APPENDIX E
DATA QUALITY CONTROL AND VALIDATION REPORTS

DOCUMENTS INCLUDED IN APPENDIX E

Indices

2006-2007 Index of Validation Reports

2011-2012 Index of MBTL Laboratory Data Reports

2013 Index to Appendices E & F

2006-2007 reports

15597 rev

Laboratory Data Consultants, Inc. October 24, 2006.

15597

Laboratory Data Consultants, Inc. June 13, 2007.

15622

Laboratory Data Consultants, Inc. October 23, 2006.

15633

Laboratory Data Consultants, Inc. October 23, 2006.

15664

Laboratory Data Consultants, Inc. October 30, 2006.

15788

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16033

Laboratory Data Consultants, Inc. January 15, 2007.

Data Validation Review Report (KK85)

Anchor Environmental, L.L.C. February 2, 2007.

QA1 Data Review Report

Anchor Environmental, L.L.C. May 2, 2007.

2011-2012 reports

26339

Laboratory Data Consultants, Inc. November 3, 2011.

26374

Laboratory Data Consultants, Inc. October 25, 2011.

26627

Laboratory Data Consultants, Inc. November 29, 2011.

27058

Laboratory Data Consultants, Inc. February 15, 2012.

Data Validation Review Report – USEPA Level 3

Anchor QEA, LLC. December 19, 2011.

Data Validation Review Report – USEPA Level 3 (Stage 2B)

Anchor QEA, LLC. March 28, 2012.

Data Validation Review Report – USEPA Level 3 (Stage 2B)

Anchor QEA, LLC. March 30, 2012.

2013-2014 Reports

28944

Laboratory Data Consultants, Inc. January 30, 2013.

28989

Laboratory Data Consultants, Inc. January 29, 2013.

29076_REV

Laboratory Data Consultants, Inc. February 7, 2013.

29096_REV

Laboratory Data Consultants, Inc. January 30, 2013.

29157

Laboratory Data Consultants, Inc. February 14, 2013.

29179

Laboratory Data Consultants, Inc. February 15, 2013.

29233

Laboratory Data Consultants, Inc. February 15, 2013.

29284

Laboratory Data Consultants, Inc. February 27, 2013.

Memorandum: Review of Petroleum Hydrocarbon Fraction Chromatography Analysis, Millennium Bulk Terminals – Longview

Anchor QEA, LLC. May 16, 2013.

Memorandum: Evaluation of Chromium, Copper, and Nickel Groundwater Concentration Data,

Anchor QEA, LLC. February 4, 2014.

Memorandum: 2012 Sediment Bioassay Validation,

Anchor QEA, LLC. February 12, 2014.

Data Validation
June 2007

Sample Date	Lab	SDG	Sample ID	Analyte	Validator	Data Validation Received/ Reviewed	Data Validation Filename
9/18/2006	ARI	JW94	G-5d-091806	Alkalinity	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5d-091806	Aluminum	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5d-091806	Calcium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5d-091806	Density	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5d-091806	Fluoride	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5d-091806	Iron	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5d-091806	Magnesium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5d-091806	Manganese	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5d-091806	Potassium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5d-091806	Silicon	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5d-091806	Sodium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5d-091806	Sulfate	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5d-091806	Total chloride	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5d-091806	Total phosphorous	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5s-091806	Alkalinity	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5s-091806	Aluminum	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5s-091806	Calcium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5s-091806	Density	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5s-091806	Fluoride	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5s-091806	Iron	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5s-091806	Magnesium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5s-091806	Manganese	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5s-091806	Potassium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5s-091806	Silicon	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5s-091806	Sodium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5s-091806	Sulfate	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5s-091806	Total chloride	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-5s-091806	Total phosphorous	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-7d-091806	Alkalinity	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-7d-091806	Aluminum	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-7d-091806	Calcium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-7d-091806	Density	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-7d-091806	Fluoride	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-7d-091806	Iron	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-7d-091806	Magnesium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-7d-091806	Manganese	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-7d-091806	Potassium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-7d-091806	Silicon	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-7d-091806	Sodium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-7d-091806	Sulfate	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-7d-091806	Total chloride	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	G-7d-091806	Total phosphorous	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-6-091806	Alkalinity	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-6-091806	Aluminum	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-6-091806	Calcium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-6-091806	Density	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-6-091806	Fluoride	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-6-091806	Iron	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-6-091806	Magnesium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-6-091806	Manganese	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-6-091806	Potassium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-6-091806	Silicon	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-6-091806	Sodium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-6-091806	Sulfate	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-6-091806	Total chloride	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-6-091806	Total phosphorous	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-7-091806	Alkalinity	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-7-091806	Aluminum	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-7-091806	Calcium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-7-091806	Density	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-7-091806	Fluoride	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-7-091806	Iron	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-7-091806	Magnesium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-7-091806	Manganese	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-7-091806	Potassium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-7-091806	Silicon	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-7-091806	Sodium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-7-091806	Sulfate	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-7-091806	Total chloride	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	PZ-7-091806	Total phosphorous	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2d-091806	Alkalinity	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2d-091806	Aluminum	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2d-091806	Calcium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2d-091806	Density	LDC	9/18/2006	15597_DVrs.zip

Data Validation
June 2007

Sample Date	Lab	SDG	Sample ID	Analyte	Validator	Data Validation Received/ Reviewed	Data Validation Filename
9/18/2006	ARI	JW94	RL-2d-091806	Fluoride	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2d-091806	Iron	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2d-091806	Magnesium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2d-091806	Manganese	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2d-091806	Potassium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2d-091806	Silicon	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2d-091806	Sodium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2d-091806	Sulfate	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2d-091806	Total chloride	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2d-091806	Total phosphorous	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2s-091806	Alkalinity	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2s-091806	Aluminum	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2s-091806	Calcium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2s-091806	Density	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2s-091806	Fluoride	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2s-091806	Iron	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2s-091806	Magnesium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2s-091806	Manganese	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2s-091806	Potassium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2s-091806	Silicon	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2s-091806	Sodium	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2s-091806	Sulfate	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2s-091806	Total chloride	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JW94	RL-2s-091806	Total phosphorous	LDC	9/18/2006	15597_DVrs.zip
9/18/2006	ARI	JX10	RL-5-091806	Alkalinity	LDC	10/23/2006	15597_DVrs.zip
9/18/2006	ARI	JX10	RL-5-091806	Aluminum	LDC	10/23/2006	15597_DVrs.zip
9/18/2006	ARI	JX10	RL-5-091806	Calcium	LDC	10/23/2006	15597_DVrs.zip
9/18/2006	ARI	JX10	RL-5-091806	Density	LDC	10/23/2006	15597_DVrs.zip
9/18/2006	ARI	JX10	RL-5-091806	Fluoride	LDC	10/23/2006	15597_DVrs.zip
9/18/2006	ARI	JX10	RL-5-091806	Iron	LDC	10/23/2006	15597_DVrs.zip
9/18/2006	ARI	JX10	RL-5-091806	Magnesium	LDC	10/23/2006	15597_DVrs.zip
9/18/2006	ARI	JX10	RL-5-091806	Manganese	LDC	10/23/2006	15597_DVrs.zip
9/18/2006	ARI	JX10	RL-5-091806	Potassium	LDC	10/23/2006	15597_DVrs.zip
9/18/2006	ARI	JX10	RL-5-091806	Silicon	LDC	10/23/2006	15597_DVrs.zip
9/18/2006	ARI	JX10	RL-5-091806	Sodium	LDC	10/23/2006	15597_DVrs.zip
9/18/2006	ARI	JX10	RL-5-091806	Sulfate	LDC	10/23/2006	15597_DVrs.zip
9/18/2006	ARI	JX10	RL-5-091806	Total chloride	LDC	10/23/2006	15597_DVrs.zip
9/18/2006	ARI	JX10	RL-5-091806	Total phosphorous	LDC	10/23/2006	15597_DVrs.zip
9/18/2006	ARI	KG93	RL-2d-091806	Arsenic	LDC	1/15/2007	16033.pdf
9/18/2006	ARI	KG93	RL-2d-091806	Chromium	LDC	1/15/2007	16033.pdf
9/18/2006	ARI	KG93	RL-2d-091806	Copper	LDC	1/15/2007	16033.pdf
9/18/2006	ARI	KG93	RL-2d-091806	Nickel	LDC	1/15/2007	16033.pdf
9/18/2006	ARI	KG93	RL-2s-091806	Arsenic	LDC	1/15/2007	16033.pdf
9/18/2006	ARI	KG93	RL-2s-091806	Chromium	LDC	1/15/2007	16033.pdf
9/18/2006	ARI	KG93	RL-2s-091806	Copper	LDC	1/15/2007	16033.pdf
9/18/2006	ARI	KG93	RL-2s-091806	Nickel	LDC	1/15/2007	16033.pdf
9/18/2006	ARI	KG93	RL-5-091806	Arsenic	LDC	1/15/2007	16033.pdf
9/18/2006	ARI	KG93	RL-5-091806	Chromium	LDC	1/15/2007	16033.pdf
9/18/2006	ARI	KG93	RL-5-091806	Copper	LDC	1/15/2007	16033.pdf
9/18/2006	ARI	KG93	RL-5-091806	Nickel	LDC	1/15/2007	16033.pdf
9/18/2006	CHMC	F2523	G-5d-091806	Cyanide	LDC	10/24/2006	15597_pdfs.zip
9/18/2006	CHMC	F2523	G-5d-091806	Cyanide, Free	LDC	10/24/2006	15597_pdfs.zip
9/18/2006	CHMC	F2523	G-5d-091806	Cyanide, WAD	LDC	10/24/2006	15597_pdfs.zip
9/18/2006	CHMC	F2523	G-5s-091806	Cyanide	LDC	10/24/2006	15597_pdfs.zip
9/18/2006	CHMC	F2523	G-5s-091806	Cyanide, Free	LDC	10/24/2006	15597_pdfs.zip
9/18/2006	CHMC	F2523	G-5s-091806	Cyanide, WAD	LDC	10/24/2006	15597_pdfs.zip
9/18/2006	CHMC	F2523	G-7d-091806	Cyanide	LDC	10/24/2006	15597_pdfs.zip
9/18/2006	CHMC	F2523	G-7d-091806	Cyanide, Free	LDC	10/24/2006	15597_pdfs.zip
9/18/2006	CHMC	F2523	G-7d-091806	Cyanide, WAD	LDC	10/24/2006	15597_pdfs.zip
9/18/2006	CHMC	F2523	PZ-6-091806	Cyanide	LDC	10/24/2006	15597_pdfs.zip
9/18/2006	CHMC	F2523	PZ-6-091806	Cyanide, Free	LDC	10/24/2006	15597_pdfs.zip
9/18/2006	CHMC	F2523	PZ-6-091806	Cyanide, WAD	LDC	10/24/2006	15597_pdfs.zip
9/18/2006	CHMC	F2523	PZ-7-091806	Cyanide	LDC	10/24/2006	15597_pdfs.zip
9/18/2006	CHMC	F2523	PZ-7-091806	Cyanide, Free	LDC	10/24/2006	15597_pdfs.zip
9/18/2006	CHMC	F2523	PZ-7-091806	Cyanide, WAD	LDC	10/24/2006	15597_pdfs.zip
9/18/2006	CHMC	F2523	RL-2d-091806	Cyanide	LDC	10/24/2006	15597_pdfs.zip
9/18/2006	CHMC	F2523	RL-2d-091806	Cyanide, Free	LDC	10/24/2006	15597_pdfs.zip
9/18/2006	CHMC	F2523	RL-2d-091806	Cyanide, WAD	LDC	10/24/2006	15597_pdfs.zip
9/18/2006	CHMC	F2523	RL-2s-091806	Cyanide	LDC	10/24/2006	15597_pdfs.zip
9/18/2006	CHMC	F2523	RL-2s-091806	Cyanide, Free	LDC	10/24/2006	15597_pdfs.zip
9/18/2006	CHMC	F2523	RL-2s-091806	Cyanide, WAD	LDC	10/24/2006	15597_pdfs.zip
9/18/2006	CHMC	F2530	RL-5-091806	Cyanide	LDC	10/24/2006	15597_pdfs.zip
9/18/2006	CHMC	F2530	RL-5-091806	Cyanide, Free	LDC	10/24/2006	15597_pdfs.zip
9/18/2006	CHMC	F2530	RL-5-091806	Cyanide, WAD	LDC	10/24/2006	15597_pdfs.zip

Data Validation
June 2007

Sample Date	Lab	SDG	Sample ID	Analyte	Validator	Data Validation Received/ Reviewed	Data Validation Filename
9/19/2006	ARI	JX10	G-44d-091906	Alkalinity	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-44d-091906	Aluminum	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-44d-091906	Calcium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-44d-091906	Density	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-44d-091906	Fluoride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-44d-091906	Iron	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-44d-091906	Magnesium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-44d-091906	Manganese	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-44d-091906	Potassium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-44d-091906	Silicon	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-44d-091906	Sodium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-44d-091906	Sulfate	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-44d-091906	Total chloride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-44d-091906	Total phosphorous	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4d-091906	Alkalinity	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4d-091906	Aluminum	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4d-091906	Calcium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4d-091906	Density	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4d-091906	Fluoride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4d-091906	Iron	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4d-091906	Magnesium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4d-091906	Manganese	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4d-091906	Potassium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4d-091906	Silicon	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4d-091906	Sodium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4d-091906	Sulfate	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4d-091906	Total chloride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4d-091906	Total phosphorous	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4s-091906	Alkalinity	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4s-091906	Aluminum	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4s-091906	Calcium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4s-091906	Density	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4s-091906	Fluoride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4s-091906	Iron	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4s-091906	Magnesium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4s-091906	Manganese	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4s-091906	Potassium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4s-091906	Silicon	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4s-091906	Sodium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4s-091906	Sulfate	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4s-091906	Total chloride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-4s-091906	Total phosphorous	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6d-091906	Alkalinity	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6d-091906	Aluminum	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6d-091906	Calcium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6d-091906	Density	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6d-091906	Fluoride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6d-091906	Iron	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6d-091906	Magnesium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6d-091906	Manganese	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6d-091906	Potassium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6d-091906	Silicon	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6d-091906	Sodium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6d-091906	Sulfate	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6d-091906	Total chloride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6d-091906	Total phosphorous	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6s-091906	Alkalinity	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6s-091906	Aluminum	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6s-091906	Calcium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6s-091906	Density	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6s-091906	Fluoride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6s-091906	Iron	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6s-091906	Magnesium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6s-091906	Manganese	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6s-091906	Potassium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6s-091906	Silicon	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6s-091906	Sodium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6s-091906	Sulfate	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6s-091906	Total chloride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	G-6s-091906	Total phosphorous	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1d-091906	Alkalinity	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1d-091906	Aluminum	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1d-091906	Calcium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1d-091906	Density	LDC	10/23/2006	15597_DVrs.zip

Data Validation
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Sample Date	Lab	SDG	Sample ID	Analyte	Validator	Data Validation Received/ Reviewed	Data Validation Filename
9/19/2006	ARI	JX10	R-1d-091906	Fluoride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1d-091906	Iron	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1d-091906	Magnesium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1d-091906	Manganese	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1d-091906	Potassium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1d-091906	Silicon	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1d-091906	Sodium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1d-091906	Sulfate	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1d-091906	Total chloride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1d-091906	Total phosphorous	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1s-091906	Alkalinity	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1s-091906	Aluminum	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1s-091906	Calcium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1s-091906	Density	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1s-091906	Fluoride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1s-091906	Iron	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1s-091906	Magnesium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1s-091906	Manganese	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1s-091906	Potassium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1s-091906	Silicon	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1s-091906	Sodium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1s-091906	Sulfate	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1s-091906	Total chloride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	R-1s-091906	Total phosphorous	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1d-091906	Alkalinity	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1d-091906	Aluminum	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1d-091906	Calcium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1d-091906	Density	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1d-091906	Fluoride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1d-091906	Iron	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1d-091906	Magnesium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1d-091906	Manganese	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1d-091906	Potassium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1d-091906	Silicon	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1d-091906	Sodium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1d-091906	Sulfate	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1d-091906	Total chloride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1d-091906	Total phosphorous	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1s-091906	Alkalinity	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1s-091906	Aluminum	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1s-091906	Calcium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1s-091906	Density	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1s-091906	Fluoride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1s-091906	Iron	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1s-091906	Magnesium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1s-091906	Manganese	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1s-091906	Potassium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1s-091906	Silicon	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1s-091906	Sodium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1s-091906	Sulfate	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1s-091906	Total chloride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-1s-091906	Total phosphorous	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3d-091906	Alkalinity	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3d-091906	Aluminum	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3d-091906	Calcium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3d-091906	Density	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3d-091906	Fluoride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3d-091906	Iron	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3d-091906	Magnesium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3d-091906	Manganese	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3d-091906	Potassium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3d-091906	Silicon	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3d-091906	Sodium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3d-091906	Sulfate	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3d-091906	Total chloride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3d-091906	Total phosphorous	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3s-091906	Alkalinity	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3s-091906	Aluminum	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3s-091906	Calcium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3s-091906	Density	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3s-091906	Fluoride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3s-091906	Iron	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3s-091906	Magnesium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3s-091906	Manganese	LDC	10/23/2006	15597_DVrs.zip

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Sample Date	Lab	SDG	Sample ID	Analyte	Validator	Data Validation Received/ Reviewed	Data Validation Filename
9/19/2006	ARI	JX10	RL-3s-091906	Potassium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3s-091906	Silicon	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3s-091906	Sodium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3s-091906	Sulfate	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3s-091906	Total chloride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-3s-091906	Total phosphorous	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-4d-091906	Alkalinity	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-4d-091906	Aluminum	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-4d-091906	Calcium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-4d-091906	Density	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-4d-091906	Fluoride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-4d-091906	Iron	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-4d-091906	Magnesium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-4d-091906	Manganese	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-4d-091906	Potassium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-4d-091906	Silicon	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-4d-091906	Sodium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-4d-091906	Sulfate	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-4d-091906	Total chloride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RL-4d-091906	Total phosphorous	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RLSW-4-091906	Alkalinity	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RLSW-4-091906	Aluminum	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RLSW-4-091906	Calcium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RLSW-4-091906	Density	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RLSW-4-091906	Fluoride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RLSW-4-091906	Iron	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RLSW-4-091906	Magnesium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RLSW-4-091906	Manganese	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RLSW-4-091906	Potassium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RLSW-4-091906	Silicon	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RLSW-4-091906	Sodium	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RLSW-4-091906	Sulfate	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RLSW-4-091906	Total chloride	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	JX10	RLSW-4-091906	Total phosphorous	LDC	10/23/2006	15597_DVrs.zip
9/19/2006	ARI	KG93	RL-1d-091906	Arsenic	LDC	1/15/2007	16033.pdf
9/19/2006	ARI	KG93	RL-1d-091906	Chromium	LDC	1/15/2007	16033.pdf
9/19/2006	ARI	KG93	RL-1d-091906	Copper	LDC	1/15/2007	16033.pdf
9/19/2006	ARI	KG93	RL-1d-091906	Nickel	LDC	1/15/2007	16033.pdf
9/19/2006	ARI	KG93	RL-1s-091906	Arsenic	LDC	1/15/2007	16033.pdf
9/19/2006	ARI	KG93	RL-1s-091906	Chromium	LDC	1/15/2007	16033.pdf
9/19/2006	ARI	KG93	RL-1s-091906	Copper	LDC	1/15/2007	16033.pdf
9/19/2006	ARI	KG93	RL-1s-091906	Nickel	LDC	1/15/2007	16033.pdf
9/19/2006	ARI	KG93	RL-3d-091906	Arsenic	LDC	1/15/2007	16033.pdf
9/19/2006	ARI	KG93	RL-3d-091906	Chromium	LDC	1/15/2007	16033.pdf
9/19/2006	ARI	KG93	RL-3d-091906	Copper	LDC	1/15/2007	16033.pdf
9/19/2006	ARI	KG93	RL-3d-091906	Nickel	LDC	1/15/2007	16033.pdf
9/19/2006	ARI	KG93	RL-3s-091906	Arsenic	LDC	1/15/2007	16033.pdf
9/19/2006	ARI	KG93	RL-3s-091906	Chromium	LDC	1/15/2007	16033.pdf
9/19/2006	ARI	KG93	RL-3s-091906	Copper	LDC	1/15/2007	16033.pdf
9/19/2006	ARI	KG93	RL-3s-091906	Nickel	LDC	1/15/2007	16033.pdf
9/19/2006	ARI	KG93	RL-4d-091906	Arsenic	LDC	1/15/2007	16033.pdf
9/19/2006	ARI	KG93	RL-4d-091906	Chromium	LDC	1/15/2007	16033.pdf
9/19/2006	ARI	KG93	RL-4d-091906	Copper	LDC	1/15/2007	16033.pdf
9/19/2006	ARI	KG93	RL-4d-091906	Nickel	LDC	1/15/2007	16033.pdf
9/19/2006	CHMC	F2530	G-44d-091906	Cyanide	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	G-44d-091906	Cyanide, Free	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	G-44d-091906	Cyanide, WAD	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	G-4d-091906	Cyanide	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	G-4d-091906	Cyanide, Free	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	G-4d-091906	Cyanide, WAD	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	G-4s-091906	Cyanide	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	G-4s-091906	Cyanide, Free	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	G-4s-091906	Cyanide, WAD	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	G-6d-091906	Cyanide	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	G-6d-091906	Cyanide, Free	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	G-6d-091906	Cyanide, WAD	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	G-6s-091906	Cyanide	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	G-6s-091906	Cyanide, Free	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	G-6s-091906	Cyanide, WAD	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	R-1d-091906	Cyanide	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	R-1d-091906	Cyanide, Free	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	R-1d-091906	Cyanide, WAD	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	R-1s-091906	Cyanide	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	R-1s-091906	Cyanide, Free	LDC	10/24/2006	15597_pdfs.zip

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Sample Date	Lab	SDG	Sample ID	Analyte	Validator	Data Validation Received/ Reviewed	Data Validation Filename
9/19/2006	CHMC	F2530	R-1s-091906	Cyanide, WAD	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	RL-1d-091906	Cyanide	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	RL-1d-091906	Cyanide, Free	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	RL-1d-091906	Cyanide, WAD	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	RL-1s-091906	Cyanide	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	RL-1s-091906	Cyanide, Free	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	RL-1s-091906	Cyanide, WAD	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	RL-3d-091906	Cyanide	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	RL-3d-091906	Cyanide, Free	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	RL-3d-091906	Cyanide, WAD	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	RL-3s-091906	Cyanide	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	RL-3s-091906	Cyanide, Free	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	RL-3s-091906	Cyanide, WAD	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	RL-4d-091906	Cyanide	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	RL-4d-091906	Cyanide, Free	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	RL-4d-091906	Cyanide, WAD	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	RL-4s-091906	Cyanide	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	RL-4s-091906	Cyanide, Free	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	RL-4s-091906	Cyanide, WAD	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	RLSW-4-091906	Cyanide	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	RLSW-4-091906	Cyanide, Free	LDC	10/24/2006	15597_pdfs.zip
9/19/2006	CHMC	F2530	RLSW-4-091906	Cyanide, WAD	LDC	10/24/2006	15597_pdfs.zip
9/26/2006	ARI	JY35	PZ-1-092606	Alkalinity	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-1-092606	Aluminum	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-1-092606	Calcium	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-1-092606	Density	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-1-092606	Fluoride	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-1-092606	Iron	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-1-092606	Magnesium	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-1-092606	Manganese	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-1-092606	Potassium	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-1-092606	Silicon	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-1-092606	Sodium	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-1-092606	Sulfate	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-1-092606	Total chloride	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-1-092606	Total phosphorous	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-3-092606	Alkalinity	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-3-092606	Aluminum	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-3-092606	Calcium	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-3-092606	Density	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-3-092606	Fluoride	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-3-092606	Iron	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-3-092606	Magnesium	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-3-092606	Manganese	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-3-092606	Potassium	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-3-092606	Silicon	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-3-092606	Sodium	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-3-092606	Sulfate	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-3-092606	Total chloride	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-3-092606	Total phosphorous	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-4-092606	Alkalinity	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-4-092606	Aluminum	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-4-092606	Calcium	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-4-092606	Density	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-4-092606	Fluoride	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-4-092606	Iron	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-4-092606	Magnesium	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-4-092606	Manganese	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-4-092606	Potassium	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-4-092606	Silicon	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-4-092606	Sodium	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-4-092606	Sulfate	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-4-092606	Total chloride	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	ARI	JY35	PZ-4-092606	Total phosphorous	LDC	10/23/2006	15597_DVrs.zip
9/26/2006	CHMC	F2574	PZ-1-092606	Cyanide	LDC	10/23/2006	15622.pdf
9/26/2006	CHMC	F2574	PZ-1-092606	Cyanide, Free	LDC	10/23/2006	15622.pdf
9/26/2006	CHMC	F2574	PZ-1-092606	Cyanide, WAD	LDC	10/23/2006	15622.pdf
9/26/2006	CHMC	F2574	PZ-3-092606	Cyanide	LDC	10/23/2006	15622.pdf
9/26/2006	CHMC	F2574	PZ-3-092606	Cyanide, Free	LDC	10/23/2006	15622.pdf
9/26/2006	CHMC	F2574	PZ-3-092606	Cyanide, WAD	LDC	10/23/2006	15622.pdf
9/26/2006	CHMC	F2574	PZ-4-092606	Cyanide	LDC	10/23/2006	15622.pdf
9/26/2006	CHMC	F2574	PZ-4-092606	Cyanide, Free	LDC	10/23/2006	15622.pdf
9/26/2006	CHMC	F2574	PZ-4-092606	Cyanide, WAD	LDC	10/23/2006	15622.pdf
9/27/2006	ARI	JY56	PZ-2-092706	Alkalinity	LDC	10/23/2006	15597_DVrs.zip

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Sample Date	Lab	SDG	Sample ID	Analyte	Validator	Data Validation Received/ Reviewed	Data Validation Filename
9/27/2006	ARI	JY56	PZ-2-092706	Aluminum	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	PZ-2-092706	Calcium	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	PZ-2-092706	Density	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	PZ-2-092706	Fluoride	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	PZ-2-092706	Iron	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	PZ-2-092706	Magnesium	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	PZ-2-092706	Manganese	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	PZ-2-092706	Potassium	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	PZ-2-092706	Silicon	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	PZ-2-092706	Sodium	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	PZ-2-092706	Sulfate	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	PZ-2-092706	Total chloride	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	PZ-2-092706	Total phosphorous	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	R-3-092706	Alkalinity	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	R-3-092706	Aluminum	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	R-3-092706	Calcium	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	R-3-092706	Density	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	R-3-092706	Fluoride	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	R-3-092706	Iron	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	R-3-092706	Magnesium	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	R-3-092706	Manganese	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	R-3-092706	Potassium	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	R-3-092706	Silicon	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	R-3-092706	Sodium	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	R-3-092706	Sulfate	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	R-3-092706	Total chloride	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	R-3-092706	Total phosphorous	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-1-092706	Alkalinity	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-1-092706	Aluminum	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-1-092706	Calcium	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-1-092706	Density	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-1-092706	Fluoride	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-1-092706	Iron	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-1-092706	Magnesium	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-1-092706	Manganese	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-1-092706	Potassium	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-1-092706	Silicon	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-1-092706	Sodium	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-1-092706	Sulfate	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-1-092706	Total chloride	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-1-092706	Total phosphorous	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-2-092706	Alkalinity	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-2-092706	Fluoride	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-2-092706	Sulfate	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-2-092706	Total chloride	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-2-092706	Total phosphorous	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-3-092706	Alkalinity	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-3-092706	Density	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-3-092706	Fluoride	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-3-092706	Sulfate	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-3-092706	Total chloride	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY56	RLSW-3-092706	Total phosphorous	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY77	RLSW-2-092706	Aluminum	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY77	RLSW-2-092706	Calcium	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY77	RLSW-2-092706	Iron	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY77	RLSW-2-092706	Magnesium	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY77	RLSW-2-092706	Manganese	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY77	RLSW-2-092706	Potassium	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY77	RLSW-2-092706	Silicon	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY77	RLSW-2-092706	Sodium	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY77	RLSW-3-092706	Aluminum	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY77	RLSW-3-092706	Calcium	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY77	RLSW-3-092706	Iron	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY77	RLSW-3-092706	Magnesium	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY77	RLSW-3-092706	Manganese	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY77	RLSW-3-092706	Potassium	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY77	RLSW-3-092706	Silicon	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	ARI	JY77	RLSW-3-092706	Sodium	LDC	10/23/2006	15597_DVrs.zip
9/27/2006	CHMC	F2582	PZ-2-092706	Cyanide	LDC	10/23/2006	15622.pdf
9/27/2006	CHMC	F2582	PZ-2-092706	Cyanide, Free	LDC	10/23/2006	15622.pdf
9/27/2006	CHMC	F2582	PZ-2-092706	Cyanide, WAD	LDC	10/23/2006	15622.pdf
9/27/2006	CHMC	F2582	R-3-092706	Cyanide	LDC	10/23/2006	15622.pdf
9/27/2006	CHMC	F2582	R-3-092706	Cyanide, Free	LDC	10/23/2006	15622.pdf
9/27/2006	CHMC	F2582	R-3-092706	Cyanide, WAD	LDC	10/23/2006	15622.pdf

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Sample Date	Lab	SDG	Sample ID	Analyte	Validator	Data Validation Received/ Reviewed	Data Validation Filename
9/27/2006	CHMC	F2582	RLSW-1-092706	Cyanide	LDC	10/23/2006	15622.pdf
9/27/2006	CHMC	F2582	RLSW-1-092706	Cyanide, Free	LDC	10/23/2006	15622.pdf
9/27/2006	CHMC	F2582	RLSW-1-092706	Cyanide, WAD	LDC	10/23/2006	15622.pdf
9/27/2006	CHMC	F2582	RLSW-2-092706	Cyanide	LDC	10/23/2006	15622.pdf
9/27/2006	CHMC	F2582	RLSW-2-092706	Cyanide, Free	LDC	10/23/2006	15622.pdf
9/27/2006	CHMC	F2582	RLSW-2-092706	Cyanide, WAD	LDC	10/23/2006	15622.pdf
9/27/2006	CHMC	F2582	RLSW-3-092706	Cyanide	LDC	10/23/2006	15622.pdf
9/27/2006	CHMC	F2582	RLSW-3-092706	Cyanide, Free	LDC	10/23/2006	15622.pdf
9/27/2006	CHMC	F2582	RLSW-3-092706	Cyanide, WAD	LDC	10/23/2006	15622.pdf
1/5/2007	ARI	KK85	G-1S-010507	2-Methylnaphthalene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-1S-010507	Acenaphthene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-1S-010507	Acenaphthylene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-1S-010507	Anthracene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-1S-010507	Benzo(a)anthracene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-1S-010507	Benzo(a)pyrene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-1S-010507	Benzo(b)fluoranthene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-1S-010507	Benzo(g,h,i)perylene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-1S-010507	Benzo(k)fluoranthene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-1S-010507	Chrysene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-1S-010507	Dibenzo(a,h)anthracene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-1S-010507	Dibenzofuran	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-1S-010507	Fluoranthene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-1S-010507	Fluorene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-1S-010507	Indeno(1,2,3-cd)pyrene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-1S-010507	Naphthalene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-1S-010507	Phenanthrene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-1S-010507	Pyrene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	1,1,1,2-Tetrachloroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	1,1,1-Trichloroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	1,1,2,2-Tetrachloroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	1,1,2-Trichloro-1,2,2-trifluoroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	1,1,2-Trichloroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	1,1-Dichloroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	1,1-Dichloroethene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	1,1-Dichloropropene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	1,2,3-Trichlorobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	1,2,3-Trichloropropane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	1,2,4-Trichlorobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	1,2,4-Trimethylbenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	1,2-Dibromo-3-chloropropane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	1,2-Dibromoethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	1,2-Dichlorobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	1,2-Dichloroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	1,2-Dichloropropane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	1,3,5-Trimethylbenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	1,3-Dichlorobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	1,3-Dichloropropane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	1,4-Dichlorobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	2,2-Dichloropropane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	2,2'-Oxybis(1-Chloropropane)	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	2,4,5-Trichlorophenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	2,4,6-Trichlorophenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	2,4-Dichlorophenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	2,4-Dimethylphenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	2,4-Dinitrophenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	2,4-Dinitrotoluene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	2,6-Dinitrotoluene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	2-Butanone (MEK)	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	2-Chloroethylvinylether	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	2-Chloronaphthalene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	2-Chlorophenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	2-Chlorotoluene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	2-Hexanone	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	2-Methylnaphthalene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	2-Methylphenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	2-Nitroaniline	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	2-Nitrophenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	3,3'-Dichlorobenzidine	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	3-Nitroaniline	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	4,4'-DDD	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	4,4'-DDE	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	4,4'-DDT	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	4,6-Dinitro-2-Methylphenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	4-Bromophenyl-phenylether	AE	3/6/2007	KK85_data_validation.pdf

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Sample Date	Lab	SDG	Sample ID	Analyte	Validator	Data Validation Received/ Reviewed	Data Validation Filename
1/5/2007	ARI	KK85	G-2S-010507	4-Chloro-3-methylphenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	4-Chloroaniline	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	4-Chlorophenyl-phenylether	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	4-Chlorotoluene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	4-Isopropyltoluene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	4-Methyl-2-Pentanone (MIBK)	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	4-Methylphenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	4-Nitroaniline	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	4-Nitrophenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Acenaphthene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Acenaphthylene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Acetone	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Acrolein	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Acrylonitrile	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Aldrin	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	alpha-BHC	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	alpha-Chlordane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Anthracene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Antimony	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Aroclor 1016	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Aroclor 1221	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Aroclor 1232	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Aroclor 1242	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Aroclor 1248	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Aroclor 1254	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Aroclor 1260	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Arsenic	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Benzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Benzo(a)anthracene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Benzo(a)pyrene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Benzo(b)fluoranthene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Benzo(g,h,i)perylene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Benzo(k)fluoranthene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Benzoic acid	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Benzyl alcohol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Beryllium	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	beta-BHC	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	bis(2-Chloroethoxy)methane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	bis(2-Chloroethyl)ether	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	bis(2-Ethylhexyl)phthalate	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Bromobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Bromochloromethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Bromodichloromethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Bromoethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Bromoform	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Bromomethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Butylbenzylphthalate	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Cadmium	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Carbazole	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Carbon disulfide	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Carbon tetrachloride	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Chlorobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Chloroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Chloroform	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Chloromethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Chromium	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Chrysene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	cis-1,2-Dichloroethene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	cis-1,3-Dichloropropene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Copper	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	delta-BHC	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Dibenzo(a,h)anthracene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Dibenzofuran	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Dibromochloromethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Dibromomethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Dichloromethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Dieldrin	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Diethylphthalate	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Dimethylphthalate	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Di-n-butylphthalate	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Di-n-octylphthalate	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Endosulfan I	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Endosulfan II	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Endosulfan sulfate	AE	3/6/2007	KK85_data_validation.pdf

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Sample Date	Lab	SDG	Sample ID	Analyte	Validator	Data Validation Received/ Reviewed	Data Validation Filename
1/5/2007	ARI	KK85	G-2S-010507	Endrin	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Endrin aldehyde	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Endrin ketone	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Ethylbenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Fluoranthene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Fluorene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	gamma-BHC (Lindane)	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	gamma-Chlordane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Heptachlor	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Heptachlor epoxide	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Hexachlorobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Hexachlorobutadiene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Hexachlorocyclopentadiene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Hexachloroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Indeno(1,2,3-cd)pyrene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Iodomethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Isophorone	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Isopropylbenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Lead	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	m,p-Xylenes	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Mercury	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Methoxychlor	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Naphthalene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	n-Butylbenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Nickel	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Nitrobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	n-Nitroso-di-n-propylamine	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	n-Nitroso-di-phenylamine	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	n-Propylbenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	o-Xylene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Pentachlorophenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Phenanthrene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Phenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Pyrene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	sec-Butylbenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Selenium	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Silver	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Styrene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	tert-Butylbenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Tetrachloroethene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Thallium	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Toluene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Toxaphene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	trans-1,2-Dichloroethene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	trans-1,3-Dichloropropene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	trans-1,4-Dichloro-2-butene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Trichloroethene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Trichlorofluoromethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Vinyl acetate	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Vinyl chloride	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-2S-010507	Zinc	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507	2-Methylnaphthalene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507	Acenaphthene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507	Acenaphthylene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507	Anthracene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507	Benzo(a)anthracene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507	Benzo(a)pyrene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507	Benzo(b)fluoranthene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507	Benzo(g,h,i)perylene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507	Benzo(k)fluoranthene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507	Chrysene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507	Dibenzo(a,h)anthracene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507	Dibenzofuran	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507	Fluoranthene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507	Fluorene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507	Indeno(1,2,3-cd)pyrene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507	Naphthalene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507	Phenanthrene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507	Pyrene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507-D	2-Methylnaphthalene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507-D	Acenaphthene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507-D	Acenaphthylene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507-D	Anthracene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507-D	Benzo(a)anthracene	AE	3/6/2007	KK85_data_validation.pdf

Data Validation
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Sample Date	Lab	SDG	Sample ID	Analyte	Validator	Data Validation Received/ Reviewed	Data Validation Filename
1/5/2007	ARI	KK85	G-6S-010507-D	Benzo(a)pyrene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507-D	Benzo(b)fluoranthene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507-D	Benzo(g,h,i)perylene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507-D	Benzo(k)fluoranthene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507-D	Chrysene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507-D	Dibenzo(a,h)anthracene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507-D	Dibenzofuran	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507-D	Fluoranthene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507-D	Fluorene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507-D	Indeno(1,2,3-cd)pyrene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507-D	Naphthalene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507-D	Phenanthrene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	G-6S-010507-D	Pyrene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	1,1,1,2-Tetrachloroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	1,1,1-Trichloroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	1,1,2,2-Tetrachloroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	1,1,2-Trichloro-1,2,2-trifluoroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	1,1,2-Trichloroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	1,1-Dichloroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	1,1-Dichloroethene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	1,1-Dichloropropene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	1,2,3-Trichlorobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	1,2,3-Trichloropropane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	1,2,4-Trichlorobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	1,2,4-Trimethylbenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	1,2-Dibromo-3-chloropropane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	1,2-Dibromoethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	1,2-Dichlorobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	1,2-Dichloroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	1,2-Dichloropropane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	1,3,5-Trimethylbenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	1,3-Dichlorobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	1,3-Dichloropropane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	1,4-Dichlorobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	2,2-Dichloropropane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	2,2'-Oxybis(1-Chloropropane)	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	2,4,5-Trichlorophenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	2,4,6-Trichlorophenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	2,4-Dichlorophenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	2,4-Dimethylphenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	2,4-Dinitrophenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	2,4-Dinitrotoluene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	2,6-Dinitrotoluene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	2-Butanone (MEK)	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	2-Chloroethylvinylether	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	2-Chloronaphthalene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	2-Chlorophenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	2-Chlorotoluene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	2-Hexanone	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	2-Methylnaphthalene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	2-Methylphenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	2-Nitroaniline	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	2-Nitrophenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	3,3'-Dichlorobenzidine	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	3-Nitroaniline	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	4,4'-DDD	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	4,4'-DDE	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	4,4'-DDT	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	4,6-Dinitro-2-Methylphenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	4-Bromophenyl-phenylether	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	4-Chloro-3-methylphenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	4-Chloroaniline	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	4-Chlorophenyl-phenylether	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	4-Chlorotoluene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	4-Isopropyltoluene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	4-Methyl-2-Pentanone (MIBK)	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	4-Methylphenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	4-Nitroaniline	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	4-Nitrophenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Acenaphthene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Acenaphthylene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Acetone	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Acrolein	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Acrylonitrile	AE	3/6/2007	KK85_data_validation.pdf

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Sample Date	Lab	SDG	Sample ID	Analyte	Validator	Data Validation Received/ Reviewed	Data Validation Filename
1/5/2007	ARI	KK85	RLSW-2-010507	Aldrin	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	alpha-BHC	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	alpha-Chlordane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Anthracene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Antimony	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Aroclor 1016	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Aroclor 1221	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Aroclor 1232	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Aroclor 1242	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Aroclor 1248	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Aroclor 1254	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Aroclor 1260	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Arsenic	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Benzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Benzo(a)anthracene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Benzo(a)pyrene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Benzo(b)fluoranthene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Benzo(g,h,i)perylene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Benzo(k)fluoranthene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Benzoic acid	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Benzyl alcohol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Beryllium	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	beta-BHC	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	bis(2-Chloroethoxy)methane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	bis(2-Chloroethyl)ether	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	bis(2-Ethylhexyl)phthalate	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Bromobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Bromochloromethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Bromodichloromethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Bromoethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Bromoform	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Bromomethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Butylbenzylphthalate	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Cadmium	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Carbazole	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Carbon disulfide	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Carbon tetrachloride	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Chlorobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Chloroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Chloroform	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Chloromethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Chromium	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Chrysene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	cis-1,2-Dichloroethene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	cis-1,3-Dichloropropene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Copper	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	delta-BHC	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Dibenzo(a,h)anthracene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Dibenzofuran	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Dibromochloromethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Dibromomethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Dichloromethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Dieldrin	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Diethylphthalate	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Dimethylphthalate	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Di-n-butylphthalate	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Di-n-octylphthalate	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Endosulfan I	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Endosulfan II	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Endosulfan sulfate	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Endrin	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Endrin aldehyde	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Endrin ketone	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Ethylbenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Fluoranthene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Fluorene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	gamma-BHC (Lindane)	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	gamma-Chlordane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Heptachlor	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Heptachlor epoxide	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Hexachlorobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Hexachlorobutadiene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Hexachlorocyclopentadiene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Hexachloroethane	AE	3/6/2007	KK85_data_validation.pdf

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Sample Date	Lab	SDG	Sample ID	Analyte	Validator	Data Validation Received/ Reviewed	Data Validation Filename
1/5/2007	ARI	KK85	RLSW-2-010507	Indeno(1,2,3-cd)pyrene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Iodomethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Isophorone	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Isopropylbenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Lead	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	m,p-Xylenes	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Mercury	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Methoxychlor	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Naphthalene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	n-Butylbenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Nickel	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Nitrobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	n-Nitroso-di-n-propylamine	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	n-Nitroso-di-phenylamine	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	n-Propylbenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	o-Xylene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Pentachlorophenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Phenanthrene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Phenol	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Pyrene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	sec-Butylbenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Selenium	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Silver	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Styrene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	tert-Butylbenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Tetrachloroethene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Thallium	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Toluene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Toxaphene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	trans-1,2-Dichloroethene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	trans-1,3-Dichloropropene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	trans-1,4-Dichloro-2-butene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Trichloroethene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Trichlorofluoromethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Vinyl acetate	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Vinyl chloride	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	RLSW-2-010507	Zinc	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	1,1,1,2-Tetrachloroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	1,1,1-Trichloroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	1,1,2,2-Tetrachloroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	1,1,2-Trichloro-1,2,2-trifluoroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	1,1,2-Trichloroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	1,1-Dichloroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	1,1-Dichloroethene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	1,1-Dichloropropene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	1,2,3-Trichlorobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	1,2,3-Trichloropropane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	1,2,4-Trichlorobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	1,2,4-Trimethylbenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	1,2-Dibromo-3-chloropropane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	1,2-Dibromoethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	1,2-Dichlorobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	1,2-Dichloroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	1,2-Dichloropropane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	1,3,5-Trimethylbenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	1,3-Dichlorobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	1,3-Dichloropropane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	1,4-Dichlorobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	2,2-Dichloropropane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	2-Butanone (MEK)	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	2-Chloroethylvinylether	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	2-Chlorotoluene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	2-Hexanone	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	4-Chlorotoluene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	4-Isopropyltoluene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	4-Methyl-2-Pentanone (MIBK)	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Acetone	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Acrolein	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Acrylonitrile	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Benzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Bromobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Bromochloromethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Bromodichloromethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Bromoethane	AE	3/6/2007	KK85_data_validation.pdf

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Sample Date	Lab	SDG	Sample ID	Analyte	Validator	Data Validation Received/ Reviewed	Data Validation Filename
1/5/2007	ARI	KK85	Trip Blank-070105	Bromoform	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Bromomethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Carbon disulfide	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Carbon tetrachloride	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Chlorobenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Chloroethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Chloroform	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Chloromethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	cis-1,2-Dichloroethene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	cis-1,3-Dichloropropene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Dibromochloromethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Dibromomethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Dichloromethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Ethylbenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Hexachlorobutadiene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Iodomethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Isopropylbenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	m,p-Xylenes	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Naphthalene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	n-Butylbenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	n-Propylbenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	o-Xylene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	sec-Butylbenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Styrene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	tert-Butylbenzene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Tetrachloroethene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Toluene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	trans-1,2-Dichloroethene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	trans-1,3-Dichloropropene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	trans-1,4-Dichloro-2-butene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Trichloroethene	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Trichlorofluoromethane	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Vinyl acetate	AE	3/6/2007	KK85_data_validation.pdf
1/5/2007	ARI	KK85	Trip Blank-070105	Vinyl chloride	AE	3/6/2007	KK85_data_validation.pdf
2/27/2007	ARI	KP85	PZ-1-022707	2-Methylnaphthalene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-1-022707	Acenaphthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-1-022707	Acenaphthylene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-1-022707	Anthracene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-1-022707	Benzo(a)anthracene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-1-022707	Benzo(a)pyrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-1-022707	Benzo(b)fluoranthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-1-022707	Benzo(g,h,i)perylene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-1-022707	Benzo(k)fluoranthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-1-022707	Chrysene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-1-022707	Dibenzo(a,h)anthracene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-1-022707	Dibenzofuran	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-1-022707	Fluoranthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-1-022707	Fluorene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-1-022707	Indeno(1,2,3-cd)pyrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-1-022707	Naphthalene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-1-022707	Phenanthrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-1-022707	Pyrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-3-022707	2-Methylnaphthalene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-3-022707	Acenaphthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-3-022707	Acenaphthylene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-3-022707	Anthracene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-3-022707	Benzo(a)anthracene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-3-022707	Benzo(a)pyrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-3-022707	Benzo(b)fluoranthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-3-022707	Benzo(g,h,i)perylene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-3-022707	Benzo(k)fluoranthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-3-022707	Chrysene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-3-022707	Dibenzo(a,h)anthracene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-3-022707	Dibenzofuran	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-3-022707	Fluoranthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-3-022707	Fluorene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-3-022707	Indeno(1,2,3-cd)pyrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-3-022707	Naphthalene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-3-022707	Phenanthrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-3-022707	Pyrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-4-022707	2-Methylnaphthalene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-4-022707	Acenaphthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-4-022707	Acenaphthylene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-4-022707	Anthracene	LDC	5/8/2007	16613.pdf

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Sample Date	Lab	SDG	Sample ID	Analyte	Validator	Data Validation Received/ Reviewed	Data Validation Filename
2/27/2007	ARI	KP85	PZ-4-022707	Benzo(a)anthracene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-4-022707	Benzo(a)pyrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-4-022707	Benzo(b)fluoranthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-4-022707	Benzo(g,h,i)perylene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-4-022707	Benzo(k)fluoranthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-4-022707	Chrysene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-4-022707	Dibenzo(a,h)anthracene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-4-022707	Dibenzofuran	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-4-022707	Fluoranthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-4-022707	Fluorene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-4-022707	Indeno(1,2,3-cd)pyrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-4-022707	Naphthalene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-4-022707	Phenanthrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-4-022707	Pyrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-5-022707	2-Methylnaphthalene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-5-022707	Acenaphthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-5-022707	Acenaphthylene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-5-022707	Anthracene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-5-022707	Benzo(a)anthracene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-5-022707	Benzo(a)pyrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-5-022707	Benzo(b)fluoranthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-5-022707	Benzo(g,h,i)perylene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-5-022707	Benzo(k)fluoranthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-5-022707	Chrysene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-5-022707	Dibenzo(a,h)anthracene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-5-022707	Dibenzofuran	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-5-022707	Fluoranthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-5-022707	Fluorene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-5-022707	Indeno(1,2,3-cd)pyrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-5-022707	Naphthalene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-5-022707	Phenanthrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-5-022707	Pyrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-53-022707	2-Methylnaphthalene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-53-022707	Acenaphthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-53-022707	Acenaphthylene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-53-022707	Anthracene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-53-022707	Benzo(a)anthracene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-53-022707	Benzo(a)pyrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-53-022707	Benzo(b)fluoranthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-53-022707	Benzo(g,h,i)perylene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-53-022707	Benzo(k)fluoranthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-53-022707	Chrysene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-53-022707	Dibenzo(a,h)anthracene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-53-022707	Dibenzofuran	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-53-022707	Fluoranthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-53-022707	Fluorene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-53-022707	Indeno(1,2,3-cd)pyrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-53-022707	Naphthalene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-53-022707	Phenanthrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	PZ-53-022707	Pyrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	1,1,1,2-Tetrachloroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	1,1,1-Trichloroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	1,1,2,2-Tetrachloroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	1,1,2-Trichloro-1,2,2-trifluoroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	1,1,2-Trichloroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	1,1-Dichloroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	1,1-Dichloroethene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	1,1-Dichloropropene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	1,2,3-Trichlorobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	1,2,3-Trichloropropane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	1,2,4-Trichlorobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	1,2,4-Trimethylbenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	1,2-Dibromo-3-chloropropane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	1,2-Dibromoethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	1,2-Dichlorobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	1,2-Dichloroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	1,2-Dichloropropane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	1,2-Diphenylhydrazine	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	1,3,5-Trimethylbenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	1,3-Dichlorobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	1,3-Dichloropropane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	1,4-Dichlorobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	2,2-Dichloropropane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	2,2'-Oxybis(1-Chloropropane)	LDC	5/8/2007	16613.pdf

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Sample Date	Lab	SDG	Sample ID	Analyte	Validator	Data Validation Received/ Reviewed	Data Validation Filename
2/27/2007	ARI	KP85	S2-A-022707	2,4,6-Trichlorophenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	2,4-Dichlorophenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	2,4-Dimethylphenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	2,4-Dinitrophenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	2,4-Dinitrotoluene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	2,6-Dinitrotoluene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	2-Butanone (MEK)	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	2-Chloroethylvinylether	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	2-Chloronaphthalene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	2-Chlorophenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	2-Chlorotoluene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	2-Hexanone	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	2-Methylnaphthalene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	2-Methylphenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	2-Nitrophenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	3,3'-Dichlorobenzidine	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	4,4'-DDD	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	4,4'-DDE	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	4,4'-DDT	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	4,6-Dinitro-2-Methylphenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	4-Bromophenyl-phenylether	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	4-Chloro-3-methylphenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	4-Chlorophenyl-phenylether	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	4-Chlorotoluene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	4-Isopropyltoluene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	4-Methyl-2-Pentanone (MIBK)	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	4-Methylphenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	4-Nitrophenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Acenaphthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Acenaphthylene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Acetone	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Acrolein	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Acrylonitrile	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Aldrin	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	alpha-BHC	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	alpha-Chlordane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Anthracene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Antimony	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Aroclor 1016	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Aroclor 1221	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Aroclor 1232	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Aroclor 1242	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Aroclor 1248	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Aroclor 1254	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Aroclor 1260	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Arsenic	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Benzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Benzidine	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Benzo(a)anthracene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Benzo(a)pyrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Benzo(b)fluoranthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Benzo(g,h,i)perylene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Benzo(k)fluoranthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Benzoic acid	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Benzyl alcohol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Beryllium	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	beta-BHC	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	bis(2-Chloroethoxy)methane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	bis(2-Chloroethyl)ether	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	bis(2-Ethylhexyl)phthalate	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Bromobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Bromochloromethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Bromodichloromethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Bromoethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Bromoform	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Bromomethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Butylbenzylphthalate	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Cadmium	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Carbon disulfide	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Carbon tetrachloride	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Chlorobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Chloroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Chloroform	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Chloromethane	LDC	5/8/2007	16613.pdf

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2/27/2007	ARI	KP85	S2-A-022707	Chromium	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Chrysene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	cis-1,2-Dichloroethene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	cis-1,3-Dichloropropene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Copper	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Cyanide	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Cyanide, WAD	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	delta-BHC	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Dibenzo(a,h)anthracene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Dibenzofuran	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Dibromochloromethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Dibromomethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Dichloromethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Dieldrin	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Diethylphthalate	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Dimethylphthalate	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Di-n-butylphthalate	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Di-n-octylphthalate	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Endosulfan I	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Endosulfan II	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Endosulfan sulfate	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Endrin	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Endrin aldehyde	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Endrin ketone	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Ethylbenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Fluoranthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Fluorene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	gamma-BHC (Lindane)	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	gamma-Chlordane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Heptachlor	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Heptachlor epoxide	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Hexachlorobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Hexachlorobutadiene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Hexachlorocyclopentadiene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Hexachloroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Indeno(1,2,3-cd)pyrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Iodomethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Isophorone	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Isopropylbenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Lead	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	m,p-Xylenes	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Mercury	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Methoxychlor	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Naphthalene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	n-Butylbenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Nickel	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Nitrobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	n-Nitroso-di-methylamine	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	n-Nitroso-di-n-propylamine	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	n-Nitroso-di-phenylamine	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	n-Propylbenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	o-Xylene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Pentachlorophenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Phenanthrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Phenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Pyrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	sec-Butylbenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Selenium	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Silver	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Styrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	tert-Butylbenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Tetrachloroethene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Thallium	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Toluene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Total solids	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Toxaphene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	trans-1,2-Dichloroethene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	trans-1,3-Dichloropropene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	trans-1,4-Dichloro-2-butene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Trichloroethene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Trichlorofluoromethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Vinyl acetate	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Vinyl chloride	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S2-A-022707	Zinc	LDC	5/8/2007	16613.pdf

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Sample Date	Lab	SDG	Sample ID	Analyte	Validator	Data Validation Received/ Reviewed	Data Validation Filename
2/27/2007	ARI	KP85	S3-A-022707	1,1,1,2-Tetrachloroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	1,1,1-Trichloroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	1,1,2,2-Tetrachloroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	1,1,2-Trichloro-1,2,2-trifluoroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	1,1,2-Trichloroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	1,1-Dichloroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	1,1-Dichloroethene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	1,1-Dichloropropene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	1,2,3-Trichlorobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	1,2,3-Trichloropropane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	1,2,4-Trichlorobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	1,2,4-Trimethylbenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	1,2-Dibromo-3-chloropropane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	1,2-Dibromoethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	1,2-Dichlorobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	1,2-Dichloroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	1,2-Dichloropropane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	1,2-Diphenylhydrazine	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	1,3,5-Trimethylbenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	1,3-Dichlorobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	1,3-Dichloropropane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	1,4-Dichlorobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	2,2-Dichloropropane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	2,2'-Oxybis(1-Chloropropane)	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	2,4,6-Trichlorophenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	2,4-Dichlorophenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	2,4-Dimethylphenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	2,4-Dinitrophenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	2,4-Dinitrotoluene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	2,6-Dinitrotoluene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	2-Butanone (MEK)	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	2-Chloroethylvinylether	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	2-Chloronaphthalene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	2-Chlorophenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	2-Chlorotoluene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	2-Hexanone	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	2-Methylnaphthalene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	2-Methylphenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	2-Nitrophenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	3,3'-Dichlorobenzidine	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	4,4'-DDD	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	4,4'-DDE	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	4,4'-DDT	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	4,6-Dinitro-2-Methylphenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	4-Bromophenyl-phenylether	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	4-Chloro-3-methylphenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	4-Chlorophenyl-phenylether	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	4-Chlorotoluene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	4-Isopropyltoluene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	4-Methyl-2-Pentanone (MIBK)	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	4-Methylphenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	4-Nitrophenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Acenaphthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Acenaphthylene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Acetone	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Acrolein	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Acrylonitrile	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Aldrin	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	alpha-BHC	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	alpha-Chlordane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Anthracene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Antimony	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Aroclor 1016	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Aroclor 1221	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Aroclor 1232	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Aroclor 1242	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Aroclor 1248	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Aroclor 1254	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Aroclor 1260	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Arsenic	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Benzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Benzidine	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Benzo(a)anthracene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Benzo(a)pyrene	LDC	5/8/2007	16613.pdf

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2/27/2007	ARI	KP85	S3-A-022707	Benzo(b)fluoranthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Benzo(g,h,i)perylene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Benzo(k)fluoranthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Benzoic acid	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Benzyl alcohol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Beryllium	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	beta-BHC	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	bis(2-Chloroethoxy)methane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	bis(2-Chloroethyl)ether	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	bis(2-Ethylhexyl)phthalate	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Bromobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Bromochloromethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Bromodichloromethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Bromoethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Bromoform	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Bromomethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Butylbenzylphthalate	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Cadmium	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Carbon disulfide	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Carbon tetrachloride	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Chlorobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Chloroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Chloroform	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Chloromethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Chromium	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Chrysene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	cis-1,2-Dichloroethene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	cis-1,3-Dichloropropene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Copper	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Cyanide	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Cyanide, WAD	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	delta-BHC	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Dibenzo(a,h)anthracene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Dibenzofuran	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Dibromochloromethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Dibromomethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Dichloromethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Dieldrin	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Diethylphthalate	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Dimethylphthalate	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Di-n-butylphthalate	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Di-n-octylphthalate	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Endosulfan I	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Endosulfan II	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Endosulfan sulfate	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Endrin	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Endrin aldehyde	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Endrin ketone	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Ethylbenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Fluoranthene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Fluorene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	gamma-BHC (Lindane)	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	gamma-Chlordane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Heptachlor	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Heptachlor epoxide	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Hexachlorobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Hexachlorobutadiene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Hexachlorocyclopentadiene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Hexachloroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Indeno(1,2,3-cd)pyrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Iodomethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Isophorone	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Isopropylbenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Lead	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	m,p-Xylenes	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Mercury	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Methoxychlor	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Naphthalene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	n-Butylbenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Nickel	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Nitrobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	n-Nitroso-di-methylamine	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	n-Nitroso-di-n-propylamine	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	n-Nitroso-di-phenylamine	LDC	5/8/2007	16613.pdf

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2/27/2007	ARI	KP85	S3-A-022707	n-Propylbenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	o-Xylene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Pentachlorophenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Phenanthrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Phenol	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Pyrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	sec-Butylbenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Selenium	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Silver	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Styrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	tert-Butylbenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Tetrachloroethene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Thallium	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Toluene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Total solids	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Toxaphene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	trans-1,2-Dichloroethene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	trans-1,3-Dichloropropene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	trans-1,4-Dichloro-2-butene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Trichloroethene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Trichlorofluoromethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Vinyl acetate	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Vinyl chloride	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	S3-A-022707	Zinc	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	1,1,1,2-Tetrachloroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	1,1,1-Trichloroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	1,1,2,2-Tetrachloroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	1,1,2-Trichloro-1,2,2-trifluoroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	1,1,2-Trichloroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	1,1-Dichloroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	1,1-Dichloroethene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	1,1-Dichloropropene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	1,2,3-Trichlorobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	1,2,3-Trichloropropane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	1,2,4-Trichlorobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	1,2,4-Trimethylbenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	1,2-Dibromo-3-chloropropane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	1,2-Dibromoethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	1,2-Dichlorobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	1,2-Dichloroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	1,2-Dichloropropane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	1,3,5-Trimethylbenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	1,3-Dichlorobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	1,3-Dichloropropane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	1,4-Dichlorobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	2,2-Dichloropropane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	2-Butanone (MEK)	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	2-Chloroethylvinylether	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	2-Chlorotoluene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	2-Hexanone	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	4-Chlorotoluene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	4-Isopropyltoluene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	4-Methyl-2-Pentanone (MIBK)	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Acetone	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Acrolein	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Acrylonitrile	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Benzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Bromobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Bromochloromethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Bromodichloromethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Bromoethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Bromoform	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Bromomethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Carbon disulfide	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Carbon tetrachloride	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Chlorobenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Chloroethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Chloroform	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Chloromethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	cis-1,2-Dichloroethene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	cis-1,3-Dichloropropene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Dibromochloromethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Dibromomethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Dichloromethane	LDC	5/8/2007	16613.pdf

Data Validation
June 2007

Sample Date	Lab	SDG	Sample ID	Analyte	Validator	Data Validation Received/ Reviewed	Data Validation Filename
2/27/2007	ARI	KP85	Trip Blank-070227	Ethylbenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Hexachlorobutadiene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Iodomethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Isopropylbenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	m,p-Xylenes	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Naphthalene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	n-Butylbenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	n-Propylbenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	o-Xylene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	sec-Butylbenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Styrene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	tert-Butylbenzene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Tetrachloroethene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Toluene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	trans-1,2-Dichloroethene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	trans-1,3-Dichloropropene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	trans-1,4-Dichloro-2-butene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Trichloroethene	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Trichlorofluoromethane	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Vinyl acetate	LDC	5/8/2007	16613.pdf
2/27/2007	ARI	KP85	Trip Blank-070227	Vinyl chloride	LDC	5/8/2007	16613.pdf
2/27/2007	CAS	K0701562	S2-A-022707	Fluoride	AE	5/2/2007	QA1 review_Chinook_050207.doc
2/27/2007	CAS	K0701562	S3-A-022707	Fluoride	AE	5/2/2007	QA1 review_Chinook_050207.doc
2/27/2007	CAS	K0701562	SPLP4-WM-022707	Fluoride	AE	5/2/2007	QA1 review_Chinook_050207.doc
2/27/2007	CAS	K0701562	SPLP4-WM-022707	Fluoride, SPLP Extraction	AE	5/2/2007	QA1 review_Chinook_050207.doc
2/27/2007	CAS	K0701562	SPLP4-WM-022707	Total solids	AE	5/2/2007	QA1 review_Chinook_050207.doc
2/27/2007	CAS	K0701936	SPLP BLK	Fluoride	AE	5/2/2007	QA1 review_Chinook_050207.doc
2/27/2007	CAS	K0701936	SPLP1-S-022707	Fluoride	AE	5/2/2007	QA1 review_Chinook_050207.doc
2/27/2007	CAS	K0701936	SPLP2-S-022707	Fluoride	AE	5/2/2007	QA1 review_Chinook_050207.doc
2/27/2007	CAS	K0701936	SPLP3-S-022707	Fluoride	AE	5/2/2007	QA1 review_Chinook_050207.doc
2/27/2007	CAS	K0702944	SPLP BLK	pH	Not Validated	--	--
2/27/2007	CAS	K0702944	SPLP1-S-022707	pH	Not Validated	--	--
2/27/2007	CAS	K0702944	SPLP2-S-022707	pH	Not Validated	--	--
2/27/2007	CAS	K0702944	SPLP3-S-022707	pH	Not Validated	--	--
2/27/2007	CHMC	G1376	SPLP1-S-022707	Cyanide	AE	5/2/2007	QA1 review_Chinook_050207.doc
2/27/2007	CHMC	G1376	SPLP1-S-022707	Cyanide, Free	AE	5/2/2007	QA1 review_Chinook_050207.doc
2/27/2007	CHMC	G1376	SPLP1-S-022707	Cyanide, WAD	AE	5/2/2007	QA1 review_Chinook_050207.doc
2/27/2007	CHMC	G1376	SPLP1-S-022707	Fluoride, distilled	AE	5/2/2007	QA1 review_Chinook_050207.doc
2/27/2007	CHMC	G1376	SPLP2-S-022707	Cyanide	AE	5/2/2007	QA1 review_Chinook_050207.doc
2/27/2007	CHMC	G1376	SPLP2-S-022707	Cyanide, Free	AE	5/2/2007	QA1 review_Chinook_050207.doc
2/27/2007	CHMC	G1376	SPLP2-S-022707	Cyanide, WAD	AE	5/2/2007	QA1 review_Chinook_050207.doc
2/27/2007	CHMC	G1376	SPLP2-S-022707	Fluoride, distilled	AE	5/2/2007	QA1 review_Chinook_050207.doc
2/27/2007	CHMC	G1376	SPLP3-S-022707	Cyanide	AE	5/2/2007	QA1 review_Chinook_050207.doc
2/27/2007	CHMC	G1376	SPLP3-S-022707	Cyanide, Free	AE	5/2/2007	QA1 review_Chinook_050207.doc
2/27/2007	CHMC	G1376	SPLP3-S-022707	Cyanide, WAD	AE	5/2/2007	QA1 review_Chinook_050207.doc
2/27/2007	CHMC	G1376	SPLP3-S-022707	Fluoride, distilled	AE	5/2/2007	QA1 review_Chinook_050207.doc

Notes:
AE - Anchor Environmental
ARI - Analytical Resources Inc.
CAS - Columbia Analytical Services
CHMC - CH2M Hill Applied Sciences Laboratory
LDC - Laboratoyr Data Consultants Inc.

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Sample ID	Date Collected	Sample Matrix	Laboratory Data Package (SDG) No.	Validation Report Number	Testing Parameters
SSA 1					
AQ-SSA1-03-3-4	3/15/2012	Soil	A12C235	AQ DVR 3.30.2012	TPH, PAH, F, CN, TOC
AQ-SSA1-06-3-3.5	3/15/2012	Soil	A12C235		TPH, PAH, F, CN, TOC
SSA 2					
AQ-SSA2-01-0-0.5	3/15/2012	Soil	A12C235	AQ DVR 3.30.2012	TKN, NO_2, NO_3, NH_4, P, ORTHOPHOSPHATE, K
AQ-SSA2-03-0-0.5	3/15/2012	Soil	A12C235		TKN, NO_2, NO_3, NH_4, P, ORTHOPHOSPHATE, K
AQ-SSA2-05-0-0.5	3/15/2012	Soil	A12C235		TKN, NO_2, NO_3, NH_4, P, ORTHOPHOSPHATE, K
AQ-SSA2-07-0-0.5	3/15/2012	Soil	A12C235		TKN, NO_2, NO_3, NH_4, P, ORTHOPHOSPHATE, K
AQ-SSA2-08-0-0.5	3/16/2012	Soil	A12C235		TKN, NO_2, NO_3, NH_4, P, ORTHOPHOSPHATE, K
AQ-SSA2-06-0-0.5	3/16/2012	Soil	A12C235		TKN, NO_2, NO_3, NH_4, P, ORTHOPHOSPHATE, K
AQ-SSA2-04-0-0.5	3/16/2012	Soil	A12C235		TKN, NO_2, NO_3, NH_4, P, ORTHOPHOSPHATE, K
AQ-SSA2-02-0-0.5	3/16/2012	Soil	A12C235		TKN, NO_2, NO_3, NH_4, P, ORTHOPHOSPHATE, K
AQ-SSA2-REF-01-0-0.5	3/16/2012	Soil	A12C235		TKN, NO_2, NO_3, NH_4, P, ORTHOPHOSPHATE, K
AQ-SSA2-REF-02-0-0.5	3/16/2012	Soil	A12C235		TKN, NO_2, NO_3, NH_4, P, ORTHOPHOSPHATE, K
SSA 3					
AQ-SSA3-01-2-3	10/13/2011	Soil	A11J200	AQ DVR 12.29.2011	Fl, CN (WAD and Total)
AQ-SSA3-02-2-3	10/13/2011	Soil	A11J200		Fl, CN (WAD and Total)
AQ-SSA3-03-2-3	10/13/2011	Soil	A11J200		Fl, CN (WAD and Total)
AQ-SSA3-04-2-3	10/13/2011	Soil	A11J200		Fl, CN (WAD and Total)
AQ-SSA3-05-2-3	10/13/2011	Soil	A11J200		Fl, CN (WAD and Total)
AQ-SSA3-06-2-3	10/13/2011	Soil	A11J200		Fl, CN (WAD and Total)
AQ-SSA3-07-2-3	10/13/2011	Soil	A11J200		Fl, CN (WAD and Total)
AQ-SSA3-08-2-3	10/13/2011	Soil	A11J200		Fl, CN (WAD and Total)
SSA 4					
AQ-SSA4-01-0-1	9/1/2011	Soil	A11I050	AQ DVR 12.29.2011	PAHs
AQ-SSA4-01-1-2	9/1/2011	Soil	A11I050		PAHs
AQ-SSA4-02-0-1	9/1/2011	Soil	A11I050		PAHs
AQ-SSA4-02-1-2	9/1/2011	Soil	A11I050		PAHs
AQ-SSA4-03-0-1	9/1/2011	Soil	A11I050		PAHs
AQ-SSA4-03-1-2	9/1/2011	Soil	A11I050		PAHs
AQ-SSA4-04-0-1	9/1/2011	Soil	A11I050		PAHs
AQ-SSA4-04-1-2	9/1/2011	Soil	A11I050		PAHs
AQ-SSA4-05-0-1	9/1/2011	Soil	A11I050		PAHs
AQ-SSA4-05-1-2	9/1/2011	Soil	A11I050		PAHs
AQ-SSA4-05-2-3	9/1/2011	Soil	A11I050		PAHs
AQ-SSA4-05-3-4	9/1/2011	Soil	A11L011	27058	PAHs
AQ-SSA4-06-0-1	9/1/2011	Soil	A11I050	AQ DVR 12.29.2011	PAHs
AQ-SSA4-06-1-2	9/1/2011	Soil	A11I050		PAHs
AQ-SSA4-07-0-1	9/1/2011	Soil	A11I050		PAHs
AQ-SSA4-07-1-2	9/1/2011	Soil	A11I050		PAHs
AQ-SSA4-08-0-1	9/1/2011	Soil	A11I050		PAHs
AQ-SSA4-08-1-2	9/1/2011	Soil	A11I050		PAHs
AQ-SSA4-09-0-1	9/1/2011	Soil	A11I050		PAHs
AQ-SSA4-09-1-2	9/1/2011	Soil	A11I050		PAHs
AQ-SSA4-10-0-1	9/1/2011	Soil	A11I050		PAHs
AQ-SSA4-10-1-2	9/1/2011	Soil	A11I050		PAHs
AQ-SSA4-11-0-1	9/1/2011	Soil	A11I050		PAHs
AQ-SSA4-11-1-2	9/1/2011	Soil	A11I050		PAHs
SSA 5					
AQ-SSA5-01-8-10	8/31/2011	Soil	A11I008	AQ DVR 12.29.2011	PAHs, Fl
AQ-SSA5-01-14-16	8/31/2011	Soil	A11I008		PAHs, Fl
AQ-SSA5-02-8-10	8/31/2011	Soil	A11I008		PAHs, Fl
AQ-SSA5-02-14-16	8/31/2011	Soil	A11I008		PAHs, Fl
AQ-SSA5-03-8-10	8/31/2011	Soil	A11I008		PAHs, Fl
AQ-SSA5-03-14-16	8/31/2011	Soil	A11I008		PAHs, Fl
AQ-SSA5-04-8-10	8/31/2011	Soil	A11I008		PAHs, Fl
AQ-SSA5-04-14-16	8/31/2011	Soil	A11I008		PAHs, Fl
AQ-SSA5-05-5-7	8/31/2011	Soil	A11I008		PAHs, Fl
AQ-SSA5-05-14-16	8/31/2011	Soil	A11I008		PAHs, Fl
AQ-SSA5-06-8-10	8/31/2011	Soil	A11I008		PAHs, Fl
AQ-SSA5-06-14-16	8/31/2011	Soil	A11I008		PAHs, Fl
AQ-SSA5-RB-01-083111	8/31/2011	Water	A11I008		PAHs, Fl, NWTPH-Dx
SSA 6					
AQ-SSA6-01-3-4	8/30/2011	Soil	A11I009, TL20	26374	NWTPH-Dx, EPH
AQ-SSA6-01-7-8	8/30/2011	Soil	A11I009, TL20	26374	NWTPH-Dx, EPH
AQ-SSA6-02-3-4	8/30/2011	Soil	A11I009	AQ DVR 12.29.2011	NWTPH-Dx
AQ-SSA6-02-4-5	8/30/2011	Soil	A11I009		NWTPH-Dx
AQ-SSA6-02-5-6	8/30/2011	Soil	A11I009		NWTPH-Dx
AQ-SSA6-03-3-4	8/30/2011	Soil	A11I009, TL20	26374 (SDG TL20) and AQ DVR 12.29.2011	NWTPH-Dx, EPH

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Sample ID	Date Collected	Sample Matrix	Laboratory Data Package (SDG) No.	Validation Report Number	Testing Parameters
AQ-SSA6-03-6-7	8/30/2011	Soil	A11I009		NWTPH-Dx
AQ-SSA6-04-1-2	8/30/2011	Soil	A11I009		NWTPH-Dx
AQ-SSA6-04-3-4	8/30/2011	Soil	A11I009		NWTPH-Dx
AQ-SSA6-05-1-2	8/30/2011	Soil	A11I009		NWTPH-Dx
AQ-SSA6-05-3-4	8/30/2011	Soil	A11I009		NWTPH-Dx
AQ-SSA6-05-7-8	8/30/2011	Soil	A11I009		NWTPH-Dx
AQ-SSA6-06-1-2	8/30/2011	Soil	A11I009		NWTPH-Dx
AQ-SSA6-06-3-4	8/30/2011	Soil	A11I009		NWTPH-Dx
AQ-SSA6-07-1-2	8/30/2011	Soil	A11I009		NWTPH-Dx
AQ-SSA6-07-5-6	8/30/2011	Soil	A11I009		NWTPH-Dx
AQ-SSA6-08-4-5	8/30/2011	Soil	A11I009	AQ DVR 12.29.2011	NWTPH-Dx
AQ-SSA6-08-7-8	8/30/2011	Soil	A11I009		NWTPH-Dx
AQ-SSA6-09-2-3	9/2/2011	Soil	A11I054		NWTPH-Dx
AQ-SSA6-09-4-5	9/2/2011	Soil	A11I054		NWTPH-Dx
AQ-SSA6-09-11-12	9/2/2011	Soil	A11I054		NWTPH-Dx
AQ-SSA6-09-13-14	9/2/2011	Soil	A11I054		NWTPH-Dx
AQ-SSA6-10-0-1	9/2/2011	Soil	A11I054		NWTPH-Dx
AQ-SSA6-10-1-2	9/2/2011	Soil	A11I054		NWTPH-Dx
AQ-SSA6-10-2-3	9/2/2011	Soil	A11I054		NWTPH-Dx
AQ-SSA6-11-2-3	9/2/2011	Soil	A11I054		NWTPH-Dx
AQ-SSA6-11-5-6	9/2/2011	Soil	A11I054		NWTPH-Dx
SSA 7					
AQ-SSA7-01-3-4	10/27/2011	Soil	A11J405		PAHs, Fl, Total CN, Sulfate, PCBs
AQ-SSA7-02-3-4	10/27/2011	Soil	A11J405	AQ DVR 12.29.2011	PAHs, Fl, Total CN, Sulfate, PCBs
AQ-SSA7-03-4-5	10/27/2011	Soil	A11J405		PAHs, Fl, Total CN, Sulfate, PCBs
AQ-SSA7-03-11-12	10/27/2011	Soil	A11L010	27058	PAHS, Fl, Total CN, PCBs
AQ-SSA7-04-1.5-2	10/27/2011	Soil	A11J405		PAHs, Fl, Total CN, Sulfate, PCBs
AQ-SSA7-04-8-9	10/27/2011	Soil	A11J405	AQ DVR 12.29.2011	PAHs, Fl, Total CN, Sulfate, PCBs
AQ-SSA7-05-0-1	10/27/2011	Soil	A11J405		PAHs, Fl, Total CN, Sulfate, PCBs
AQ-SSA7-05-2-3	10/27/2011	Soil	A11J405		PAHs, Fl, Total CN, Sulfate, PCBs, HCID
AQ-SSA7-05-2-3	10/27/2011	Soil	A11L010	27058	TPH-Dx
AQ-SSA7-05-6-7	10/27/2011	Soil	A11J405	AQ DVR 12.29.2011	PAHs, Fl, Total CN, Sulfate, PCBs, HCID
AQ-SSA7-05-6-7	10/27/2011	Soil	A11L010	27058	TPH-Dx
AQ-SSA7-05-12-13	10/27/2011	Soil	A11J405		PAHs, Fl, Total CN, Sulfate, PCBs, HCID
AQ-SSA7-06-0-1	10/28/2011	Soil	A11K011		PAHs, Fl, Total CN, Sulfate, PCBs
AQ-SSA7-06-4-5	10/28/2011	Soil	A11K011		PAHs, Fl, Total CN, Sulfate, PCBs
AQ-SSA7-06-8-9	10/28/2011	Soil	A11K011		PAHs, Fl, Total CN, Sulfate, PCBs
AQ-SSA7-07-0-1	10/28/2011	Soil	A11K011		PAHs, Fl, Total CN, Sulfate, PCBs
AQ-SSA7-07-3-4	10/28/2011	Soil	A11K011	AQ DVR 12.29.2011	PAHs, Fl, Total CN, Sulfate, PCBs
AQ-SSA7-07-6-7	10/28/2011	Soil	A11K011		PAHs, Fl, Total CN, Sulfate, PCBs
AQ-SSA7-08-3-4	10/28/2011	Soil	A11K011		PAHs, Fl, Total CN, Sulfate, PCBs
AQ-SSA7-09-3-4	10/28/2011	Soil	A11K011		PAHs, Fl, Total CN, Sulfate, PCBs
AQ-SSA7-10-3-4	10/28/2011	Soil	A11K011		PAHs, Fl, Total CN, Sulfate, PCBs
AQ-SSA7-RB01-102811	10/28/2011	Water	A11K011		PAHs, Fl, Total CN, Sulfate, PCBs
SSA 7 Monitoring Well Development					
SSA7-MW-01-0-3	2/21/2012	Soil	A12B281	Archive	Archive
SSA7-MW-01-3-6	2/21/2012	Soil	A12B281	Archive	Archive
SSA7-MW-01-6-9	2/21/2012	Soil	A12B281	Archive	Archive
SSA7-MW-01-9-12	2/21/2012	Soil	A12B281	Archive	Archive
SSA7-MW-01-12-15	2/21/2012	Soil	A12B281	Archive	Archive
SSA7-MW-01-15-16.5	2/21/2012	Soil	A12B281	Archive	Archive
SSA 7 Groundwater Sampling					
SSA7-MW-01-GW-02231	2/23/2012	Groundwater	A12B337	AQ DVR 3.30.2012	Dissolved metals (Al, Ca, Fe, K, Mg, Mn, Na, Si,), PCBs, PAH, Alkalinity, Cl, Total and Dissolved CN (WAD, Free, and Total), F, P, SO_4, TSS, TDS,
SSA 8					
No Analytical Data for SSA8 - Diver Survey					
SSA 9 **July Groundwater Sampling**					
G1-S-072511	7/25/2011	Groundwater	A11G308	26627	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
G1-S-D-072511	7/25/2011	Groundwater	A11G308	26627	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
G1-D-072511	7/25/2011	Groundwater	A11G308	26627	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
G2-S-072511	7/25/2011	Groundwater	A11G308	26627	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
G2-D-072511	7/25/2011	Groundwater	A11G308	26627	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
G3-S-072811	7/28/2011	Groundwater	A11G386	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
G3-D-072811	7/28/2011	Groundwater	A11G386	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
G4-S-072611	7/26/2011	Groundwater	A11G328	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
G4-D-072811	7/28/2011	Groundwater	A11G386	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
G5-S-072811	7/28/2011	Groundwater	A11G386	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
G5-D-072811	7/28/2011	Groundwater	A11G386	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
G6-S-072611	7/26/2011	Groundwater	A11G328	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS

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Sample ID	Date Collected	Sample Matrix	Laboratory Data Package (SDG) No.	Validation Report Number	Testing Parameters
G6-S-072811	7/28/2011	Groundwater	A11G386	26339	PAHs
G6-D-072611	7/26/2011	Groundwater	A11G328	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
G6-D-072811	7/28/2011	Groundwater	A11G386	26339	PAHs
G7-D-072811	7/28/2011	Groundwater	A11G386	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
PZ-1-072611	7/26/2011	Groundwater	A11G328	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
PZ-1-072811	7/28/2011	Groundwater	A11G386	26339	PAHs
PZ-2-072611	7/26/2011	Groundwater	A11G328	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
PZ-2-072811	7/28/2011	Groundwater	A11G386	26339	PAHs
PZ-3-072711	7/27/2011	Groundwater	A11G365	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS, PAHs
PZ-4-072711	7/27/2011	Groundwater	A11G365	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS, PAHs
PZ-5-072511	7/25/2011	Groundwater	A11G308	26627	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
PZ-5-072811	7/28/2011	Groundwater	A11G386	26339	PAHs
PZ-6-072711	7/27/2011	Groundwater	A11G365	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
PZ-7-072711	7/27/2011	Groundwater	A11G365	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
MBT-072511-02 (R-1S)	7/25/2011	Groundwater	A11G307	26627	Total CL, Fl, CN (WAD, Free, and Total)
R-1S-080211	8/2/2011	Groundwater	A11H037	26627	PAHs
MBT-072511-04 (R-1D)	7/25/2011	Groundwater	A11G307	26627	Total CL, Fl, CN (WAD, Free, and Total)
R-1D-080211	8/2/2011	Groundwater	A11H037	26627	PAHs
MBT-072511-07 (R-2)	7/25/2011	Groundwater	A11G307	26627	Total CL, Fl, CN (WAD, Free, and Total)
R-2-080211	8/2/2011	Groundwater	A11H037	26627	PAHs
MBT-072511-03 (R-3)	7/25/2011	Groundwater	A11G307	26627	Total CL, Fl, CN (WAD, Free, and Total)
R-3-080211	8/2/2011	Groundwater	A11H037	26627	PAHs
MBT-072511-05 (R-4S)	7/25/2011	Groundwater	A11G307	26627	Total CL, Fl, CN (WAD, Free, and Total)
MBT-072511-06 (R-4S Dup)	7/25/2011	Groundwater	A11G307	26627	Total CL, Fl, CN (WAD, Free, and Total)
R-4S-080211	8/2/2011	Groundwater	A11H037	26627	PAHs
MBT-072511-01 (R-4D)	7/25/2011	Groundwater	A11G307	26627	Total CL, Fl, CN (WAD, Free, and Total)
R-4D-080211	8/2/2011	Groundwater	A11H037	26627	PAHs
MBT-072711-15 (RL-1S)	7/27/2011	Groundwater	A11G364	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), Dissolved Metals
MBT-072611-08 (RL-1D)	7/26/2011	Groundwater	A11G327	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), Dissolved Metals
MBT-072711-16 (RL-2S)	7/27/2011	Groundwater	A11G364	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), Dissolved Metals
MBT-072611-11 (RL-2D)	7/26/2011	Groundwater	A11G327	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), Dissolved Metals
MBT-072611-12 (RL-3S)	7/26/2011	Groundwater	A11G327	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), Dissolved Metals
MBT-072711-17 (RL-3D)	7/27/2011	Groundwater	A11G364	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), Dissolved Metals
MBT-072711-18 (RL-4S)	7/27/2011	Groundwater	A11G364	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), Dissolved Metals
RL-4S-072711	7/27/2011	Groundwater	A11G365	26339	PAHs
MBT-072611-14 (RL-4D)	7/26/2011	Groundwater	A11G327	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), Dissolved Metals
MBT-072611-13 (RL-5)	7/26/2011	Groundwater	A11G327	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), Dissolved Metals
October Groundwater Sampling					
G1-S-101111	10/11/2011	Groundwater	A11J155	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
G51-S-101111	10/11/2011	Groundwater	A11J155	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
G1-D-101111	10/11/2011	Groundwater	A11J155	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
G2-S-101111	10/11/2011	Groundwater	A11J155	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
G2-D-101111	10/11/2011	Groundwater	A11J155	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
G3-S-101111	10/11/2011	Groundwater	A11J155	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
G3-D-101111	10/11/2011	Groundwater	A11J155	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
G4-S-101011	10/10/2011	Groundwater	A11J137	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
G4-D-101111	10/11/2011	Groundwater	A11J155	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
G5-S-100711	10/7/2011	Groundwater	A11J117	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
G5-D-100711	10/7/2011	Groundwater	A11J117	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
G6-S-101011	10/10/2011	Groundwater	A11J137	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS, PAHs
G6-D-101011	10/10/2011	Groundwater	A11J137	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS, PAHs
G7-D-100711	10/7/2011	Groundwater	A11J117	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
PZ-1-100711	10/7/2011	Groundwater	A11J117	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS, PAHs
PZ-2-100711	10/7/2011	Groundwater	A11J117	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS, PAHs
PZ-3-100711	10/7/2011	Groundwater	A11J117	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS, PAHs
PZ-4-101011	10/10/2011	Groundwater	A11J137	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS, PAHs

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Sample ID	Date Collected	Sample Matrix	Laboratory Data Package (SDG) No.	Validation Report Number	Testing Parameters
PZ-5-101011	10/10/2011	Groundwater	A11J137	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS, PAHs
PZ-6-100711	10/7/2011	Groundwater	A11J117	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
PZ-7-100711	10/7/2011	Groundwater	A11J117	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
R-1S-100511	10/5/2011	Groundwater	A11J072	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS, PAHs
R-1D-100511	10/5/2011	Groundwater	A11J072	26627	Total CL, SO_4, Total Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS, PAHs
R-2-100511	10/5/2011	Groundwater	A11J072	26627	Total CL, SO_4, Total Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS, PAHs
R-3-100511	10/5/2011	Groundwater	A11J072	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS, PAHs
R-53-100511	10/5/2011	Groundwater	A11J072	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS, PAHs
R-4S-100511	10/5/2011	Groundwater	A11J072	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS, PAHs
R-4D-100511	10/5/2011	Groundwater	A11J072	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS, PAHs
RL-1S-100611	10/6/2011	Groundwater	A11J097	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
RL-1D-100611	10/6/2011	Groundwater	A11J097	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
RL-2S-100611	10/6/2011	Groundwater	A11J097	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
RL-2D-100611	10/6/2011	Groundwater	A11J097	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
RL-3S-100611	10/6/2011	Groundwater	A11J097	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
RL-3D-100611	10/6/2011	Groundwater	A11J097	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
RL-4S-100611	10/6/2011	Groundwater	A11J097	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
RL-4D-100611	10/6/2011	Groundwater	A11J097	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
RL-5-100711	10/7/2011	Groundwater	A11J118	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
RLSW-1-101011	10/10/2011	Groundwater	A11J138	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
RLSW-2-101111	10/11/2011	Groundwater	A11J154	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
RLSW-3-101111	10/11/2011	Groundwater	A11J154	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
RLSW-4-101011	10/10/2011	Groundwater	A11J138	26627	Total CL, SO_4, Total and Dissolved Fl, Total and Dissolved CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
SSA 10 **July Surface Water Sampling**					
W1-080111	08/01/2011	Surface water	A11H018	26627	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
W2-080111	08/01/2011	Surface water	A11H018	26627	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
W2-080111-D	08/01/2011	Surface water	A11H018	26627	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
W3-080111	08/01/2011	Surface water	A11H018	26627	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
W4-080111	08/01/2011	Surface water	A11H018	26627	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
W5-080111	08/01/2011	Surface water	A11H018	26627	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
W6-080111	08/01/2011	Surface water	A11H018	26627	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
W7-080111	08/01/2011	Surface water	A11H018	26627	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
MBT-072611-09 (CDID Down)	7/26/2011	Surface water	A11G327	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem
MBT-072611-10 (CDID Up)	7/26/2011	Surface water	A11G237	26339	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem
October Surface Water Sampling					
W1-101211	10/12/2011	Surface water	A11J175	AQ DVR 12.29.2011	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
W2-101211	10/12/2011	Surface water	A11J175		Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
W3-101211	10/12/2011	Surface water	A11J175		Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
W4-101211	10/12/2011	Surface water	A11J175		Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
W5-101211	10/12/2011	Surface water	A11J175		Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
W6-101211	10/12/2011	Surface water	A11J175		Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
W7-101211	10/12/2011	Surface water	A11J175		Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem, Alkalinity, Total P, TDS, TSS
MBT-100611-01 (CDID Down)	10/6/2011	Surface water	A11J099	26627	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem
MBT-100611-02 (CDID Up)	10/6/2011	Surface water	A11J099	26627	Total CL, SO_4, Fl, CN (WAD, Free, and Total), GeoChem

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Sample ID	Date Collected	Sample Matrix	Laboratory Data Package (SDG) No.	Validation Report Number	Testing Parameters
Geochemistry Sampling - Lysimeters					
GC-LY-01-2.5-3	12/20/2011	Soil	A11L274	AQ DVR 3.28.2012	Total Fluoride
GC-LY-02-2.5-3	12/20/2011	Soil	A11L274		Total Fluoride
GC-LY-03-4-4.6	12/20/2011	Soil	A11L274		Total Fluoride
GC-LY-04-3.6-4.3	12/20/2011	Soil	A11L274		Total Fluoride
GC-LY-05-1.4-2	12/20/2011	Soil	A11L274		Total Fluoride
GC-LY-06-2.7-3.3	12/20/2011	Soil	A11L274		Total Fluoride
GC-LY-07-3-3.5	12/21/2011	Soil	A11L274		Total Fluoride
GC-LY-08-2-2.5	12/20/2011	Soil	A11L274		Total Fluoride
Porewater					
010412_1005 (GC-LY-01)	1/4/2012	Porewater	A12A029	AQ DVR 3.28.2012	Dissolved Al, Ca, Fe, Mg, K, Na, Si, F, Cl, PO_4, SO_4, pH, Alkalinity
010412_1006 (GC-LY-02)	1/4/2012	Porewater	A12A029		Dissolved Al, Ca, Fe, Mg, K, Na, Si, F, Cl, PO_4, SO_4, pH, Alkalinity
010412_1003 (GC-LY-03)	1/4/2012	Porewater	A12A029		Dissolved Al, Ca, Fe, Mg, K, Na, Si, F, Cl, PO_4, SO_4, pH, Alkalinity
010412_1004 (GC-LY-04)	1/4/2012	Porewater	A12A029		Dissolved Al, Ca, Fe, Mg, K, Na, Si, F, Cl, PO_4, SO_4, pH, Alkalinity
010412_1008 (GC-LY-05)	1/4/2012	Porewater	A12A029		Dissolved Al, Ca, Fe, Mg, K, Na, Si, F, Cl, PO_4, SO_4, pH, Alkalinity
010412_1007 (GC-LY-06)	1/4/2012	Porewater	A12A029		Dissolved Al, Ca, Fe, Mg, K, Na, Si, F, Cl, PO_4, SO_4, pH, Alkalinity
010412_1001 (GC-LY-07)	1/4/2012	Porewater	A12A029		Dissolved Al, Ca, Fe, Mg, K, Na, Si, F, Cl, PO_4, SO_4, pH, Alkalinity
010412_1002 (GC-LY-08)	1/4/2012	Porewater	A12A029		Dissolved Al, Ca, Fe, Mg, K, Na, Si, F, Cl, PO_4, SO_4, pH, Alkalinity
012512-1001 (GC-LY-07)	1/25/2012	Porewater	A12A304	AQ DVR 3.28.2012	Total Fluoride, Dissolved Fluoride
012512-1002 (GC-LY-08)	1/25/2012	Porewater	A12A304		Total Fluoride, Dissolved Fluoride
012512-1003 (GC-LY-01)	1/25/2012	Porewater	A12A304		Total Fluoride, Dissolved Fluoride
012512-1004 (GC-LY-02)	1/25/2012	Porewater	A12A304		Total Fluoride, Dissolved Fluoride
012512-1005 (GC-LY-03)	1/25/2012	Porewater	A12A304		Total Fluoride, Dissolved Fluoride
012512-1006 (GC-LY-04)	1/25/2012	Porewater	A12A304		Total Fluoride, Dissolved Fluoride
012512-1007 (GC-LY-05)	1/25/2012	Porewater	A12A304		Total Fluoride, Dissolved Fluoride
012512-1008 (GC-LY-06)	1/25/2012	Porewater	A12A304		Total Fluoride, Dissolved Fluoride, pH
Geochemistry Sampling - Soil Borings					
GC-SB-01					
123011_002	12/20/2011	Soil	A12A071	AQ DVR 3.28.2012	Total Fluoride, TOC, pH
123011_003	12/20/2011	Soil	A12A071		Total Fluoride, TOC
123011_004	12/20/2011	Soil	A12A071		Total Fluoride, TOC
010312_001	12/20/2011	Soil	A12A071		Total Fluoride, TOC
010312_002	12/20/2011	Soil	A12A071		Total Fluoride, TOC
010312_003	12/20/2011	Soil	A12A071		Total Fluoride, TOC
GC-SB-02					
010312_006	12/20/2011	Soil	A12A071	AQ DVR 3.28.2012	Total Fluoride, TOC
010312_007	12/20/2011	Soil	A12A071		Total Fluoride, TOC
010312_008	12/20/2011	Soil	A12A071		Total Fluoride, TOC
010312_009	12/20/2011	Soil	A12A071		Total Fluoride, TOC
010312_010	12/20/2011	Soil	A12A071		Total Fluoride, TOC, pH
010312_011	12/20/2011	Soil	A12A071		Total Fluoride, TOC, pH
010312_011 reanalysis	12/20/2011	Soil	A12C160	AQ DVR 3.30.2012	Total Fluoride
GC-SB-03					
010412_001	12/20/2011	Soil	A12A071	AQ DVR 3.28.2012	Total Fluoride, TOC
010412_002	12/20/2011	Soil	A12A071		Total Fluoride, TOC
010412_003	12/20/2011	Soil	A12A071		Total Fluoride, TOC
010412_004	12/20/2011	Soil	A12A071		Total Fluoride, TOC
010512_001	12/20/2011	Soil	A12A071		Total Fluoride, TOC, pH
GC-SB-04					
010512_003	12/20/2011	Soil	A12A071	AQ DVR 3.28.2012	Total Fluoride, TOC
010512_004	12/20/2011	Soil	A12A071		Total Fluoride, TOC
010512_005	12/20/2011	Soil	A12A071		Total Fluoride, TOC
010512_006	12/20/2011	Soil	A12A071		Total Fluoride, TOC
010612_001	12/20/2011	Soil	A12A071		Total Fluoride, TOC
010912_001	12/20/2011	Soil	A12A071		Total Fluoride, TOC
Supplemental Groundwater Samples (January 2012)					
SSA4-MW-01-011212	1/12/2012	Groundwater	A12A135	AQ DVR 3.28.2012	PAHs (SIM PAH - Low Level)
SSA6-MW-01-011212	1/12/2012	Groundwater	A12A135		NWTPH-Dx, EPH

Notes:

Al = aluminum
Ca = calcium
CN = cyanide
DVR = data validation report
EPH = extractable petroleum hydrocarbon
F = fluoride
Fe = iron
HCID = hydrocarbon identification
K = potassium
Mg = magnesium
Na = sodium
NH_4 = ammonium
NO_2 = nitrite
NO_3 = nitrate
NWTPH-Dx = Northwest Total Petroleum Hydrocarbons diesel-range (analytical method)
P = total phosphorous
PAH = polycyclic aromatic hydrocarbon
PO_4 = orthophosphate
SDG = sample data group
Si = silicon
SIM = selected Ion Monitoring (analytical method)
SO_4 = sulfate
TDS = total dissolved solid
TOC = total organic carbon
TSS = total suspended solid
TPH-Dx = total petroleum hydrocarbon – diesel range
WAD = weak acid dissociable

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Geochemistry Samples - Lysimeters					
GC-LY-01-092612	9/26/2012	Porewater	A12I470	28944	Dissolved Fluoride, Total Chloride, Phosphorus, Sulfate, Dissolved Metals, pH, Alkalinity
GC-LY-02-092612	9/26/2012	Porewater	A12I470	28944	Dissolved Fluoride, Total Chloride, Phosphorus, Sulfate, Dissolved Metals, pH, Alkalinity
GC-LY-04-092612	9/26/2012	Porewater	A12I470	28944	Dissolved Fluoride, Total Chloride, Phosphorus, Sulfate, Dissolved Metals, pH, Alkalinity
GC-LY-05-092612	9/26/2012	Porewater	A12I470	28944	Dissolved Fluoride, Total Chloride, Phosphorus, Sulfate, Dissolved Metals, pH, Alkalinity
GC-LY-06-092612	9/26/2012	Porewater	A12I470	28944	Dissolved Fluoride, Total Chloride, Phosphorus, Sulfate, Dissolved Metals, pH, Alkalinity
GC-LY-07-092612	9/26/2012	Porewater	A12I470	28944	Dissolved Fluoride, Total Chloride, Phosphorus, Sulfate, Dissolved Metals, pH, Alkalinity
GC-LY-08-092612	9/26/2012	Porewater	A12I470	28944	Dissolved Fluoride, Total Chloride, Phosphorus, Sulfate, Dissolved Metals, pH, Alkalinity
Surface Water Sampling					
W1-100112	10/1/2012	Surface water	A12J044	29076	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
W2-100112	10/1/2012	Surface water	A12J044	29076	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
W3-100112	10/1/2012	Surface water	A12J044	29076	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
W4-100112	10/1/2012	Surface water	A12J044	29076	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
W5-100212	10/2/2012	Surface water	A12J067	29076	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
W6-100112	10/1/2012	Surface water	A12J044	29076	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
W7-100112	10/1/2012	Surface water	A12J044	29076	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
W8-100312	10/3/2012	Surface water	A12J102	28944	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
W9-100212	10/2/2012	Surface water	A12J067	29076	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
W10-100212	10/2/2012	Surface water	A12J067	29076	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
RLSW Series Wells					
RLSW-1-100412	10/4/2012	Groundwater	A12J138	29157	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
RLSW-2-100512	10/5/2012	Groundwater	A12J175	29076	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
RLSW-3-100512	10/5/2012	Groundwater	A12J175	29076	VOC, PCBs, Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), SVOCs, Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
RLSW-3-120412	12/4/2012	Groundwater	A12L076	29157	PAH
RLSW-4-100212	10/2/2012	Groundwater	A12J067	29076	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
G Series Wells					
G1-S-100412	10/4/2012	Groundwater	A12J138	29157	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
G1-D-100412	10/4/2012	Groundwater	A12J138	29157	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS

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G1-S-120312	12/3/2012	Groundwater	A12L049	29157	Total and Dissolved Cyanide (WAD, Free, and Total)
G1-D-120312	12/3/2012	Groundwater	A12L049	29157	Total and Dissolved Cyanide (WAD, Free, and Total)
G1-D-120312-D	12/3/2012	Groundwater	A12L049	29157	Total and Dissolved Cyanide (WAD, Free, and Total)
G2-S-100312	10/3/2012	Groundwater	A12J102	28944	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS, Total and Dissolved Metals, SVOCs, Low-level PCB Aroclors, VOCs
G2-D-100312	10/3/2012	Groundwater	A12J102	28944	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
G2-S-120312	12/3/2012	Groundwater	A12L049	29157	PAH
G2-D-120312	12/3/2012	Groundwater	A12L049	29157	PAH
G2-D-120312-D	12/3/2012	Groundwater	A12L049	29157	PAH
G3-S-100412	10/4/2012	Groundwater	A12J138	29157	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
G3-D-100412	10/4/2012	Groundwater	A12J138	29157	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
G4-S-100312	10/3/2012	Groundwater	A12J102	28944	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Alkalinity, Total Phosphorus, TDS, TSS, Total and Dissolved Metals, SVOCs, Low-level PCB Aroclors, VOCs
G4-D-100512	10/5/2012	Groundwater	A12J175	29076	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
G5-S-100412	10/4/2012	Groundwater	A12J138	29157	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
G5-D-100412	10/4/2012	Groundwater	A12J138	29157	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
G6-S-100212	10/2/2012	Groundwater	A12J067	29076	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
G6-D-100212	10/2/2012	Groundwater	A12J067	29076	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
G7-D-100512	10/5/2012	Groundwater	A12J175	29076	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
R Series Wells					
R-2-100312	10/3/2012	Groundwater	A12J102	28944	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Alkalinity, Total Phosphorus, TDS, TSS, Total and Dissolved Metals, SVOCs, Low-level PCB Aroclors, VOCs
RL Series Wells					
RL-1S-100412	10/4/2012	Groundwater	A12J138	29157	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Alkalinity, Total Phosphorus, TDS, TSS, Total and Dissolved Metals, SVOCs, Low-level PCB Aroclors, VOCs
SSA Series Wells					
SSA4-MW-01-100512	10/5/2012	Groundwater	A12J175	29076	PAHs, Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
SSA6-MW-01-100512	10/5/2012	Groundwater	A12J175, VM65	29076, 28944	NWTPH-Dx, EPH, Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
SSA6-MW-01-120412	12/4/2012	Groundwater	A12L076	29157	NWTPH-Dx (with and without silica gel)
SSA7-MW-01-100512	10/5/2012	Groundwater	A12J175	29076	PAHs, PCBs, Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS

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PZ Series Wells					
PZ-1-100212	10/2/2012	Groundwater	A12J067	29076	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
PZ-2-100212	10/2/2012	Groundwater	A12J067	29076	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
PZ-3-100212	10/2/2012	Groundwater	A12J067	29076	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
PZ-4-100212	10/2/2012	Groundwater	A12J067	29076	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
PZ-5-100212	10/2/2012	Groundwater	A12J067	29076	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
PZ-6-100212	10/2/2012	Groundwater	A12J067	29076	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
PZ-7-100212	10/2/2012	Groundwater	A12J067	29076	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
Old Industrial Landfill					
AQ-ILF-01-0-11	10/17/2012	Soil - Composite	A12J509	28944	Fluoride, Cyanide (WAD and Total), Metals (Total & TCLP), SVOCs, PCBs, TOC
AQ-ILF-02-6-8	10/17/2012	Soil	A12J509	28944	VOCs, NWTPH-Dx
AQ-ILF-02-0-12	10/17/2012	Soil - Composite	A12J509, A12L107	28944, 29157	Fluoride, Cyanide (WAD and Total), Metals (Total & TCLP), SVOCs, PCBs, TOC, PAH
AQ-ILF-03-8-10	10/17/2012	Soil	A12J509	28944	VOCs, NWTPH-Dx
AQ-ILF-03-0-12	10/17/2012	Soil - Composite	A12J509, A12L107, VV48, B2913 (Bioassay)	28944, 28989	Fluoride, Cyanide (WAD and Total), Metals (Total & TCLP), SVOCs, PCBs, TOC, NWTPH-Dx, EPH, Hazardous Waste Designation Bioassay
AQ-ILF-04-12-14	10/17/2012	Soil	A12J509	28944	VOCs, NWTPH-Dx
AQ-ILF-04-0-14	10/17/2012	Soil - Composite	A12J509	28944	Fluoride, Cyanide (WAD and Total), Metals (Total & TCLP), SVOCs, PCBs, TOC
AQ-ILF-05-10-12	10/18/2012	Soil	A12J515	28944	VOCs, NWTPH-Dx
AQ-ILF-05-0-14	10/18/2012	Soil - Composite	A12J515, A12L107, VV48	28944, 29157, 28989	Fluoride, Cyanide (WAD and Total), Metals (Total & TCLP), SVOCs, PCBs, TOC, EPH
Floor Sweeps Landfill					
AQ-FSL-01-4-6	10/18/2012	Soil	A12J515	28944	VOCs, NWTPH-Dx
AQ-FSL-01-8-10	10/18/2012	Soil	A12J515	28944	NWTPH-Dx
AQ-FSL-01-0-12	10/18/2012	Soil - Composite	A12J515, A12L107, VV14, B2913 (Bioassay)	28944, 29157, 28989	Fluoride, Cyanide (WAD and Total), Metals (Total & TCLP), SVOCs, PCBs, TOC, NWTPH-Dx, EPH, Hazardous Waste Designation Bioassay
AQ-FSL-02-14-16	10/18/2012	Soil	A12J515	28944	VOCs, NWTPH-Dx
AQ-FSL-02-0-16	10/18/2012	Soil - Composite	A12J515	28944	Fluoride, Cyanide (WAD and Total), Metals (Total & TCLP), SVOCs, PCBs, TOC
AQ-FSL-03-5-7	10/18/2012	Soil	A12J515	28944	VOCs, NWTPH-Dx
AQ-FSL-03-1-8.5	10/18/2012	Soil - Composite	A12J515, VV14	28944, 28989	Fluoride, Cyanide (WAD and Total), Metals (Total & TCLP), SVOCs, PCBs, TOC, NWTPH-Dx, EPH
Area East of the Former Cryolite Recovery Plant					
AQ-ECA-01-2-5	10/19/2012	Soil - Composite	A12J537, A12L002	28944, 29157	Fluoride, Cyanide (WAD and Total), Total Metals, PAHs, TOC
AQ-ECA-02-3-5	10/19/2012	Soil	A12J537	28944	NWTPH-Dx
AQ-ECA-02-1-5	10/19/2012	Soil - Composite	A12J537, A12L002, VV14	28944, 29157, 28989	Fluoride, Cyanide (WAD and Total), Total Metals, PAHs, TOC,
AQ-ECA-03-5-7	10/19/2012	Soil	A12J537	28944	VOCs, NWTPH-Dx
AQ-ECA-03-1-7	10/19/2012	Soil - Composite	A12J537, A12L002, B2913 (Bioassay)	28944, 29157	Fluoride, Cyanide (WAD and Total), Total Metals, PAHs, SVOCs, PCBs, TOC, Hazardous Waste Designation Bioassay
AQ-ECA-04-2-8	10/19/2012	Soil - Composite	A12J537, A12L002	28944, 29157	Fluoride, Cyanide (WAD and Total), Metals (Total & TCLP), PAHs, TOC

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Black Mud Deposits					
AQ-BMD-01-4-5	10/22/2012	Soil	A12J576	29076	VOCs
AQ-BMD-01-2-5	10/22/2012	Soil - Composite	A12J576, A12L002	29076, 29157	Fluoride, Cyanide (WAD and Total), Total Metals, PAHs, TOC
AQ-BMD-02-3.5-5.5	10/22/2012	Soil	A12J576	29076	VOCs
AQ-BMD-02-1.5-5.5	10/22/2012	Soil - Composite	A12J576, A12L002	29076, 29157	Fluoride, Cyanide (WAD and Total), Total Metals, PAHs, TOC
AQ-BMD-03-4-6	10/22/2012	Soil	A12J576	29076	VOCs
AQ-BMD-03-2-8	10/22/2012	Soil - Composite	A12J576, A12L002	29076, 29157	Fluoride, Cyanide (WAD and Total), Total Metals, SVOCs, PCBs, TOC
AQ-BMD-04-3-5	10/22/2012	Soil	A12J576	29076	VOCs
AQ-BMD-04-1-7	10/22/2012	Soil - Composite	A12J576, A12L002	29076, 29157	Fluoride, Cyanide (WAD and Total), Total Metals, PAHs, TOC
AQ-BMD-05-3-5	10/22/2012	Soil	A12J576	29076	VOCs
AQ-BMD-05-1-6	10/22/2012	Soil - Composite	A12J576, A12L002	29076, 29157	Fluoride, Cyanide (WAD and Total), Total Metals, PAHs, TOC
AQ-BMD-06-3.5-5.5	10/22/2012	Soil	A12J576	29076	VOCs
AQ-BMD-06-1.5-5.5	10/22/2012	Soil - Composite	A12J576, A12L002	29076, 29157	Fluoride, Cyanide (WAD and Total), Total Metals, PAHs, TOC
AQ-BMD-07-1-3	10/22/2012	Soil - Composite	A12J576	29076	Fluoride, Cyanide (WAD and Total), Metals (Total & TCLP), PAHs, TOC, VOCs
AQ-BMD-08-2-4	10/23/2012	Soil - Composite	A12J621, A12L002, B2913 (Bioassay)	28944, 29157	Fluoride, Cyanide (WAD and Total), Total Metals, PAHs, TOC, Hazardous Waste Designation Bioassay
Black Mud Ponds (East)					
AQ-BMP-01-2-16	10/24/2012	Soil - Composite	A12J671, A12L002	29076, 29157	Fluoride, Cyanide (WAD and Total), Total Metals, PAHs, TOC
AQ-BMP-02-11-13	10/24/2012	Soil	A12J671	29076	VOCs
AQ-BMP-02-1-15	10/24/2012	Soil - Composite	A12J671, A12L002, VV14	29076, 29157, 28989	Fluoride, Cyanide (WAD and Total), Total Metals, PAHs, TOC, NWTPH-Dx, EPH
AQ-BMP-03-2-16	10/23/2012	Soil - Composite	A12J621, A12L002	28944, 29157	Fluoride, Cyanide (WAD and Total), Total Metals, PAHs, TOC
AQ-BMP-04-1.5-13.5	10/23/2012	Soil - Composite	A12J621	28944	Fluoride, Cyanide (WAD and Total), Metals (Total and TCLP), SVOCs, PCBs, TOC
AQ-BMP-05-1.5-15.5	10/23/2012	Soil - Composite	A12J621, A12L002, VV14, B2913 (Bioassay)	28944, 29157, 28989	Fluoride, Cyanide (WAD and Total), Total Metals, PAHs, TOC, NWTPH-Dx , EPH, Hazardous Waste Designation Bioassay
White Mud Pond					
AQ-WMP-01-2.5-7.5	10/24/2012	Soil - Composite	A12J671, A12L002	29076, 29157	Fluoride, Cyanide (WAD and Total), Total Metals, PAHs, TOC
AQ-WMP-02-6-8	10/24/2012	Soil	A12J671	29076	VOCs
AQ-WMP-02-2-8	10/24/2012	Soil - Composite	A12J671, A12L002	29076, 29157	Fluoride, Cyanide (WAD and Total), Total Metals, PAHs, TOC
AQ-WMP-03-2-6	10/24/2012	Soil - Composite	A12J671	29076	Fluoride, Cyanide (WAD and Total), Metals (Total and TCLP), PAHs, TOC
AQ-WMP-04-2-8	10/24/2012	Soil - Composite	A12J671, A12L002, B2913 (Bioassay)	29076, 29157	Fluoride, Cyanide (WAD and Total), Total Metals, SVOCs, PCBs, TOC, Hazardous Waste Designation Bioassay
Outfall Area Soils					
AQ-SO-OF3-0-10	10/25/2012	Soil	A12J671	29076	SVOCs, PCBs, SMS Metals, Total Solids
AQ-SO-OF5-0-10	10/25/2012	Soil	A12J671	29076	SVOCs, PCBs, SMS Metals, Total Solids
AQ-SO-OF5D-0-10	10/25/2012	Soil	A12J671	29076	SVOCs, PCBs, SMS Metals, Total Solids
Geotech Samples - Mud Deposits					
AQ-BMD-G01	10/25/2012	5-gal Soil/Waste	--	--	Geotechnical
AQ-BMD-G06	10/25/2012	5-gal Soil/Waste	--	--	Geotechnical
AQ-BMP-G02	10/25/2012	5-gal Soil/Waste	--	--	Geotechnical
AQ-BMP-G04	10/25/2012	5-gal Soil/Waste	--	--	Geotechnical
AQ-WMP-G02	10/25/2012	5-gal Soil/Waste	--	--	Geotechnical
AQ-WMP-G03	10/25/2012	5-gal Soil/Waste	--	--	Geotechnical

MBTL Sample Identification and Corresponding Laboratory and Validation Data Reports
2012-2013

Sample ID	Date Collected	Sample Matrix	Laboratory Data Package (SDG) No.	Validation Report Number	Testing Parameters
Flat Storage Area Soils (SSA4)					
AQ-SSA4-12A-0-1	11/8/2012	Soil	A12K226	29076	PAHs
AQ-SSA4-12A-1-2	11/8/2012	Soil	A12K226	29076	PAHs
AQ-SSA4-12B-0-1	11/8/2012	Soil	A12K226	29076	PAHs
AQ-SSA4-12B-1-2	11/8/2012	Soil	A12K226	29076	PAHs
AQ-SSA4-13-0-1	11/8/2012	Soil	A12K226	29076	PAHs
AQ-SSA4-13-1-2	11/8/2012	Soil	A12K226	29076	PAHs
AQ-SSA4-14-0-1	11/8/2012	Soil	A12K226	29076	PAHs
AQ-SSA4-14-1-2	11/8/2012	Soil	A12K226	29076	PAHs
AQ-SSA4-15-0-1	11/8/2012	Soil	A12K226	29076	PAHs
AQ-SSA4-15-1-2	11/8/2012	Soil	A12K226	29076	PAHs
AQ-SSA4-16-0-1	11/8/2012	Soil	A12K226	29076	PAHs
AQ-SSA4-16-1-2	11/8/2012	Soil	A12K226	29076	PAHs
AQ-SSA4-17-0-1	11/8/2012	Soil	A12K226	29076	PAHs
AQ-SSA4-17-1-2	11/8/2012	Soil	A12K226	29076	PAHs
AQ-SSA4-18-0-1	11/8/2012	Soil	A12K226	29076	PAHs
AQ-SSA4-18-1-2	11/8/2012	Soil	A12K226	29076	PAHs
AQ-SSA4-19-0-1	11/9/2012	Soil	A12K226	29076	PAHs
AQ-SSA4-19-1-2	11/9/2012	Soil	A12K226	29076	PAHs
AQ-SSA4-69-0-1	11/9/2012	Soil	A12K226	29076	PAHs
AQ-SSA4-69-1-2	11/9/2012	Soil	A12K226	29076	PAHs
AQ-SSA4-20-0-1	11/8/2012	Soil	A12K226	29076	PAHs
AQ-SSA4-20-1-2	11/8/2012	Soil	A12K226	29076	PAHs
AQ-SSA4-24-0-1	1/11/2013	Soil	A13A243	29233	PAH(SIM), TS, TOC
AQ-SSA4-24-1-2	1/11/2013	Soil	A13A243	29233	PAH(SIM), TS, TOC
AQ-SSA4-25-0-1	1/11/2013	Soil	A13A243	29233	PAH(SIM), TS, TOC
AQ-SSA4-25-1-2	1/11/2013	Soil	A13A243	29233	PAH(SIM), TS, TOC
AQ-SSA4-26-0-1	1/11/2013	Soil	A13A243	29233	PAH(SIM), TS, TOC
AQ-SSA4-26-1-2	1/11/2013	Soil	A13A243	29233	PAH(SIM), TS, TOC
AQ-SSA4-76-0-1	1/11/2013	Soil	A13A243	29233	PAH(SIM), TS, TOC
AQ-SSA4-76-1-2	1/11/2013	Soil	A13A243	29233	PAH(SIM), TS, TOC
AQ-SSA4-27-0-1	1/11/2013	Soil	A13A243	29233	PAH(SIM), TS, TOC
AQ-SSA4-27-1-2	1/11/2013	Soil	A13A243	29233	PAH(SIM), TS, TOC
AQ-SSA4-RB-011113	1/11/2013	Soil	A13A243	29233	PAH(SIM)
Nearshore Area Sediments					
AQ-SE-01-10	11/13/2012	Sediment	A12K308	29076	SVOCs, SMS Metals, TS, TOC
AQ-SE-02-10	11/13/2012	Sediment	A12K308	29076	SVOCs, SMS Metals, TS, TOC
AQ-SE-03-10	11/14/2012	Sediment	A12K308	29076	SVOCs, SMS Metals, TS, TOC
AQ-SE-04-10	11/14/2012	Sediment	A12K308	29076	SVOCs, SMS Metals, TS, TOC
AQ-SE-05-10	11/14/2012	Sediment	A12K308	29076	SVOCs, SMS Metals, TS, TOC
AQ-SE-06-10	11/14/2012	Sediment	A12K308	29076	SVOCs, SMS Metals, TS, TOC
AQ-SE-07-10	11/14/2012	Sediment	A12K308	29076	SVOCs, SMS Metals, TS, TOC
AQ-SE-57-10	11/14/2012	Sediment	A12K308	29076	SVOCs, SMS Metals, TS, TOC
AQ-SE-08-10	11/14/2012	Sediment	A12K308	29076	SVOCs, SMS Metals, TS, TOC

MBTL Sample Identification and Corresponding Laboratory and Validation Data Reports
2012-2013

Sample ID	Date Collected	Sample Matrix	Laboratory Data Package (SDG) No.	Validation Report Number	Testing Parameters
AQ-SE-01-10	11/13/2012	Sediment	A4909	28989	Dioxin-like PCB Congeners
AQ-SE-02-10	11/13/2012	Sediment	A4909	28989	Dioxin-like PCB Congeners
AQ-SE-03-10	11/14/2012	Sediment	A4909	28989	Dioxin-like PCB Congeners
AQ-SE-04-10	11/14/2012	Sediment	A4909	28989	Dioxin-like PCB Congeners
AQ-SE-05-10	11/14/2012	Sediment	A4909	28989	Dioxin-like PCB Congeners
AQ-SE-06-10	11/14/2012	Sediment	A4909	28989	Dioxin-like PCB Congeners
AQ-SE-07-10	11/14/2012	Sediment	A4909	28989	Dioxin-like PCB Congeners
AQ-SE-57-10	11/14/2012	Sediment	A4909	28989	Dioxin-like PCB Congeners
AQ-SE-08-10	11/14/2012	Sediment	A4909	28989	Dioxin-like PCB Congeners
AQ-SS-14-10	12/10/2012	Sediment	A12L200	29157	SVOCs, SMS Metals, TS, TOC
AQ-SS-10-10	12/10/2012	Sediment	A12L200, 31300075	29157, 29233	SVOCs, SMS Metals, TS, TOC, PCB Aroclors
AQ-SS-09-10	12/10/2012	Sediment	A12L200, 31300075	29157, 29233	SVOCs, SMS Metals, TS, TOC, PCB Aroclors
AQ-SS-04-10	12/10/2012	Sediment	A12L200	29157	SVOCs, SMS Metals, TS, TOC
AQ-SS-03-10	12/10/2012	Sediment	A12L258, A5019, 31300075	29157, 29096, 29233	SVOCs, SMS Metals, TS, TOC, PCB congeners
AQ-SS-14-10	12/10/2012	Sediment	A4995	29096	PCB Congeners
AQ-SS-10-10	12/10/2012	Sediment	A4995	29096	PCB Congeners
AQ-SS-09-10	12/10/2012	Sediment	A4995	29096	PCB Congeners
AQ-SS-04-10	12/10/2012	Sediment	A4995	29096	PCB Congeners
Offshore NPDES Area Sediments					
MBTL12-SS-01-02	12/10/2012	Sediment	A12L233, VW48	29179	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides
MBTL12-SS-09-02	12/11/2012	Sediment	A12L233, VW48	29179	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides
MBTL12-SS-09-10	12/11/2012	Sediment	A12L233, VW48, A13A229; P840-1 and P840-2 (Bioassays)	29179, 29233	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides, *Hyallela* and *Chironomus* Bioassays
MBTL12-SS-10-02	12/11/2012	Sediment	A12L233, VW48	29179	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides
MBTL12-SS-10-10	12/11/2012	Sediment	A12L233, VW48, A13A229; P840-1 and P840-2 (Bioassays)	29179, 29233	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides, *Hyallela* and *Chironomus* Bioassays
MBTL12-SS-01-10	12/11/2012	Sediment	A12L233, VW48	29179	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides
MBTL12-SS-02-02	12/11/2012	Sediment	A12L233, VW48	29179	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides
MBTL12-SS-02-10	12/11/2012	Sediment	A12L233, VW48	29179	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides
MBTL12-SS-04-02	12/12/2012	Sediment	A12L259, VW49	29179	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides
MBTL12-SS-04-10	12/12/2012	Sediment	A12L259, VW49	29179	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides
MBTL12-SS-08-02	12/12/2012	Sediment	A12L259, VW49	29179	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides
MBTL12-SS-08-10	12/12/2012	Sediment	A12L259, VW49	29179	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides
MBTL12-SS-07-02	12/12/2012	Sediment	A12L259, VW49	29179	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides
MBTL12-SS-07-10	12/12/2012	Sediment	A12L259, VW49	29179	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides
MBTL12-SS-03-02	12/12/2012	Sediment	A12L259, VW49	29179	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides
MBTL12-SS-03-10	12/12/2012	Sediment	A12L259, VW49, A13A229	29179, 29233	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides
MBTL12-SS-06-02	12/12/2012	Sediment	A12L259, VW49	29179	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides
MBTL12-SS-06-10	12/12/2012	Sediment	A12L259, VW49	29179	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides
MBTL12-SS-54-10	12/12/2012	Sediment	A12L259, VW49	29179	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides
MBTL12-SS-11-02	12/13/2012	Sediment	A12L259, VW49	29179	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides
MBTL12-SS-11-10	12/13/2012	Sediment	A12L294, VV87, A13A229	29179, 29233	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides
MBTL12-SS-12-02	12/13/2012	Sediment	A12L294, VV87	29179	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides

MBTL Sample Identification and Corresponding Laboratory and Validation Data Reports
2012-2013

Sample ID	Date Collected	Sample Matrix	Laboratory Data Package (SDG) No.	Validation Report Number	Testing Parameters
MBTL12-SS-12-10	12/13/2012	Sediment	A12L294, VV87, A13A229; P840-1 and P840-2 (Bioassays)	29179, 29233	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides, *Hyallela* and *Chironomus* Bioassays
MBTL12-SS-13-02	12/13/2012	Sediment	A12L294, VV87	29179	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides
MBTL12-SS-13-10	12/13/2012	Sediment	A12L294, VV87, A13A229	29179, 29233	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides
MBTL12-SS-05-02	12/13/2012	Sediment	A12L294, VV87	29179	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides
MBTL12-SS-05-10	12/13/2012	Sediment	A12L294, VV87	29179	Grain Size, Fluoride, Aluminum, Cyanide, PAH, TS, TOC, Ammonia, PCB Aroclors, Sulfides
Offshore NPDES Reference Sediments QA/QC Samples					
W59-100212	10/2/2012	Surface water	A12J067	29076	Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
SSA7-MW-51-100512	10/5/2012	Groundwater	A12J175	29076	PAHs, PCBs, Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
RB-01-100512	10/5/2012	Rinse Blank for Waters	A12J175, VM65	29076, 28944	NWTPH-Dx, EPH, VOCs, SVOCs, PCBs, Total and Dissolved Metals, Total Chloride, Sulfate, Total and Dissolved Fluoride, Total and Dissolved Cyanide (WAD, Free and Total), Total and Dissolved Metals, Alkalinity, Total Phosphorus, TDS, TSS
AQ-RB-101912	10/19/2012	Rinse Blank for Mud, Landfill, & Outfall Soil Sampling	A12J537	28944	Fluoride, Cyanide (WAD and Total), Total Metals, PAHs, SVOCs, PCBs, NWTPH-Dx
AQ-RB-102312	10/23/2012	Rinse Blank for Mud, Landfill, & Outfall Soil Sampling	A12J621	28944	VOCs
AQ-SSA4-RB-110912	11/9/2012	Rinse Blank for SSA4 Soil Sampling	A12K226	29076	PAHs
RB-120412	12/4/2012	Rinse Blank for groundwaters	A12L076	29157	NWTPH-Dx, PAHs, Total and Dissolved Cyanide (WAD, Free, and Total)
AQ-SE-RB	11/13/2012	Rinse Blank for Nearshore Sediment Sampling	A12K308	29076	SVOCs, SMS Metals, TS, TOC
AQ-SE-FB	11/13/2012	Field Blank for Nearshore Sediment Sampling	A12K308	29076	SVOCs, SMS Metals, TS, TOC
AQ-SE-RB	11/13/2012	Rinse Blank for Nearshore Sediment Sampling	A4908	28989	Dioxin-like PCB Congeners
AQ-SE-FB	11/13/2012	Field Blank for Nearshore Sediment Sampling	A4908	28989	Dioxin-like PCB Congeners
MBTL12-RB	12/12/2012	Rinse Blank for NPDES seds	A12L261	29233	Fluoride, Aluminum, Cyanide, sulfides, PAHs, TSS, TOC, Ammonia, PCBs
MBTL12-FB	12/12/2012	Field Blank for NPDES seds	A12L261	29233	Fluoride, Aluminum, Cyanide, sulfides, PAHs, TSS, TOC, Ammonia, PCBs

Notes:
GeoChem = total and dissolved metals: Al, As, Ca, Cr, Cu, Fe, Mg, Mn, Ni, K, Na, Si
Total and Dissolved Metals (for Groundwater)= Ag, Be, Cd, Hg, Pb, Sb, Se, Tl, Zn
Metals (for Total and TCLP Metals analyses of Mud & LF deposits)= Ag, As, Ba, Be, Cd, Cr, Cu, Hg, Ni, Pb, Sb, Se, Tl, Zn
SMS Metals (for Outfall Soils, Sediment) = Sb, As, Cd, Cr, Cu, Pb, Hg, Ni, Ag, Zn

NWTPH-Dx = Northwest Total Petroleum Hydrocarbons - Diesel Range
PAHs = Polycyclic Aromatic Hydrocarbons
PCBs = Polychlorinated Biphenyls
SMS = Sediment Management Standards
SVOCs = Semi-volatile Organic Compounds
TDS = Total Dissolved Solids
TOC = Total Organic Carbon
TS = Total Solids
TSS = Total Suspended Solids
VOCs = Volatile Organic Compounds
WAD = Weak Acid Dissociable

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Chinook Ventures, Inc.

Collection Date: September 18, 2006

LDC Report Date: October 24, 2006

Matrix: Water

Parameters: Wet Chemistry

***Validation Level:** EPA Level III & IV

Laboratory: CH2M Hill Applied Sciences Laboratory

Sample Delivery Group (SDG): F2523

Sample Identification

PZ-7-091806**
G-7d-091806**
PZ-6-091806**
G-5s-091806
G-5d-091806
RL-2d-091806
RL-2s-091806
G-7d-091806MS
G-7d-091806MSD

**Indicates sample underwent EPA Level IV review

*Changed to EPA Level III & IV Validation Level

Introduction

*This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per ASTM Method D4282 for Free Cyanide, EPA Method 335.2 for Total Cyanide, and Standard Method 4500-CN-I for Weak Acid Dissociable Cyanide.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Extraction Until Analysis	Required Holding Time From Sample Extraction Until Analysis	Flag	A or P
All samples in SDG F2523	Free cyanide	4 days	24 hours	J (all detects) R (all non-detects)	A

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
MB	Free cyanide	0.0422 ug/L	All samples in SDG F2523

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

*IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

***V. Duplicates**

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

***VII. Sample Result Verification**

All sample result verifications were acceptable for samples on which a EPA Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level III criteria.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG F2523

SDG	Sample	Analyte	Flag	A or P	Reason
*F2523	PZ-7-091806** G-7d-091806** PZ-6-091806** G-5s-091806 G-5d-091806 RL-2d-091806 RL-2s-091806	Free cyanide	J (all detects) R (all non-detects)	A	Technical holding times

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG F2523

No Sample Data Qualified in this SDG

*Indicates change as the result of report review. SDG F2523

LDC #: 15597A6

SDG #: F2523

Laboratory: CH2M Hill Applied Sciences Laboratory

VALIDATION COMPLETENESS WORKSHEET

Level III / IV

Date: 10/13/06

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: Free Cyanide (ASTM D4282), Total Cyanide (EPA Method 335.2), Weak Acid Dissociable Cyanide (SM4500-CN-I)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 9/18/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	SW	
IV	Matrix Spike/Matrix Spike Duplicates	~~SW~~ A	client specified
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: All level 4

1	PZ-7-091806	11		21		31	
2	G-7d-091806	12		22		32	
3	PZ-6-091806	13		23		33	
4	G-5s-091806	14		24		34	
5	G-5d-091806	15		25		35	
6	RL-2d-091806	16		26		36	
7	RL-2s-091806	17		27		37	
8	G-7d-091806MS	18		28		38	
9	↓ MSD	19		29		39	
10		20		30		40	

Notes:

LDC #: 15597A6
SDG #: F2513

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MY
2nd reviewer: C

All circled methods are applicable to each sample.

Sample ID	Parameter																	
1-7	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}	Free CN	WAD CN		
8.9	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}	Free CN			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}				

Comments:

LDC #: 15697A6
SDG #: F2323

VALIDATION FINDINGS CHECKLIST

Page: 1 of 1
Reviewer: MY
2nd Reviewer: [illegible]

Method: Inorganics (EPA Method See comm)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.		✓		
Cooler temperature criteria was met.	✓			
II. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial calibration correlation coefficients ≥ 0.995?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	✓			
Were titrant checks performed as required? (Level IV only)			✓	
Were balance checks performed as required? (Level IV only)			✓	
III. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	✓			
IV. Matrix spike/Matrix spike duplicates and Duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓	X		—
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	✓		X	
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of ≤ CRDL(≤ 2X CRDL for soil) was used for samples that were ≤ 5X the CRDL, including when only one of the duplicate sample values were ≤ 5X the CRDL.	✓		X	
V. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits?	✓			
VI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 15597A6
SDG #: F1523

VALIDATION FINDINGS CHECKLIST

Page: 1 of 1
Reviewer: MY
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
VII. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were detection limits < RL?	✓			
VIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
IX. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates.			✓	
X. Field blanks				
Field blanks were identified in this SDG.		✓		
Target analytes were detected in the field blanks.			✓	

LDC #: 15897A6
SDG #: F3523

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

All circled dates have exceeded the technical holding time.
(Y) N N/A Were all samples preserved as applicable to each method ?
(Y) N N/A Were all cooler temperatures within validation criteria?

Method:		ASTM D4282					
Parameters:		Free CN					
Technical holding time:		24hrs					
Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
1-7 (All)	9/18/06	9/22/06	(4 days)				J/R/A (never)

LDC #: 15597A6
SDG #: FK03

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: MM
2nd Reviewer: K

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were all samples associated with a given method blank?
Y N N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: ug/L **Associated Samples:** All (7SX)

Analyte	Blank ID	Maximum ICB/CCB	Blank Action Limit	Sample Identification								
	MB											
Free CN	0.0422		0.211									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 15597A6
SDG #: FY523

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: MY
2nd Reviewer: ✓

METHOD: Inorganics, Method See cover

The correlation coefficient (r) for the calibration of FCN was recalculated. Calibration date: 09/20/06

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found / True x 100 Where, Found = concentration of each analyte measured in the analysis of the ICV or CCV solution
True = concentration of each analyte in the ICV or CCV source

Type of Analysis	Analyte		ug/L (units)	~~ug~~ Area (units)	Recalculated r or %R	Reported r or %R	Acceptable (Y/N)
Initial calibration Calibration verification	Free CN	Blank	0	58628	r=0.9999	r=0.9999	Y
		Standard 1	0.5	94490			
		Standard 2	1.0	99490			
		Standard 3	2.0	114664			
		Standard 4	5.0	229669			
		Standard 5	10.0	413559			
		Standard 6	20.0	975058			
		Standard 7	50.0	1884834			
Calibration verification CCV	Free CN	10	9.27		~~200~~ -7.3	-7.4 ~~-4.6~~	Y
Calibration verification CCV	Total CN	200	210.5		5.3	5.3	↓
Calibration verification CCV	WAD CN	100	92.6		-7.4	-7.4	↓

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

CALCLC.6

LDC #: 15597 A6
SDG #: F2523

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: MM
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated %R / RPD	Reported %R / RPD	Acceptable (Y/N)
LCS	Laboratory control sample	Total CN	0.367	0.372 ~~0.529~~	98.7	98.6	Y
~~LA~~ 8	Matrix spike sample	Free CN	(SSR-SR) 35.5	33.3	107	107	
~~[illegible]~~ TD G-2d-091906	Duplicate sample	WAD CN	0.109	0.112	2.7	NR ~~NR~~	

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

TOTCLC.6

LDC #: 15597A6
SDG #: F1573

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: MM
2nd reviewer: R

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments?
Y N N/A Are all detection limits below the CRQL?

Compound (analyte) results for 1 reported with a positive detect were recalculated and verified using the following equation:

Concentration =

Total CN = $\frac{Abs - 0.00321}{1.101}$

Recalculation:

Total CN = $\frac{0.104 - 0.00321}{1.101}$ = 0.0915 mg/L

#	Sample ID	Analyte	Reported Concentration ( )	Calculated Concentration ( )	Acceptable (Y/N)
1	1	Free CN (ug/L)	1.16	1.16	Y
		Total CN (ug/L)	0.0915	0.0915	↓
		WAD CN ↓	0.0229	0.0229	↓

Note:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Chinook Ventures, Inc.

Collection Date: September 19, 2006

LDC Report Date: October 24, 2006

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: CH2M Hill Applied Sciences Laboratory

Sample Delivery Group (SDG): F2530

***Sample Identification**

G-6s-091906
G-6d-091906
RL-1s-091906
RL-1d-091906
RLSW-4-091906
G-4d-091906
G-44d-091906
G-4s-091906
RL-5-091906
RL-3s-091906
RL-3d-091906
R-1s-091906
R-1d-091906
R-4d-091906
R-4s-091906
G-4d-091906MS
G-4d-091906MSD
G-44d-091906MS
G-44d-091906MSD

*Added MS and MSD samples

Introduction

*This data review covers 19 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per ASTM Method D4282 for Free Cyanide, EPA Method 335.2 for Total Cyanide, and Standard Method 4500-CN-I for Weak Acid Dissociable Cyanide.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Extraction Until Analysis	Required Holding Time From Sample Extraction Until Analysis	Flag	A or P
G-6s-091906	Free cyanide	50.5 hours	24 hours	J (all detects) R (all non-detects)	P
G-6d-091906	Free cyanide	50.25 hours	24 hours	J (all detects) R (all non-detects)	P
RL-1s-091906	Free cyanide	49.75 hours	24 hours	J (all detects) R (all non-detects)	P
RL-1d-091906	Free cyanide	49.25 hours	24 hours	J (all detects) R (all non-detects)	P
RLSW-4-091906 R-1d-091906	Free cyanide	48.25 hours	24 hours	J (all detects) R (all non-detects)	P
G-4d-091906	Free cyanide	47.75 hours	24 hours	J (all detects) UJ (all non-detects)	P
G-44d-091906	Free cyanide	47.5 hours	24 hours	J (all detects) UJ (all non-detects)	P
G-4s-091906	Free cyanide	47 hours	24 hours	J (all detects) UJ (all non-detects)	P
RL-5-091906	Free cyanide	50.75 hours	24 hours	J (all detects) R (all non-detects)	P
RL-3s-091906	Free cyanide	50.5 hours	24 hours	J (all detects) R (all non-detects)	P
RL-3d-091906	Free cyanide	50 hours	24 hours	J (all detects) R (all non-detects)	P
R-1s-091906	Free cyanide	49 hours	24 hours	J (all detects) R (all non-detects)	P
R-4d-091906 R-4s-091906	Free cyanide	47.25 hours	24 hours	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
MB	Free cyanide	0.109 ug/L	All samples in SDG F2530

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
G-6d-091906	Free cyanide	0.340 ug/L	0.340U ug/L
RL-1d-091906	Free cyanide	0.503 ug/L	0.503U ug/L
RLSW-4-091906	Free cyanide	0.294 ug/L	0.294U ug/L
G-44d-091906	Free cyanide	0.513 ug/L	0.513U ug/L
G-4s-091906	Free cyanide	0.501 ug/L	0.501U ug/L
RL-3d-091906	Free cyanide	0.283 ug/L	0.283U ug/L
R-1s-091906	Free cyanide	0.527 ug/L	0.527U ug/L

*IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

*V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

The results for the weak acid dissociable cyanide sample analysis were greater than the total cyanide sample analysis as follows:

Sample ID	Concentration	
	Total cyanide	Weak acid dissociable cyanide
RL-1d-091906	0.00435 mg/L	0.0127 mg/L
G-44d-091906	0.0050U mg/L	0.0117 mg/L

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

Samples G-4d-091906 and G-44d-091906 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD
	G-4d-091906	G-44d-091906	
Free cyanide	0.625 ug/L	0.513 ug/L	20
Total cyanide	0.147 mg/L	0.00500U mg/L	200

Analyte	Concentration (mg/L)		RPD
	G-4d-091906	G-44d-091906	
WAD Cyanide	0.00500U mg/L	0.0117 mg/L	200.

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG F2530

SDG	Sample	Analyte	Flag	A or P	Reason
F2530	G-6s-091906 G-6d-091906 RL-1s-091906 RL-1d-091906 RLSW-4-091906 R-1d-091906 RL-5-091906 RL-3s-091906 RL-3d-091906 R-1s-091906	Free cyanide	J (all detects) R (all non-detects)	P	Technical holding times
F2530	R-4d-091906 R-4s-091906 G-4d-091906 G-44d-091906 G-4s-091906	Free cyanide	J (all detects) UJ (all non-detects)	P	Technical holding times

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG F2530

SDG	Sample	Analyte	Modified Final Concentration	A or P
F2530	G-6d-091906	Free cyanide	0.340U ug/L	A
F2530	RL-1d-091906	Free cyanide	0.503U ug/L	A
F2530	RLSW-4-091906	Free cyanide	0.294U ug/L	A
F2530	G-44d-091906	Free cyanide	0.513U ug/L	A
F2530	G-4s-091906	Free cyanide	0.501U ug/L	A
F2530	RL-3d-091906	Free cyanide	0.283U ug/L	A
F2530	R-1s-091906	Free cyanide	0.527U ug/L	A

LDC #: 15597B6

SDG #: F2530

Laboratory: CH2M Hill Applied Sciences Laboratory

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/13/06

Page: 1 of 1

Reviewer: MM

2nd Reviewer: [illegible]

METHOD: Free Cyanide (ASTM D4282), Total Cyanide (EPA Method 335.2), Weak Acid Dissociable Cyanide (SM4500-CN-I)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 9/19/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	SW	
IV	Matrix Spike/Matrix Spike Duplicates	A ~~N~~	~~3 client specific~~
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	SW	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	D = 6 + 7
X	Field blanks	✓	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	G-6s-091906	11	RL-3d-091906	21		31	
2	G-6d-091906	12	R-1s-091906	22		32	
3	RL-1s-091906	13	R-1d-091906	23		33	
4	RL-1d-091906	14	R-4d-091906	24		34	
5	RLSW-4-091906	15	R-4s-091906	25		35	
6	G-4d-091906	16	MB	26		36	
7	G-44d-091906	17	G-4d-091906 MS	27		37	
8	G-4s-091906	18	↓ MSD	28		38	
9	RL-5-091906	19	G-44d-091906 MS	29		39	
10	RL-3s-091906	20	↓ MSD	30		40	

Notes:

LDC #: 15597B6
SDG #: F2530

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MY
2nd reviewer: C

All circled methods are applicable to each sample.

Sample ID	Parameter				
1-15	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}	Free CN	WAD CN		
16,17	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}				
18,19	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}		WAD CN		
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}				

Comments:

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

Anchor Environmental, LLC
1423 3rd Avenue, Suite 300
Seattle, WA 98101-2226
ATTN: Ms. Lisa Allen

October 24, 2006

SUBJECT: Chinook Ventures, Inc., Data Validation

Dear Ms. Allen,

Enclosed are the revised data validation reports for the fractions listed below. Please replace the previously submitted report with the enclosed revised report.

SDG#	LDC#	Fraction
F2523	15597A6	Wet Chemistry
F2530	15597B6	Wet Chemistry

Please feel free to contact us if you have any questions.

Sincerely,

Stella S. Cuenco
Project Manager/Senior Chemist

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LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

Anchor Environmental, LLC
1423 3rd Avenue, Suite 300
Seattle, WA 98101-2226
ATTN: Ms. Lisa Allen

October 23, 2006

SUBJECT: Chinook Ventures, Inc., Data Validation

Dear Ms. Allen,

Enclosed are the revised data validation reports for the fractions listed below. Please replace the previously submitted report with the enclosed revised report.

SDG#	LDC#	Fraction
JY35	15597E4	Dissolved Metals
JY35	15597E6	Wet Chemistry

Please feel free to contact us if you have any questions.

Sincerely,

Stella S. Cuenco
Project Manager/Senior Chemist

V:\LOGIN\Anchor\Chinook\15597REV.wpd

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

Anchor Environmental, LLC
1423 3rd Avenue, Suite 300
Seattle, WA 98101-2226
ATTN: Ms. Lisa Allen

October 16, 2006

SUBJECT: Chinook Ventures, Inc., Data Validation

Dear Ms. Allen,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on October 12, 2006. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 15597:

SDG #	Fraction
F2523, F2530, JW94, JX10, JY35, JY56, JY77	Metals, Wet Chemistry

The data validation was performed under EPA Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998

Please feel free to contact us if you have any questions.

Sincerely,

Stella S. Cuenco
Project Manager/Senior Chemist

V:\LOGIN\Anchor\Chinook\15597COV.wpd

1 WEEK TAT (25% Surcharge)

Attachment 1

1,867 Pages

LDC #15597 (Anchor Environmental-Seattle WA / Chinook Ventures, Inc.)

LDC	SDG#	DATE REC'D	(3) DATE DUE	Diss. Metals (6010B)		Diss. Si (6010B)		Alk. (2320)		Cl,F, SO4 (300.0)		T. Phos. (365.2)		Fluid Density		Free CN- (D4282)		Total CN- (335.2)		WAD CN- (4500)																			
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	F2523	10/12/06	10/19/06	-	-	-	-	-	-	-	-	-	-	-	-	7	0	7	0	7	0																		
B	F2530	10/12/06	10/19/06	-	-	-	-	-	-	-	-	-	-	-	-	15	0	15	0	15	0																		
C	JW94	10/12/06	10/19/06	9	0	5	0	7	0	7	0	7	0	7	0	-	-	-	-	-	-																		
D	JX10	10/12/06	10/19/06	14	0	14	0	14	0	14	0	14	0	14	0	-	-	-	-	-	-																		
E	JY35	10/12/06	10/19/06	3	0	3	0	3	0	3	0	3	0	3	0	-	-	-	-	-	-																		
F	JY56	10/12/06	10/19/06	5	0	5	0	7	0	7	0	7	0	6	0	-	-	-	-	-	-																		
G	JY77	10/12/06	10/19/06	8	0	8	0	6	0	6	0	6	0	7	0	-	-	-	-	-	-																		
Total	B/SC			39	0	35	0	37	0	37	0	37	0	37	0	22	0	22	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	288

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS, MSD, or DUP's.

15597ST.wpd

Chinook Ventures, Inc.
Data Validation Reports
LDC# 15597

Metals

LDC

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	September 18, 2006
LDC Report Date:	October 13, 2006
Matrix:	Water
Parameters:	Dissolved Metals
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	JW94

Sample Identification

PZ-7-091806*
G-7d-091806
PZ-6-091806*
G-5s-091806
G-5d-091806
RL-2d-091806
RL-2s-091806
PZ-7-091806
PZ-6-091806
PZ-7-091806MS*
PZ-7-091806DUP*
PZ-7-091806MS
PZ-7-091806DUP

*Indicates sample was acidified.

Introduction

This data review covers 13 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6010B for Dissolved Metals. The metals analyzed were Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium, and Silicon.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Calcium	0.06 mg/L	G-7d-091806 G-5s-091806 G-5d-091806 RL-2d-091806 RL-2s-091806 PZ-7-091806 PZ-6-091806

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
PZ-7-091806MS* (PZ-7-091806* PZ-6-091806*)	Calcium	84 (85-115)	J (all detects) UJ (all non-detects)	A

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIII. Field Duplicates

No field duplicates were identified in this SDG.

XIV. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Dissolved Metals - Data Qualification Summary - SDG JW94

SDG	Sample	Analyte	Flag	A or P	Reason
JW94	PZ-7-091806* PZ-6-091806*	Calcium	J (all detects) UJ (all non-detects)	A	Matrix spike analysis (%R)

Chinook Ventures, Inc.
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG JW94

No Sample Data Qualified in this SDG

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: PZ-7-091806
SAMPLE

Lab Sample ID: JW94A
LIMS ID: 06-16998
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JW94-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/18/06
Date Received: 09/19/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	09/20/06	6010B	09/25/06	7429-90-5	Aluminum	0.05	0.38	
6010B	09/20/06	6010B	09/25/06	7440-70-2	Calcium	0.05	37.1	J
6010B	09/20/06	6010B	09/25/06	7439-89-6	Iron	0.05	17.4	
6010B	09/20/06	6010B	09/25/06	7439-95-4	Magnesium	0.05	14.9	
6010B	09/20/06	6010B	09/25/06	7439-96-5	Manganese	0.001	0.580	
6010B	09/20/06	6010B	09/25/06	7440-09-7	Potassium	0.5	4.5	
6010B	09/20/06	6010B	09/25/06	7440-21-3	Silicon	0.06	25.3	
6010B	09/20/06	6010B	09/25/06	7440-23-5	Sodium	0.5	971	

U-Analyte undetected at given RL
RL-Reporting Limit

10/30/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: PZ-7-091806
SAMPLE

Lab Sample ID: JW94H
LIMS ID: 06-17234
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JW94-Anchor Environmental
Project: Chinook

Date Sampled: 09/18/06
Date Received: 09/19/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	09/23/06	6010B	09/25/06	7429-90-5	Aluminum	0.05	0.38	
3010A	09/23/06	6010B	09/25/06	7440-70-2	Calcium	0.05	36.6	
3010A	09/23/06	6010B	09/25/06	7439-89-6	Iron	0.05	18.0	
3010A	09/23/06	6010B	09/25/06	7439-95-4	Magnesium	0.05	14.6	
3010A	09/23/06	6010B	09/25/06	7439-96-5	Manganese	0.001	0.573	
3010A	09/23/06	6010B	09/25/06	7440-09-7	Potassium	0.5	4.6	
3010A	09/23/06	6010B	09/25/06	7440-23-5	Sodium	0.5	962	

U-Analyte undetected at given RL
RL-Reporting Limit

10/30/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G-7d-091806
SAMPLE

Lab Sample ID: JW94B
LIMS ID: 06-16999
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JW94-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/18/06
Date Received: 09/19/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	09/20/06	6010B	09/25/06	7440-21-3	Silicon	0.3	21.3	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G-7d-091806
SAMPLE

Lab Sample ID: JW94I
LIMS ID: 06-17235
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JW94-Anchor Environmental
Project: Chinook

Date Sampled: 09/18/06
Date Received: 09/19/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	09/23/06	6010B	09/25/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	09/23/06	6010B	09/25/06	7440-70-2	Calcium	0.05	87.6	
3010A	09/23/06	6010B	09/25/06	7439-89-6	Iron	0.05	0.80	
3010A	09/23/06	6010B	09/25/06	7439-95-4	Magnesium	0.05	49.5	
3010A	09/23/06	6010B	09/25/06	7439-96-5	Manganese	0.001	1.50	
3010A	09/23/06	6010B	09/25/06	7440-09-7	Potassium	0.5	14.4	
3010A	09/23/06	6010B	09/25/06	7440-23-5	Sodium	0.5	348	

U-Analyte undetected at given RL
RL-Reporting Limit

10/2/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: PZ-6-091806
SAMPLE

Lab Sample ID: JW94C
LIMS ID: 06-17000
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JW94-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/18/06
Date Received: 09/19/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	09/20/06	6010B	09/25/06	7429-90-5	Aluminum	0.05	1.52	
6010B	09/20/06	6010B	09/25/06	7440-70-2	Calcium	0.05	16.1	J
6010B	09/20/06	6010B	09/25/06	7439-89-6	Iron	0.05	1.80	
6010B	09/20/06	6010B	09/25/06	7439-95-4	Magnesium	0.05	2.16	
6010B	09/20/06	6010B	09/25/06	7439-96-5	Manganese	0.001	0.186	
6010B	09/20/06	6010B	09/25/06	7440-09-7	Potassium	0.5	4.7	
6010B	09/20/06	6010B	09/25/06	7440-21-3	Silicon	0.06	23.1	
6010B	09/20/06	6010B	09/25/06	7440-23-5	Sodium	0.5	1,450	

U-Analyte undetected at given RL
RL-Reporting Limit

10/2/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: PZ-6-091806
SAMPLE

Lab Sample ID: JW94J
LIMS ID: 06-17236
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JW94-Anchor Environmental
Project: Chinook

Date Sampled: 09/18/06
Date Received: 09/19/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	09/23/06	6010B	09/25/06	7429-90-5	Aluminum	0.05	1.59	
3010A	09/23/06	6010B	09/25/06	7440-70-2	Calcium	0.05	16.0	
3010A	09/23/06	6010B	09/25/06	7439-89-6	Iron	0.05	4.89	
3010A	09/23/06	6010B	09/25/06	7439-95-4	Magnesium	0.05	2.14	
3010A	09/23/06	6010B	09/25/06	7439-96-5	Manganese	0.001	0.215	
3010A	09/23/06	6010B	09/25/06	7440-09-7	Potassium	0.5	4.2	
3010A	09/23/06	6010B	09/25/06	7440-23-5	Sodium	0.5	1,470	

U-Analyte undetected at given RL
RL-Reporting Limit

10/2/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G-5s-091806
SAMPLE

Lab Sample ID: JW94D
LIMS ID: 06-17001
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JW94-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/18/06
Date Received: 09/19/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	09/20/06	6010B	09/25/06	7440-21-3	Silicon	0.3	22.8	

U-Analyte undetected at given RL
RL-Reporting Limit

10/30/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G-5s-091806
SAMPLE

Lab Sample ID: JW94K
LIMS ID: 06-17237
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JW94-Anchor Environmental
Project: Chinook

Date Sampled: 09/18/06
Date Received: 09/19/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	09/23/06	6010B	09/25/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	09/23/06	6010B	09/25/06	7440-70-2	Calcium	0.05	58.5	
3010A	09/23/06	6010B	09/25/06	7439-89-6	Iron	0.05	3.98	
3010A	09/23/06	6010B	09/25/06	7439-95-4	Magnesium	0.05	29.7	
3010A	09/23/06	6010B	09/25/06	7439-96-5	Manganese	0.001	2.08	
3010A	09/23/06	6010B	09/25/06	7440-09-7	Potassium	0.5	9.9	
3010A	09/23/06	6010B	09/25/06	7440-23-5	Sodium	0.5	72.5	

U-Analyte undetected at given RL
RL-Reporting Limit

10/2/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G-5d-091806
SAMPLE

Lab Sample ID: JW94E
LIMS ID: 06-17002
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JW94-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/18/06
Date Received: 09/19/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	09/20/06	6010B	09/25/06	7440-21-3	Silicon	0.3	31.4	

U-Analyte undetected at given RL
RL-Reporting Limit

10/30/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G-5d-091806
SAMPLE

Lab Sample ID: JW94L
LIMS ID: 06-17238
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JW94-Anchor Environmental
Project: Chinook

Date Sampled: 09/18/06
Date Received: 09/19/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	09/23/06	6010B	09/25/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	09/23/06	6010B	09/25/06	7440-70-2	Calcium	0.05	40.7	
3010A	09/23/06	6010B	09/25/06	7439-89-6	Iron	0.05	37.4	
3010A	09/23/06	6010B	09/25/06	7439-95-4	Magnesium	0.05	17.7	
3010A	09/23/06	6010B	09/25/06	7439-96-5	Manganese	0.001	2.19	
3010A	09/23/06	6010B	09/25/06	7440-09-7	Potassium	0.5	4.7	
3010A	09/23/06	6010B	09/25/06	7440-23-5	Sodium	0.5	18.3	

U-Analyte undetected at given RL
RL-Reporting Limit

11/10/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RL-2d-091806
SAMPLE

Lab Sample ID: JW94F
LIMS ID: 06-17003
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JW94-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/18/06
Date Received: 09/19/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	09/20/06	6010B	09/25/06	7440-21-3	Silicon	0.3	37.2	

U-Analyte undetected at given RL
RL-Reporting Limit

10/2006

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RL-2d-091806
SAMPLE

Lab Sample ID: JW94M
LIMS ID: 06-17239
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JW94-Anchor Environmental
Project: Chinook

Date Sampled: 09/18/06
Date Received: 09/19/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	09/23/06	6010B	09/25/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	09/23/06	6010B	09/25/06	7440-70-2	Calcium	0.05	86.1	
3010A	09/23/06	6010B	09/25/06	7439-89-6	Iron	0.05	74.9	
3010A	09/23/06	6010B	09/25/06	7439-95-4	Magnesium	0.05	33.5	
3010A	09/23/06	6010B	09/25/06	7439-96-5	Manganese	0.001	2.22	
3010A	09/23/06	6010B	09/25/06	7440-09-7	Potassium	0.5	4.5	
3010A	09/23/06	6010B	09/25/06	7440-23-5	Sodium	0.5	587	

U-Analyte undetected at given RL
RL-Reporting Limit

10/2006

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RL-2s-091806
SAMPLE

Lab Sample ID: JW94G
LIMS ID: 06-17004
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JW94-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/18/06
Date Received: 09/19/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	09/20/06	6010B	09/25/06	7440-21-3	Silicon	0.3	17.4	

U-Analyte undetected at given RL
RL-Reporting Limit

10/2/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RL-2s-091806
SAMPLE

Lab Sample ID: JW94N
LIMS ID: 06-17240
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JW94-Anchor Environmental
Project: Chinook

Date Sampled: 09/18/06
Date Received: 09/19/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	09/23/06	6010B	09/25/06	7429-90-5	Aluminum	0.05	0.16	
3010A	09/23/06	6010B	09/25/06	7440-70-2	Calcium	0.05	8.12	
3010A	09/23/06	6010B	09/25/06	7439-89-6	Iron	0.05	7.16	
3010A	09/23/06	6010B	09/25/06	7439-95-4	Magnesium	0.05	2.88	
3010A	09/23/06	6010B	09/25/06	7439-96-5	Manganese	0.001	0.103	
3010A	09/23/06	6010B	09/25/06	7440-09-7	Potassium	0.5	4.4	
3010A	09/23/06	6010B	09/25/06	7440-23-5	Sodium	0.5	1,930	

U-Analyte undetected at given RL
RL-Reporting Limit

9/28/06

LDC #: 15597C4

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/13/06
Page: 1 of 1
Reviewer: MM
2nd Reviewer: [illegible]

SDG #: JW94
Laboratory: Analytical Resources, Inc.

METHOD: Dissolved Metals (EPA SW 846 Method 6010B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/18/06
II.	Calibration	A	
III.	Blanks	SW	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Matrix Spike Analysis	SW	
VI.	Duplicate Sample Analysis	A	
VII.	Laboratory Control Samples (LCS)	A	LCS
VIII.	Internal Standard (ICP-MS)	N	not utilized
IX.	Furnace Atomic Absorption QC	N	
X.	ICP Serial Dilution	N	not performed
XI.	Sample Result Verification	N	
XII.	Overall Assessment of Data	A	
XIII.	Field Duplicates	N	
XIV.	Field Blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

1	PZ-7-091806*	11	PZ-7-091806DUP*	21		31	
2	G-7d-091806	12	PZ-7-091806MS	22		32	
3	PZ-6-091806*	13	PZ-7-091806DUP	23		33	
4	G-5s-091806	14	PD	24		34	
5	G-5d-091806	15		25		35	
6	RL-2d-091806	16		26		36	
7	RL-2s-091806	17		27		37	
8	PZ-7-091806	18		28		38	
9	PZ-6-091806	19		29		39	
10	PZ-7-091806MS*	20		30		40	

Notes: *: Sample was acidified only.

LDC #: 05597C4
SDG #: TW94

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: MH
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-7	AQ	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
8-9	✓	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
10, 11	✓	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
12, 13	✓	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
ICP Trace		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,

Comments: Mercury by CVAA if performed

LDC #: 15597C4
SDG #: JW94

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Page: 1 of 1
Reviewer: MH
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/7000) Soil preparation factor applied: _____
Sample Concentration units, unless otherwise noted: mg/L Associated Samples: 2, 4-9 (75%)

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (mg/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit											
Al															Al
Sb															Sb
As															As
Ba															Ba
Be															Be
Cd															Cd
Ca		0.06		0.30											Ca
Cr															Cr
Cc															Co
Cu															Cu
Fe															Fe
Pb															Pb
Mg															Mg
Mn															Mn
Hg															Hg
Ni															Ni
K															K
Se															Se
Ag															Ag
Na															Na
Tl															Tl
V															V
Zn															Zn
B															B
Mo															Mo
Sr															Sr

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

BLNKSMP.4S2

LDC #: 15597c4
SDG #: JW94

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: MM
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of ~~75-125~~? 85-115 If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

Y N N/A Was a post digestion spike analyzed for ICP elements that did not meet the required criteria for matrix spike recovery?

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
1	10	A2	Ca	84 (85-115)	1,3	J/UJ/A

Comments:

MS.4S2

LDC Report# 15597D4

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Chinook Ventures, Inc.

Collection Date: September 18 through September 19, 2006

LDC Report Date: October 13, 2006

Matrix: Water

Parameters: Dissolved Metals

Validation Level: EPA Level III

Laboratory: Analytical Resources, Inc.

Sample Delivery Group (SDG): JX10

Sample Identification

G-6s-091906
G-6d-091906
RL-1s-091906
RL-1d-091906
RLSW-4-091906
G-4d-091906
G-44d-091906
G-4s-091906
RL-5-091806
RL-3S-091906
RL-3d-091906
R-1s-091906
R-1d-091906
RL-4d-091906
G-6s-091906MS
G-6s-091906DUP

Introduction

This data review covers 16 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6010B for Dissolved Metals. The metals analyzed were Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium, and Silicon.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIII. Field Duplicates

Samples G-4d-091906 and G-44d-091906 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/L)		RPD
	G-4d-091906	G-44d-091906	
Calcium	114	112	2
Iron	24.0	21.6	11
Magnesium	61.8	60.0	3
Manganese	2.59	2.50	4
Potassium	11.1	10.7	4
Sodium	105	109	4
Silicon	22.9	22.9	0

XIV. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Dissolved Metals - Data Qualification Summary - SDG JX10

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG JX10

No Sample Data Qualified in this SDG

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G-6s-091906
SAMPLE

Lab Sample ID: JX10A
LIMS ID: 06-17071
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	09/23/06	6010B	09/26/06	7429-90-5	Aluminum	0.05	0.62	
3010A	09/23/06	6010B	09/26/06	7440-70-2	Calcium	0.05	23.1	
3010A	09/23/06	6010B	09/26/06	7439-89-6	Iron	0.05	0.77	
3010A	09/23/06	6010B	09/26/06	7439-95-4	Magnesium	0.05	14.6	
3010A	09/23/06	6010B	09/26/06	7439-96-5	Manganese	0.001	0.736	
3010A	09/23/06	6010B	09/26/06	7440-09-7	Potassium	0.5	10.4	
3010A	09/23/06	6010B	09/26/06	7440-23-5	Sodium	0.5	717	

U-Analyte undetected at given RL
RL-Reporting Limit

IL 10/30/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G-6s-091906
SAMPLE

Lab Sample ID: JX10O
LIMS ID: 06-17284
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: Chinook

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	09/23/06	6010B	09/26/06	**7440-21-3**	**Silicon**	0.3	**17.9**	

U-Analyte undetected at given RL
RL-Reporting Limit

2/10/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: G-6d-091906
SAMPLE

Lab Sample ID: JX10B
LIMS ID: 06-17072
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	09/23/06	6010B	09/26/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	09/23/06	6010B	09/26/06	**7440-70-2**	**Calcium**	0.05	**187**	
3010A	09/23/06	6010B	09/26/06	**7439-89-6**	**Iron**	0.05	**42.2**	
3010A	09/23/06	6010B	09/26/06	**7439-95-4**	**Magnesium**	0.05	**131**	
3010A	09/23/06	6010B	09/26/06	**7439-96-5**	**Manganese**	0.001	**6.01**	
3010A	09/23/06	6010B	09/26/06	**7440-09-7**	**Potassium**	0.5	**12.6**	
3010A	09/23/06	6010B	09/26/06	**7440-23-5**	**Sodium**	0.5	**494**	

U-Analyte undetected at given RL
RL-Reporting Limit

R 101306

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G-6d-091906
SAMPLE

Lab Sample ID: JX10P
LIMS ID: 06-17285
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: Chinook

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	09/23/06	6010B	09/26/06	**7440-21-3**	**Silicon**	0.3	**26.5**	

U-Analyte undetected at given RL
RL-Reporting Limit

R 10/30/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RL-1s-091906
SAMPLE

Lab Sample ID: JX10C
LIMS ID: 06-17073
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	09/23/06	6010B	09/26/06	**7429-90-5**	**Aluminum**	0.05	**0.08**	
3010A	09/23/06	6010B	09/26/06	**7440-70-2**	**Calcium**	0.05	**14.9**	
3010A	09/23/06	6010B	09/26/06	**7439-89-6**	**Iron**	0.05	**10.9**	
3010A	09/23/06	6010B	09/26/06	**7439-95-4**	**Magnesium**	0.05	**7.42**	
3010A	09/23/06	6010B	09/26/06	**7439-96-5**	**Manganese**	0.001	**0.311**	
3010A	09/23/06	6010B	09/26/06	**7440-09-7**	**Potassium**	0.5	**1.5**	
3010A	09/23/06	6010B	09/26/06	**7440-23-5**	**Sodium**	0.5	**140**	

U-Analyte undetected at given RL
RL-Reporting Limit

10/30/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RL-1s-091906
SAMPLE

Lab Sample ID: JX10Q
LIMS ID: 06-17286
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: Chinook

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	09/23/06	6010B	09/26/06	**7440-21-3**	**Silicon**	0.3	**24.9**	

U-Analyte undetected at given RL
RL-Reporting Limit

10/2/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RL-1d-091906
SAMPLE

Lab Sample ID: JX10D
LIMS ID: 06-17074
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	09/23/06	6010B	09/26/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	09/23/06	6010B	09/26/06	**7440-70-2**	**Calcium**	0.05	**121**	
3010A	09/23/06	6010B	09/26/06	**7439-89-6**	**Iron**	0.05	**59.6**	
3010A	09/23/06	6010B	09/26/06	**7439-95-4**	**Magnesium**	0.05	**59.6**	
3010A	09/23/06	6010B	09/26/06	**7439-96-5**	**Manganese**	0.001	**3.13**	
3010A	09/23/06	6010B	09/26/06	**7440-09-7**	**Potassium**	0.5	**2.2**	
3010A	09/23/06	6010B	09/26/06	**7440-23-5**	**Sodium**	0.5	**28.6**	

U-Analyte undetected at given RL
RL-Reporting Limit

R 10/30/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: RL-1d-091906
SAMPLE

Lab Sample ID: JX10R
LIMS ID: 06-17287
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: Chinook

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	09/23/06	6010B	09/26/06	**7440-21-3**	**Silicon**	0.3	**31.9**	

U-Analyte undetected at given RL
RL-Reporting Limit

N 10/13/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RLSW-4-091906
SAMPLE

Lab Sample ID: JX10E
LIMS ID: 06-17075
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	09/23/06	6010B	09/26/06	7429-90-5	Aluminum	0.05	0.48	
3010A	09/23/06	6010B	09/26/06	7440-70-2	Calcium	0.05	41.2	
3010A	09/23/06	6010B	09/26/06	7439-89-6	Iron	0.05	6.34	
3010A	09/23/06	6010B	09/26/06	7439-95-4	Magnesium	0.05	18.4	
3010A	09/23/06	6010B	09/26/06	7439-96-5	Manganese	0.001	1.98	
3010A	09/23/06	6010B	09/26/06	7440-09-7	Potassium	0.5	11.2	
3010A	09/23/06	6010B	09/26/06	7440-23-5	Sodium	0.5	973	

U-Analyte undetected at given RL
RL-Reporting Limit

K 10/30/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RLSW-4-091906
SAMPLE

Lab Sample ID: JX10S
LIMS ID: 06-17288
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: Chinook

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	09/23/06	6010B	09/26/06	**7440-21-3**	**Silicon**	0.3	**19.7**	

U-Analyte undetected at given RL
RL-Reporting Limit

R 10/30/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: G-4d-091906
SAMPLE

Lab Sample ID: JX10F
LIMS ID: 06-17076
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	09/23/06	6010B	09/26/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	09/23/06	6010B	09/26/06	**7440-70-2**	**Calcium**	0.05	**114**	
3010A	09/23/06	6010B	09/26/06	**7439-89-6**	**Iron**	0.05	**24.0**	
3010A	09/23/06	6010B	09/26/06	**7439-95-4**	**Magnesium**	0.05	**61.8**	
3010A	09/23/06	6010B	09/26/06	**7439-96-5**	**Manganese**	0.001	**2.59**	
3010A	09/23/06	6010B	09/26/06	**7440-09-7**	**Potassium**	0.5	**11.1**	
3010A	09/23/06	6010B	09/26/06	**7440-23-5**	**Sodium**	0.5	**105**	

U-Analyte undetected at given RL
RL-Reporting Limit

R 10/3/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G-4d-091906
SAMPLE

Lab Sample ID: JX10T
LIMS ID: 06-17289
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: Chinook

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	09/23/06	6010B	09/26/06	**7440-21-3**	**Silicon**	0.3	**22.9**	

U-Analyte undetected at given RL
RL-Reporting Limit

C101306

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G-44d-091906
SAMPLE

Lab Sample ID: JX10G
LIMS ID: 06-17077
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	09/23/06	6010B	09/26/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	09/23/06	6010B	09/26/06	**7440-70-2**	**Calcium**	0.05	**112**	
3010A	09/23/06	6010B	09/26/06	**7439-89-6**	**Iron**	0.05	**21.6**	
3010A	09/23/06	6010B	09/26/06	**7439-95-4**	**Magnesium**	0.05	**60.0**	
3010A	09/23/06	6010B	09/26/06	**7439-96-5**	**Manganese**	0.001	**2.50**	
3010A	09/23/06	6010B	09/26/06	**7440-09-7**	**Potassium**	0.5	**10.7**	
3010A	09/23/06	6010B	09/26/06	**7440-23-5**	**Sodium**	0.5	**109**	

U-Analyte undetected at given RL
RL-Reporting Limit

2/01/06

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: G-44d-091906
SAMPLE

Lab Sample ID: JX10U
LIMS ID: 06-17290
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: Chinook

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	09/23/06	6010B	09/26/06	**7440-21-3**	**Silicon**	0.3	**22.9**	

U-Analyte undetected at given RL
RL-Reporting Limit

DL 101306

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: G-4s-091906
SAMPLE

Lab Sample ID: JX10H
LIMS ID: 06-17078
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	09/23/06	6010B	09/26/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	09/23/06	6010B	09/26/06	**7440-70-2**	**Calcium**	0.05	**90.1**	
3010A	09/23/06	6010B	09/26/06	**7439-89-6**	**Iron**	0.05	**46.3**	
3010A	09/23/06	6010B	09/26/06	**7439-95-4**	**Magnesium**	0.05	**47.9**	
3010A	09/23/06	6010B	09/26/06	**7439-96-5**	**Manganese**	0.001	**2.52**	
3010A	09/23/06	6010B	09/26/06	**7440-09-7**	**Potassium**	0.5	**7.8**	
3010A	09/23/06	6010B	09/26/06	**7440-23-5**	**Sodium**	0.5	**74.1**	

U-Analyte undetected at given RL
RL-Reporting Limit

10/3/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G-4s-091906
SAMPLE

Lab Sample ID: JX10V
LIMS ID: 06-17291
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: Chinook

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	09/23/06	6010B	09/26/06	**7440-21-3**	**Silicon**	0.3	**29.4**	

U-Analyte undetected at given RL
RL-Reporting Limit

9/01/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: RL-5-091806
SAMPLE

Lab Sample ID: JX10I
LIMS ID: 06-17079
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/18/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	09/23/06	6010B	09/26/06	**7429-90-5**	**Aluminum**	0.05	**0.14**	
3010A	09/23/06	6010B	09/26/06	**7440-70-2**	**Calcium**	0.05	**8.02**	
3010A	09/23/06	6010B	09/26/06	**7439-89-6**	**Iron**	0.05	**0.55**	
3010A	09/23/06	6010B	09/26/06	**7439-95-4**	**Magnesium**	0.05	**3.51**	
3010A	09/23/06	6010B	09/26/06	**7439-96-5**	**Manganese**	0.001	**0.086**	
3010A	09/23/06	6010B	09/26/06	**7440-09-7**	**Potassium**	0.5	**0.8**	
3010A	09/23/06	6010B	09/26/06	**7440-23-5**	**Sodium**	0.5	**123**	

U-Analyte undetected at given RL
RL-Reporting Limit

K 101306

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: RL-5-091806
SAMPLE

Lab Sample ID: JX10W
LIMS ID: 06-17292
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: Chinook

Date Sampled: 09/18/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	09/23/06	6010B	09/26/06	**7440-21-3**	**Silicon**	0.3	**11.2**	

U-Analyte undetected at given RL
RL-Reporting Limit

9/10/06

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: RL-3s-091906
SAMPLE

Lab Sample ID: JX10J
LIMS ID: 06-17080
Matrix: Water
Data Release Authorized
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	09/23/06	6010B	09/26/06	**7429-90-5**	**Aluminum**	0.05	**0.27**	
3010A	09/23/06	6010B	09/26/06	**7440-70-2**	**Calcium**	0.05	**38.0**	
3010A	09/23/06	6010B	09/26/06	**7439-89-6**	**Iron**	0.05	**17.7**	
3010A	09/23/06	6010B	09/26/06	**7439-95-4**	**Magnesium**	0.05	**18.5**	
3010A	09/23/06	6010B	09/26/06	**7439-96-5**	**Manganese**	0.001	**1.21**	
3010A	09/23/06	6010B	09/26/06	**7440-09-7**	**Potassium**	0.5	**3.1**	
3010A	09/23/06	6010B	09/26/06	**7440-23-5**	**Sodium**	0.5	**618**	

U-Analyte undetected at given RL
RL-Reporting Limit

R 10/23/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: RL-3s-091906
SAMPLE

Lab Sample ID: JX10X
LIMS ID: 06-17293
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: Chinook

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	09/23/06	6010B	09/26/06	**7440-21-3**	**Silicon**	0.3	**21.5**	

U-Analyte undetected at given RL
RL-Reporting Limit

R/01306

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: RL-3d-091906
SAMPLE

Lab Sample ID: JX10K
LIMS ID: 06-17081
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	09/23/06	6010B	09/26/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	09/23/06	6010B	09/26/06	**7440-70-2**	**Calcium**	0.05	**122**	
3010A	09/23/06	6010B	09/26/06	**7439-89-6**	**Iron**	0.05	**41.8**	
3010A	09/23/06	6010B	09/26/06	**7439-95-4**	**Magnesium**	0.05	**57.3**	
3010A	09/23/06	6010B	09/26/06	**7439-96-5**	**Manganese**	0.001	**2.59**	
3010A	09/23/06	6010B	09/26/06	**7440-09-7**	**Potassium**	0.5	**4.1**	
3010A	09/23/06	6010B	09/26/06	**7440-23-5**	**Sodium**	0.5	**36.2**	

U-Analyte undetected at given RL
RL-Reporting Limit

R 10/3/06

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RL-3d-091906
SAMPLE

Lab Sample ID: JX10Y
LIMS ID: 06-17294
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: Chinook

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	09/23/06	6010B	09/26/06	**7440-21-3**	**Silicon**	0.3	**30.4**	

U-Analyte undetected at given RL
RL-Reporting Limit

K 10/3/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: R-1s-091906
SAMPLE

Lab Sample ID: JX10L
LIMS ID: 06-17082
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	09/23/06	6010B	09/26/06	7429-90-5	Aluminum	0.05	0.09	
3010A	09/23/06	6010B	09/26/06	7440-70-2	Calcium	0.05	14.4	
3010A	09/23/06	6010B	09/26/06	7439-89-6	Iron	0.05	6.69	
3010A	09/23/06	6010B	09/26/06	7439-95-4	Magnesium	0.05	5.43	
3010A	09/23/06	6010B	09/26/06	7439-96-5	Manganese	0.001	1.20	
3010A	09/23/06	6010B	09/26/06	7440-09-7	Potassium	0.5	2.4	
3010A	09/23/06	6010B	09/26/06	7440-23-5	Sodium	0.5	87.2	

U-Analyte undetected at given RL
RL-Reporting Limit

7/10/306

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: R-1s-091906
SAMPLE

Lab Sample ID: JX10Z
LIMS ID: 06-17295
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: Chinook

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	09/23/06	6010B	09/26/06	**7440-21-3**	**Silicon**	0.3	**24.9**	

U-Analyte undetected at given RL
RL-Reporting Limit

R/0132

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: R-1d-091906
SAMPLE

Lab Sample ID: JX10M
LIMS ID: 06-17083
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	09/23/06	6010B	09/26/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	09/23/06	6010B	09/26/06	**7440-70-2**	**Calcium**	0.05	**130**	
3010A	09/23/06	6010B	09/26/06	**7439-89-6**	**Iron**	0.05	**149**	
3010A	09/23/06	6010B	09/26/06	**7439-95-4**	**Magnesium**	0.05	**62.7**	
3010A	09/23/06	6010B	09/26/06	**7439-96-5**	**Manganese**	0.001	**5.70**	
3010A	09/23/06	6010B	09/26/06	**7440-09-7**	**Potassium**	0.5	**2.5**	
3010A	09/23/06	6010B	09/26/06	**7440-23-5**	**Sodium**	0.5	**126**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: R-1d-091906
SAMPLE

Lab Sample ID: JX10AA
LIMS ID: 06-17296
Matrix: Water
Data Release Authorized
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: Chinook

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	09/23/06	6010B	09/26/06	**7440-21-3**	**Silicon**	0.3	**30.0**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RL-4d-091906
SAMPLE

Lab Sample ID: JX10N
LIMS ID: 06-17084
Matrix: Water
Data Release Authorized
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	09/23/06	6010B	09/26/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	09/23/06	6010B	09/26/06	**7440-70-2**	**Calcium**	0.05	**40.4**	
3010A	09/23/06	6010B	09/26/06	**7439-89-6**	**Iron**	0.05	**36.8**	
3010A	09/23/06	6010B	09/26/06	**7439-95-4**	**Magnesium**	0.05	**19.0**	
3010A	09/23/06	6010B	09/26/06	**7439-96-5**	**Manganese**	0.001	**2.42**	
3010A	09/23/06	6010B	09/26/06	**7440-09-7**	**Potassium**	0.5	**1.8**	
3010A	09/23/06	6010B	09/26/06	**7440-23-5**	**Sodium**	0.5	**18.2**	

U-Analyte undetected at given RL
RL-Reporting Limit

2/01/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: R-4d-091906
SAMPLE

Lab Sample ID: JX10AB
LIMS ID: 06-17297
Matrix: Water
Data Release Authorized:
Reported: 09/27/06

QC Report No: JX10-Anchor Environmental
Project: Chinook

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	09/23/06	6010B	09/26/06	**7440-21-3**	**Silicon**	0.3	**32.0**	

U-Analyte undetected at given RL
RL-Reporting Limit

N 10/33

LDC #: 15597D4

SDG #: JX10

Laboratory: Analytical Resources, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/13/06

Page: 1 of 1

Reviewer: m

2nd Reviewer: M

METHOD: Dissolved Metals (EPA SW 846 Method 6010B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/18/06 – 9/19/06
II.	Calibration	A	
III.	Blanks	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Matrix Spike Analysis	A	
VI.	Duplicate Sample Analysis	A	
VII.	Laboratory Control Samples (LCS)	A	LCS
VIII.	Internal Standard (ICP-MS)	N	3 Not Utilized
IX.	Furnace Atomic Absorption QC	N	
X.	ICP Serial Dilution	N	Not performed
XI.	Sample Result Verification	N	
XII.	Overall Assessment of Data	A	
XIII.	Field Duplicates	SW	D = 6 + 7
XIV.	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: M

1	G-6s-091906	11	RL-3d-091906	21		31	
2	G-6d-091906	12	R-1s-091906	22		32	
3	RL-1s-091906	13	R-1d-091906	23		33	
4	RL-1d-091906	14	RL-4d-091906	24		34	
5	RLSW-4-091906	15	G-6s-091906MS	25		35	
6	G-4d-091906	16	G-6s-091906DUP	26		36	
7	G-44d-091906	17	PB	27		37	
8	G-4s-091906	18		28		38	
9	RL-5-091906	19		29		39	
10	RL-3S-091906	20		30		40	

Notes:

LDC #: 15597 D4
SDG #: TX10

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: MH
2nd reviewer: A

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-14	AQ	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
MW-16	b	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
ICP Trace		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,

Comments: Mercury by CVAA if performed

LDC#: 15597D4
SDG#: JX10

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer:
2nd Reviewer:

METHOD: Metals (EPA Method 6010B)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (mg/L)		RPD	
	6	7		
Calcium	114	112	2	
Iron	24.0	21.6	11	
Magnesium	61.8	60.0	3	
Manganese	2.59	2.50	4	
Potassium	11.1	10.7	4	
Sodium	105	109	4	
Silicon	22.9	22.9	0	

V:\FIELD DUPLICATES\FD_inorganic\15597D4.wpd

Revision 1

LDC Report# 15597E4

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	September 26, 2006
LDC Report Date:	October 23, 2006
Matrix:	Water
Parameters:	Dissolved Metals
***Validation Level:**	EPA Level IV
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	JY35

Sample Identification

PZ-3-092606
PZ-4-092606
PZ-1-092606
PZ-3-092606MS
PZ-3-092606DUP

*Changed to EPA Level IV Validation Level

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6010B for Dissolved Metals. The metals analyzed were Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium, and Silicon.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

*XI. Sample Result Verification

All sample result verifications were acceptable for samples.

XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIII. Field Duplicates

No field duplicates were identified in this SDG.

XIV. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Dissolved Metals - Data Qualification Summary - SDG JY35

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG JY35

No Sample Data Qualified in this SDG

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: PZ-3-092606
SAMPLE

Lab Sample ID: JY35A
LIMS ID: 06-17761
Matrix: Water
Data Release Authorized:
Reported: 10/04/06

QC Report No: JY35-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/26/06
Date Received: 09/27/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	09/30/06	6010B	10/02/06	7429-90-5	Aluminum	0.05	0.69	
3010A	09/30/06	6010B	10/02/06	7440-70-2	Calcium	0.05	5.69	
3010A	09/30/06	6010B	10/02/06	7439-89-6	Iron	0.05	1.22	
3010A	09/30/06	6010B	10/02/06	7439-95-4	Magnesium	0.05	2.65	
3010A	09/30/06	6010B	10/02/06	7439-96-5	Manganese	0.001	0.309	
3010A	09/30/06	6010B	10/02/06	7440-09-7	Potassium	0.5	5.9	
3010A	09/30/06	6010B	10/02/06	7440-23-5	Sodium	0.5	1,390	

U-Analyte undetected at given RL
RL-Reporting Limit

M 101353

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: PZ-3-092606
SAMPLE

Lab Sample ID: JY35D
LIMS ID: 06-17764
Matrix: Water
Data Release Authorized:
Reported: 10/04/06

QC Report No: JY35-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/26/06
Date Received: 09/27/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	09/29/06	6010B	10/03/06	**7440-21-3**	**Silicon**	0.3	**11.4**	

U-Analyte undetected at given RL
RL-Reporting Limit

10/3/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: PZ-4-092606
SAMPLE

Lab Sample ID: JY35B
LIMS ID: 06-17762
Matrix: Water
Data Release Authorized:
Reported: 10/04/06

QC Report No: JY35-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/26/06
Date Received: 09/27/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	09/30/06	6010B	10/02/06	**7429-90-5**	**Aluminum**	0.1	**0.4**	
3010A	09/30/06	6010B	10/02/06	**7440-70-2**	**Calcium**	0.1	**3.5**	
3010A	09/30/06	6010B	10/02/06	**7439-89-6**	**Iron**	0.1	**36.8**	
3010A	09/30/06	6010B	10/02/06	**7439-95-4**	**Magnesium**	0.1	**2.1**	
3010A	09/30/06	6010B	10/02/06	**7439-96-5**	**Manganese**	0.002	**0.087**	
3010A	09/30/06	6010B	10/02/06	**7440-09-7**	**Potassium**	1	**10**	
3010A	09/30/06	6010B	10/02/06	**7440-23-5**	**Sodium**	1	**4,590**	

U-Analyte undetected at given RL
RL-Reporting Limit

M 10/23/06

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: PZ-4-092606
SAMPLE

Lab Sample ID: JY35E
LIMS ID: 06-17765
Matrix: Water
Data Release Authorized:
Reported: 10/04/06

QC Report No: JY35-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/26/06
Date Received: 09/27/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	09/29/06	6010B	10/03/06	7440-21-3	Silicon	0.3	37.5	

U-Analyte undetected at given RL
RL-Reporting Limit

10/3/06

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: PZ-1-092606
SAMPLE

Lab Sample ID: JY35C
LIMS ID: 06-17763
Matrix: Water
Data Release Authorized:
Reported: 10/04/06

QC Report No: JY35-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/26/06
Date Received: 09/27/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	09/30/06	6010B	10/02/06	7429-90-5	Aluminum	0.05	0.58	
3010A	09/30/06	6010B	10/02/06	7440-70-2	Calcium	0.05	4.21	
3010A	09/30/06	6010B	10/02/06	7439-89-6	Iron	0.05	4.76	
3010A	09/30/06	6010B	10/02/06	7439-95-4	Magnesium	0.05	0.40	
3010A	09/30/06	6010B	10/02/06	7439-96-5	Manganese	0.001	0.298	
3010A	09/30/06	6010B	10/02/06	7440-09-7	Potassium	0.5	3.0	
3010A	09/30/06	6010B	10/02/06	7440-23-5	Sodium	0.5	1,000	

U-Analyte undetected at given RL
RL-Reporting Limit

10/13/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: PZ-1-092606
SAMPLE

Lab Sample ID: JY35F
LIMS ID: 06-17766
Matrix: Water
Data Release Authorized:
Reported: 10/04/06

QC Report No: JY35-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/26/06
Date Received: 09/27/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	09/29/06	6010B	10/03/06	**7440-21-3**	**Silicon**	0.3	**11.5**	

U-Analyte undetected at given RL
RL-Reporting Limit

JC 10/13/06

FORM-I

LDC #: 15597E4

SDG #: JY35

Laboratory: Analytical Resources, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III / IV

Date: 10/13/06

Page: 1 of 1

Reviewer: MU

2nd Reviewer: [illegible]

METHOD: Dissolved Metals (EPA SW 846 Method 6010B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/26/06
II.	Calibration	A	
III.	Blanks	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Matrix Spike Analysis	A	
VI.	Duplicate Sample Analysis	A	
VII.	Laboratory Control Samples (LCS)	A	LCS
VIII.	Internal Standard (ICP-MS)	N	Not utilized
IX.	Furnace Atomic Absorption QC	N	
X.	ICP Serial Dilution	N	Not performed.
XI.	Sample Result Verification	N	
XII.	Overall Assessment of Data	A	
XIII.	Field Duplicates	N	
XIV.	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: All ## level 4

1	PZ-3-092606 ##	11		21		31	
2	PZ-4-092606 ##	12		22		32	
3	PZ-1-092606	13		23		33	
4	PZ-3-092606MS	14		24		34	
5	PZ-3-092606DUP	15		25		35	
6	PB	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 15597 G4
SDG #: J4335

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: MH
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-3	AQ	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
m 4-5	b	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
ICP Trace		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___

Comments: Mercury by CVAA if performed

LDC #: 45974
SDG #: J435

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: MM
2nd Reviewer: [illegible]

Method: Metals (EPA SW 846 Method 6010/7000/6020)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury and 85-115% for cyanide) QC limits?	✓			
Were all initial calibration correlation coefficients ≥ 0.995? (Level IV only)	✓			
III. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
IV. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	✓			
IV. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	✓			
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were < 5X the RL.	✓			
V. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	✓			
VI. Furnace Atomic Absorption QC				
If MSA was performed, was the correlation coefficients > 0.995?			✓	
Do all applicable analysies have duplicate injections? (Level IV only)			✓	
For sample concentrations > RL, are applicable duplicate injection RSD values < 20%? (Level IV only)			✓	
Were analytical spike recoveries within the 85-115% QC limits?			✓	

LDC #: 15597 E4
SDG #: J435

VALIDATION FINDINGS CHECKLIST

Reviewer: JM
2nd Reviewer: M

Validation Area	Yes	No	NA	Findings/Comments
VII. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the IDL?		✓		
Were all percent differences (%Ds) < 10%?			✓	
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.			✓	
VIII. Internal Standards (EPA SW 846 Method 6020)				
Were all the percent recoveries (%R) within the 30-120% of the intensity of the internal standard in the associated initial calibration?			✓	
If the %Rs were outside the criteria, was a reanalysis performed?			✓	
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates.			✓	
XIII. Field blanks				
Field blanks were identified in this SDG.		✓		
Target analytes were detected in the field blanks.			✓	

LDC #: 15599Z4
SDG #: J135

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: MJ
2nd Reviewer: A

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$$\%R = \frac{Found}{True} \times 100$$

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
ICV	ICP (Initial calibration)	Ca	2024	2000	101.2	101.2	Y
	GFAA (Initial calibration)						
	CVAA (Initial calibration)						
CCV	ICP (Continuing calibration)	Si	2.032	2000	101.6	101.6	Y
	GFAA (Continuing calibration)						
	CVAA (Continuing calibration)						
	Cyanide (Initial calibration)						
	Cyanide (Continuing calibation)						

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 15497E4
SDG #: J135

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: MM
2nd Reviewer: A

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recaluculated using the following formula:

$\%R = \frac{Found}{True} \times 100$

Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$

Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$\%D = \frac{|I-SDR|}{I} \times 100$

Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICSAB	ICP interference check	Mn	950.2	1000	95.0	95.0	Y
LCS	Laboratory control sample	Fe	2.002	2.00	100	100	↓
4P	Matrix spike	Al	(SSR-SR) 1.818	2.00	91	91.0	↓
5 ~~4D~~	Duplicate	K	5.8	5.9	1.7	1.7	↓
MD	ICP serial dilution						

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

TOTCLC.4SW

LDC #: 15597E4
SDG #: J425

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: MW
2nd reviewer: A

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for 1 were recalculated and verified using the following equation:

Concentration = $\frac{(RD)(FV)(Dil)}{(In.\ Vol.)(\%S)}$

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor
%S = Decimal percent solids

Recalculation:

Si = 2.277 mg/L x 5
= 11.385 mg/L

Sample ID	Analyte	Reported Concentration (mg/L)	Calculated Concentration (mg/L)	Acceptable (Y/N)
1	Al	0.69	0.69	Y
	Ca	5.69	5.69	
	Fe	1.22	1.22	
	Mg	2.65	2.65	
	Mn	0.309	0.309	
	K	5.9	5.9	
	Na	1390	1390	
	Si	11.4	11.4	

RECALC.4S2

LDC Report# 15597F4

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	September 27, 2006
LDC Report Date:	October 13, 2006
Matrix:	Water
Parameters:	Dissolved Metals
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	JY56

Sample Identification

RLSW-1-092706
R4D-092706
PZ-2-092706
R3-092706
R43-092706
RLSW-1-092706MS
RLSW-1-092706DUP

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6010B for Dissolved Metals. The metals analyzed were Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium, and Silicon.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Sodium	723.2 ug/L	All samples in SDG JY56

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIII. Field Duplicates

Samples R3-092706 and R43-092706 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/L)		RPD
	R3-092706	R43-092706	
Calcium	0.5	0.5	0
Iron	145	70.1	70
Magnesium	0.3	0.3	0
Manganese	0.007	0.005U	200
Potassium	17	18	6
Sodium	7420	7690	4
Silicon	89.3	127	35

XIV. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Dissolved Metals - Data Qualification Summary - SDG JY56

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG JY56

No Sample Data Qualified in this SDG

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RLSW-1-092706
SAMPLE

Lab Sample ID: JY56A
LIMS ID: 06-17872
Matrix: Water
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY56-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 09/27/06
Date Received: 09/28/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/03/06	6010B	10/05/06	7429-90-5	Aluminum	0.05	0.25	
3010A	10/03/06	6010B	10/05/06	7440-70-2	Calcium	0.05	28.0	
3010A	10/03/06	6010B	10/05/06	7439-89-6	Iron	0.05	8.00	
3010A	10/03/06	6010B	10/05/06	7439-95-4	Magnesium	0.05	16.3	
3010A	10/03/06	6010B	10/05/06	7439-96-5	Manganese	0.001	0.508	
3010A	10/03/06	6010B	10/05/06	7440-09-7	Potassium	0.5	2.0	
3010A	10/03/06	6010B	10/05/06	7440-23-5	Sodium	0.5	593	

U-Analyte undetected at given RL
RL-Reporting Limit

10/13/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RLSW-1-092706
SAMPLE

Lab Sample ID: JY56H
LIMS ID: 06-17879
Matrix: Water
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY56-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 09/27/06
Date Received: 09/28/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/02/06	6010B	10/03/06	7440-21-3	Silicon	0.3	21.8	

U-Analyte undetected at given RL
RL-Reporting Limit

1 10/13/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: R4D-092706
SAMPLE

Lab Sample ID: JY56B
LIMS ID: 06-17873
Matrix: Water
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY56-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 09/27/06
Date Received: 09/28/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/03/06	6010B	10/05/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	10/03/06	6010B	10/05/06	7440-70-2	Calcium	0.05	86.2	
3010A	10/03/06	6010B	10/05/06	7439-89-6	Iron	0.05	130	
3010A	10/03/06	6010B	10/05/06	7439-95-4	Magnesium	0.05	42.9	
3010A	10/03/06	6010B	10/05/06	7439-96-5	Manganese	0.001	4.86	
3010A	10/03/06	6010B	10/05/06	7440-09-7	Potassium	0.5	2.3	
3010A	10/03/06	6010B	10/05/06	7440-23-5	Sodium	0.5	112	

U-Analyte undetected at given RL
RL-Reporting Limit

R 10/30/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: R4D-092706
SAMPLE

Lab Sample ID: JY56I
LIMS ID: 06-17880
Matrix: Water
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY56-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 09/27/06
Date Received: 09/28/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/02/06	6010B	10/03/06	7440-21-3	Silicon	0.3	37.3	

U-Analyte undetected at given RL
RL-Reporting Limit

10/3/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: PZ-2-092706
SAMPLE

Lab Sample ID: JY56C
LIMS ID: 06-17874
Matrix: Water
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY56-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 09/27/06
Date Received: 09/28/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/03/06	6010B	10/05/06	7429-90-5	Aluminum	0.1	0.2	
3010A	10/03/06	6010B	10/05/06	7440-70-2	Calcium	0.1	2.2	
3010A	10/03/06	6010B	10/05/06	7439-89-6	Iron	0.1	12.8	
3010A	10/03/06	6010B	10/05/06	7439-95-4	Magnesium	0.1	1.2	
3010A	10/03/06	6010B	10/05/06	7439-96-5	Manganese	0.002	0.122	
3010A	10/03/06	6010B	10/05/06	7440-09-7	Potassium	1	7	
3010A	10/03/06	6010B	10/05/06	7440-23-5	Sodium	1	2,670	

U-Analyte undetected at given RL
RL-Reporting Limit

10/13/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: PZ-2-092706
SAMPLE

Lab Sample ID: JY56J
LIMS ID: 06-17881
Matrix: Water
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY56-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 09/27/06
Date Received: 09/28/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/02/06	6010B	10/03/06	7440-21-3	Silicon	0.3	21.1	

U-Analyte undetected at given RL
RL-Reporting Limit

10/3/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: R3-092706
SAMPLE

Lab Sample ID: JY56F
LIMS ID: 06-17877
Matrix: Water
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY56-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 09/27/06
Date Received: 09/28/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/03/06	6010B	10/05/06	7429-90-5	Aluminum	0.2	0.2	U
3010A	10/03/06	6010B	10/05/06	7440-70-2	Calcium	0.2	0.5	
3010A	10/03/06	6010B	10/05/06	7439-89-6	Iron	0.2	145	
3010A	10/03/06	6010B	10/05/06	7439-95-4	Magnesium	0.2	0.3	
3010A	10/03/06	6010B	10/05/06	7439-96-5	Manganese	0.005	0.007	
3010A	10/03/06	6010B	10/05/06	7440-09-7	Potassium	2	17	
3010A	10/03/06	6010B	10/05/06	7440-23-5	Sodium	2	7,420	

U-Analyte undetected at given RL
RL-Reporting Limit

A 101306

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: R3-092706
SAMPLE

Lab Sample ID: JY56K
LIMS ID: 06-17882
Matrix: Water
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY56-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 09/27/06
Date Received: 09/28/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/02/06	6010B	10/03/06	7440-21-3	Silicon	0.3	89.3	

U-Analyte undetected at given RL
RL-Reporting Limit

9/01/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: R43-092706
SAMPLE

Lab Sample ID: JY56G
LIMS ID: 06-17878
Matrix: Water
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY56-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 09/27/06
Date Received: 09/28/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/03/06	6010B	10/05/06	7429-90-5	Aluminum	0.2	0.2	U
3010A	10/03/06	6010B	10/05/06	**7440-70-2**	**Calcium**	0.2	**0.5**	
3010A	10/03/06	6010B	10/05/06	**7439-89-6**	**Iron**	0.2	**70.1**	
3010A	10/03/06	6010B	10/05/06	**7439-95-4**	**Magnesium**	0.2	**0.3**	
3010A	10/03/06	6010B	10/05/06	7439-96-5	Manganese	0.005	0.005	U
3010A	10/03/06	6010B	10/05/06	**7440-09-7**	**Potassium**	2	**18**	
3010A	10/03/06	6010B	10/05/06	**7440-23-5**	**Sodium**	2	**7,690**	

U-Analyte undetected at given RL
RL-Reporting Limit

R 10/2/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: R43-092706
SAMPLE

Lab Sample ID: JY56L
LIMS ID: 06-17883
Matrix: Water
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY56-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 09/27/06
Date Received: 09/28/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/02/06	6010B	10/03/06	7440-21-3	Silicon	0.3	127	

U-Analyte undetected at given RL
RL-Reporting Limit

LDC #: 15597F4

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/13/06

SDG #: JY56

Page: 1 of 1

Laboratory: Analytical Resources, Inc.

Reviewer: MG

2nd Reviewer: [illegible]

METHOD: Dissolved Metals (EPA SW 846 Method 6010B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/27/06
II.	Calibration	A	
III.	Blanks	SW	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Matrix Spike Analysis	A	
VI.	Duplicate Sample Analysis	A	
VII.	Laboratory Control Samples (LCS)	A	LCS
VIII.	Internal Standard (ICP-MS)	N	not utilized
IX.	Furnace Atomic Absorption QC	N	
X.	ICP Serial Dilution	N	not performed
XI.	Sample Result Verification	N	
XII.	Overall Assessment of Data	A	
XIII.	Field Duplicates	SW	D = 4+5
XIV.	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	RLSW-1-092706	11		21		31	
2	R4D-092706	12		22		32	
3	PZ-2-092706	13		23		33	
4	R3-092706	14		24		34	
5	R43-092706	15		25		35	
6	RLSW-1-092706MS	16		26		36	
7	RLSW-1-092706DUP	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 15597F4
SDG #: J4F6

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: MH
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-5	A2	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
MW6-7	b	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
ICP Trace		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 165974
SDG #: J456

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Page: 1 of 1
Reviewer: MH
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/7000) Soil preparation factor applied: _____
Sample Concentration units, unless otherwise noted: mg/L Associated Samples: All (25X)

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit											
Al															Al
Sb															Sb
As															As
Ba															Ba
Be															Be
Cd															Cd
Ca															Ca
Cr															Cr
Co															Co
Cu															Cu
Fe															Fe
Pb															Pb
Mg															Mg
Mn															Mn
Hg															Hg
Ni															Ni
K															K
Se															Se
Ag															Ag
Na			727.2	3616											Na
Tl															Tl
V															V
Zn															Zn
B															B
Mo															Mo
Sr															Sr

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

BLNKSMP.4S2

LDC#: 15597F4
SDG#: JX10

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: Metals (EPA Method 6010B)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (mg/L)		RPD	
	4	5		
Calcium	0.5	0.5	0	
Iron	145	70.1	70	
Magnesium	0.3	0.3	0	
Manganese	0.007	0.005U	200	
Potassium	17	18	6	
Sodium	7420	7690	4	
Silicon	89.3	127	35	

V:\FIELD DUPLICATES\FD_inorganic\15597F4.wpd

LDC Report# 15597G4

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	September 27 through September 29, 2006
LDC Report Date:	October 13, 2006
Matrix:	Water
Parameters:	Dissolved Metals
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	JY77

Sample Identification

RL-4S-092806
R2-092906
R4S-092706
G1S-092806
RLSW-2-092706
RLSW-3-092706
G2S-092906
G2D-092906
RL-4S-092806MS
RL-4S-092806DUP

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6010B for Dissolved Metals. The metals analyzed were Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium, and Silicon.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Sodium	723.2 ug/L	RL-4S-092806 G1S-092806 RLSW-2-092706 RLSW-3-092706

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIII. Field Duplicates

No field duplicates were identified in this SDG.

XIV. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Dissolved Metals - Data Qualification Summary - SDG JY77

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG JY77

No Sample Data Qualified in this SDG

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: RL-4S-092806
SAMPLE

Lab Sample ID: JY77A
LIMS ID: 06-18044
Matrix: Water
Data Release Authorized
Reported: 10/06/06

QC Report No: JY77-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/28/06
Date Received: 09/29/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/03/06	6010B	10/05/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	10/03/06	6010B	10/05/06	7440-70-2	Calcium	0.05	32.1	
3010A	10/03/06	6010B	10/05/06	7439-89-6	Iron	0.05	39.2	
3010A	10/03/06	6010B	10/05/06	7439-95-4	Magnesium	0.05	16.8	
3010A	10/03/06	6010B	10/05/06	7439-96-5	Manganese	0.001	2.66	
3010A	10/03/06	6010B	10/05/06	7440-09-7	Potassium	0.5	1.4	
3010A	10/03/06	6010B	10/05/06	7440-23-5	Sodium	0.5	31.3	

U-Analyte undetected at given RL
RL-Reporting Limit

M 101306

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RL-4S-092806
SAMPLE

Lab Sample ID: JY77J
LIMS ID: 06-18053
Matrix: Water
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY77-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/28/06
Date Received: 09/29/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/02/06	6010B	10/03/06	7440-21-3	Silicon	0.3	35.8	

U-Analyte undetected at given RL
RL-Reporting Limit

10/10/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: R2-092906
SAMPLE

Lab Sample ID: JY77B
LIMS ID: 06-18045
Matrix: Water
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY77-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/29/06
Date Received: 09/29/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/03/06	6010B	10/03/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	10/03/06	6010B	10/03/06	7440-70-2	Calcium	0.05	32.0	
3010A	10/03/06	6010B	10/03/06	7439-89-6	Iron	0.05	35.1	
3010A	10/03/06	6010B	10/03/06	7439-95-4	Magnesium	0.05	14.7	
3010A	10/03/06	6010B	10/03/06	7439-96-5	Manganese	0.001	2.29	
3010A	10/03/06	6010B	10/03/06	7440-09-7	Potassium	0.5	1.9	
3010A	10/03/06	6010B	10/03/06	7440-23-5	Sodium	0.5	31.8	

U-Analyte undetected at given RL
RL-Reporting Limit

9/10/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: R2-092906
SAMPLE

Lab Sample ID: JY77K
LIMS ID: 06-18054
Matrix: Water
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY77-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/29/06
Date Received: 09/29/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/02/06	6010B	10/03/06	**7440-21-3**	**Silicon**	0.3	**33.1**	

U-Analyte undetected at given RL
RL-Reporting Limit

R 10/30/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: R4S-092706
SAMPLE

Lab Sample ID: JY77C
LIMS ID: 06-18046
Matrix: Water
Data Release Authorized
Reported: 10/06/06

QC Report No: JY77-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/27/06
Date Received: 09/29/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/03/06	6010B	10/03/06	7429-90-5	Aluminum	0.05	0.07	
3010A	10/03/06	6010B	10/03/06	7440-70-2	Calcium	0.05	87.0	
3010A	10/03/06	6010B	10/03/06	7439-89-6	Iron	0.05	50.0	
3010A	10/03/06	6010B	10/03/06	7439-95-4	Magnesium	0.05	37.9	
3010A	10/03/06	6010B	10/03/06	7439-96-5	Manganese	0.001	5.49	
3010A	10/03/06	6010B	10/03/06	7440-09-7	Potassium	0.5	3.2	
3010A	10/03/06	6010B	10/03/06	7440-23-5	Sodium	0.5	340	

U-Analyte undetected at given RL
RL-Reporting Limit

10/13/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: R4S-092706
SAMPLE

Lab Sample ID: JY77L
LIMS ID: 06-18055
Matrix: Water
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY77-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/28/06
Date Received: 09/29/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/02/06	6010B	10/03/06	7440-21-3	Silicon	0.3	29.0	

U-Analyte undetected at given RL
RL-Reporting Limit

2/012306

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G1S-092806
SAMPLE

Lab Sample ID: JY77D
LIMS ID: 06-18047
Matrix: Water
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY77-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/28/06
Date Received: 09/29/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/03/06	6010B	10/05/06	7429-90-5	Aluminum	0.05	0.59	
3010A	10/03/06	6010B	10/05/06	7440-70-2	Calcium	0.05	27.2	
3010A	10/03/06	6010B	10/05/06	7439-89-6	Iron	0.05	1.56	
3010A	10/03/06	6010B	10/05/06	7439-95-4	Magnesium	0.05	12.1	
3010A	10/03/06	6010B	10/05/06	7439-96-5	Manganese	0.001	0.227	
3010A	10/03/06	6010B	10/05/06	7440-09-7	Potassium	0.5	14.7	
3010A	10/03/06	6010B	10/05/06	7440-23-5	Sodium	0.5	61.4	

U-Analyte undetected at given RL
RL-Reporting Limit

N 10/3/06

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G1S-092806
SAMPLE

Lab Sample ID: JY77M
LIMS ID: 06-18056
Matrix: Water
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY77-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/28/06
Date Received: 09/29/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/02/06	6010B	10/03/06	7440-21-3	Silicon	0.3	14.9	

U-Analyte undetected at given RL
RL-Reporting Limit

R 10/06/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RLSW-2-092706
SAMPLE

Lab Sample ID: JY77E
LIMS ID: 06-18048
Matrix: Water
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY77-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/27/06
Date Received: 09/29/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/03/06	6010B	10/05/06	7429-90-5	Aluminum	0.05	1.57	
3010A	10/03/06	6010B	10/05/06	7440-70-2	Calcium	0.05	18.4	
3010A	10/03/06	6010B	10/05/06	7439-89-6	Iron	0.05	0.38	
3010A	10/03/06	6010B	10/05/06	7439-95-4	Magnesium	0.05	9.67	
3010A	10/03/06	6010B	10/05/06	7439-96-5	Manganese	0.001	0.176	
3010A	10/03/06	6010B	10/05/06	7440-09-7	Potassium	0.5	3.0	
3010A	10/03/06	6010B	10/05/06	7440-23-5	Sodium	0.5	612	

U-Analyte undetected at given RL
RL-Reporting Limit

R 10/13/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RLSW-2-092706
SAMPLE

Lab Sample ID: JY77N
LIMS ID: 06-18057
Matrix: Water
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY77-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/27/06
Date Received: 09/29/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/02/06	6010B	10/03/06	7440-21-3	Silicon	0.3	20.2	

U-Analyte undetected at given RL
RL-Reporting Limit

10/3/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RLSW-3-092706
SAMPLE

Lab Sample ID: JY77G
LIMS ID: 06-18050
Matrix: Water
Data Release Authorized
Reported: 10/06/06

QC Report No: JY77-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/27/06
Date Received: 09/29/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/03/06	6010B	10/05/06	7429-90-5	Aluminum	0.05	0.31	
3010A	10/03/06	6010B	10/05/06	7440-70-2	Calcium	0.05	87.3	
3010A	10/03/06	6010B	10/05/06	7439-89-6	Iron	0.05	69.0	
3010A	10/03/06	6010B	10/05/06	7439-95-4	Magnesium	0.05	40.4	
3010A	10/03/06	6010B	10/05/06	7439-96-5	Manganese	0.001	1.82	
3010A	10/03/06	6010B	10/05/06	7440-09-7	Potassium	0.5	4.3	
3010A	10/03/06	6010B	10/05/06	7440-23-5	Sodium	0.5	277	

U-Analyte undetected at given RL
RL-Reporting Limit

10/13/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RLSW-3-092706
SAMPLE

Lab Sample ID: JY77O
LIMS ID: 06-18058
Matrix: Water
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY77-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/27/06
Date Received: 09/29/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/02/06	6010B	10/03/06	7440-21-3	Silicon	0.3	28.7	

U-Analyte undetected at given RL
RL-Reporting Limit

2 10/2006

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G2S-092906
SAMPLE

Lab Sample ID: JY77H
LIMS ID: 06-18051
Matrix: Water
Data Release Authorized
Reported: 10/06/06

QC Report No: JY77-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/29/06
Date Received: 09/29/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/03/06	6010B	10/03/06	7429-90-5	Aluminum	0.05	0.14	
3010A	10/03/06	6010B	10/03/06	7440-70-2	Calcium	0.05	79.2	
3010A	10/03/06	6010B	10/03/06	7439-89-6	Iron	0.05	3.48	
3010A	10/03/06	6010B	10/03/06	7439-95-4	Magnesium	0.05	56.3	
3010A	10/03/06	6010B	10/03/06	7439-96-5	Manganese	0.001	1.59	
3010A	10/03/06	6010B	10/03/06	7440-09-7	Potassium	0.5	15.5	
3010A	10/03/06	6010B	10/03/06	7440-23-5	Sodium	0.5	773	

U-Analyte undetected at given RL
RL-Reporting Limit

5/01304

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G2S-092906
SAMPLE

Lab Sample ID: JY77P
LIMS ID: 06-18059
Matrix: Water
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY77-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/29/06
Date Received: 09/29/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/02/06	6010B	10/03/06	7440-21-3	Silicon	0.3	23.5	

U-Analyte undetected at given RL
RL-Reporting Limit

10/13/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G2D-092906
SAMPLE

Lab Sample ID: JY77I
LIMS ID: 06-18052
Matrix: Water
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY77-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/29/06
Date Received: 09/29/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/03/06	6010B	10/03/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	10/03/06	6010B	10/03/06	7440-70-2	Calcium	0.05	99.8	
3010A	10/03/06	6010B	10/03/06	7439-89-6	Iron	0.05	27.3	
3010A	10/03/06	6010B	10/03/06	7439-95-4	Magnesium	0.05	55.6	
3010A	10/03/06	6010B	10/03/06	7439-96-5	Manganese	0.001	1.78	
3010A	10/03/06	6010B	10/03/06	7440-09-7	Potassium	0.5	11.3	
3010A	10/03/06	6010B	10/03/06	7440-23-5	Sodium	0.5	814	

U-Analyte undetected at given RL
RL-Reporting Limit

10/13/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G2D-092906
SAMPLE

Lab Sample ID: JY77Q
LIMS ID: 06-18060
Matrix: Water
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY77-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/29/06
Date Received: 09/29/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/02/06	6010B	10/03/06	7440-21-3	Silicon	0.3	28.7	

U-Analyte undetected at given RL
RL-Reporting Limit

2/0B36

LDC #: 15597G4

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/13/06

SDG #: JY77

Page: 1 of 1

Laboratory: Analytical Resources, Inc.

Reviewer: MM

2nd Reviewer: [illegible]

METHOD: Dissolved Metals (EPA SW 846 Method 6010B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/29/06 - 9/29/06
II.	Calibration	A	
III.	Blanks	SW	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Matrix Spike Analysis	A	
VI.	Duplicate Sample Analysis	A	
VII.	Laboratory Control Samples (LCS)	A	LCS
VIII.	Internal Standard (ICP-MS)	N	not utilized
IX.	Furnace Atomic Absorption QC	N	
X.	ICP Serial Dilution	N	not performed
XI.	Sample Result Verification	N	
XII.	Overall Assessment of Data	A	
XIII.	Field Duplicates	N	
XIV.	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: All

1	RL-4S-092806	11	PB	21		31	
2	R2-092906	12		22		32	
3	R4S-092706	13		23		33	
4	G1S-092806	14		24		34	
5	RLSW-2-092706	15		25		35	
6	RLSW-3-092706	16		26		36	
7	G2S-092906	17		27		37	
8	G2D-092906	18		28		38	
9	RL-4S-092806MS	19		29		39	
10	RL-4S-092806DUP	20		30		40	

Notes:

LDC #: 15597G4
SDG #: J497

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: MH
2nd reviewer: ✓

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-8	AQ	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
AQ 9-10	↓	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
ICP Trace		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 15996G6
SDG #: J4n7

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Page: 1 of 1
Reviewer: MH
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/7000) Soil preparation factor applied: _____
Sample Concentration units, unless otherwise noted: mg/L Associated Samples: 1, 4, 5, 6 (7SR)

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit											
Al															Al
Sb															Sb
As															As
Ba															Ba
Be															Be
Cd															Cd
Ca															Ca
Cr															Cr
Co															Co
Cu															Cu
Fe															Fe
Pb															Pb
Mg															Mg
Mn															Mn
Hg															Hg
Ni															Ni
K															K
Se															Se
Ag															Ag
Na			723.2	3.616											Na
Tl															Tl
V															V
Zn															Zn
B															B
Mo															Mo
Sr															Sr

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

BLNKSMP.4S2

Chinook Ventures, Inc.
Data Validation Reports
LDC# 15597

Wet Chemistry

LDC

LDC Report# 15597A6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	September 18, 2006
LDC Report Date:	October 13, 2006
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	CH2M Hill Applied Sciences Laboratory
Sample Delivery Group (SDG):	F2523

Sample Identification

PZ-7-091806
G-7d-091806
PZ-6-091806
G-5s-091806
G-5d-091806
RL-2d-091806
RL-2s-091806

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per ASTM Method D4282 for Free Cyanide, EPA Method 335.2 for Total Cyanide, and Standard Method 4500-CN-I for Weak Acid Dissociable Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Extraction Until Analysis	Required Holding Time From Sample Extraction Until Analysis	Flag	A or P
All samples in SDG F2523	Free cyanide	4 days	24 hours	J (all detects) R (all non-detects)	A

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
MB	Free cyanide	0.0422 ug/L	All samples in SDG F2523

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

IV. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) analyses specified for the samples in this SDG, and therefore matrix spike analyses were not performed for this SDG.

V. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG F2523

SDG	Sample	Analyte	Flag	A or P	Reason
F2523	PZ-7-091806 G-7d-091806 PZ-6-091806 G-5s-091806 G-5d-091806 RL-2d-091806 RL-2s-091806	Free cyanide	J (all detects) R (all non-detects)	A	Technical holding times

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG F2523

No Sample Data Qualified in this SDG

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

PZ-7-091806

SDG No.: F2523

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F252301

Date Received: 09/19/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.248	1.67	1.16	B	ug/L	1	3 ML	ASTM D4282	09/22/06 J

R 10/30/06

MB061003-07:30-P2523-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

PZ-7-091806

SDG No.: F2523

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F252301

Date Received: 09/19/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.0915		mg/L	1	50 ML	E335.2	09/21/06

10/13/06

YL060922-12:12-F2523-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

PZ-7-091806

SDG No.: F2523

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F252301

Date Received: 09/19/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.0229		mg/L	1	50 ML	SM4500-CN I	09/28/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G-7d-091806

SDG No.: F2523

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F252302

Date Received: 09/19/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.531		ug/L	1	10 ML	ASTM D4282	09/22/06 J

A 10/30/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G-7d-091806

SDG No.: F2523

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F252302

Date Received: 09/19/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.0180		mg/L	1	50 ML	E335.2	09/21/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G-7d-091806

SDG No.: F2523

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F252302

Date Received: 09/19/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.0102		mg/L	1	50 ML	SM4500-CN I	09/28/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

PZ-6-091806

SDG No.: F2523

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F252303

Date Received: 09/19/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.248	1.67	10.7		ug/L	1	3 ML	ASTM D4282	09/22/06 J

R 10/30/06

MB061003-07:30-F2523-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

PZ-6-091806

SDG No.: F2523

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F252303

Date Received: 09/19/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.0503	0.100	5.43		mg/L	20	50 ML	E335.2	09/21/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

PZ-6-091806

SDG No.: F2523

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F252303

Date Received: 09/19/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.145		mg/L	1	50 ML	SM4500-CN I	09/28/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G-5s-091806

SDG No.: F2523

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F252304

Date Received: 09/19/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.452	B	ug/L	1	10 ML	ASTM D4282	09/22/06 J

10/30/06

MB061003-07:30-P2523-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G-5s-091806

SDG No.: F2523

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F252304

Date Received: 09/19/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.00500	U	mg/L	1	50 ML	E335.2	09/21/06

JC 101306

YL060922-12:12-F2523-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G-5s-091806

SDG No.: F2523

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F252304

Date Received: 09/19/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00500	U	mg/L	1	50 ML	SM4500-CN I	09/28/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G-5d-091806

SDG No.: F2523

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F252305

Date Received: 09/19/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.269	B	ug/L	1	10 ML	ASTM D4282	09/22/06 J

2/6/2006

MB061003-07:30-F2523-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G-5d-091806

SDG No.: F2523

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F252305

Date Received: 09/19/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.00500	U	mg/L	1	50 ML	E335.2	09/21/06

R 10/30/06

YL060922-12:12-P2523-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G-5d-091806

SDG No.: F2523

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F252305

Date Received: 09/19/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00500	U	mg/L	1	50 ML	SM4500-CN I	09/28/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-2d-091806

SDG No.: F2523

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F252306

Date Received: 09/19/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.495	B	ug/L	1	10 ML	ASTM D4282	09/22/06

RL 10/30/06

MB061003-07:30-F2523-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-2d-091806

SDG No.: F2523

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F252306

Date Received: 09/19/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.0361		mg/L	1	50 ML	E335.2	09/21/06

R 101306

YL060922-12:12-F2523-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-2d-091806

SDG No.: F2523

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F252306

Date Received: 09/19/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00971		mg/L	1	50 ML	SM4500-CN I	09/28/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-2B-091806

SDG No.: F2523

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F252307

Date Received: 09/19/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.495	3.33	36.9		ug/L	1	1.5 ML	ASTM D4282	09/22/06 J

M 101306

MB061003-07:30-F2523-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-2s-091806

SDG No.: F2523

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F252307

Date Received: 09/19/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.101	0.200	15.8		mg/L	40	50 ML	E335.2	09/21/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-2s-091806

SDG No.: F2523

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F252307

Date Received: 09/19/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.0744		mg/L	1	50 ML	SM4500-CN I	09/28/06

DK061002-09:45-F2523-W

FORM I GEN CHEM

R 10/13/06

LDC #: 15597A6

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/13/06

SDG #: F2523

Page: 1 of 1

Laboratory: CH2M Hill Applied Sciences Laboratory

Reviewer: MM

2nd Reviewer:

METHOD: Free Cyanide (ASTM D4282), Total Cyanide (EPA Method 335.2), Weak Acid Dissociable Cyanide (SM4500-CN-I)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 9/18/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	SW	
IV	Matrix Spike/Matrix Spike Duplicates	N	} client specified
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: A2

1	PZ-7-091806	11		21		31	
2	G-7d-091806	12		22		32	
3	PZ-6-091806	13		23		33	
4	G-5s-091806	14		24		34	
5	G-5d-091806	15		25		35	
6	RL-2d-091806	16		26		36	
7	RL-2s-091806	17		27		37	
8	MB	18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 15597A6
SDG #: F2513

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MY
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Parameter																	
1-7	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}	Free CN	WAD CN		
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				

Comments:

LDC #: 15897A6
SDG #: F7523

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

All circled dates have exceeded the technical holding time.
(Y) N N/A Were all samples preserved as applicable to each method ?
(Y) N N/A Were all cooler temperatures within validation criteria?

Method:		ASTM D4282					
Parameters:		Free CN					
Technical holding time:		24 hrs					
Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
1-7 (All)	9/18/06	9/22/06	(4 days)				J/R/A (none)

HT.6

LDC #: 15597A6
SDG #: FH03

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: MY
2nd Reviewer: K

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were all samples associated with a given method blank?
Y N N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: ug/L **Associated Samples:** All (75%)

Analyte	Blank ID	Maximum ICB/CCB	Blank Action Limit	Sample Identification								
	MB											
Free CN	0.0422		0.211									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC Report# 15597B6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	September 19, 2006
LDC Report Date:	October 13, 2006
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	CH2M Hill Applied Sciences Laboratory
Sample Delivery Group (SDG):	F2530

Sample Identification

G-6s-091906
G-6d-091906
RL-1s-091906
RL-1d-091906
RLSW-4-091906
G-4d-091906
G-44d-091906
G-4s-091906
RL-5-091906
RL-3s-091906
RL-3d-091906
R-1s-091906
R-1d-091906
R-4d-091906
R-4s-091906

Introduction

This data review covers 15 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per ASTM Method D4282 for Free Cyanide, EPA Method 335.2 for Total Cyanide, and Standard Method 4500-CN-I for Weak Acid Dissociable Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Extraction Until Analysis	Required Holding Time From Sample Extraction Until Analysis	Flag	A or P
G-6s-091906	Free cyanide	50.5 hours	24 hours	J (all detects) R (all non-detects)	P
G-6d-091906	Free cyanide	50.25 hours	24 hours	J (all detects) R (all non-detects)	P
RL-1s-091906	Free cyanide	49.75 hours	24 hours	J (all detects) R (all non-detects)	P
RL-1d-091906	Free cyanide	49.25 hours	24 hours	J (all detects) R (all non-detects)	P
RLSW-4-091906 R-1d-091906	Free cyanide	48.25 hours	24 hours	J (all detects) R (all non-detects)	P
G-4d-091906	Free cyanide	47.75 hours	24 hours	J (all detects) UJ (all non-detects)	P
G-44d-091906	Free cyanide	47.5 hours	24 hours	J (all detects) UJ (all non-detects)	P
G-4s-091906	Free cyanide	47 hours	24 hours	J (all detects) UJ (all non-detects)	P
RL-5-091906	Free cyanide	50.75 hours	24 hours	J (all detects) R (all non-detects)	P
RL-3s-091906	Free cyanide	50.5 hours	24 hours	J (all detects) R (all non-detects)	P
RL-3d-091906	Free cyanide	50 hours	24 hours	J (all detects) R (all non-detects)	P
R-1s-091906	Free cyanide	49 hours	24 hours	J (all detects) R (all non-detects)	P
R-4d-091906 R-4s-091906	Free cyanide	47.25 hours	24 hours	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
MB	Free cyanide	0.109 ug/L	All samples in SDG F2530

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
G-6d-091906	Free cyanide	0.340 ug/L	0.340U ug/L
RL-1d-091906	Free cyanide	0.503 ug/L	0.503U ug/L
RLSW-4-091906	Free cyanide	0.294 ug/L	0.294U ug/L
G-44d-091906	Free cyanide	0.513 ug/L	0.513U ug/L
G-4s-091906	Free cyanide	0.501 ug/L	0.501U ug/L
RL-3d-091906	Free cyanide	0.283 ug/L	0.283U ug/L
R-1s-091906	Free cyanide	0.527 ug/L	0.527U ug/L

IV. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) analyses specified for the samples in this SDG, and therefore matrix spike analyses were not performed for this SDG.

V. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

The results for the weak acid dissociable cyanide sample analysis were greater than the total cyanide sample analysis as follows:

Sample ID	Concentration	
	Total cyanide	Weak acid dissociable cyanide
RL-1d-091906	0.00435 mg/L	0.0127 mg/L
G-44d-091906	0.0050U mg/L	0.0117 mg/L

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

Samples G-4d-091906 and G-44d-091906 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD
	G-4d-091906	G-44d-091906	
Free cyanide	0.625 ug/L	0.513 ug/L	20
Total cyanide	0.147 mg/L	0.00500U mg/L	200

Analyte	Concentration (mg/L)		RPD
	G-4d-091906	G-44d-091906	
WAD Cyanide	0.00500U mg/L	0.0117 mg/L	200

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG F2530

SDG	Sample	Analyte	Flag	A or P	Reason
F2530	G-6s-091906 G-6d-091906 RL-1s-091906 RL-1d-091906 RLSW-4-091906 R-1d-091906 RL-5-091906 RL-3s-091906 RL-3d-091906 R-1s-091906	Free cyanide	J (all detects) R (all non-detects)	P	Technical holding times
F2530	R-4d-091906 R-4s-091906 G-4d-091906 G-44d-091906 G-4s-091906	Free cyanide	J (all detects) UJ (all non-detects)	P	Technical holding times

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG F2530

SDG	Sample	Analyte	Modified Final Concentration	A or P
F2530	G-6d-091906	Free cyanide	0.340U ug/L	A
F2530	RL-1d-091906	Free cyanide	0.503U ug/L	A
F2530	RLSW-4-091906	Free cyanide	0.294U ug/L	A
F2530	G-44d-091906	Free cyanide	0.513U ug/L	A
F2530	G-4s-091906	Free cyanide	0.501U ug/L	A
F2530	RL-3d-091906	Free cyanide	0.283U ug/L	A
F2530	R-1s-091906	Free cyanide	0.527U ug/L	A

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G-6s-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253001

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	2.67		UG/L	1	10 ML	ASTM D4282	09/21/06 J

YL061001-15:35-F2530-W

FORM I GEN CHEM

2 10/3/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G-6s-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253001

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.137		mg/L	1	50 ML	E335.2	09/21/06

h 10/3/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G-6s-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253001

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.0259		mg/L	1	50 ML	SM4500-CN I	09/28/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G-6d-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253002

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.340	J	UG/L	1	10 ML	ASTM D4282	09/21/06

UJ

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G-6d-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253002

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.0252	0.0500	3.05		mg/L	10	50 ML	E335.2	09/21/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G-6d-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253002

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.0592		mg/L	1	50 ML	SM4500-CN I	09/28/06

DK061002-09:47-F2530-W

FORM I GEN CHEM

10/3/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-1s-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253003

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.641		UG/L	1	10 ML	ASTM D4282	09/21/06 J

YL061001-15:35-F2530-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-1s-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253003

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.0261		mg/L	1	50 ML	E335.2	09/21/06

YL060928-16:42-P2530-W

FORM I GEN CHEM

8/18/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-1s-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253003

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00719		mg/L	1	50 ML	SM4500-CN I	09/28/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-1d-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253004

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed	
57-12-5	Cyanide, Free	0.0743	0.500	0.503		UG/L	1	10 ML	ASTM D4282	09/21/06	UJ

YL061001-15:35-F2530-W

FORM I GEN CHEM

11/10/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-1d-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253004

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.00435	B	mg/L	1	50 ML	E335.2	09/21/06

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MB061003-07:52-F2530-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-1d-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253004

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.0127		mg/L	1	50 ML	SM4500-CN I	09/28/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RLSW-4-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253005

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.294	J	UG/L	1	10 ML	ASTM D4282	09/21/06

UJ

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RLSW-4-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253005

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.0126	0.0250	0.707		mg/L	5	50 ML	E335.2	09/21/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RLSW-4-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253005

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.0319		mg/L	1	50 ML	SM4500-CN I	09/28/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G-4d-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253006

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.625		UG/L	1	10 ML	ASTM D4282	09/21/06 J

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FORM I GEN CHEM

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1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G-4d-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253006

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.147		mg/L	1	50 ML	E335.2	09/21/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G-4d-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253006

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00500	U	mg/L	1	50 ML	SM4500-CN I	09/28/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G-44d-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253007

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.513		UG/L	1	10 ML	ASTM D4282	09/21/06

UJ

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G-44d-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253007

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.00500	U	mg/L	1	50 ML	E335.2	09/21/06

YL 10/3/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G-44d-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253007

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.0117		mg/L	1	50 ML	SM4500-CN I	09/28/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G-4s-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253008

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed	
57-12-5	Cyanide, Free	0.0743	0.500	0.501		UG/L	1	10 ML	ASTM D4282	09/21/06	UJ

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FORM I GEN CHEM

2/01/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G-4s-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253008

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.00500	U	mg/L	1	50 ML	E335.2	09/21/06

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FORM I GEN CHEM)

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G-4s-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253008

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00500	U	mg/L	1	50 ML	SM4500-CN I	09/28/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-5-091806

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253009

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	4.07		UG/L	1	10 ML	ASTM D4282	09/21/06 J

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-5-091806

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253009

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.0380		mg/L	1	50 ML	E335.2	09/21/06

DL 10/30/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-5-091806

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253009

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00213	B	mg/L	1	50 ML	SM4500-CN I	09/28/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-3s-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253010

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	1.04		UG/L	1	10 ML	ASTM D4282	09/21/06 J

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-3s-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253010

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.111		mg/L	1	50 ML	E335.2	09/21/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-3s-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253010

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.0203		mg/L	1	50 ML	SM4500-CN I	09/28/06

9/10/2006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-3d-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253011

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.283	J	UG/L	1	10 ML	ASTM D4282	09/21/06 UJ

YL061001-15:35-F2530-W

FORM I GEN CHEM

R 10/06/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-3d-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253011

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.00500	U	mg/L	1	50 ML	E335.2	09/21/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-3d-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253011

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00500	U	mg/L	1	50 ML	SM4500-CN I	09/28/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

R-1s-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253012

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.527		UG/L	1	10 ML	ASTM D4282	09/21/06

UJ

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

R-1s-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253012

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.0670		mg/L	1	50 ML	E335.2	09/21/06

YL060928-16:42-F2530-W

FORM I GEN CHEM

N/01308

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

R-1s-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253012

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.0213		mg/L	1	50 ML	SM4500-CN I	09/28/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

R-1d-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253013

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	1.83		UG/L	1	10 ML	ASTM D4282	09/21/06 J

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

R-1d-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253013

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.0398		mg/L	1	50 ML	E335.2	09/21/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

R-1d-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253013

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.0107		mg/L	1	50 ML	SM4500-CN I	09/28/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-4d-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253014

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.581		UG/L	1	10 ML	ASTM D4282	09/21/06 J

YL061001-15:35-F2530-W

FORM I GEN CHEM

9/01386

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-4d-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253014

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.00500	U	mg/L	1	50 ML	E335.2	09/22/06

R 10/13/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-4d-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253014

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00500	U	mg/L	1	50 ML	SM4500-CN I	09/28/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-4s-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253015

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.624		UG/L	1	10 ML	ASTM D4282	09/21/06

9/21/06

YL061001-15:35-F2530-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-4s-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253015

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.00500	U	mg/L	1	50 ML	E335.2	09/22/06

YL060928-16:42-F2530-W

FORM I GEN CHEM

2/01/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RL-4s-091906

SDG No.: F2530

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F253015

Date Received: 09/20/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00500	U	mg/L	1	50 ML	SM4500-CN I	09/28/06

LDC #: 15597B6

SDG #: F2530

Laboratory: CH2M Hill Applied Sciences Laboratory

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/13/06

Page: 1 of 1

Reviewer: MM

2nd Reviewer: [illegible]

METHOD: Free Cyanide (ASTM D4282), Total Cyanide (EPA Method 335.2), Weak Acid Dissociable Cyanide (SM4500-CN-I)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 9/19/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	SW	
IV	Matrix Spike/Matrix Spike Duplicates	N	} client specified
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	SW	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	D = 6 + 7
X	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: As

1	G-6s-091906	11	RL-3d-091906	21		31	
2	G-6d-091906	12	R-1s-091906	22		32	
3	RL-1s-091906	13	R-1d-091906	23		33	
4	RL-1d-091906	14	R-4d-091906	24		34	
5	RLSW-4-091906	15	R-4s-091906	25		35	
6	G-4d-091906	16	MB	26		36	
7	G-44d-091906	17		27		37	
8	G-4s-091906	18		28		38	
9	RL-5-091906	19		29		39	
10	RL-3s-091906	20		30		40	

Notes:

LDC #: 15597B6
SDG #: F7330

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MY
2nd reviewer: C

All circled methods are applicable to each sample.

Sample ID	Parameter																	
1-15	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN	NH_3	TKN	TOC	CR^{6+}	Free CN	WAD CN		
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				

Comments:

LDC #: 15597B6
SDG #: F2580

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page: 1 of 1
Reviewer: MM
2nd reviewer: [illegible]

All circled dates have exceeded the technical holding time.
Y N N/A Were all samples preserved as applicable to each method ?
Y N N/A Were all cooler temperatures within validation criteria?

Method:		ASTM D4282					
Parameters:		Free Cn					
Technical holding time:		24hr					
Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
1	9/19/06 1000	9/21/06 1236	(50.5 hr)				J/R/P
2	1015	1237	(50.25 hr)				
3	1100	1241	(49.75 hr)				
4	1130	1242	(49.25 hr)				
5	1230	1243	(48.25 hr)				
6	1300	1245	(47.75 hr)				J/UJ/P
7	1320	1246	(47.5 hr)				
8	1345	1247	(47 hr)				
9	1005	1248	~~(48~~ (50.75 hr)				J/R/P
10	1018	1252	(50.5 hr)				
11	1050	1254	(50 hr)				
12	1155	1255	(49 hr)				
13	1235	1256	(48.25 hr)				
14	1335	1257	(47.25 hr)				J/UJ/P
15	1350	1258	~~(47.75~~	(47.25 hr)			

LDC #: 15597B6
SDG #: F1530

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: MM
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See comm

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were all samples associated with a given method blank?
Y N N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: ug/L **Associated Samples:** All

Analyte	Blank ID	Maximum ICB/CCB	Blank Action Limit	Sample Identification								
	MB			2	4	5	7	8	11	12		
Free CN	0.109		0.545	0.340	0.503	0.294	0.513	0.501	0.283	0.527		

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 15597B6
SDG #: F2530

VALIDATION FINDINGS WORKSHEET
Sample Result Verification

Reviewer: MM
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See comm

#	Sample ID	Analyte	~~Lab Reporting Limit~~ Total CN (mg/L) (units)	~~RDL (units)~~ Weak Acid Dissociable CN (mg/L)	Finding	Qualifications
1	4		0.00435	0.0127	WADCN > Total CN	Text.
2	7		0.00504	0.0117	↓	↓

Comments:

ABVCRDL.6

LDC#:_15597B6_____ **VALIDATION FINDINGS WORKSHEET** Page:__1of1__
SDG#:__F2530_____ **Field Duplicates** Reviewer:__
2nd Reviewer:__

Inorganics, Method___See cover_____

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD	
	6	7		
Free Cyanide (ug/L)	0.625	0.513	20	
Total Cyanide	0.147	0.00500U	200	
WAD Cyanide	0.00500U	0.0117	200	

V:\FIELD DUPLICATES\FD_inorganic\15597B6.wpd

LDC Report# 15597C6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	September 18, 2006
LDC Report Date:	October 13, 2006
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	JW94

Sample Identification

PZ-7-091806
G-7d-091806
PZ-6-091806
G-5s-091806
G-5d-091806
RL-2d-091806
RL-2s-091806
G-7d-091806MS
G-7d-091806DUP

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Chloride, Fluoride, and Sulfate, EPA Method 365.2 for Total Phosphorus, Standard Method 2320 for Alkalinity, and Fluid Density by Pychnometer.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG JW94

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG JW94

No Sample Data Qualified in this SDG

SAMPLE RESULTS-CONVENTIONALS
JW94-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 09/28/06

Project: CHINOOK
Event: NA
Date Sampled: 09/18/06
Date Received: 09/19/06

Client ID: PZ-7-091806
ARI ID: 06-16998 JW94A

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/20/06 092006#1	SM 2320	mg/L CaCO3	1.0	2,250
Chloride	09/19/06 091906#1	EPA 300.0	mg/L	1.0	26.8
Fluoride	09/19/06 091906#1	EPA 300.0	mg/L	1.0	32.5
Total Phosphorus	09/21/06 092106#1	EPA 365.2	mg-P/L	0.160	9.34
Sulfate	09/19/06 091906#1	EPA 300.0	mg/L	1.0	< 1.0 U

RL Analytical reporting limit
U Undetected at reported detection limit

10/30

SAMPLE RESULTS-CONVENTIONALS
JW94-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 09/28/06

Project: CHINOOK
Event: NA
Date Sampled: 09/18/06
Date Received: 09/19/06

Client ID: G-7d-091806
ARI ID: 06-16999 JW94B

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/20/06 092006#1	SM 2320	mg/L CaCO3	1.0	891
Chloride	09/20/06 092006#1	EPA 300.0	mg/L	5.0	84.1
Fluoride	09/20/06	EPA 300.0	mg/L	0.1	1.4
Total Phosphorus	09/21/06 092106#1	EPA 365.2	mg-P/L	0.016	0.040
Sulfate	09/20/06	EPA 300.0	mg/L	5.0	191

RL Analytical reporting limit
U Undetected at reported detection limit

R 101306

SAMPLE RESULTS-CONVENTIONALS
JW94-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 09/28/06

Project: CHINOOK
Event: NA
Date Sampled: 09/18/06
Date Received: 09/19/06

Client ID: PZ-6-091806
ARI ID: 06-17000 JW94C

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/20/06 092006#1	SM 2320	mg/L CaCO3	1.0	2,810
Chloride	09/19/06 091906#1	EPA 300.0	mg/L	1.0	38.2
Fluoride	09/20/06	EPA 300.0	mg/L	2.0	94.4
Total Phosphorus	09/21/06 092106#1	EPA 365.2	mg-P/L	0.160	14.6
Sulfate	09/20/06	EPA 300.0	mg/L	5.0	193

RL Analytical reporting limit
U Undetected at reported detection limit

R 101306

SAMPLE RESULTS-CONVENTIONALS
JW94-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 09/28/06

Project: CHINOOK
Event: NA
Date Sampled: 09/18/06
Date Received: 09/19/06

Client ID: G-5s-091806
ARI ID: 06-17001 JW94D

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/20/06 092006#1	SM 2320	mg/L CaCO3	1.0	312
Chloride	09/19/06 091906#1	EPA 300.0	mg/L	1.0	41.3
Fluoride	09/20/06	EPA 300.0	mg/L	0.1	0.2
Total Phosphorus	09/21/06 092106#1	EPA 365.2	mg-P/L	0.016	0.018
Sulfate	09/19/06 091906#1	EPA 300.0	mg/L	1.0	17.3

RL Analytical reporting limit
U Undetected at reported detection limit

10/2/06

SAMPLE RESULTS-CONVENTIONALS
JW94-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 09/28/06

Project: CHINOOK
Event: NA
Date Sampled: 09/18/06
Date Received: 09/19/06

Client ID: G-5d-091806
ARI ID: 06-17002 JW94E

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/20/06 092006#1	SM 2320	mg/L CaCO3	1.0	249
Chloride	09/19/06 091906#1	EPA 300.0	mg/L	1.0	18.3
Fluoride	09/20/06	EPA 300.0	mg/L	0.1	0.2
Total Phosphorus	09/21/06 092106#1	EPA 365.2	mg-P/L	0.016	0.792
Sulfate	09/20/06	EPA 300.0	mg/L	0.1	1.2

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
JW94-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 09/28/06

Project: CHINOOK
Event: NA
Date Sampled: 09/18/06
Date Received: 09/19/06

Client ID: RL-2d-091806
ARI ID: 06-17003 JW94F

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/20/06 092006#1	SM 2320	mg/L CaCO3	1.0	1,530
Chloride	09/19/06 091906#1	EPA 300.0	mg/L	1.0	30.7
Fluoride	09/19/06 091906#1	EPA 300.0	mg/L	1.0	10.5
Total Phosphorus	09/21/06 092106#1	EPA 365.2	mg-P/L	0.040	2.51
Sulfate	09/19/06 091906#1	EPA 300.0	mg/L	1.0	16.7

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
JW94-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 09/28/06

Project: CHINOOK
Event: NA
Date Sampled: 09/18/06
Date Received: 09/19/06

Client ID: RL-2s-091806
ARI ID: 06-17004 JW94G

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/20/06 092006#1	SM 2320	mg/L CaCO3	1.0	4,180
Chloride	09/20/06 092006#1	EPA 300.0	mg/L	5.0	59.1
Fluoride	09/20/06	EPA 300.0	mg/L	5.0	94.0
Total Phosphorus	09/21/06 092106#1	EPA 365.2	mg-P/L	0.200	15.4
Sulfate	09/20/06	EPA 300.0	mg/L	10.0	300

RL Analytical reporting limit
U Undetected at reported detection limit

R 10/13/06

ANALYTICAL RESOURCES INCORPORATED

Anchor Environmental
Chinook
Fluid Density

Sample ID	Temperature (°C)	Density (g/ml)
PZ-7-091806	23	1.0025
G-7d-091806	23	1.0016
PZ-6-091806	23	1.0039
G-5s-091806	23	1.0005
G-5d-091806	23	1.0002
RL-2d-091806	23	1.0012
RL-2s-091806	23	1.0049

Density measured in a calibrated 500 ml flask at the indicated temperature.

JW94

R 10/20/06

LDC #: 15597C6

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/13/06

SDG #: JW94

Page: 1 of 1

Laboratory: Analytical Resources, Inc.

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: Alkalinity (SM2320), Chloride, Fluoride, Sulfate (EPA Method 300.0), Total Phosphorus (EPA Method 365.2), Fluid Density (Method ~~Hydrometer~~) pychnometer

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/18/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	
V	Duplicates	A	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: All

1	PZ-7-091806	11		21		31	
2	G-7d-091806	12		22		32	
3	PZ-6-091806	13		23		33	
4	G-5s-091806	14		24		34	
5	G-5d-091806	15		25		35	
6	RL-2d-091806	16		26		36	
7	RL-2s-091806	17		27		37	
8	G-7d-091806MS	18		28		38	
9	G-7d-091806DUP	19		29		39	
10	MB	20		30		40	

Notes:

LDC #: 15696C6
SDG #: JW94

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MY
2nd reviewer: A

All circled methods are applicable to each sample.

Sample ID	Parameter															
1-7	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}	T-P	Fluid Density
8-8	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}	T-P	
9	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}	T-P	
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}		
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}		
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}		
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}		
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}		
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}		
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}		
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}		
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}		
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}		
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}		
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}		
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}		
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}		
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}		
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}		
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}		

Comments:

LDC Report# 15597D6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	September 18 through September 19, 2006
LDC Report Date:	October 13, 2006
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	JX10

Sample Identification

G-6s-091906
G-6d-091906
RL-1s-091906
RL-1d-091906
RLSW-4-091906
G-4d-091906
G-44d-091906
G-4s-091906
RL-5-091806
RL-3S-091906
RL-3d-091906
R-1s-091906
R-1d-091906
RL-4d-091906
G-6s-091906MS
G-6s-091906DUP
RL-1s-091906DUP
RL-4d-091906MS
RL-4d-091906DUP

Introduction

This data review covers 19 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Chloride, Fluoride, and Sulfate, EPA Method 365.2 for Total Phosphorus, Standard Method 2320 for Alkalinity, and Fluid Density by Pychnometer.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
ICB/CCB	Chloride	0.18 mg/L	G-4s-091906 RL-5-091806 RL-3S-091906

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

Samples G-4d-091906 and G-44d-091906 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD
	G-4d-091906	G-44d-091906	
Alkalinity	702 mg/L	736 mg/L	5
Chloride	101 mg/L	67.2 mg/L	40
Fluoride	0.4 mg/L	0.3 mg/L	29
Total phosphorus	0.256 mg/L	0.240 mg/L	6
Sulfate	23.1 mg/L	15.7 mg/L	38
Fluid density	1.0010 g/mL	1.0011 g/mL	0

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG JX10

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG JX10

No Sample Data Qualified in this SDG

SAMPLE RESULTS-CONVENTIONALS
JX10-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/03/06

Project: CHINOOK
Event: NA
Date Sampled: 09/19/06
Date Received: 09/20/06

Client ID: G-6s-091906
ARI ID: 06-17071 JX10A

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/20/06 092006#1	SM 2320	mg/L CaCO3	1.0	1,580
Chloride	09/22/06 092206#1	EPA 300.0	mg/L	0.5	10.7
Fluoride	09/21/06 092106#1	EPA 300.0	mg/L	2.0	85.4
Total Phosphorus	09/21/06 092106#1	EPA 365.2	mg-P/L	0.160	5.98
Sulfate	09/21/06 092106#1	EPA 300.0	mg/L	2.0	51.3

RL Analytical reporting limit
U Undetected at reported detection limit

10/3/06

SAMPLE RESULTS-CONVENTIONALS
JX10-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized
Reported: 10/03/06

Project: CHINOOK
Event: NA
Date Sampled: 09/19/06
Date Received: 09/20/06

Client ID: G-6d-091906
ARI ID: 06-17072 JX10B

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/20/06 092006#1	SM 2320	mg/L CaCO3	1.0	1,860
Chloride	09/21/06 092106#1	EPA 300.0	mg/L	5.0	122
Fluoride	09/21/06 092106#1	EPA 300.0	mg/L	0.1	< 0.1 U
Total Phosphorus	09/21/06 092106#1	EPA 365.2	mg-P/L	0.016	0.558
Sulfate	09/21/06 092106#1	EPA 300.0	mg/L	10.0	246

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
JX10-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized
Reported: 10/03/06

Project: CHINOOK
Event: NA
Date Sampled: 09/19/06
Date Received: 09/20/06

Client ID: RL-1s-091906
ARI ID: 06-17073 JX10C

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/20/06 092006#1	SM 2320	mg/L CaCO3	1.0	285
Chloride	09/22/06 092206#1	EPA 300.0	mg/L	0.5	3.4
Fluoride	09/20/06 092006#1	EPA 300.0	mg/L	1.0	13.0
Total Phosphorus	09/21/06 092106#1	EPA 365.2	mg-P/L	0.016	0.660
Sulfate	09/21/06 092106#1	EPA 300.0	mg/L	0.1	1.2

RL Analytical reporting limit
U Undetected at reported detection limit

L 101306

SAMPLE RESULTS-CONVENTIONALS
JX10-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/03/06

Project: CHINOOK
Event: NA
Date Sampled: 09/19/06
Date Received: 09/20/06

Client ID: RL-1d-091906
ARI ID: 06-17074 JX10D

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/20/06 092006#1	SM 2320	mg/L CaCO3	1.0	796
Chloride	09/22/06 092206#1	EPA 300.0	mg/L	0.5	5.7
Fluoride	09/21/06 092106#1	EPA 300.0	mg/L	0.1	0.2
Total Phosphorus	09/21/06 092106#1	EPA 365.2	mg-P/L	0.016	1.03
Sulfate	09/21/06 092106#1	EPA 300.0	mg/L	0.1	0.2

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
JX10-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/03/06

Project: CHINOOK
Event: NA
Date Sampled: 09/19/06
Date Received: 09/20/06

Client ID: RLSW-4-091906
ARI ID: 06-17075 JX10E

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/20/06 092006#1	SM 2320	mg/L CaCO3	1.0	2,110
Chloride	09/20/06 092006#1	EPA 300.0	mg/L	1.0	12.5
Fluoride	09/21/06 092106#1	EPA 300.0	mg/L	2.0	89.4
Total Phosphorus	09/21/06 092106#1	EPA 365.2	mg-P/L	0.080	6.21
Sulfate	09/21/06 092106#1	EPA 300.0	mg/L	2.0	58.3

RL Analytical reporting limit
U Undetected at reported detection limit

10/03/06

SAMPLE RESULTS-CONVENTIONALS
JX10-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized
Reported: 10/03/06

Project: CHINOOK
Event: NA
Date Sampled: 09/19/06
Date Received: 09/20/06

Client ID: G-4d-091906
ARI ID: 06-17076 JX10F

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/20/06 092006#1	SM 2320	mg/L CaCO3	1.0	702
Chloride	09/21/06 092106#1	EPA 300.0	mg/L	5.0	101
Fluoride	09/27/06 092706#1	EPA 300.0	mg/L	0.2	0.4
Total Phosphorus	09/21/06 092106#1	EPA 365.2	mg-P/L	0.016	0.256
Sulfate	09/20/06	EPA 300.0	mg/L	1.0	23.1

RL Analytical reporting limit
U Undetected at reported detection limit

10/3/06

SAMPLE RESULTS-CONVENTIONALS
JX10-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/03/06

Project: CHINOOK
Event: NA
Date Sampled: 09/19/06
Date Received: 09/20/06

Client ID: G-44d-091906
ARI ID: 06-17077 JX10G

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/20/06 092006#1	SM 2320	mg/L CaCO3	1.0	736
Chloride	09/21/06 092106#1	EPA 300.0	mg/L	2.0	67.2
Fluoride	09/27/06 092706#1	EPA 300.0	mg/L	0.2	0.3
Total Phosphorus	09/21/06 092106#1	EPA 365.2	mg-P/L	0.016	0.240
Sulfate	09/20/06 092006#1	EPA 300.0	mg/L	1.0	15.7

RL Analytical reporting limit
U Undetected at reported detection limit

10/03/06

SAMPLE RESULTS-CONVENTIONALS
JX10-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/03/06

Project: CHINOOK
Event: NA
Date Sampled: 09/19/06
Date Received: 09/20/06

Client ID: G-4s-091906
ARI ID: 06-17078 JX10H

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/20/06 092006#1	SM 2320	mg/L CaCO3	1.0	609
Chloride	09/20/06 092006#1	EPA 300.0	mg/L	1.0	40.8
Fluoride	09/21/06 092106#1	EPA 300.0	mg/L	0.1	0.3
Total Phosphorus	09/21/06 092106#1	EPA 365.2	mg-P/L	0.016	0.968
Sulfate	09/21/06 092106#1	EPA 300.0	mg/L	0.2	9.4

RL Analytical reporting limit
U Undetected at reported detection limit

10/03/06

SAMPLE RESULTS-CONVENTIONALS
JX10-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/03/06

Project: CHINOOK
Event: NA
Date Sampled: 09/18/06
Date Received: 09/20/06

Client ID: RL-5-091806
ARI ID: 06-17079 JX10I

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/20/06 092006#1	SM 2320	mg/L CaCO3	1.0	182
Chloride	09/20/06 092006#1	EPA 300.0	mg/L	1.0	12.4
Fluoride	09/21/06 092106#1	EPA 300.0	mg/L	0.1	1.6
Total Phosphorus	09/21/06 092106#1	EPA 365.2	mg-P/L	0.016	0.206
Sulfate	09/21/06 092106#1	EPA 300.0	mg/L	5.0	114

RL Analytical reporting limit
U Undetected at reported detection limit

10/3/06

SAMPLE RESULTS-CONVENTIONALS
JX10-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/03/06

Project: CHINOOK
Event: NA
Date Sampled: 09/19/06
Date Received: 09/20/06

Client ID: RL-3s-091906
ARI ID: 06-17080 JX10J

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/20/06 092006#1	SM 2320	mg/L CaCO3	1.0	1,420
Chloride	09/20/06 092006#1	EPA 300.0	mg/L	1.0	12.3
Fluoride	09/20/06 092006#1	EPA 300.0	mg/L	1.0	16.6
Total Phosphorus	09/22/06 092206#1	EPA 365.2	mg-P/L	0.160	4.66
Sulfate	09/21/06 092106#1	EPA 300.0	mg/L	0.2	9.2

RL Analytical reporting limit
U Undetected at reported detection limit

RL 10/3/06

SAMPLE RESULTS-CONVENTIONALS
JX10-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized
Reported: 10/03/06

Project: CHINOOK
Event: NA
Date Sampled: 09/19/06
Date Received: 09/20/06

Client ID: RL-3d-091906
ARI ID: 06-17081 JX10K

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/20/06 092006#1	SM 2320	mg/L CaCO3	1.0	774
Chloride	09/22/06 092206#1	EPA 300.0	mg/L	0.5	5.9
Fluoride	09/21/06 092106#1	EPA 300.0	mg/L	0.1	0.2
Total Phosphorus	09/22/06 092206#1	EPA 365.2	mg-P/L	0.032	0.468
Sulfate	09/21/06 092106#1	EPA 300.0	mg/L	0.1	0.2

RL Analytical reporting limit
U Undetected at reported detection limit

10/03/06

SAMPLE RESULTS-CONVENTIONALS
JX10-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/03/06

Project: CHINOOK
Event: NA
Date Sampled: 09/19/06
Date Received: 09/20/06

Client ID: R-1s-091906
ARI ID: 06-17082 JX10L

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/20/06 092006#1	SM 2320	mg/L CaCO3	1.0	189
Chloride	09/22/06 092206#1	EPA 300.0	mg/L	0.5	2.1
Fluoride	09/21/06 092106#1	EPA 300.0	mg/L	0.5	20.6
Total Phosphorus	09/22/06 092206#1	EPA 365.2	mg-P/L	0.016	0.548
Sulfate	09/21/06 092106#1	EPA 300.0	mg/L	0.1	< 0.1 U

RL Analytical reporting limit
U Undetected at reported detection limit

8/10/06

SAMPLE RESULTS-CONVENTIONALS
JX10-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/03/06

Project: CHINOOK
Event: NA
Date Sampled: 09/19/06
Date Received: 09/20/06

Client ID: R-1d-091906
ARI ID: 06-17083 JX10M

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/20/06 092006#1	SM 2320	mg/L CaCO3	1.0	1,010
Chloride	09/22/06 092206#1	EPA 300.0	mg/L	5.0	116
Fluoride	09/21/06 092106#1	EPA 300.0	mg/L	1.0	< 1.0 U
Total Phosphorus	09/22/06 092206#1	EPA 365.2	mg-P/L	0.032	1.26
Sulfate	09/27/06 092706#1	EPA 300.0	mg/L	0.1	0.1

RL Analytical reporting limit
U Undetected at reported detection limit

2/01/06

SAMPLE RESULTS-CONVENTIONALS
JX10-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/03/06

Project: CHINOOK
Event: NA
Date Sampled: 09/19/06
Date Received: 09/20/06

Client ID: RL-4d-091906
ARI ID: 06-17084 JX10N

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/20/06 092006#1	SM 2320	mg/L CaCO3	1.0	286
Chloride	09/22/06 092206#1	EPA 300.0	mg/L	0.5	10.8
Fluoride	09/22/06 092206#1	EPA 300.0	mg/L	0.1	0.3
Total Phosphorus	09/22/06 092206#1	EPA 365.2	mg-P/L	0.016	1.22
Sulfate	09/27/06 092706#1	EPA 300.0	mg/L	0.1	< 0.1 U

RL Analytical reporting limit
U Undetected at reported detection limit

ANALYTICAL RESOURCES INCORPORATED

Anchor Environmental
Chinook
Fluid Density

Sample ID	Temperature (°C)	Density (g/ml)
G-6s-091906	23	1.0021
G-6d-091906	23	1.0032
RL-1s-091906	23	1.0005
RL-1d-091906	23	1.0010
RLSW-4-091906	23	1.0032
G-4d-091906	23	1.0010
G-44d-091906	23	1.0011
G-4s-091906	23	1.0010
RL-5-091806	23	1.0005
RL-3s-091906	23	1.0019
RL-3d-091906	22	0.9996
R-1s-091906	22	0.9991
R-1d-091906	22	0.9998
RL-4d-091906	22	0.9989

Density measured in a calibrated 500 ml flask at the indicated temperature.

JX10

R 10/30/06

LDC #: 15597D6

SDG #: JX10

Laboratory: Analytical Resources, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/13/06

Page: 1 of 1

Reviewer: MM

2nd Reviewer: M

METHOD: Alkalinity (SM2320), Chloride, Fluoride, Sulfate (EPA Method 300.0), Total Phosphorus (EPA Method 365.2), Fluid Density (Method pycnometer)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/18/06, 9/19/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	SW	
IV	Matrix Spike/Matrix Spike Duplicates	A	
V	Duplicates	A	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	D = 6 + 7
X	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	G-6s-091906	11	RL-3d-091906	21		31	
2	G-6d-091906	12	R-1s-091906	22		32	
3	RL-1s-091906	13	R-1d-091906	23		33	
4	RL-1d-091906	14	RL-4d-091906	24		34	
5	RLSW-4-091906	15	G-6s-091906MS	25		35	
6	G-4d-091906	16	G-6s-091906DUP	26		36	
7	G-44d-091906	17	RL-1s-091906DUP	27		37	
8	G-4s-091906	18	RL-4d-091906MS	28		38	
9	RL-5-091906	19	RL-4d-091906DUP	29		39	
10	RL-3S-091906	20	MB	30		40	

Notes:

LDC #: 15697 06
SDG #: 7410

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MY
2nd reviewer: N

All circled methods are applicable to each sample.

Sample ID	Parameter																
1-14	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}	T-P	Fluid Density	
15	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
16	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
17	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
18	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}	T-P		
19	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}	T-P		
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			

Comments:

METHODS.6

LDC #: 15597D6
SDG #: TX10

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: MM
2nd Reviewer: A

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were all samples associated with a given method blank?
Y N N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: mg/L **Associated Samples:** 8-10 (>5x)

Analyte	Blank ID	Maximum ICB/CCB	Blank Action Limit	Sample Identification								
Ca		0.18	0.90									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC#:_15597D6_____
SDG#:__JX10_____

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page:__1of 1__
Reviewer:_____
2nd Reviewer:_____

Inorganics, Method___See cover_____

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD	
	6	7		
Alkalinity	702	736	5	
Chloride	101	67.2	40	
Fluoride	0.4	0.3	29	
Total Phosphorus	0.256	0.240	6	
Sulfate	23.1	15.7	38	
Fluid Density (g/mL)	1.0010	1.0011	0	

V:\FIELD DUPLICATES\FD_inorganic\15597D6.wpd

Revision 1

LDC Report# 15597E6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	September 26, 2006
LDC Report Date:	October 23, 2006
Matrix:	Water
Parameters:	Wet Chemistry
***Validation Level:**	EPA Level IV
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	JY35

***Sample Identification**

PZ-3-092606
PZ-4-092606
PZ-1-092606
PZ-3-092606MS
PZ-3-092606DUP

*Changed to EPA Level IV Validation Level

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Chloride, Fluoride, and Sulfate, EPA Method 365.2 for Total Phosphorus, Standard Method 2320 for Alkalinity, and Fluid Density by Pychnometer.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

*VII. Sample Result Verification

All sample result verifications were acceptable for samples.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG JY35

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG JY35

No Sample Data Qualified in this SDG

SAMPLE RESULTS-CONVENTIONALS
JY35-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/05/06

Project: CHINOOK
Event: NA
Date Sampled: 09/26/06
Date Received: 09/27/06

Client ID: PZ-3-092606
ARI ID: 06-17761 JY35A

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/29/06 092906#2	SM 2320	mg/L CaCO3	1.0	2,780
Chloride	10/03/06 100306#1	EPA 300.0	mg/L	2.0	43.6
Fluoride	10/03/06 100306#1	EPA 300.0	mg/L	5.0	213
Total Phosphorus	09/28/06 092806#1	EPA 365.2	mg-P/L	0.160	4.54
Sulfate	10/04/06 100406#1	EPA 300.0	mg/L	0.2	0.2

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
JY35-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/05/06

Project: CHINOOK
Event: NA
Date Sampled: 09/26/06
Date Received: 09/27/06

Client ID: PZ-4-092606
ARI ID: 06-17762 JY35B

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/29/06 092906#2	SM 2320	mg/L CaCO3	1.0	6,410
Chloride	10/03/06 100306#1	EPA 300.0	mg/L	5.0	112
Fluoride	10/04/06 100406#1	EPA 300.0	mg/L	50.0	1,020
Total Phosphorus	09/28/06 092806#1	EPA 365.2	mg-P/L	0.640	43.4
Sulfate	10/03/06 100306#1	EPA 300.0	mg/L	5.0	105

RL Analytical reporting limit
U Undetected at reported detection limit

2 10/30/06

SAMPLE RESULTS-CONVENTIONALS
JY35-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized
Reported: 10/05/06

Project: CHINOOK
Event: NA
Date Sampled: 09/26/06
Date Received: 09/27/06

Client ID: PZ-1-092606
ARI ID: 06-17763 JY35C

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/29/06 092906#2	SM 2320	mg/L CaCO3	1.0	1,750
Chloride	10/04/06 100406#1	EPA 300.0	mg/L	0.5	18.7
Fluoride	10/03/06 100306#1	EPA 300.0	mg/L	5.0	234
Total Phosphorus	09/28/06 092806#1	EPA 365.2	mg-P/L	0.200	7.98
Sulfate	10/03/06 100306#1	EPA 300.0	mg/L	5.0	116

RL Analytical reporting limit
U Undetected at reported detection limit

10/13/06

ANALYTICAL RESOURCES INCORPORATED

Anchor Environmental
Chinook
Fluid Density

Sample ID	Temperature (°C)	Density (g/ml)
PZ-3-092606	23	1.0042
PZ-4-092606	23	1.0107
PZ-1-092606	23	1.0025

Density measured in a calibrated 500 ml flask at the indicated temperature.

JY35

R(01396

LDC #: 15597E6

SDG #: JY35

Laboratory: Analytical Resources, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level ~~III~~/IV

Date: 10/13/06

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: Alkalinity (SM2320), Chloride, Fluoride, Sulfate (EPA Method 300.0), Total Phosphorus (EPA Method 365.2), Fluid Density (Method pychnometers)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/26/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	
V	Duplicates	A	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	~~N~~ A	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	PZ-3-092606 RE	11		21		31	
2	PZ-4-092606 RE	12		22		32	
3	PZ-1-092606	13		23		33	
4	PZ-3-092606MS	14		24		34	
5	PZ-3-092606DUP	15		25		35	
6	MB	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 15597T6
SDG #: J435

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MY
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Parameter				
1-3	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}	T-P	Fluid Density		
1-4	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}	T-P			
1-5	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}	T-P			
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				

Comments:

LDC #: 155926
SDG #: J135

VALIDATION FINDINGS CHECKLIST

Page: 1 of 1
Reviewer: MY
2nd Reviewer: [illegible]

Method: Inorganics (EPA Method See cover

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial calibration correlation coefficients ≥ 0.995?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	✓			
Were titrant checks performed as required? (Level IV only)	✓		NA	
Were balance checks performed as required? (Level IV only)				
III. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
IV. Matrix spike/Matrix spike duplicates and Duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	✓			
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of ≤ CRDL(≤ 2X CRDL for soil) was used for samples that were ≤ 5X the CRDL, including when only one of the duplicate sample values were ≤ 5X the CRDL.	✓			
V. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits?	✓			
VI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 15559226
SDG #: J135

VALIDATION FINDINGS CHECKLIST

Reviewer: MY
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
VII. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were detection limits < RL?	✓			
VIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
IX. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates.			✓	
X. Field blanks				
Field blanks were identified in this SDG.		✓		
Target analytes were detected in the field blanks.			✓	

LDC #: 15597 26
SDG #: J135

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: MY
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

The correlation coefficient (r) for the calibration of T-P was recalculated. Calibration date: 9/28/06

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found / True x 100 Where, Found = concentration of each analyte measured in the analysis of the ICV or CCV solution
True = concentration of each analyte in the ICV or CCV source

Type of Analysis	Analyte		Conc. (mg/L) (units)	Mrs (units)	Recalculated r or %R	Reported r or %R	Acceptable (Y/N)
Initial calibration		Blank	0	0			
Calibration verification		Standard 1	0.008	0.004			
		Standard 2	0.032	0.019			
	T-P	Standard 3	0.128	0.079	r = 0.9999	r = 0.9999	Y
		Standard 4	0.256	0.159			
		Standard 5	0.400	0.253			
		Standard 6	0.800	0.519			
		Standard 7					
Calibration verification ICV	T-P	0.242	0.240		100.8	100.8	Y
Calibration verification ICV	F	3	2.87		96	96	↓
Calibration verification ICV	Cl	3	2.82		94	94	

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

CALCLC.6

LDC #: 1059766
SDG #: J435

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: MM
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated %R / RPD	Reported %R / RPD	Acceptable (Y/N)
LCS	Laboratory control sample	Cd	3.09	3.00	103	103.3	Y
4	Matrix spike sample	Cd	(SSR-SR) 95.8	100	95.8	95.4	↓
5	Duplicate sample	Al/K	2810	2770	1.4	1.4	↓

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

TOTCLC.6

LDC #: 15599Z6
SDG #: J435

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: MM
2nd reviewer: A

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments?
Y N N/A Are all detection limits below the CRQL?

Compound (analyte) results for / reported with a positive detect were recalculated and verified using the following equation:

Concentration =

$F = (1.74 \times 10^{-6} \times \text{Area}) \times DF$

Recalculation:

$F = (1.74 \times 10^{-6} \times 2446061) \times 50$
$= 212.8$ mg/L

#	Sample ID	Analyte	Reported Concentration (mg/L)	Calculated Concentration (mg/L)	Acceptable (Y/N)
1	1	Alkalinity	2780	2770	Y
		Cl	43.6	43.6	
		F	213	213	
		T-P	4.53	4.53	
		SO4	0.2	0.2	
		Fluid Density (g/mL)	1.0042	1.0042	

Note:

RECALC.6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	September 27, 2006
LDC Report Date:	October 13, 2006
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	JY56

Sample Identification

RLSW-1-092706
R4D-092706
PZ-2-092706
RLSW-3-092706
RLSW-2-092706
R3-092706
R43-092706
RLSW-1-092706MS
RLSW-1-092706DUP
R4D-092706MS

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Chloride, Fluoride, and Sulfate, EPA Method 365.2 for Total Phosphorus, Standard Method 2320 for Alkalinity, and Fluid Density by Pychnometer.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
ICB/CCB	Chloride	0.10 mg/L	R3-092706 R43-092706

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

Samples R3-092706 and R43-092706 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD
	R3-092706	R43-092706	
Alkalinity	13100 mg/L	13100 mg/L	0
Chloride	68.5 mg/L	74.4 mg/L	8
Fluoride	2410 mg/L	2380 mg/L	1
Total phosphorus	32.0 mg/L	29.0 mg/L	10
Sulfate	275 mg/L	279 mg/L	1
Fluid density	1.0202 g/mL	1.0196 g/mL	0

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG JY56

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG JY56

No Sample Data Qualified in this SDG

SAMPLE RESULTS-CONVENTIONALS
JY56-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/04/06

Project: CHINOOK
Event: 060354-01
Date Sampled: 09/27/06
Date Received: 09/28/06

Client ID: RLSW-1-092706
ARI ID: 06-17872 JY56A

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/29/06 092906#2	SM 2320	mg/L CaCO3	1.0	1,360
Chloride	09/28/06 092806#1	EPA 300.0	mg/L	1.0	16.0
Fluoride	09/29/06 092906#1	EPA 300.0	mg/L	2.0	63.8
Total Phosphorus	10/02/06 100206#1	EPA 365.2	mg-P/L	0.160	3.22
Sulfate	09/29/06 092906#1	EPA 300.0	mg/L	2.0	56.4

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
JY56-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/04/06

Project: CHINOOK
Event: 060354-01
Date Sampled: 09/27/06
Date Received: 09/28/06

Client ID: R4D-092706
ARI ID: 06-17873 JY56B

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/29/06 092906#2	SM 2320	mg/L CaCO3	1.0	901
Chloride	09/28/06 092806#1	EPA 300.0	mg/L	1.0	11.8
Fluoride	10/02/06 100206#1	EPA 300.0	mg/L	0.5	1.1
Total Phosphorus	10/02/06 100206#1	EPA 365.2	mg-P/L	0.160	1.18
Sulfate	09/29/06 092906#1	EPA 300.0	mg/L	0.1	< 0.1 U

RL Analytical reporting limit
U Undetected at reported detection limit

R 10/3/06

SAMPLE RESULTS-CONVENTIONALS
JY56-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/04/06

Project: CHINOOK
Event: 060354-01
Date Sampled: 09/27/06
Date Received: 09/28/06

Client ID: PZ-2-092706
ARI ID: 06-17874 JY56C

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/29/06 092906#2	SM 2320	mg/L CaCO3	1.0	4,360
Chloride	09/28/06 092806#1	EPA 300.0	mg/L	1.0	39.7
Fluoride	09/29/06 092906#1	EPA 300.0	mg/L	20.0	539
Total Phosphorus	10/02/06 100206#1	EPA 365.2	mg-P/L	0.320	9.04
Sulfate	09/29/06 092906#1	EPA 300.0	mg/L	5.0	106

RL Analytical reporting limit
U Undetected at reported detection limit

R 101306

SAMPLE RESULTS-CONVENTIONALS
JY56-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/04/06

Project: CHINOOK
Event: 060354-01
Date Sampled: 09/27/06
Date Received: 09/28/06

Client ID: RLSW-3-092706
ARI ID: 06-17875 JY56D

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/29/06 092906#2	SM 2320	mg/L CaCO3	1.0	964
Chloride	09/28/06 092806#1	EPA 300.0	mg/L	1.0	21.9
Fluoride	09/28/06 092806#1	EPA 300.0	mg/L	1.0	11.8
Total Phosphorus	10/02/06 100206#1	EPA 365.2	mg-P/L	0.160	0.940
Sulfate	09/29/06 092906#1	EPA 300.0	mg/L	0.1	0.2

RL Analytical reporting limit
U Undetected at reported detection limit

4 101306

SAMPLE RESULTS-CONVENTIONALS
JY56-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/04/06

Project: CHINOOK
Event: 060354-01
Date Sampled: 09/27/06
Date Received: 09/28/06

Client ID: RLSW-2-092706
ARI ID: 06-17876 JY56E

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/29/06 092906#2	SM 2320	mg/L CaCO3	1.0	962
Chloride	10/02/06 100206#1	EPA 300.0	mg/L	0.2	7.5
Fluoride	09/29/06 092906#1	EPA 300.0	mg/L	2.0	71.4
Total Phosphorus	10/02/06 100206#1	EPA 365.2	mg-P/L	0.160	0.780
Sulfate	09/29/06 092906#1	EPA 300.0	mg/L	5.0	101

RL Analytical reporting limit
U Undetected at reported detection limit

10/03/06

SAMPLE RESULTS-CONVENTIONALS
JY56-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/04/06

Project: CHINOOK
Event: 060354-01
Date Sampled: 09/27/06
Date Received: 09/28/06

Client ID: R3-092706
ARI ID: 06-17877 JY56F

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/29/06 092906#2	SM 2320	mg/L CaCO3	1.0	13,100
Chloride	09/29/06 092906#1	EPA 300.0	mg/L	2.0	68.5
Fluoride	10/02/06 100206#1	EPA 300.0	mg/L	50.0	2,410
Total Phosphorus	10/02/06 100206#1	EPA 365.2	mg-P/L	0.800	32.0
Sulfate	09/29/06 092906#1	EPA 300.0	mg/L	10.0	275

RL Analytical reporting limit
U Undetected at reported detection limit

10/03/06

SAMPLE RESULTS-CONVENTIONALS
JY56-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized
Reported: 10/04/06

Project: CHINOOK
Event: 060354-01
Date Sampled: 09/27/06
Date Received: 09/28/06

Client ID: R43-092706
ARI ID: 06-17878 JY56G

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/29/06 092906#2	SM 2320	mg/L CaCO3	1.0	13,100
Chloride	09/29/06 092906#1	EPA 300.0	mg/L	2.0	74.4
Fluoride	10/02/06 100206#1	EPA 300.0	mg/L	50.0	2,380
Total Phosphorus	10/02/06 100206#1	EPA 365.2	mg-P/L	0.800	29.0
Sulfate	09/29/06 092906#1	EPA 300.0	mg/L	10.0	279

RL Analytical reporting limit
U Undetected at reported detection limit

10/3/06

ANALYTICAL RESOURCES INCORPORATED

Anchor Environmental
Chinook 060354-01
Fluid Density

Sample ID	Temperature (°C)	Density (g/ml)
RLSW-1-092706	23.5	1.0019
R4D-092706	23.5	1.0009
PZ-2-092706	23.5	1.0062
RLSW-3-092706	23.5	1.0011
R3-092706	23.5	1.0202
R43-092706	23.5	1.0196

Density measured in a calibrated 500 ml flask at the indicated temperature.

JY56

r 101306

LDC #: 15597F6

SDG #: JY56

Laboratory: Analytical Resources, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/13/06

Page: 1 of 1

Reviewer: HY

2nd Reviewer: M

METHOD: Alkalinity (SM2320), Chloride, Fluoride, Sulfate (EPA Method 300.0), Total Phosphorus (EPA Method 365.2), Fluid Density (Method Hydrometer)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/27/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	SW	
IV	Matrix Spike/Matrix Spike Duplicates	A	
V	Duplicates	A	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	D = 6+7
X	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: A

1	RLSW-1-092706	11	MB	21		31	
2	R4D-092706	12		22		32	
3	PZ-2-092706	13		23		33	
4	RLSW-3-092706	14		24		34	
5 ✓	RLSW-2-092706	15		25		35	
6 ✓	R3-092706	16		26		36	
7 ✓	R43-092706	17		27		37	
8	RLSW-1-092706MS	18		28		38	
9	RLSW-1-092706DUP	19		29		39	
10	R4D-092706MS	20		30		40	

Notes:

LDC #: 15697F6
SDG #: J5J56

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MY
2nd reviewer: M

All circled methods are applicable to each sample.

Sample ID	Parameter				
1-7	pH TDS (Cl) (F) NO_3 NO_2 (SO_4) PO_4 (ALK) CN^- NH_3 TKN TOC CR^{6+}	(T-P)	~~Fluoride~~ ~~Density~~		
1-4, 6, 7	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}		(Density)		
8	pH TDS (Cl) (F) NO_3 NO_2 (SO_4) PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
9	pH TDS (Cl) (F) NO_3 NO_2 (SO_4) PO_4 (ALK) CN^- NH_3 TKN TOC CR^{6+}	(T-P)			
10	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}	(T-P)			
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				

Comments:

LDC #: 16697F6
SDG #: J4F6

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: MM
2nd Reviewer: A

METHOD: Inorganics, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were all samples associated with a given method blank?
Y N N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: mg/L **Associated Samples:** 6, 7 (>5x)

Analyte	Blank ID	Maximum ICB/CCB	Blank Action Limit	Sample Identification								
Ca		0.10	0.50									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC#:_15597F6_____ **VALIDATION FINDINGS WORKSHEET** Page:__1 of 1__
SDG#:__JY56_____ **Field Duplicates** Reviewer:__
2nd Reviewer:__

Inorganics, Method___See cover_____

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD	
	6	7		
Alkalinity	13100	13100	0	
Chloride	68.5	74.4	8	
Fluoride	2410	2380	1	
Total Phosphorus	32.0	29.0	10	
Sulfate	275	279	1	
Fluid Density (g/mL)	1.0202	1.0196	0	

V:\FIELD DUPLICATES\FD_inorganic\15597F6.wpd

LDC Report# 15597G6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	September 27 through September 29, 2006
LDC Report Date:	October 13, 2006
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	JY77

Sample Identification

RL-4S-092806
R2-092906
R4S-092706
G1S-092806
RLSW-2-092906
G2S-092906
G2D-092906
RL-4S-092806MS
RL-4S-092806DUP
R2-092906MS

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Chloride, Fluoride, and Sulfate, EPA Method 365.2 for Total Phosphorus, Standard Method 2320 for Alkalinity, and Fluid Density by Pychnometer.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG JY77

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG JY77

No Sample Data Qualified in this SDG

SAMPLE RESULTS-CONVENTIONALS
JY77-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/05/06

Project: Chinook
Event: 060354-01
Date Sampled: 09/28/06
Date Received: 09/29/06

Client ID: RL-4S-092806
ARI ID: 06-18044 JY77A

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/29/06 092906#2	SM 2320	mg/L CaCO3	1.0	278
Chloride	10/02/06 100206#1	EPA 300.0	mg/L	0.2	7.8
Fluoride	10/02/06 100206#1	EPA 300.0	mg/L	0.1	0.5
Total Phosphorus	10/02/06 100206#1	EPA 365.2	mg-P/L	0.160	0.560
Sulfate	10/02/06 100206#1	EPA 300.0	mg/L	0.2	0.2

RL Analytical reporting limit
U Undetected at reported detection limit

h 101306

SAMPLE RESULTS-CONVENTIONALS
JY77-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/05/06

Project: Chinook
Event: 060354-01
Date Sampled: 09/29/06
Date Received: 09/29/06

Client ID: R2-092906
ARI ID: 06-18045 JY77B

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/29/06 092906#2	SM 2320	mg/L CaCO3	1.0	263
Chloride	10/02/06 100206#1	EPA 300.0	mg/L	0.2	8.7
Fluoride	10/02/06 100206#1	EPA 300.0	mg/L	0.1	0.4
Total Phosphorus	10/02/06 100206#1	EPA 365.2	mg-P/L	0.160	1.08
Sulfate	10/02/06 100206#1	EPA 300.0	mg/L	0.2	0.2

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
JY77-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/05/06

Project: Chinook
Event: 060354-01
Date Sampled: 09/27/06
Date Received: 09/29/06

Client ID: R4S-092706
ARI ID: 06-18046 JY77C

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/29/06 092906#2	SM 2320	mg/L CaCO3	1.0	1,230
Chloride	09/29/06 092906#1	EPA 300.0	mg/L	1.0	11.5
Fluoride	10/04/06 100406#1	EPA 300.0	mg/L	0.5	10.1
Total Phosphorus	10/02/06 100206#1	EPA 365.2	mg-P/L	0.160	2.30
Sulfate	10/04/06 100406#1	EPA 300.0	mg/L	0.1	< 0.1 U

RL Analytical reporting limit
U Undetected at reported detection limit

10/2/06

SAMPLE RESULTS-CONVENTIONALS
JY77-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/05/06

Project: Chinook
Event: 060354-01
Date Sampled: 09/28/06
Date Received: 09/29/06

Client ID: G1S-092806
ARI ID: 06-18047 JY77D

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/29/06 092906#2	SM 2320	mg/L CaCO3	1.0	234
Chloride	10/02/06 100206#1	EPA 300.0	mg/L	0.2	3.8
Fluoride	09/29/06 092906#1	EPA 300.0	mg/L	1.0	14.3
Total Phosphorus	10/02/06 100206#1	EPA 365.2	mg-P/L	0.160	0.320
Sulfate	10/02/06 100206#1	EPA 300.0	mg/L	0.2	7.8

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
JY77-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/05/06

Project: Chinook
Event: 060354-01
Date Sampled: 09/29/06
Date Received: 09/29/06

Client ID: G2S-092906
ARI ID: 06-18051 JY77H

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/29/06 092906#2	SM 2320	mg/L CaCO3	1.0	2,130
Chloride	10/02/06 100206#1	EPA 300.0	mg/L	5.0	134
Fluoride	10/02/06 100206#1	EPA 300.0	mg/L	0.2	4.9
Total Phosphorus	10/02/06 100206#1	EPA 365.2	mg-P/L	0.160	0.420
Sulfate	09/29/06 092906#1	EPA 300.0	mg/L	1.0	17.6

RL Analytical reporting limit
U Undetected at reported detection limit

10/13/06

SAMPLE RESULTS-CONVENTIONALS
JY77-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/05/06

Project: Chinook
Event: 060354-01
Date Sampled: 09/29/06
Date Received: 09/29/06

Client ID: G2D-092906
ARI ID: 06-18052 JY77I

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	09/29/06 092906#2	SM 2320	mg/L CaCO3	1.0	1,830
Chloride	10/02/06 100206#1	EPA 300.0	mg/L	10.0	195
Fluoride	10/04/06 100406#1	EPA 300.0	mg/L	0.5	2.4
Total Phosphorus	10/02/06 100206#1	EPA 365.2	mg-P/L	0.160	2.00
Sulfate	10/02/06 100206#1	EPA 300.0	mg/L	10.0	310

RL Analytical reporting limit
U Undetected at reported detection limit

10/13/06

ANALYTICAL RESOURCES INCORPORATED

Anchor Environmental
Chinook 060354-01
Fluid Density

Sample ID	Temperature (°C)	Density (g/ml)
RL-4S-092806	22.5	1.0005
R2-092906	22.5	1.0004
R4S-092706	22.5	1.0018
G1S-092806	22.5	1.0003
RLSW-2-092806	22.5	1.0020
G2S-092906	22.5	1.0026
G2D-092906	22.5	1.0027

Density measured in a calibrated 500 ml flask at the indicated temperature.

JY77

LDC #: 15597G6

SDG #: JY77

Laboratory: Analytical Resources, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/13/06

Page: 1 of 1

Reviewer: MW

2nd Reviewer: A

METHOD: Alkalinity (SM2320), Chloride, Fluoride, Sulfate (EPA Method 300.0), Total Phosphorus (EPA Method 365.2), Fluid Density (Method Pychnometer)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/27 - 9/29/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	~~SW~~ A	
IV	Matrix Spike/Matrix Spike Duplicates	A	
V	Duplicates	A	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: A2

1	RL-4S-092806	11	MB	21		31	
2	R2-092906	12		22		32	
3	R4S-092706	13		23		33	
4	G1S-092806	14		24		34	
5	RLSW-2-092~~8~~06 9	15		25		35	
6	G2S-092906	16		26		36	
7	G2D-092906	17		27		37	
8	RL-4S-092806MS	18		28		38	
9	RL-4S-092806DUP	19		29		39	
10	R2-092906MS	20		30		40	

Notes:

LDC #: 15597G6
SDG #: 74/77

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MY
2nd reviewer: n

All circled methods are applicable to each sample.

Sample ID	Parameter				
1-4, 6, 7	pH TDS (Cl) (F) NO_3 NO_2 (SO_4) PO_4 (ALK) CN^- NH_3 TKN TOC CR^{6+}	(T-P)	(Fluid Density)		
5	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
8	pH TDS (Cl) (F) NO_3 NO_2 (SO_4) PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
9	pH TDS (Cl) (F) NO_3 NO_2 (SO_4) PO_4 (ALK) CN^- NH_3 TKN TOC CR^{6+}	(T-P)			
10	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}	(T-P)			
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}				

Comments:

LDC Report# 15597A6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	September 18, 2006
LDC Report Date:	June 13, 2007
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	CH2M Hill Applied Sciences Laboratory
Sample Delivery Group (SDG):	F2523

Sample Identification

PZ-7-091806
G-7d-091806
PZ-6-091806
G-5s-091806
G-5d-091806
RL-2d-091806
RL-2s-091806

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per ASTM Method D4282 for Free Cyanide, EPA Method 335.2 for Total Cyanide, and Standard Method 4500-CN-I for Weak Acid Dissociable Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Extraction Until Analysis	Required Holding Time From Sample Extraction Until Analysis	Flag	A or P
All samples in SDG F2523	Free cyanide	4 days	24 hours	J (all detects) R (all non-detects)	A

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
MB	Free cyanide	0.0422 ug/L	All samples in SDG F2523

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

IV. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) analyses specified for the samples in this SDG, and therefore matrix spike analyses were not performed for this SDG.

V. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG F2523

SDG	Sample	Analyte	Flag	A or P	Reason
F2523	PZ-7-091806 G-7d-091806 PZ-6-091806 G-5s-091806 G-5d-091806 RL-2d-091806 RL-2s-091806	Free cyanide	J (all detects) R (all non-detects)	A	Technical holding times

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG F2523

No Sample Data Qualified in this SDG

LDC Report# 15597B6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	September 19, 2006
LDC Report Date:	June 13, 2007
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	CH2M Hill Applied Sciences Laboratory
Sample Delivery Group (SDG):	F2530

Sample Identification

G-6s-091906
G-6d-091906
RL-1s-091906
RL-1d-091906
RLSW-4-091906
G-4d-091906
G-44d-091906
G-4s-091906
RL-5-091906
RL-3s-091906
RL-3d-091906
R-1s-091906
R-1d-091906
R-4d-091906
R-4s-091906

Introduction

This data review covers 15 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per ASTM Method D4282 for Free Cyanide, EPA Method 335.2 for Total Cyanide, and Standard Method 4500-CN-I for Weak Acid Dissociable Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Extraction Until Analysis	Required Holding Time From Sample Extraction Until Analysis	Flag	A or P
G-6s-091906	Free cyanide	50.5 hours	24 hours	J (all detects) R (all non-detects)	P
G-6d-091906	Free cyanide	50.25 hours	24 hours	J (all detects) R (all non-detects)	P
RL-1s-091906	Free cyanide	49.75 hours	24 hours	J (all detects) R (all non-detects)	P
RL-1d-091906	Free cyanide	49.25 hours	24 hours	J (all detects) R (all non-detects)	P
RLSW-4-091906 R-1d-091906	Free cyanide	48.25 hours	24 hours	J (all detects) R (all non-detects)	P
G-4d-091906	Free cyanide	47.75 hours	24 hours	J (all detects) UJ (all non-detects)	P
G-44d-091906	Free cyanide	47.5 hours	24 hours	J (all detects) UJ (all non-detects)	P
G-4s-091906	Free cyanide	47 hours	24 hours	J (all detects) UJ (all non-detects)	P
RL-5-091906	Free cyanide	50.75 hours	24 hours	J (all detects) R (all non-detects)	P
RL-3s-091906	Free cyanide	50.5 hours	24 hours	J (all detects) R (all non-detects)	P
RL-3d-091906	Free cyanide	50 hours	24 hours	J (all detects) R (all non-detects)	P
R-1s-091906	Free cyanide	49 hours	24 hours	J (all detects) R (all non-detects)	P
R-4d-091906 R-4s-091906	Free cyanide	47.25 hours	24 hours	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
MB	Free cyanide	0.109 ug/L	All samples in SDG F2530

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
G-6d-091906	Free cyanide	0.340 ug/L	0.340U ug/L
RL-1d-091906	Free cyanide	0.503 ug/L	0.503U ug/L
RLSW-4-091906	Free cyanide	0.294 ug/L	0.294U ug/L
G-44d-091906	Free cyanide	0.513 ug/L	0.513U ug/L
G-4s-091906	Free cyanide	0.501 ug/L	0.501U ug/L
RL-3d-091906	Free cyanide	0.283 ug/L	0.283U ug/L
R-1s-091906	Free cyanide	0.527 ug/L	0.527U ug/L

IV. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) analyses specified for the samples in this SDG, and therefore matrix spike analyses were not performed for this SDG.

V. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

The results for the weak acid dissociable cyanide sample analysis were greater than the total cyanide sample analysis as follows:

Sample ID	Concentration	
	Total cyanide	Weak acid dissociable cyanide
RL-1d-091906	0.00435 mg/L	0.0127 mg/L
G-44d-091906	0.0050U mg/L	0.0117 mg/L

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

Samples G-4d-091906 and G-44d-091906 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD
	G-4d-091906	G-44d-091906	
Free cyanide	0.625 ug/L	0.513 ug/L	20
Total cyanide	0.147 mg/L	0.00500U mg/L	200

Analyte	Concentration (mg/L)		RPD
	G-4d-091906	G-44d-091906	
WAD Cyanide	0.00500U mg/L	0.0117 mg/L	200

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG F2530

SDG	Sample	Analyte	Flag	A or P	Reason
F2530	G-6s-091906 G-6d-091906 RL-1s-091906 RL-1d-091906 RLSW-4-091906 R-1d-091906 RL-5-091906 RL-3s-091906 RL-3d-091906 R-1s-091906	Free cyanide	J (all detects) R (all non-detects)	P	Technical holding times
F2530	R-4d-091906 R-4s-091906 G-4d-091906 G-44d-091906 G-4s-091906	Free cyanide	J (all detects) UJ (all non-detects)	P	Technical holding times

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG F2530

SDG	Sample	Analyte	Modified Final Concentration	A or P
F2530	G-6d-091906	Free cyanide	0.340U ug/L	A
F2530	RL-1d-091906	Free cyanide	0.503U ug/L	A
F2530	RLSW-4-091906	Free cyanide	0.294U ug/L	A
F2530	G-44d-091906	Free cyanide	0.513U ug/L	A
F2530	G-4s-091906	Free cyanide	0.501U ug/L	A
F2530	RL-3d-091906	Free cyanide	0.283U ug/L	A
F2530	R-1s-091906	Free cyanide	0.527U ug/L	A

LDC Report# 15597C4

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	September 18, 2006
LDC Report Date:	June 13, 2007
Matrix:	Water
Parameters:	Dissolved Metals
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	JW94

Sample Identification

PZ-7-091806*
G-7d-091806
PZ-6-091806*
G-5s-091806
G-5d-091806
RL-2d-091806
RL-2s-091806
PZ-7-091806
PZ-6-091806
PZ-7-091806MS*
PZ-7-091806DUP*
PZ-7-091806MS
PZ-7-091806DUP

*Indicates sample was acidified.

Introduction

This data review covers 13 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6010B for Dissolved Metals. The metals analyzed were Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium, and Silicon.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Calcium	0.06 mg/L	G-7d-091806 G-5s-091806 G-5d-091806 RL-2d-091806 RL-2s-091806 PZ-7-091806 PZ-6-091806

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
PZ-7-091806MS* (PZ-7-091806* PZ-6-091806*)	Calcium	84 (85-115)	J (all detects) UJ (all non-detects)	A

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIII. Field Duplicates

No field duplicates were identified in this SDG.

XIV. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Dissolved Metals - Data Qualification Summary - SDG JW94

SDG	Sample	Analyte	Flag	A or P	Reason
JW94	PZ-7-091806* PZ-6-091806*	Calcium	J (all detects) UJ (all non-detects)	A	Matrix spike analysis (%R)

Chinook Ventures, Inc.
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG JW94

No Sample Data Qualified in this SDG

LDC Report# 15597C6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	September 18, 2006
LDC Report Date:	June 13, 2007
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	JW94

Sample Identification

PZ-7-091806
G-7d-091806
PZ-6-091806
G-5s-091806
G-5d-091806
RL-2d-091806
RL-2s-091806
G-7d-091806MS
G-7d-091806DUP

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Chloride, Fluoride, and Sulfate, EPA Method 365.2 for Total Phosphorus, Standard Method 2320 for Alkalinity, and Fluid Density by Pychnometer.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG JW94

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG JW94

No Sample Data Qualified in this SDG

LDC Report# 15597D4

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	September 18 through September 19, 2006
LDC Report Date:	June 13, 2007
Matrix:	Water
Parameters:	Dissolved Metals
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	JX10

Sample Identification

G-6s-091906
G-6d-091906
RL-1s-091906
RL-1d-091906
RLSW-4-091906
G-4d-091906
G-44d-091906
G-4s-091906
RL-5-091806
RL-3S-091906
RL-3d-091906
R-1s-091906
R-1d-091906
RL-4d-091906
G-6s-091906MS
G-6s-091906DUP

Introduction

This data review covers 16 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6010B for Dissolved Metals. The metals analyzed were Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium, and Silicon.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIII. Field Duplicates

Samples G-4d-091906 and G-44d-091906 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/L)		RPD
	G-4d-091906	G-44d-091906	
Calcium	114	112	2
Iron	24.0	21.6	11
Magnesium	61.8	60.0	3
Manganese	2.59	2.50	4
Potassium	11.1	10.7	4
Sodium	105	109	4
Silicon	22.9	22.9	0

XIV. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Dissolved Metals - Data Qualification Summary - SDG JX10

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG JX10

No Sample Data Qualified in this SDG

LDC Report# 15597D6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	September 18 through September 19, 2006
LDC Report Date:	June 13, 2007
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	JX10

Sample Identification

G-6s-091906
G-6d-091906
RL-1s-091906
RL-1d-091906
RLSW-4-091906
G-4d-091906
G-44d-091906
G-4s-091906
RL-5-091806
RL-3S-091906
RL-3d-091906
R-1s-091906
R-1d-091906
RL-4d-091906
G-6s-091906MS
G-6s-091906DUP
RL-1s-091906DUP
RL-4d-091906MS
RL-4d-091906DUP

Introduction

This data review covers 19 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Chloride, Fluoride, and Sulfate, EPA Method 365.2 for Total Phosphorus, Standard Method 2320 for Alkalinity, and Fluid Density by Pychnometer.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
ICB/CCB	Chloride	0.18 mg/L	G-4s-091906 RL-5-091806 RL-3S-091906

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

Samples G-4d-091906 and G-44d-091906 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD
	G-4d-091906	G-44d-091906	
Alkalinity	702 mg/L	736 mg/L	5
Chloride	101 mg/L	67.2 mg/L	40
Fluoride	0.4 mg/L	0.3 mg/L	29
Total phosphorus	0.256 mg/L	0.240 mg/L	6
Sulfate	23.1 mg/L	15.7 mg/L	38
Fluid density	1.0010 g/mL	1.0011 g/mL	0

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG JX10

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG JX10

No Sample Data Qualified in this SDG

LDC Report# 15597E4

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	September 26, 2006
LDC Report Date:	June 13, 2007
Matrix:	Water
Parameters:	Dissolved Metals
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	JY35

Sample Identification

PZ-3-092606
PZ-4-092606
PZ-1-092606
PZ-3-092606MS
PZ-3-092606DUP

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6010B for Dissolved Metals. The metals analyzed were Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium, and Silicon.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIII. Field Duplicates

No field duplicates were identified in this SDG.

XIV. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Dissolved Metals - Data Qualification Summary - SDG JY35

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG JY35

No Sample Data Qualified in this SDG

LDC Report# 15597E6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	September 26, 2006
LDC Report Date:	June 13, 2007
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	JY35

Sample Identification

PZ-3-092606
PZ-4-092606
PZ-1-092606
PZ-3-092606MS
PZ-3-092606DUP

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Chloride, Fluoride, and Sulfate, EPA Method 365.2 for Total Phosphorus, Standard Method 2320 for Alkalinity, and Fluid Density by Pychnometer.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG JY35

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG JY35

No Sample Data Qualified in this SDG

LDC Report# 15597F4

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	September 27, 2006
LDC Report Date:	June 13, 2007
Matrix:	Water
Parameters:	Dissolved Metals
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	JY56

Sample Identification

RLSW-1-092706
R4D-092706
PZ-2-092706
R3-092706
R43-092706
RLSW-1-092706MS
RLSW-1-092706DUP

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6010B for Dissolved Metals. The metals analyzed were Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium, and Silicon.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Sodium	723.2 ug/L	All samples in SDG JY56

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIII. Field Duplicates

Samples R3-092706 and R43-092706 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/L)		RPD
	R3-092706	R43-092706	
Calcium	0.5	0.5	0
Iron	145	70.1	70
Magnesium	0.3	0.3	0
Manganese	0.007	0.005U	200
Potassium	17	18	6
Sodium	7420	7690	4
Silicon	89.3	127	35

XIV. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Dissolved Metals - Data Qualification Summary - SDG JY56

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG JY56

No Sample Data Qualified in this SDG

LDC Report# 15597F6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	September 27, 2006
LDC Report Date:	June 13, 2007
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	JY56

Sample Identification

RLSW-1-092706
R4D-092706
PZ-2-092706
RLSW-3-092706
RLSW-2-092706
R3-092706
R43-092706
RLSW-1-092706MS
RLSW-1-092706DUP
R4D-092706MS

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Chloride, Fluoride, and Sulfate, EPA Method 365.2 for Total Phosphorus, Standard Method 2320 for Alkalinity, and Fluid Density by Pychnometer.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
ICB/CCB	Chloride	0.10 mg/L	R3-092706 R43-092706

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

Samples R3-092706 and R43-092706 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD
	R3-092706	R43-092706	
Alkalinity	13100 mg/L	13100 mg/L	0
Chloride	68.5 mg/L	74.4 mg/L	8
Fluoride	2410 mg/L	2380 mg/L	1
Total phosphorus	32.0 mg/L	29.0 mg/L	10
Sulfate	275 mg/L	279 mg/L	1
Fluid density	1.0202 g/mL	1.0196 g/mL	0

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG JY56

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG JY56

No Sample Data Qualified in this SDG

LDC Report# 15597G4

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	September 27 through September 29, 2006
LDC Report Date:	June 13, 2007
Matrix:	Water
Parameters:	Dissolved Metals
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	JY77

Sample Identification

RL-4S-092806
R2-092906
R4S-092706
G1S-092806
RLSW-2-092706
RLSW-3-092706
G2S-092906
G2D-092906
RL-4S-092806MS
RL-4S-092806DUP

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6010B for Dissolved Metals. The metals analyzed were Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium, and Silicon.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Sodium	723.2 ug/L	RL-4S-092806 G1S-092806 RLSW-2-092706 RLSW-3-092706

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIII. Field Duplicates

No field duplicates were identified in this SDG.

XIV. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Dissolved Metals - Data Qualification Summary - SDG JY77

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG JY77

No Sample Data Qualified in this SDG

LDC Report# 15597G6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	September 27 through September 29, 2006
LDC Report Date:	June 13, 2007
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	JY77

Sample Identification

RL-4S-092806
R2-092906
R4S-092706
G1S-092806
RLSW-2-092906
G2S-092906
G2D-092906
RL-4S-092806MS
RL-4S-092806DUP
R2-092906MS

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Chloride, Fluoride, and Sulfate, EPA Method 365.2 for Total Phosphorus, Standard Method 2320 for Alkalinity, and Fluid Density by Pychnometer.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG JY77

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG JY77

No Sample Data Qualified in this SDG

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

Anchor Environmental, LLC
1423 3rd Avenue, Suite 300
Seattle, WA 98101-2226
ATTN: Ms. Lisa Allen

October 23, 2006

SUBJECT: Chinook Ventures, Inc., Data Validation

Dear Ms. Allen,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on October 18, 2006. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 15622:

SDG #	Fraction
F2628, F2574, F2582, F2604, F2616, JZ82	Dissolved Metals, Wet Chemistry

The data validation was performed under EPA Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998

Please feel free to contact us if you have any questions.

Sincerely,

Stella S. Cuenco
Project Manager/Senior Chemist

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1 WEEK TAT (25% Surcharge)

Attachment 1

696 Pages

LDC #15622 (Anchor Environmental-Seattle WA / Chinook Ventures, Inc.)

LDC	SDG#	DATE REC'D	(3) DATE DUE	Diss. Metals (6010B)		Diss. Si (6010B)		Alk. (2320)		Cl,F, SO4 (300.0)		T. Phos. (365.2)		Fluid Density		Free CN- (D4282)		Total CN- (335.2)		WAD CN- (4500)																			
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	F2628	10/18/06	10/25/06	-	-	-	-	-	-	-	-	-	-	-	-	3	0	3	0	3	0																		
B	F2574	10/18/06	10/25/06	-	-	-	-	-	-	-	-	-	-	-	-	3	0	3	0	3	0																		
C	F2582	10/18/06	10/25/06	-	-	-	-	-	-	-	-	-	-	-	-	8	0	8	0	8	0																		
D	F2604	10/18/06	10/25/06	-	-	-	-	-	-	-	-	-	-	-	-	10	0	10	0	10	0																		
E	F2616	10/18/06	10/25/06	-	-	-	-	-	-	-	-	-	-	-	-	9	0	9	0	9	0																		
F	JZ82	10/18/06	10/25/06	3	0	3	0	3	0	3	0	3	0	3	0	-	-	-	-	-	-																		
Total	B/SC			3	0	3	0	3	0	3	0	3	0	3	0	33	0	33	0	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	117

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS, MSD, or DUP's.

15622ST.wpd

Chinook Ventures, Inc.
Data Validation Reports
LDC# 15622

Dissolved Metals

LDC

LDC Report# 15622F4

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Chinook Ventures, Inc.

Collection Date: October 4, 2006

LDC Report Date: October 19, 2006

Matrix: Water

Parameters: Dissolved Metals

Validation Level: EPA Level III

Laboratory: Analytical Resources, Inc.

Sample Delivery Group (SDG): JZ82

Sample Identification

W1-100406
W6-100406
W7-100406
W1-100406MS
W1-100406DUP

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6010B for Dissolved Metals. The metals analyzed were Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium, and Silicon.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
W1-100406MS (All samples in SDG JZ82)	Iron	116 (85-115)	J (all detects)	A

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIII. Field Duplicates

No field duplicates were identified in this SDG.

XIV. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Dissolved Metals - Data Qualification Summary - SDG JZ82

SDG	Sample	Analyte	Flag	A or P	Reason
JZ82	W1-100406 W6-100406 W7-100406	Iron	J (all detects)	A	Matrix spike analysis (%R)

Chinook Ventures, Inc.
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG JZ82

No Sample Data Qualified in this SDG

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: W1-100406
SAMPLE

Lab Sample ID: JZ82A
LIMS ID: 06-18789
Matrix: Water
Data Release Authorized:
Reported: 10/11/06

QC Report No: JZ82-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 10/04/06
Date Received: 10/04/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/09/06	6010B	10/09/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	10/09/06	6010B	10/09/06	**7440-70-2**	**Calcium**	0.05	**15.9**	
3010A	10/09/06	6010B	10/09/06	**7439-89-6**	**Iron**	0.05	**4.57**	J
3010A	10/09/06	6010B	10/09/06	**7439-95-4**	**Magnesium**	0.05	**7.57**	
3010A	10/09/06	6010B	10/09/06	**7439-96-5**	**Manganese**	0.001	**0.859**	
3010A	10/09/06	6010B	10/09/06	**7440-09-7**	**Potassium**	0.5	**1.9**	
3010A	10/09/06	6010B	10/09/06	**7440-23-5**	**Sodium**	0.5	**12.1**	

U-Analyte undetected at given RL
RL-Reporting Limit

10/2006

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: W1-100406
SAMPLE

Lab Sample ID: JZ82D
LIMS ID: 06-18792
Matrix: Water
Data Release Authorized:
Reported: 10/11/06

QC Report No: JZ82-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 10/04/06
Date Received: 10/04/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/09/06	6010B	10/10/06	**7440-21-3**	**Silicon**	0.3	**23.3**	

U-Analyte undetected at given RL
RL-Reporting Limit

C/02006

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: W6-100406
SAMPLE

Lab Sample ID: JZ82B
LIMS ID: 06-18790
Matrix: Water
Data Release Authorized:
Reported: 10/11/06

QC Report No: JZ82-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 10/04/06
Date Received: 10/04/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/09/06	6010B	10/09/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	10/09/06	6010B	10/09/06	**7440-70-2**	**Calcium**	0.05	**24.2**	
3010A	10/09/06	6010B	10/09/06	**7439-89-6**	**Iron**	0.05	**0.05**	J
3010A	10/09/06	6010B	10/09/06	**7439-95-4**	**Magnesium**	0.05	**8.87**	
3010A	10/09/06	6010B	10/09/06	**7439-96-5**	**Manganese**	0.001	**0.486**	
3010A	10/09/06	6010B	10/09/06	**7440-09-7**	**Potassium**	0.5	**1.7**	
3010A	10/09/06	6010B	10/09/06	**7440-23-5**	**Sodium**	0.5	**13.2**	

U-Analyte undetected at given RL
RL-Reporting Limit

M/02006

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: W6-100406
SAMPLE

Lab Sample ID: JZ82E
LIMS ID: 06-18793
Matrix: Water
Data Release Authorized:
Reported: 10/11/06

QC Report No: JZ82-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 10/04/06
Date Received: 10/04/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/09/06	6010B	10/10/06	**7440-21-3**	**Silicon**	0.3	**20.0**	

U-Analyte undetected at given RL
RL-Reporting Limit

10/2006

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: W7-100406
SAMPLE

Lab Sample ID: JZ82C
LIMS ID: 06-18791
Matrix: Water
Data Release Authorized:
Reported: 10/11/06

QC Report No: JZ82-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 10/04/06
Date Received: 10/04/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/09/06	6010B	10/09/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	10/09/06	6010B	10/09/06	**7440-70-2**	**Calcium**	0.05	**16.7**	
3010A	10/09/06	6010B	10/09/06	**7439-89-6**	**Iron**	0.05	**6.46**	J
3010A	10/09/06	6010B	10/09/06	**7439-95-4**	**Magnesium**	0.05	**8.03**	
3010A	10/09/06	6010B	10/09/06	**7439-96-5**	**Manganese**	0.001	**0.917**	
3010A	10/09/06	6010B	10/09/06	**7440-09-7**	**Potassium**	0.5	**2.0**	
3010A	10/09/06	6010B	10/09/06	**7440-23-5**	**Sodium**	0.5	**12.5**	

U-Analyte undetected at given RL
RL-Reporting Limit

10/02/06

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: W7-100406
SAMPLE

Lab Sample ID: JZ82F
LIMS ID: 06-18794
Matrix: Water
Data Release Authorized:
Reported: 10/11/06

QC Report No: JZ82-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 10/04/06
Date Received: 10/04/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/09/06	6010B	10/10/06	**7440-21-3**	**Silicon**	0.3	**22.4**	

U-Analyte undetected at given RL
RL-Reporting Limit

10/02006

LDC #: 15622F4 **VALIDATION COMPLETENESS WORKSHEET** Date: 10/19/06

SDG #: JZ82 Level III Page: 1 of 1

Laboratory: Analytical Resources, Inc. Reviewer: MM

2nd Reviewer: A

METHOD: Dissolved Metals (EPA SW 846 Method 6010B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/4/06
II.	Calibration	A	
III.	Blanks	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Matrix Spike Analysis	SW	
VI.	Duplicate Sample Analysis	A	
VII.	Laboratory Control Samples (LCS)	A	LCS
VIII.	Internal Standard (ICP-MS)	N	3µ not utilized
IX.	Furnace Atomic Absorption QC	N	
X.	ICP Serial Dilution	N	not performed
XI.	Sample Result Verification	N	
XII.	Overall Assessment of Data	A	
XIII.	Field Duplicates	N	
XIV.	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: AA

1	W1-100406	11		21		31	
2	W6-100406	12		22		32	
3	W7-100406	13		23		33	
4	W1-100406MS	14		24		34	
5	W1-100406DUP	15		25		35	
6	PB	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 15622T4
SDG #: J782

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: MH
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-3	AQ	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
M4.5	↓	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
ICP Trace		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___

Comments: Mercury by CVAA if performed

LDC #: 15622F4
SDG #: J2S2

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: JMM
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken. 85-115

Y N N/A Was a post digestion spike analyzed for ICP elements that did not meet the required criteria for matrix spike recovery?

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
1	4	AQ	Fe	116	All	J+/A

Comments:

MS.4S2

Chinook Ventures, Inc.
Data Validation Reports
LDC# 15622

Wet Chemistry

LDC

LDC Report# 15622A6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Chinook Ventures, Inc.

Collection Date: October 4, 2006

LDC Report Date: October 19, 2006

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: CH2M Hill Applied Sciences Laboratory

Sample Delivery Group (SDG): F2628

Sample Identification

W1-100406
W6-100406
W7-100406

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per ASTM Method D4282 for Free Cyanide, EPA Method 335.2 for Total Cyanide, and Standard Method 4500-CN-I for Weak Acid Dissociable Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Extraction Until Analysis	Required Holding Time From Sample Extraction Until Analysis	Flag	A or P
W1-100406	Free cyanide	49.25 hours	24 hours	J (all detects) R (all non-detects)	P
W6-100406	Free cyanide	50.25 hours	24 hours	J (all detects) R (all non-detects)	P
W7-100406	Free cyanide	49.75 hours	24 hours	J (all detects) R (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
MB	Free cyanide	0.132 ug/L	All samples in SDG F2628

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
W1-100406	Free cyanide	0.264 ug/L	0.264U ug/L
W6-100406	Free cyanide	0.121 ug/L	0.121U ug/L
W7-100406	Free cyanide	0.196 ug/L	0.196U ug/L

IV. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) analyses specified for the samples in this SDG, and therefore matrix spike analyses were not performed for this SDG.

V. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG F2628

SDG	Sample	Analyte	Flag	A or P	Reason
F2628	W1-100406 W6-100406 W7-100406	Free cyanide	J (all detects) R (all non-detects)	P	Technical holding times

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG F2628

SDG	Sample	Analyte	Modified Final Concentration	A or P
F2628	W1-100406	Free cyanide	0.264U ug/L	A
F2628	W6-100406	Free cyanide	0.121U ug/L	A
F2628	W7-100406	Free cyanide	0.196U ug/L	A

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W1-100406

SDG No.: F2628

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F262801

Date Received: 10/05/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.264	B	ug/L	1	10 ML	ASTM D4282	10/06/06 UJ

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W1-100406

SDG No.: F2628

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F262801

Date Received: 10/05/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.0788		mg/L	1	50 ML	E335.2	10/09/06

DX061013-11:33-F2628-W

FORM I GEN CHEM

A 102006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W1-100406

SDG No.: F2628

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F262801

Date Received: 10/05/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00500	U	mg/L	1	50 ML	SM4500-CN I	10/06/06

D102006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W6-100406

SDG No.: F2628

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F262802

Date Received: 10/05/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.121	B	ug/L	1	10 ML	ASTM D4282	10/06/06 UJ

2/10 2006

YL061009-13:06-F2628-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W6-100406

SDG No.: F2628

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F262802

Date Received: 10/05/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00500	U	mg/L	1	50 ML	SM4500-CN I	10/06/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W6-100406

SDG No.: F2628

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F262802

Date Received: 10/05/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.0452		mg/L	1	50 ML	E335.2	10/09/06

DK061013-11:33-F2628-W

FORM I GEN CHEM

N 10 2006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W7-100406

SDG No.: F2628

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F262803

Date Received: 10/05/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed	
57-12-5	Cyanide, Free	0.0743	0.500	0.196	B	ug/L	1	10 ML	ASTM D4282	10/06/06	UJ

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W7-100406

SDG No.: F2628

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F262803

Date Received: 10/05/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.0126	0.0250	1.19		mg/L	5	50 ML	E335.2	10/09/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W7-100406

SDG No.: F2628

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F262803

Date Received: 10/05/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00500	U	mg/L	1	50 ML	SM4500-CN I	10/06/06

LDC #: 15622A6

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/19/06

SDG #: F2628

Page: 1 of 1

Laboratory: CH2M Hill Applied Sciences Laboratory

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: Free Cyanide (ASTM D4282), Total Cyanide (EPA Method 335.2), Weak Acid Dissociable Cyanide (SM4500-CN-I)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 10/4/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	SW	
IV	Matrix Spike/Matrix Spike Duplicates	N	3 client specified
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	W1-100406	11		21		31	
2	W6-100406	12		22		32	
3	W7-100406	13		23		33	
4	MB	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 15662A6
SDG #: F628

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MY
2nd reviewer: A

All circled methods are applicable to each sample.

Sample ID	Parameter																		
1-3	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN	NH_3	TKN	TOC	CR^{6+}	Free CN	WAD CN			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}					
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}					
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}					
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}					
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}					
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}					
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}					
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}					
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}					
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}					
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}					
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}					
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}					
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}					
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}					
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}					
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}					
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}					
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}					
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}					
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}					

Comments:

LDC #: 15662A6
SDG #: F2628

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page: 1 of 1
Reviewer: MY
2nd reviewer: [illegible]

All circled dates have exceeded the technical holding time.
Y N N/A Were all samples preserved as applicable to each method ?
Y N N/A Were all cooler temperatures within validation criteria?

Method:		ASTM D4282					
Parameters:		Free CN					
Technical holding time:		24hr					
Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
1	10/4/06 1050	10/6/06 1209	(49.25 hr)				J/R/P
2	1005	1213	(50.25 hr)				
3	1030	1214	(49.75 hr)				

LDC #: 15662A6
SDG #: F2628

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: MM
2nd Reviewer: A

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were all samples associated with a given method blank?
Y N N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: ug/L **Associated Samples:** All

Analyte	Blank ID	Maximum ICB/CCB	Blank Action Limit	Sample Identification								
	MB			1	2	3						
Free CN	0.132		0.66	0.264	0.121	0.196						

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Chinook Ventures, Inc.

Collection Date: September 26, 2006

LDC Report Date: October 23, 2006

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: CH2M Hill Applied Sciences Laboratory

Sample Delivery Group (SDG): F2574

Sample Identification

PZ-3-092606
PZ-4-092606
PZ-1-092606

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per ASTM Method D4282 for Free Cyanide, EPA Method 335.2 for Total Cyanide, and Standard Method 4500-CN-I for Weak Acid Dissociable Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

		Total Time From Sample Extraction	Required Holding Time From Sample Extraction		

Sample	Analyte	Until Analysis	Until Analysis	Flag	A or P
All samples in SDG F2574	Free cyanide	3 days	24 hours	J (all detects) R (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable with the following exceptions:

Date	Lab. Reference/ID	Analyte	%D (Limits)	Associated Samples	Flag	A or P
9/29/06	CV3-0929	Free cyanide	19.0 (≤15)	All samples in SDG F2574	J (all detects)	A

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) analyses specified for the samples in this SDG, and therefore matrix spike analyses were not performed for this SDG.

V. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG F2574

SDG	Sample	Analyte	Flag	A or P	Reason
F2574	PZ-3-092606 PZ-4-092606 PZ-1-092606	Free cyanide	J (all detects) R (all non-detects)	P	Technical holding times
F2574	PZ-3-092606 PZ-4-092606 PZ-1-092606	Free cyanide	J (all detects)	A	Calibration (%D)

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG F2574

No Sample Data Qualified in this SDG

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

PZ-3-092606

SDG No.: F2574

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F257401

Date Received: 09/27/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	1.35		ug/L	1	10 ML	ASTM D4282	09/29/06 J

YL061009-09:41-F2574-W

FORM I GEN CHEM

10/20/06

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

PZ-3-092606

SDG No.: F2574

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F257401

Date Received: 09/27/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00503	0.0100	0.434		mg/L	2	50 ML	E335.2	10/02/06

DK061006-11:51-F2574-W

FORM I GEN CHEM

N/102006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

PZ-3-092606

SDG No.: F2574

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F257401

Date Received: 09/27/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.0264		mg/L	1	50 ML	SM4500-CN I	09/28/06

A/102506

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

PZ-4-092606

SDG No.: F2574

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F257402

Date Received: 09/27/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	2.48	16.7	189		ug/L	10	3 ML	ASTM D4282	09/29/06 J

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

PZ-4-092606

SDG No.: F2574

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F257402

Date Received: 09/27/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.503	1.00	70.4		mg/L	200	50 ML	E335.2	10/02/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

PZ-4-092606

SDG No.: F2574

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F257402

Date Received: 09/27/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.0415		mg/L	1	50 ML	SM4500-CN I	09/28/06

2/10 2006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

PZ-1-092606

SDG No.: F2574

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F257403

Date Received: 09/27/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.248	1.67	23.0		ug/L	1	3 ML	ASTM D4282	09/29/06 J

YL061009-09:41-F2574-W

FORM I GEN CHEM

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

PZ-1-092606

SDG No.: F2574

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F257403

Date Received: 09/27/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.126	0.250	7.48		mg/L	50	50 ML	E335.2	10/02/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

PZ-1-092606

SDG No.: F2574

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F257403

Date Received: 09/27/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.0956		mg/L	1	50 ML	SM4500-CN I	09/28/06

R 10/20/06

DK061009-17:05-F2574-W

FORM I GEN CHEM

LDC #: 15622B6 **VALIDATION COMPLETENESS WORKSHEET** Date: 10/19/06

SDG #: F2574 Level III Page: 1 of 1

Laboratory: CH2M Hill Applied Sciences Laboratory Reviewer: MM

2nd Reviewer: [illegible]

METHOD: Free Cyanide (ASTM D4282), Total Cyanide (EPA Method 335.2), Weak Acid Dissociable Cyanide (SM4500-CN-I)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 9/26/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	SW	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	N	
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	PZ-3-092606	11		21		31	
2	PZ-4-092606	12		22		32	
3	PZ-1-092606	13		23		33	
4	MB	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 15662B6
SDG #: FXSM4

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MY
2nd reviewer: A

All circled methods are applicable to each sample.

Sample ID	Parameter
1-3	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+} Free CN WAD CN ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____

Comments:

LDC #: 15622B6
SDG #: FX574

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

All circled dates have exceeded the technical holding time.
(Y) N N/A Were all samples preserved as applicable to each method ?
(Y) N N/A Were all cooler temperatures within validation criteria?

Method:		ASTM D4282					
Parameters:		Free CN					
Technical holding time:		24 hr					
Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
All	9/26/06	9/29/06	(3 days)				J/R/P

HT.6

LDC #: 15628B6
SDG #: F3574

VALIDATION FINDINGS WORKSHEET
Calibration

Page: 1 of 1
Reviewer: MY
2nd Reviewer: K

METHOD: Inorganics, EPA Method Sel com

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were all instruments calibrated daily, each set-up time, and were the proper number of standards used?
Y (N) N/A Were all initial and continuing calibration verification percent recoveries (%R) within the control limits of ~~90-110%~~ ? %D ≤15%
(Y) N N/A Are all correlation coefficients ≥0.995 ?

LEVEL IV/D ONLY:

Y N (N/A) Were recalculated results acceptable? See Level IV Initial and Continuing Calibration Recaluculation Worksheet for recalulations.
Y N (N/A) Was a balance check conducted prior to the TDS analysis.?
Y N (N/A) Was the titrant normality checked?

#	Date	Calibration ID	Analyte	~~%R~~ %D	Associated Samples	Qualifications
1	9/29/06	CV3-0929	Free CN	19.0 (≤15%)	All	J det /A

Comments:

CAL6

LDC Report# 15622C6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Chinook Ventures, Inc.

Collection Date: September 27, 2006

LDC Report Date: October 19, 2006

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: CH2M Hill Applied Sciences Laboratory

Sample Delivery Group (SDG): F2582

Sample Identification

RLSW-2-092706
RLSW-3-092706
R4D-092706
PZ-2-092706
RLSW-1-092706
R4S-092706
R3-092706
R43-092706

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per ASTM Method D4282 for Free Cyanide, EPA Method 335.2 for Total Cyanide, and Standard Method 4500-CN-I for Weak Acid Dissociable Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Extraction Until Analysis	Required Holding Time From Sample Extraction Until Analysis	Flag	A or P
RLSW-2-092706 RLSW-1-092706	Free cyanide	53.75 hours	24 hours	J (all detects) R (all non-detects)	P
RLSW-3-092706	Free cyanide	54.25 hours	24 hours	J (all detects) R (all non-detects)	P
R4D-092706 R4S-092706	Free cyanide	53 hours	24 hours	J (all detects) R (all non-detects)	P
PZ-2-092706	Free cyanide	56 hours	24 hours	J (all detects) R (all non-detects)	P
R3-092706	Free cyanide	52 hours	24 hours	J (all detects) R (all non-detects)	P
R43-092706	Free cyanide	51.25 hours	24 hours	J (all detects) R (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
MB	Free cyanide	0.0477 ug/L	All samples in SDG F2582

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

IV. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) analyses specified for the samples in this SDG, and therefore matrix spike analyses were not performed for this SDG.

V. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

Samples R3-092706 and R43-092706 were identified as field duplicates. No cyanide concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration		RPD
	R3-092706	R43-092706	
Free cyanide	85.2 ug/L	130 ug/L	42
Total cyanide	426 mg/L	414 mg/L	3

Analyte	Concentration		RPD
	R3-092706	R43-092706	
Weak acid dissociable cyanide	0.890 mg/L	0.724 mg/L	21

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG F2582

SDG	Sample	Analyte	Flag	A or P	Reason
F2582	RLSW-2-092706 RLSW-1-092706 RLSW-3-092706 R4D-092706 R4S-092706 PZ-2-092706 R3-092706 R43-092706	Free cyanide	J (all detects) R (all non-detects)	P	Technical holding times

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG F2582

No Sample Data Qualified in this SDG

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RLSW-2-092706

SDG No.: F2582

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F258201

Date Received: 09/28/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.624		ug/L	1	10 ML	ASTM D4282	09/29/06 J

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YL061009-09:43-F2582-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RLSW-2-092706

SDG No.: F2582

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F258201

Date Received: 09/28/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.0943		mg/L	1	50 ML	E335.2	10/02/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RLSW-2-092706

SDG No.: F2582

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F258201

Date Received: 09/28/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.0188		mg/L	1	50 ML	SM4500-CN I	10/05/06

DK061009-11:02-F2582-W

FORM I GEN CHEM

M/02006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RLSW-3-092706

SDG No.: F2582

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F258202

Date Received: 09/28/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	1.38		ug/L	1	10 ML	ASTM D4282	09/29/06 J

N/10/2006

YL061009-09:43-F2582-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RLSW-3-092706

SDG No.: F2582

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F258202

Date Received: 09/28/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.299		mg/L	1	50 ML	E335.2	10/02/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RLSW-3-092706

SDG No.: F2582

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F258202

Date Received: 09/28/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.0309		mg/L	1	50 ML	SM4500-CN I	10/05/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

R4D-092706

SDG No.: F2582

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F258203

Date Received: 09/28/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed	
57-12-5	Cyanide, Free	0.0743	0.500	1.61		ug/L	1	10 ML	ASTM D4282	09/29/06	J

YL061009-09:43-F2582-W

FORM I GEN CHEM

4/02006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

R4D-092706

SDG No.: F2582

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F258203

Date Received: 09/28/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.0271		mg/L	1	50 ML	E335.2	10/02/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

R4D-092706

SDG No.: F2582

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F258203

Date Received: 09/28/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.0198		mg/L	1	50 ML	SM4500-CN I	10/05/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

PZ-2-092706

SDG No.: F2582

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F258204

Date Received: 09/28/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	2.48	16.7	73.2		ug/L	10	3 ML	ASTM D4282	09/29/06 J

YL061009-09:43-F2582-W

FORM I GEN CHEM

N 10/20/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

PZ-2-092706

SDG No.: F2582

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F258204

Date Received: 09/28/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.252	0.500	34.7		mg/L	100	50 ML	E335.2	10/02/06

DK061006-12:06-F2582-W

FORM I GEN CHEM

M 102006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

PZ-2-092706

SDG No.: F2582

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F258204

Date Received: 09/28/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.137		mg/L	1	50 ML	SM4500-CN I	10/05/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RLSW-1-092706

SDG No.: F2582

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F258205

Date Received: 09/28/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.853		ug/L	1	10 ML	ASTM D4282	09/29/06 J

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RLSW-1-092706

SDG No.: F2582

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F258205

Date Received: 09/28/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.0952		mg/L	1	50 ML	E335.2	10/02/06

DK061006-12:06-F2582-W

FORM I GEN CHEM

R 10/20/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

RLSW-1-092706

SDG No.: F2582

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F258205

Date Received: 09/28/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.0239		mg/L	1	50 ML	SM4500-CN I	10/05/06

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

R4S-092706

SDG No.: F2582

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F258206

Date Received: 09/28/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	2.02		ug/L	1	10 ML	ASTM D4282	09/29/06 J

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

R4S-092706

SDG No.: F2582

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F258206

Date Received: 09/28/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.0534		mg/L	1	50 ML	E335.2	10/02/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

R4S-092706

SDG No.: F2582

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F258206

Date Received: 09/28/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00567		mg/L	1	50 ML	SM4500-CN I	10/05/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

R3-092706

SDG No.: F2582

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F258207

Date Received: 09/28/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	2.48	16.7	85.2		ug/L	10	3 ML	ASTM D4282	09/29/06 J

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

R3-092706

SDG No.: F2582

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F258207

Date Received: 09/28/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	5.03	10.0	426		mg/L	2000	50 ML	E335.2	10/02/06

R/02006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

R3-092706

SDG No.: F2582

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F258207

Date Received: 09/28/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.0171	0.0500	0.890		mg/L	10	50 ML	SM4500-CN I	10/05/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

R43-092706

SDG No.: F2582

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F258208

Date Received: 09/28/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	2.48	16.7	130		ug/L	10	3 ML	ASTM D4282	09/29/06 J

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

R43-092706

SDG No.: F2582

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F258208

Date Received: 09/28/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	5.03	10.0	414		mg/L	2000	50 ML	E335.2	10/02/06

DK061006-12:06-F2582-W

FORM I GEN CHEM

M/02006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

R43-092706

SDG No.: F2582

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F258208

Date Received: 09/28/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.0171	0.0500	0.724		mg/L	10	50 ML	SM4500-CN I	10/05/06

LDC #: 15622C6

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/19/06

SDG #: F2582

Page: 1 of 1

Laboratory: CH2M Hill Applied Sciences Laboratory

Reviewer: MA

2nd Reviewer: A

METHOD: Free Cyanide (ASTM D4282), Total Cyanide (EPA Method 335.2), Weak Acid Dissociable Cyanide (SM4500-CN-I)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 9/27/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	N	} client-specified
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	(7,8)
X	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: A2

1	RLSW-2-092706	11		21		31	
2	RLSW-3-092706	12		22		32	
3	R4D-092706	13		23		33	
4	PZ-2-092706	14		24		34	
5	RLSW-1-092706	15		25		35	
6	R4S-092706	16		26		36	
7	R3-092706	17		27		37	
8	R43-092706	18		28		38	
9	MB	19		29		39	
10		20		30		40	

Notes:

LDC #: 15662-C6
SDG #: F 2582

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MY
2nd reviewer: A

All circled methods are applicable to each sample.

Sample ID	Parameter
1-8	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+} (Free CN) (WAD CN) ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____

Comments:

LDC #: 15622e6
SDG #: F1582

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page: 1 of 1
Reviewer: MY
2nd reviewer: M

All circled dates have exceeded the technical holding time.
(Y) N N/A Were all samples preserved as applicable to each method ?
(Y) N N/A Were all cooler temperatures within validation criteria?

Method:		ASTM 9422B					
Parameters:		Free CN					
Technical holding time:		24 hr					
Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
1	9/29/06 1025	9/29/06 ~~1607~~ 1607	(53.75 hr)				J/P/P
2	1005	1613	(54.25 hr)				
3	1120	1616	(53 hr)				
4	0815	1618	(56 hr)				
5	1040	1620	(53.75 hr)				
6	1115	1622	(53 hr)				
7	1230	1624	(52 hr)				
8	1310	1626	(51.25 hr)				

LDC #: 15662C6
SDG #: F2582

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: MM
2nd Reviewer: a

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were all samples associated with a given method blank?
Y N N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: ug/L

Associated Samples: All (75%)

Analyte	Blank ID	Maximum ICB/CCB	Blank Action Limit	Sample Identification								
	MB											
Free CN	0.0477		0.2385									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC#: 15626C6
SDG#: F2582

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: MM
2nd Reviewer: [illegible]

Inorganics, Method See cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD	
	7	8		
Free Cyanide (ug/L)	85.2	130	42	
Total Cyanide	426	414	3	
WAD Cyanide	0.890	0.724	21	

V:\FIELD DUPLICATES\FD_inorganic\15622C6.wpd

LDC Report# 15622D6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Chinook Ventures, Inc.

Collection Date: October 2, 2006

LDC Report Date: October 19, 2006

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: CH2M Hill Applied Sciences Laboratory

Sample Delivery Group (SDG): F2604

Sample Identification

R2-100206
G1S-100206
G2S-100206
G2D-100206
G1D-100206
PZ5-100206
PZ45-100206
G3S-100206
G43S-100206
FB-100206

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per ASTM Method D4282 for Free Cyanide, EPA Method 335.2 for Total Cyanide, and Standard Method 4500-CN-I for Weak Acid Dissociable Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Extraction Until Analysis	Required Holding Time From Sample Extraction Until Analysis	Flag	A or P
R2-100206	Free cyanide	53.75 hours	24 hours	J (all detects) R (all non-detects)	P
G1S-100206	Free cyanide	53.5 hours	24 hours	J (all detects) R (all non-detects)	P
G2S-100206 G2D-100206	Free cyanide	3 days	24 hours	J (all detects) R (all non-detects)	P
G1D-100206	Free cyanide	53.25 hours	24 hours	J (all detects) R (all non-detects)	P
PZ5-100206	Free cyanide	52.5 hours	24 hours	J (all detects) R (all non-detects)	P
PZ45-100206	Free cyanide	52 hours	24 hours	J (all detects) R (all non-detects)	P
G3S-100206	Free cyanide	51 hours	24 hours	J (all detects) R (all non-detects)	P
G43S-100206 FB-100206	Free cyanide	50.5 hours	24 hours	J (all detects) R (all non-detects)	P

Non-detected sample concentrations were qualified as unusable (R) due to a gross exceedance (>2X) of holding time.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
MB	Free cyanide	0.0968 ug/L	G2S-100206 G2D-100206
MB	Free cyanide	0.0543 ug/L	R2-100206 G1S-100206 G1D-100206 PZ5-100206 PZ45-100206 G3S-100206 G43S-100206 FB-100206

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
G2S-100206	Free cyanide	0.250 ug/L	0.250U ug/L
G2D-100206	Free cyanide	0.303 ug/L	0.303U ug/L
G1S-100206	Free cyanide	0.225 ug/L	0.225U ug/L

IV. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) analyses specified for the samples in this SDG, and therefore matrix spike analyses were not performed for this SDG.

V. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

Samples PZ5-100206 and PZ45-100206 and samples G3S-100206 and G43S-100206 were identified as field duplicates. No cyanide concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration		RPD
	PZ5-100206	PZ45-100206	
Free cyanide	211 ug/L	336 ug/L	46
Total cyanide	304 mg/L	354 mg/L	15
Weak acid dissociable cyanide	0.748 mg/L	1.04 mg/L	28

Analyte	Concentration		RPD
	G3S-100206	G43S-100206	
Free cyanide	0.883 ug/L	0.952 ug/L	8
Total cyanide	0.0825 mg/L	0.0861 mg/L	4
Weak acid dissociable cyanide	0.0279 mg/L	0.0229 mg/L	20

X. Field Blanks

Sample FB-100206 was identified as a field blank. No cyanide contaminants were found in this blank.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG F2604

SDG	Sample	Analyte	Flag	A or P	Reason
F2604	R2-100206 G1S-100206 G2S-100206 G2D-100206 G1D-100206 PZ5-100206 PZ45-100206 G3S-100206 G43S-100206 FB-100206	Free cyanide	J (all detects) R (all non-detects)	P	Technical holding times

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG F2604

SDG	Sample	Analyte	Modified Final Concentration	A or P
F2604	G2S-100206	Free cyanide	0.250U ug/L	A
F2604	G2D-100206	Free cyanide	0.303U ug/L	A
F2604	G1S-100206	Free cyanide	0.225U ug/L	A

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

R2-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260401

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.450	B	ug/L	1	10 ML	ASTM D4282	10/04/06

2/02026

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

R2-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260401

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.00500	U	mg/L	1	50 ML	E335.2	10/09/06

M 102006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

R2-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260401

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00213	B	mg/L	1	50 ML	SM4500-CN I	10/05/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G1S-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260402

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.225	B	ug/L	1	10 ML	ASTM D4282	10/04/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G1S-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260402

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.00500	U	mg/L	1	50 ML	E335.2	10/09/06

R 102006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G18-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260402

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00500	U	mg/L	1	50 ML	SM4500-CN I	10/05/06

R 10/20/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G2S-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260403

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed	
57-12-5	Cyanide, Free	0.0743	0.500	0.250	B	ug/L	1	10 ML	ASTM D4282	10/05/06	UJ

10/02/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G2S-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260403

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.353		mg/L	1	50 ML	E335.2	10/09/06

2/02006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G2S-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260403

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.0143		mg/L	1	50 ML	SM4500-CN I	10/05/06

DK061011-16:27-F2604-W

FORM I GEN CHEM

R 102006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G2D-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260404

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.303	B	ug/L	1	10 ML	ASTM D4282	10/05/06 UJ

4/02006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G2D-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260404

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.368		mg/L	1	50 ML	E335.2	10/09/06

R 102006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G2D-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260404

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.0193		mg/L	1	50 ML	SM4500-CN I	10/05/06

11/02/2006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G1D-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260405

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	3.35		ug/L	1	10 ML	ASTM D4282	10/04/06

U

11/02/06

FORM I G

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G1D-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260405

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.0479		mg/L	1	50 ML	E335.2	10/09/06

ML 102006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G1D-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260405

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00769		mg/L	1	50 ML	SM4500-CN I	10/05/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

PZ5-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260406

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	4.95	33.3	211		ug/L	20	3 ML	ASTM D4282	10/04/06 J

M 102006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

PZ5-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260406

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	2.52	5.00	304		mg/L	1000	50 ML	E335.2	10/09/06

N/102006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

PZ5-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260406

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.0171	0.0500	0.784		mg/L	10	50 ML	SM4500-CN I	10/05/06

DK061011-16:27-F2604-W

FORM I GEN CHEM

N/10/2006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

PZ45-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260407

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	4.95	33.3	336		ug/L	20	3 ML	ASTM D4282	10/04/06 J

R 10 2006

YL061009-12:54-F2604-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

PZ45-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260407

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	2.52	5.00	354		mg/L	1000	50 ML	E335.2	10/09/06

R 10/20/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

PZ45-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260407

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.0171	0.0500	1.04		mg/L	10	50 ML	SM4500-CN I	10/06/06

DK061011-16:27-F2604-W

FORM I GEN CHEM

2/02005

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G3S-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260408

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.883		ug/L	1	10 ML	ASTM D4282	10/04/06 J

10/20/06

YL061009-12:56-F2604-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G3S-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260408

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.0825		mg/L	1	50 ML	E335.2	10/09/06

R/02006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G3S-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260408

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.0279		mg/L	1	50 ML	SM4500-CN I	10/06/06

DK061011-16:27-F2604-W

FORM I GEN CHEM

M 10 2006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G43S-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260409

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.952		ug/L	1	10 ML	ASTM D4282	10/04/06 J

E/0 2006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G43S-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260409

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.0861		mg/L	1	50 ML	E335.2	10/09/06

DKD61013-11:21-P2604-W

FORM I GEN CHEM

R 10/2006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G43S-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260409

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.0229		mg/L	1	50 ML	SM4500-CN I	10/06/06

DK061011-16:27-F2604-W

FORM I GEN CHEM

10/2006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

FB-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260410

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed	
57-12-5	Cyanide, Free	0.0743	0.500	0.500	U	ug/L	1	10 ML	ASTM D4282	10/04/06	R

R 10/20/06

YL061009-I2:54-F2604-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

FB-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260410

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.00500	U	mg/L	1	50 ML	E335.2	10/09/06

DK061013-11:21-F2604-W

FORM I GEN CHEM

10/20/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

FB-100206

SDG No.: F2604

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F260410

Date Received: 10/03/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00500	U	mg/L	1	50 ML	SM4500-CN.I	10/06/06

LDC #: 15622D6

VALIDATION COMPLETENESS WORKSHEET

Level III

SDG #: F2604

Laboratory: CH2M Hill Applied Sciences Laboratory

Date: 10/19/06

Page: 1 of 1

Reviewer: HM

2nd Reviewer: [illegible]

METHOD: Free Cyanide (ASTM D4282), Total Cyanide (EPA Method 335.2), Weak Acid Dissociable Cyanide (SM4500-CN-I)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 10/2/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	SW	
IV	Matrix Spike/Matrix Spike Duplicates	N	} client specified.
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	(6,7), (8,9)
X	Field blanks	ND	FB=10

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: A2

1	R2-100206	11	PIB	21		31	
2	G1S-100206	12		22		32	
3	G2S-100206	13		23		33	
4	G2D-100206	14		24		34	
5	G1D-100206	15		25		35	
6	PZ5-100206	16		26		36	
7	PZ45-100206	17		27		37	
8	G3S-100206	18		28		38	
9	G43S-100206	19		29		39	
10	FB-100206	20		30		40	

Notes:

LDC #: 15662-06
SDG #: F2604

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MY
2nd reviewer: U

All circled methods are applicable to each sample.

Sample ID	Parameter
1-10	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+} (Free CN) (WAD CN) ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ____ ____ ____ ____

Comments:

LDC #: 15622A6
SDG #: F26.4

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

All circled dates have exceeded the technical holding time.
(Y) N N/A Were all samples preserved as applicable to each method ?
(Y) N N/A Were all cooler temperatures within validation criteria?

Method:		ASTM D2482	→				
Parameters:		Free CN	→				
Technical holding time:		24hr	→				
Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
1	10/26/06 1015		10/4/06 1605	(53.75 hrs)			J/R/P
2	1045		1608	(53.5 hrs)			
3	1027		10/5/06	(3 days)			
4	1035		↓	↓			
5	1052		10/04/06 1614	(53.25 hrs)			
6	1216		1640	(52.5 hrs)			
7	1216		1619	(52 hrs)			
8	1346		1641	(51 hrs)			
9	1346		1622	(50.5 hrs)			
10	1400		1623	(50.5 hrs)			✓

LDC #: 15662D6
SDG #: F X604

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: MM
2nd Reviewer: A

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were all samples associated with a given method blank?
~~Y~~ N N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: ug/L

Associated Samples: 3, 4

Analyte	Blank ID	Maximum ICB/CCB	Blank Action Limit	Sample Identification								
	MB			3	4							
Free CN	0.0968		0.484	0.250	0.303							

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 15662116
SDG #: F3604

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: MM
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were all samples associated with a given method blank?
~~Y~~ N N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: ug/L

Associated Samples: ~~All~~ 1, 2, 5-10

Analyte	Blank ID	Maximum ICB/CCB	Blank Action Limit	Sample Identification								
	MB			2	~~3~~							
Free CN	0.0543		0.2715	0.225	~~0.250~~							

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC#: 15626D6
SDG#: F2604

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer:
2nd Reviewer:

Inorganics, Method See cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD	
	6	7		
Free Cyanide (ug/L)	211	336	46	
Total Cyanide	304	354	15	
WAD Cyanide	0.784	1.04	28	

Analyte	Concentration (mg/L)		RPD	
	8	9		
Free Cyanide (ug/L)	0.883	0.952	8	
Total Cyanide	0.0825	0.0861	4	
WAD Cyanide	0.0279	0.0229	20	

V:\FIELD DUPLICATES\FD_inorganic\15622D6.wpd

LDC Report# 15622E6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Chinook Ventures, Inc.

Collection Date: October 3, 2006

LDC Report Date: October 19, 2006

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: CH2M Hill Applied Sciences Laboratory

Sample Delivery Group (SDG): F2616

Sample Identification

G3D-100206
W5-100306
W3-100306
W2-100306
W42-100306
W4A-100306
W4B-100306
FB1-100306
FB2-100306

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per ASTM Method D4282 for Free Cyanide, EPA Method 335.2 for Total Cyanide, and Standard Method 4500-CN-I for Weak Acid Dissociable Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Extraction Until Analysis	Required Holding Time From Sample Extraction Until Analysis	Flag	A or P
G3D-100206 FB1-100306	Free cyanide	53.5 hours	24 hours	J (all detects) R (all non-detects)	P
W5-100306	Free cyanide	53 hours	24 hours	J (all detects) R (all non-detects)	P
W3-100306	Free cyanide	52.25 hours	24 hours	J (all detects) R (all non-detects)	P
W2-100306 W42-100306	Free cyanide	51.75 hours	24 hours	J (all detects) R (all non-detects)	P
W4A-100306	Free cyanide	50.75 hours	24 hours	J (all detects) R (all non-detects)	P
W4B-100306	Free cyanide	50.25 hours	24 hours	J (all detects) R (all non-detects)	P
FB2-100306	Free cyanide	50 hours	24 hours	J (all detects) R (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
MB	Free cyanide	0.0968 ug/L	All samples in SDG F2616

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
W3-100306	Free cyanide	0.387 ug/L	0.387U ug/L
W2-100306	Free cyanide	0.317 ug/L	0.317U ug/L
W42-100306	Free cyanide	0.280 ug/L	0.280U ug/L
W4B-100306	Free cyanide	0.480 ug/L	0.480U ug/L
FB1-100306	Free cyanide	0.434 ug/L	0.434U ug/L
FB2-100306	Free cyanide	0.434 ug/L	0.434U ug/L

IV. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) analyses specified for the samples in this SDG, and therefore matrix spike analyses were not performed for this SDG.

V. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

The results for the weak acid dissociable cyanide sample analysis were greater than the total cyanide sample analysis as follows:

Sample ID	Concentration	
	Total cyanide	Weak acid dissociable cyanide
W5-100306	0.005U mg/L	0.0138 mg/L

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

Samples W2-100306 and W42-100306 were identified as field duplicates. No cyanide concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (ug/L)		RPD
	W2-100306	W42-100306	
Free cyanide	0.317	0.280	12

X. Field Blanks

Samples FB1-100306 and FB2-100306 were identified as field blanks. No cyanide contaminants were found in these blanks with the following exceptions:

Field Blank ID	Analyte	Concentration (ug/L)
FB1-100306	Free cyanide	0.434
FB2-100306	Free cyanide	0.434

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG F2616

SDG	Sample	Analyte	Flag	A or P	Reason
F2616	G3D-100206 FB1-100306 W5-100306 W3-100306 W2-100306 W42-100306 W4A-100306 W4B-100306 FB2-100306	Free cyanide	J (all detects) R (all non-detects)	P	Technical holding times

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG F2616

SDG	Sample	Analyte	Modified Final Concentration	A or P
F2616	W3-100306	Free cyanide	0.387U ug/L	A
F2616	W2-100306	Free cyanide	0.317U ug/L	A
F2616	W42-100306	Free cyanide	0.280U ug/L	A
F2616	W4B-100306	Free cyanide	0.480U ug/L	A
F2616	FB1-100306	Free cyanide	0.434U ug/L	A
F2616	FB2-100306	Free cyanide	0.434U ug/L	A

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G3D-100206

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261601

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	2.40		ug/L	1	10 ML	ASTM D4282	10/05/06 J

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G3D-100206

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261601

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.106		mg/L	1	50 ML	E335.2	10/12/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

G3D-100206

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261601

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.0456		mg/L	1	50 ML	SM4500-CN I	10/06/06

2/10/2006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W5-100306

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261602

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	1.49		ug/L	1	10 ML	ASTM D4282	10/05/06 J

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W5-100306

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261602

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.00500	U	mg/L	1	50 ML	E335.2	10/12/06

WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W5-100306

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261602

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.0138		mg/L	1	50 ML	SM4500-CN I	10/06/06

11/10/2006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W3-100306

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261603

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.387	B	ug/L	1	10 ML	ASTM D4282	10/05/06 UJ

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W3-100306

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261603

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.00500	U	mg/L	1	50 ML	E335.2	10/12/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W3-100306

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261603

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00500	U	mg/L	1	50 ML	SM4500-CN I	10/06/06

9/02006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W2-100306

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261604

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.317	B	ug/L	1	10 ML	ASTM D4282	10/05/06 UJ

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W2-100306

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261604

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.00500	U	mg/L	1	50 ML	E335.2	10/12/06

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W2-100306

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261604

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00500	U	mg/L	1	50 ML	SM4500-CN I	10/06/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W42-100306

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261605

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.280	B	ug/L	1	10 ML	ASTM D4282	10/05/06 UJ

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W42-100306

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261605

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.00500	U	mg/L	1	50 ML	E335.2	10/12/06

WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W42-100306

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261605

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00500	U	mg/L	1	50 ML	SM4500-CN I	10/06/06

DX061011-16:37-F2616-W

FORM I GEN CHEM

10/20/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W4A-100306

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261606

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.741		ug/L	1	10 ML	ASTM D4282	10/05/06 J

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W4A-100306

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261606

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.00500	U	mg/L	1	50 ML	E335.2	10/12/06

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W4A-100306

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261606

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00500	U	mg/L	1	50 ML	SM4500-CN I	10/06/06

10/10/2006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W4B-100306

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261607

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.480	B	ug/L	1	10 ML	ASTM D4282	10/05/06 UJ

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W4B-100306

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261607

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.00500	U	mg/L	1	50 ML	E335.2	10/12/06

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

W4B-100306

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261607

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00500	U	mg/L	1	50 ML	SM4500-CN I	10/06/06

11/03/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

FB1-100306

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261608

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.434	B	ug/L	1	10 ML	ASTM D4282	10/05/06 UJ

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

FB1-100306

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261608

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.00500	U	mg/L	1	50 ML	E335.2	10/12/06

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

FB1-100306

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261608

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00500	U	mg/L	1	50 ML	SM4500-CN I	10/06/06

9/10/2006

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

FB2-100306

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261609

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed	
57-12-5	Cyanide, Free	0.0743	0.500	0.434	B	ug/L	1	10 ML	ASTM D4282	10/05/06	UJ

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

FB2-100306

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261609

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide	0.00252	0.00500	0.00500	U	mg/L	1	50 ML	E335.2	10/12/06

WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

FB2-100306

SDG No.: F2616

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F261609

Date Received: 10/04/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, WAD	0.00171	0.00500	0.00500	U	mg/L	1	50 ML	SM4500-CN I	10/06/06

LDC #: 15622E6

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/19/06

SDG #: F2616

Page: 1 of 1

Laboratory: CH2M Hill Applied Sciences Laboratory

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: Free Cyanide (ASTM D4282), Total Cyanide (EPA Method 335.2), Weak Acid Dissociable Cyanide (SM4500-CN-I)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 10/3/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	SW	
IV	Matrix Spike/Matrix Spike Duplicates	N	client specified
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	SW	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	(4, 5)
X	Field blanks	SW	FB = 8, 9

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: [illegible]

1	G3D-100206	11		21		31	
2	W5-100306	12		22		32	
3	W3-100306	13		23		33	
4	W2-100306	14		24		34	
5	W42-100306	15		25		35	
6	W4A-100306	16		26		36	
7	W4B-100306	17		27		37	
8	FB1-100306	18		28		38	
9	FB2-100306	19		29		39	
10	MB	20		30		40	

Notes:

LDC #: 15662-26
SDG #: F7616

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Reviewer: MY
2nd reviewer: H

All circled methods are applicable to each sample.

Sample ID	Parameter																	
1-9	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN	NH_3	TKN	TOC	CR^{6+}	Free CN	WAD CN		
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				

Comments:

LDC #: 15622F6
SDG #: F7616

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page: 1 of 1
Reviewer: MY
2nd reviewer: M

All circled dates have exceeded the technical holding time.
(Y) N N/A Were all samples preserved as applicable to each method ?
(Y) N N/A Were all cooler temperatures within validation criteria?

Method:		ASTM D4282					
Parameters:		Free CN					
Technical holding time:		24 hr					
Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
1	10/3/06 1005	10/05/06 1530	(53.5 hr)				J/R/P
2	1041	1534	(53 hr)				
3	1124	1536	(52.25 hr)				
4	1200	1538	(51.75 hr)				
5	1200	1540	(51.75 hr)				
6	1300	1542	(50.75 hr)				
7	1330	1544	(50.25 hr)				
8	1010	1546	(53.5 hr)				
9	1345	1548	(50 hr)				

LDC #: 15662E6
SDG #: F2616

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: MM
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were all samples associated with a given method blank?
Y N N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: ug/L **Associated Samples:** All

Analyte	Blank ID	Maximum ICB/CCB	Blank Action Limit	Sample Identification								
	MB			3	4	5	7	8	9			
Free CN	0.0968		0.484	0.387	0.317	0.280	0.480	0.434	0.434			

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 15622-E6
SDG #: FY616

VALIDATION FINDINGS WORKSHEET
Sample Result Verification

Page: 1 of 1
Reviewer: MH
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

#	Sample ID	Analyte	Total CN ~~Lab Reporting Limit~~ (units)	WAD CN RDL (units)	Finding	Qualifications
1	2		0.005 U mg/L	0.0138 mg/L	WAD CN > Total CN	Reject

Comments:

ABVCRDL.6

LDC#: 15626E6
SDG#: F2616

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: MY
2nd Reviewer: [illegible]

Inorganics, Method See cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (ug/L)		RPD	
	4	5		
Free Cyanide (ug/L)	0.317	0.280	12	

V:\FIELD DUPLICATES\FD_inorganic\15622E6.wpd

LDC #: 15622E6
SDG #: F1616

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: MH
2nd reviewer: M

METHOD: Inorganics, EPA Method See com

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target anlytes detected in the field blanks?

Sample: 8 Field Blank / Trip Blank / Rinsate (circle one)

Analyte	Concentration Units ( ) ug/L
Free CN	0.434

Sample: 9 Field Blank / Trip Blank / Rinsate (circle one)

Analyte	Concentration Units ( ) ug/L
Free CN	0.434

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Chinook Ventures, Inc.

Collection Date: October 4, 2006

LDC Report Date: October 23, 2006

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: Analytical Resources, Inc.

Sample Delivery Group (SDG): JZ82

Sample Identification

W1-100406
W6-100406
W7-100406
W1-100406MS
W1-100406DUP

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Chloride, Fluoride and Sulfate, EPA Method 365.2 for Total Phosphorus, Standard Method 2320 for Alkalinity, and Fluid Density by Pychnometer .

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG JZ82

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG JZ82

No Sample Data Qualified in this SDG

SAMPLE RESULTS-CONVENTIONALS
JZ82-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/11/06

Project: CHINOOK
Event: 060354-01
Date Sampled: 10/04/06
Date Received: 10/04/06

Client ID: W1-100406
ARI ID: 06-18789 JZ82A

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/09/06 100906#1	SM 2320	mg/L CaCO3	1.0	94.1
Chloride	10/09/06 100906#1	EPA 300.0	mg/L	0.2	8.7
Fluoride	10/09/06 100906#1	EPA 300.0	mg/L	0.1	0.2
Total Phosphorus	10/09/06 100906#1	EPA 365.2	mg-P/L	0.016	< 0.016 U
Sulfate	10/09/06 100906#1	EPA 300.0	mg/L	0.1	4.6

RL Analytical reporting limit
U Undetected at reported detection limit

11/10/06

SAMPLE RESULTS-CONVENTIONALS
JZ82-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/11/06

Project: CHINOOK
Event: 060354-01
Date Sampled: 10/04/06
Date Received: 10/04/06

Client ID: W6-100406
ARI ID: 06-18790 JZ82B

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/09/06 100906#1	SM 2320	mg/L CaCO3	1.0	117
Chloride	10/09/06 100906#1	EPA 300.0	mg/L	1.0	14.4
Fluoride	10/09/06 100906#1	EPA 300.0	mg/L	0.1	0.2
Total Phosphorus	10/09/06 100906#1	EPA 365.2	mg-P/L	0.016	0.016
Sulfate	10/09/06 100906#1	EPA 300.0	mg/L	0.1	1.4

RL Analytical reporting limit
U Undetected at reported detection limit

R/02006

SAMPLE RESULTS-CONVENTIONALS
JZ82-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/11/06

Project: CHINOOK
Event: 060354-01
Date Sampled: 10/04/06
Date Received: 10/04/06

Client ID: W7-100406
ARI ID: 06-18791 JZ82C

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/09/06 100906#1	SM 2320	mg/L CaCO3	1.0	96.3
Chloride	10/09/06 100906#1	EPA 300.0	mg/L	0.2	8.6
Fluoride	10/09/06 100906#1	EPA 300.0	mg/L	0.1	0.1
Total Phosphorus	10/09/06 100906#1	EPA 365.2	mg-P/L	0.016	< 0.016 U
Sulfate	10/09/06 100906#1	EPA 300.0	mg/L	0.1	4.4

RL Analytical reporting limit
U Undetected at reported detection limit

10 2006

ANALYTICAL RESOURCES INCORPORATED

Anchor Environmental
Chinook 060354-01
Fluid Density

Sample ID	Temperature (°C)	Density (g/ml)
W1-100406	23	1.0000
W6-100406	23	0.9999
W7-100406	23	0.9997

Density measured in a calibrated 500 ml flask at the indicated temperature.

JZ82

4/10/2006

LDC #: 15622F6

SDG #: JZ82

Laboratory: Analytical Resources, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/9/06

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: Alkalinity (SM2320), Chloride, Fluoride, Sulfate (EPA Method 300.0), Total Phosphorus (EPA Method 365.2), Fluid Density (Method Pychnometer)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/4/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	
V	Duplicates	A	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	W1-100406	11		21		31	
2	W6-100406	12		22		32	
3	W7-100406	13		23		33	
4	W1-100406MS	14		24		34	
5	W1-100406DUP	15		25		35	
6	MB	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 15622F6
SDG #: J782

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MY
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Parameter																
1-3	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}	T-P	Field Density	
M 4	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}	T-P		
V 5	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}	T-P		
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			

Comments:

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

Anchor Environmental, LLC
1423 3rd Avenue, Suite 300
Seattle, WA 98101-2226
ATTN: Ms. Lisa Allen

October 23, 2006

SUBJECT: Chinook Ventures, Inc., Data Validation

Dear Ms. Allen,

Enclosed are the final validation reports for the fractions listed below. This SDG was received on October 19, 2006. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 15633:

SDG #	Fraction
JZ83	Dissolved Metals, Wet Chemistry

The data validation was performed under EPA Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998

Please feel free to contact us if you have any questions.

Sincerely,

Stella S. Cuenco
Project Manager/Senior Chemist

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1 WEEK TAT (25% Surcharge)

Attachment 1

293 Pages

LDC #15633 (Anchor Environmental-Seattle WA / Chinook Ventures, Inc.)

LDC	SDG#	DATE REC'D	(3) DATE DUE	Diss. Metals (6010B)		Diss. Si (6010B)		Alk. (2320)		Cl, SO4 (300.0)		F (300.0)		T. Phos. (365.2)		Fluid Density																					
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	JZ83	10/19/06	10/26/06	7	0	7	0	7	0	7	0	9	0	7	0	7	0																				
Total	B/SC			7	0	7	0	7	0	7	0	9	0	7	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS, MSD, or DUP's.

15633ST.wpd

Chinook Ventures, Inc.
Data Validation Reports
LDC# 15633

Dissolved Metals

LDC

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Chinook Ventures, Inc.

Collection Date: October 2 through October 3, 2006

LDC Report Date: October 21, 2006

Matrix: Water

Parameters: Dissolved Metals

Validation Level: EPA Level III

Laboratory: Analytical Resources, Inc.

Sample Delivery Group (SDG): JZ83

Sample Identification

63D-100206
W5-100306
W3-100306
W2-100306
W42-100306
W4A-100306
W4B-100306
63D-100206MS
63D-100206DUP

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6010B for Dissolved Metals. The metals analyzed were Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium, and Silicon.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Iron	0.06 mg/L	All samples in SDG JZ83

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
W4B-100306	Iron	0.09 mg/L	0.09U mg/L

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIII. Field Duplicates

Samples W2-100306 and W42-100306 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/L)		RPD
	W2-100306	W42-100306	
Calcium	18.7	18.9	1
Magnesium	8.53	8.62	1
Manganese	0.228	0.206	10
Potassium	2.1	2.3	9

Compound	Concentration (mg/L)		RPD
	W2-100306	W42-100306	
Sodium	13.2	13.7	4
Silicon	20.6	20.8	1

XIV. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Dissolved Metals - Data Qualification Summary - SDG JZ83

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG JZ83

SDG	Sample	Analyte	Modified Final Concentration	A or P
JZ83	W4B-100306	Iron	0.09U mg/L	A

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: 63D-100206
SAMPLE

Lab Sample ID: JZ83A
LIMS ID: 06-18795
Matrix: Water
Data Release Authorized:
Reported: 10/12/06

QC Report No: JZ83-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 10/02/06
Date Received: 10/04/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/10/06	6010B	10/10/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	10/10/06	6010B	10/10/06	7440-70-2	Calcium	0.05	54.7	
3010A	10/10/06	6010B	10/10/06	7439-89-6	Iron	0.05	25.4	
3010A	10/10/06	6010B	10/10/06	7439-95-4	Magnesium	0.05	33.0	
3010A	10/10/06	6010B	10/10/06	7439-96-5	Manganese	0.001	1.95	
3010A	10/10/06	6010B	10/10/06	7440-09-7	Potassium	0.5	5.2	
3010A	10/10/06	6010B	10/10/06	7440-23-5	Sodium	0.5	159	

U-Analyte undetected at given RL
RL-Reporting Limit

K 102306

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: 63D-100206
SAMPLE

Lab Sample ID: JZ83J
LIMS ID: 06-18804
Matrix: Water
Data Release Authorized:
Reported: 10/12/06

QC Report No: JZ83-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 10/02/06
Date Received: 10/04/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/10/06	6010B	10/10/06	7440-21-3	Silicon	0.3	26.4	

U-Analyte undetected at given RL
RL-Reporting Limit

8/02/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: W5-100306
SAMPLE

Lab Sample ID: JZ83B
LIMS ID: 06-18796
Matrix: Water
Data Release Authorized:
Reported: 10/12/06

QC Report No: JZ83-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 10/03/06
Date Received: 10/04/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/10/06	6010B	10/10/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	10/10/06	6010B	10/10/06	**7440-70-2**	**Calcium**	0.05	**14.9**	
3010A	10/10/06	6010B	10/10/06	7439-89-6	Iron	0.05	0.05	U
3010A	10/10/06	6010B	10/10/06	**7439-95-4**	**Magnesium**	0.05	**4.28**	
3010A	10/10/06	6010B	10/10/06	**7439-96-5**	**Manganese**	0.001	**0.004**	
3010A	10/10/06	6010B	10/10/06	**7440-09-7**	**Potassium**	0.5	**1.2**	
3010A	10/10/06	6010B	10/10/06	**7440-23-5**	**Sodium**	0.5	**7.4**	

U-Analyte undetected at given RL
RL-Reporting Limit

K 102306

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: W5-100306
SAMPLE

Lab Sample ID: JZ83K
LIMS ID: 06-18805
Matrix: Water
Data Release Authorized:
Reported: 10/12/06

QC Report No: JZ83-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 10/03/06
Date Received: 10/04/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/10/06	6010B	10/10/06	**7440-21-3**	**Silicon**	0.3	**5.1**	

U-Analyte undetected at given RL
RL-Reporting Limit

N 102206

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: W3-100306
SAMPLE

Lab Sample ID: JZ83C
LIMS ID: 06-18797
Matrix: Water
Data Release Authorized
Reported: 10/12/06

QC Report No: JZ83-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 10/03/06
Date Received: 10/04/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/10/06	6010B	10/10/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	10/10/06	6010B	10/10/06	**7440-70-2**	**Calcium**	0.05	**19.2**	
3010A	10/10/06	6010B	10/10/06	7439-89-6	Iron	0.05	0.05	U
3010A	10/10/06	6010B	10/10/06	**7439-95-4**	**Magnesium**	0.05	**8.92**	
3010A	10/10/06	6010B	10/10/06	**7439-96-5**	**Manganese**	0.001	**0.573**	
3010A	10/10/06	6010B	10/10/06	**7440-09-7**	**Potassium**	0.5	**2.2**	
3010A	10/10/06	6010B	10/10/06	**7440-23-5**	**Sodium**	0.5	**13.8**	

U-Analyte undetected at given RL
RL-Reporting Limit

10/12/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: W3-100306
SAMPLE

Lab Sample ID: JZ83L
LIMS ID: 06-18806
Matrix: Water
Data Release Authorized:
Reported: 10/12/06

QC Report No: JZ83-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 10/03/06
Date Received: 10/04/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/10/06	6010B	10/10/06	**7440-21-3**	**Silicon**	0.3	21.2	

U-Analyte undetected at given RL
RL-Reporting Limit

R 102306

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: W2-100306
SAMPLE

Lab Sample ID: JZ83D
LIMS ID: 06-18798
Matrix: Water
Data Release Authorized:
Reported: 10/12/06

QC Report No: JZ83-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 10/03/06
Date Received: 10/04/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/10/06	6010B	10/10/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	10/10/06	6010B	10/10/06	**7440-70-2**	**Calcium**	0.05	**18.7**	
3010A	10/10/06	6010B	10/10/06	7439-89-6	Iron	0.05	0.05	U
3010A	10/10/06	6010B	10/10/06	**7439-95-4**	**Magnesium**	0.05	**8.53**	
3010A	10/10/06	6010B	10/10/06	**7439-96-5**	**Manganese**	0.001	**0.228**	
3010A	10/10/06	6010B	10/10/06	**7440-09-7**	**Potassium**	0.5	**2.1**	
3010A	10/10/06	6010B	10/10/06	**7440-23-5**	**Sodium**	0.5	**13.2**	

U-Analyte undetected at given RL
RL-Reporting Limit

10/22/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: W2-100306
SAMPLE

Lab Sample ID: JZ83M
LIMS ID: 06-18807
Matrix: Water
Data Release Authorized:
Reported: 10/12/06

QC Report No: JZ83-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 10/03/06
Date Received: 10/04/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/10/06	6010B	10/10/06	7440-21-3	Silicon	0.3	20.6	

U-Analyte undetected at given RL
RL-Reporting Limit

R/02306

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: W42-100306
SAMPLE

Lab Sample ID: JZ83E
LIMS ID: 06-18799
Matrix: Water
Data Release Authorized:
Reported: 10/12/06

QC Report No: JZ83-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 10/03/06
Date Received: 10/04/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/10/06	6010B	10/10/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	10/10/06	6010B	10/10/06	**7440-70-2**	**Calcium**	0.05	**18.9**	
3010A	10/10/06	6010B	10/10/06	7439-89-6	Iron	0.05	0.05	U
3010A	10/10/06	6010B	10/10/06	**7439-95-4**	**Magnesium**	0.05	**8.62**	
3010A	10/10/06	6010B	10/10/06	**7439-96-5**	**Manganese**	0.001	**0.206**	
3010A	10/10/06	6010B	10/10/06	**7440-09-7**	**Potassium**	0.5	**2.3**	
3010A	10/10/06	6010B	10/10/06	**7440-23-5**	**Sodium**	0.5	**13.7**	

U-Analyte undetected at given RL
RL-Reporting Limit

4 102306

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: W42-100306
SAMPLE

Lab Sample ID: JZ83N
LIMS ID: 06-18808
Matrix: Water
Data Release Authorized:
Reported: 10/12/06

QC Report No: JZ83-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 10/03/06
Date Received: 10/04/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/10/06	6010B	10/10/06	7440-21-3	Silicon	0.3	20.8	

U-Analyte undetected at given RL
RL-Reporting Limit

T 102306

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: W4A-100306
SAMPLE

Lab Sample ID: JZ83F
LIMS ID: 06-18800
Matrix: Water
Data Release Authorized:
Reported: 10/12/06

QC Report No: JZ83-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 10/03/06
Date Received: 10/04/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/10/06	6010B	10/10/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	10/10/06	6010B	10/10/06	7440-70-2	Calcium	0.05	19.5	
3010A	10/10/06	6010B	10/10/06	7439-89-6	Iron	0.05	0.05	U
3010A	10/10/06	6010B	10/10/06	7439-95-4	Magnesium	0.05	8.83	
3010A	10/10/06	6010B	10/10/06	7439-96-5	Manganese	0.001	0.471	
3010A	10/10/06	6010B	10/10/06	7440-09-7	Potassium	0.5	2.3	
3010A	10/10/06	6010B	10/10/06	7440-23-5	Sodium	0.5	14.5	

U-Analyte undetected at given RL
RL-Reporting Limit

R 102306

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: W4A-100306
SAMPLE

Lab Sample ID: JZ83O
LIMS ID: 06-18809
Matrix: Water
Data Release Authorized:
Reported: 10/12/06

QC Report No: JZ83-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 10/03/06
Date Received: 10/04/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/10/06	6010B	10/10/06	7440-21-3	Silicon	0.3	19.9	

U-Analyte undetected at given RL
RL-Reporting Limit

N 10/23/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: W4B-100306
SAMPLE

Lab Sample ID: JZ83G
LIMS ID: 06-18801
Matrix: Water
Data Release Authorized:
Reported: 10/12/06

QC Report No: JZ83-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 10/03/06
Date Received: 10/04/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/10/06	6010B	10/10/06	7429-90-5	Aluminum	0.05	0.05	U
3010A	10/10/06	6010B	10/10/06	7440-70-2	Calcium	0.05	20.0	
3010A	10/10/06	6010B	10/10/06	7439-89-6	Iron	0.05	0.09	U
3010A	10/10/06	6010B	10/10/06	7439-95-4	Magnesium	0.05	9.04	
3010A	10/10/06	6010B	10/10/06	7439-96-5	Manganese	0.001	0.498	
3010A	10/10/06	6010B	10/10/06	7440-09-7	Potassium	0.5	2.4	
3010A	10/10/06	6010B	10/10/06	7440-23-5	Sodium	0.5	14.9	

U-Analyte undetected at given RL
RL-Reporting Limit

R/102306

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: W4B-100306
SAMPLE

Lab Sample ID: JZ83P
LIMS ID: 06-18810
Matrix: Water
Data Release Authorized:
Reported: 10/12/06

QC Report No: JZ83-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 10/03/06
Date Received: 10/04/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/10/06	6010B	10/10/06	7440-21-3	Silicon	0.3	20.9	

U-Analyte undetected at given RL
RL-Reporting Limit

R 10/28/06

LDC #: 15633A4

SDG #: JZ83

Laboratory: Analytical Resources, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/21/06

Page: 1 of 1

Reviewer: MM

2nd Reviewer: A

METHOD: Dissolved Metals (EPA SW 846 Method 6010B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/2/06, 10/3/06
II.	Calibration	A	
III.	Blanks	SW	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Matrix Spike Analysis	A	
VI.	Duplicate Sample Analysis	A	
VII.	Laboratory Control Samples (LCS)	A	LCS
VIII.	Internal Standard (ICP-MS)	N	Not utilized
IX.	Furnace Atomic Absorption QC	N	
X.	ICP Serial Dilution	N	Not performed
XI.	Sample Result Verification	N	
XII.	Overall Assessment of Data	A	
XIII.	Field Duplicates	SW	(4,5)
XIV.	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: A

1	63D-100206	11		21		31	
2	W5-100306	12		22		32	
3	W3-100306	13		23		33	
4	W2-100306	14		24		34	
5	W42-100306	15		25		35	
6	W4A-100306	16		26		36	
7	W4B-100306	17		27		37	
8	63D-100206MS	18		28		38	
9	63D-100206DUP	19		29		39	
10	PB	20		30		40	

Notes:

LDC #: 15633A4
SDG #: J283

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: MH
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-7	Aq	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN, ___ ___
8 & 9	↓	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN, ___ ___
ICP Trace		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN, ___

Comments: Mercury by CVAA if performed

LDC #: 15633A4
SDG #: J283

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Page: 1 of 1
Reviewer: MH
2nd Reviewer: A

METHOD: Trace Metals (EPA SW 846 Method 6010/7000) Soil preparation factor applied: _____
Sample Concentration units, unless otherwise noted: mg/L Associated Samples: All

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] mg/L	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	7										
Al															Al
Sb															Sb
As															As
Ba															Ba
Be															Be
Cd															Cd
Ca															Ca
Cr															Cr
Cc															Co
Cu															Cu
Fe		0.06		0.30	0.09										Fe
Pb															Pb
Mg															Mg
Mn															Mn
Hg															Hg
Ni															Ni
K															K
Se															Se
Ag															Ag
Na															Na
Tl															Tl
V															V
Zn															Zn
B															B
Mo															Mo
Sr															Sr

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

BLNKSMP.4S2

LDC#: 15633A4
SDG#: JZ83

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Metals (EPA Method 6010B)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (mg/L)		RPD	
	4	5		
Calcium	18.7	18.9	1	
Magnesium	8.53	8.62	1	
Manganese	0.228	0.206	10	
Potassium	2.1	2.3	9	
Sodium	13.2	13.7	4	
Silicon	20.6	20.8	1	

V:\FIELD DUPLICATES\FD_inorganic\15633A4.wpd

Chinook Ventures, Inc.
Data Validation Reports
LDC# 15633

Wet Chemistry

LDC

LDC Report# 15633A6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Chinook Ventures, Inc.

Collection Date: October 2 through October 3, 2006

LDC Report Date: October 21, 2006

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: Analytical Resources, Inc.

Sample Delivery Group (SDG): JZ83

Sample Identification

63D-100206
W5-100306
W3-100306
W2-100306
W42-100306
W4A-100306
W4B-100306
FB1-100306
FB2-100306

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Chloride, Fluoride, Sulfate, EPA Method 365.2 for Total Phosphorus, Standard Method 2320 for Alkalinity, and Fluid Density by Pychnometer .

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

V. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

Samples W2-100306 and W42-100306 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration		RPD
	W2-100306	W42-100306	
Alkalinity	105 mg/L	102 mg/L	3
Chloride	9.3 mg/L	9.4 mg/L	1
Fluoride	0.2 mg/L	0.2 mg/L	0
Total phosphorus	0.016 mg/L	0.020 mg/L	22
Sulfate	3.6 mg/L	3.6 mg/L	0
Fluid density	1.0002 g/mL	1.0002 g/mL	0

X. Field Blanks

Samples FB1-100306 and FB2-100306 were identified as field blanks. No metal contaminants were found in these blanks.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG JZ83

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG JZ83

No Sample Data Qualified in this SDG

SAMPLE RESULTS-CONVENTIONALS
JZ83-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/11/06

Project: Chinook
Event: 060354-01
Date Sampled: 10/02/06
Date Received: 10/04/06

Client ID: 63D-100206
ARI ID: 06-18795 JZ83A

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/09/06 100906#1	SM 2320	mg/L CaCO3	1.0	542
Chloride	10/09/06 100906#1	EPA 300.0	mg/L	2.0	61.7
Fluoride	10/09/06 100906#1	EPA 300.0	mg/L	0.2	6.6
Total Phosphorus	10/09/06 100906#1	EPA 365.2	mg-P/L	0.016	0.544
Sulfate	10/09/06 100906#1	EPA 300.0	mg/L	1.0	34.0

RL Analytical reporting limit
U Undetected at reported detection limit

C/02306

SAMPLE RESULTS-CONVENTIONALS
JZ83-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/11/06

Project: Chinook
Event: 060354-01
Date Sampled: 10/03/06
Date Received: 10/04/06

Client ID: W5-100306
ARI ID: 06-18796 JZ83B

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/09/06 100906#1	SM 2320	mg/L CaCO3	1.0	55.6
Chloride	10/09/06 100906#1	EPA 300.0	mg/L	0.1	4.4
Fluoride	10/09/06 100906#1	EPA 300.0	mg/L	0.1	< 0.1 U
Total Phosphorus	10/09/06 100906#1	EPA 365.2	mg-P/L	0.016	0.036
Sulfate	10/09/06 100906#1	EPA 300.0	mg/L	1.0	10.2

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
JZ83-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/11/06

Project: Chinook
Event: 060354-01
Date Sampled: 10/03/06
Date Received: 10/04/06

Client ID: W3-100306
ARI ID: 06-18797 JZ83C

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/09/06 100906#1	SM 2320	mg/L CaCO3	1.0	103
Chloride	10/09/06 100906#1	EPA 300.0	mg/L	1.0	8.8
Fluoride	10/10/06 101006#1	EPA 300.0	mg/L	0.1	0.2
Total Phosphorus	10/09/06 100906#1	EPA 365.2	mg-P/L	0.016	0.016
Sulfate	10/09/06 100906#1	EPA 300.0	mg/L	0.2	3.8

RL Analytical reporting limit
U Undetected at reported detection limit

12/02/06

SAMPLE RESULTS-CONVENTIONALS
JZ83-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/11/06

Project: Chinook
Event: 060354-01
Date Sampled: 10/03/06
Date Received: 10/04/06

Client ID: W2-100306
ARI ID: 06-18798 JZ83D

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/09/06 100906#1	SM 2320	mg/L CaCO3	1.0	105
Chloride	10/09/06 100906#1	EPA 300.0	mg/L	1.0	9.3
Fluoride	10/10/06 101006#1	EPA 300.0	mg/L	0.1	0.2
Total Phosphorus	10/09/06 100906#1	EPA 365.2	mg-P/L	0.016	0.016
Sulfate	10/09/06 100906#1	EPA 300.0	mg/L	0.2	3.6

RL Analytical reporting limit
U Undetected at reported detection limit

2/02202

SAMPLE RESULTS-CONVENTIONALS
JZ83-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized
Reported: 10/11/06

Project: Chinook
Event: 060354-01
Date Sampled: 10/03/06
Date Received: 10/04/06

Client ID: W42-100306
ARI ID: 06-18799 JZ83E

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/09/06 100906#1	SM 2320	mg/L CaCO3	1.0	102
Chloride	10/09/06 100906#1	EPA 300.0	mg/L	1.0	9.4
Fluoride	10/10/06 101006#1	EPA 300.0	mg/L	0.1	0.2
Total Phosphorus	10/09/06 100906#1	EPA 365.2	mg-P/L	0.016	0.020
Sulfate	10/09/06 100906#1	EPA 300.0	mg/L	0.2	3.6

RL Analytical reporting limit
U Undetected at reported detection limit

2/102306

SAMPLE RESULTS-CONVENTIONALS
JZ83-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/11/06

Project: Chinook
Event: 060354-01
Date Sampled: 10/03/06
Date Received: 10/04/06

Client ID: W4A-100306
ARI ID: 06-18800 JZ83F

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/09/06 100906#1	SM 2320	mg/L CaCO3	1.0	104
Chloride	10/09/06 100906#1	EPA 300.0	mg/L	1.0	9.5
Fluoride	10/09/06 100906#1	EPA 300.0	mg/L	0.1	0.2
Total Phosphorus	10/09/06 100906#1	EPA 365.2	mg-P/L	0.016	< 0.016 U
Sulfate	10/09/06 100906#1	EPA 300.0	mg/L	0.1	3.7

RL Analytical reporting limit
U Undetected at reported detection limit

R 102306

SAMPLE RESULTS-CONVENTIONALS
JZ83-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/11/06

Project: Chinook
Event: 060354-01
Date Sampled: 10/03/06
Date Received: 10/04/06

Client ID: W4B-100306
ARI ID: 06-18801 JZ83G

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/09/06 100906#1	SM 2320	mg/L CaCO3	1.0	105
Chloride	10/09/06 100906#1	EPA 300.0	mg/L	1.0	9.5
Fluoride	10/09/06 100906#1	EPA 300.0	mg/L	0.1	0.2
Total Phosphorus	10/09/06 100906#1	EPA 365.2	mg-P/L	0.016	0.016
Sulfate	10/09/06 100906#1	EPA 300.0	mg/L	0.1	3.9

RL Analytical reporting limit
U Undetected at reported detection limit

9/102306

SAMPLE RESULTS-CONVENTIONALS
JZ83-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/11/06

Project: Chinook
Event: 060354-01
Date Sampled: 10/03/06
Date Received: 10/04/06

Client ID: FB1-100306
ARI ID: 06-18802 JZ83H

Analyte	Date Batch	Method	Units	RL	Sample
Fluoride	10/09/06 100906#1	EPA 300.0	mg/L	0.1	< 0.1 U

RL Analytical reporting limit
U Undetected at reported detection limit

7/0230L

SAMPLE RESULTS-CONVENTIONALS
JZ83-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized
Reported: 10/11/06

Project: Chinook
Event: 060354-01
Date Sampled: 10/03/06
Date Received: 10/04/06

Client ID: FB2-100306
ARI ID: 06-18803 JZ83I

Analyte	Date Batch	Method	Units	RL	Sample
Fluoride	10/09/06 100906#1	EPA 300.0	mg/L	0.1	< 0.1 U

RL Analytical reporting limit
U Undetected at reported detection limit

N 102306

ANALYTICAL RESOURCES INCORPORATED

Anchor Environmental
Chinook 060354-01
Fluid Density

Sample ID	Temperature (°C)	Density (g/ml)
63D-100206	23	1.0009
W5-100306	23	1.0001
W3-100306	23	1.0001
W2-100306	23	1.0002
W42-100306	23	1.0002
W4A-100306	23	1.0001
W4B-100306	23	1.0001

Density measured in a calibrated 500 ml flask at the indicated temperature.

JZ83

5/02304

LDC #: 15633A6

SDG #: JZ83

Laboratory: Analytical Resources, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/21/06

Page: 1 of 1

Reviewer: MM

2nd Reviewer: A

METHOD: Alkalinity (SM2320), Chloride, Fluoride, Sulfate (EPA Method 300.0), Total Phosphorus (EPA Method 365.2), Fluid Density (Method Hydrometer)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/2, 3/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	~~SW~~ A	
IV	Matrix Spike/Matrix Spike Duplicates	N	client specified
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	(4,5)
X.	Field blanks	ND	FB = 8,9

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: All

1	63D-100206	11		21		31	
2	W5-100306	12		22		32	
3	W3-100306	13		23		33	
4	W2-100306	14		24		34	
5	W42-100306	15		25		35	
6	W4A-100306	16		26		36	
7	W4B-100306	17		27		37	
8	FB1-100306	18		28		38	
9	FB2-100306	19		29		39	
10	MB	20		30		40	

Notes:

LDC #: 15633A6
SDG #: J283

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MY
2nd reviewer: K

All circled methods are applicable to each sample.

Sample ID	Parameter																	
1-7	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}	T-P	Fluid Density		
~~8~~ 8.9	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}				

Comments:

LDC#: 15633A6
SDG#: JZ83

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: MM
2nd Reviewer: C

Inorganics, Method See cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD	
	4	5		
Alkalinity	105	102	3	
Chloride	9.3	9.4	1	
Fluoride	0.2	0.2	0	
Total Phosphorus	0.016	0.020	22	
Sulfate	3.6	3.6	0	
Fluid Density (g/mL)	1.0002	1.0002	0	

V:\FIELD DUPLICATES\FD_inorganic\15633A6.wpd

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

Anchor Environmental, LLC
1423 3rd Avenue, Suite 300
Seattle, WA 98101-2226
ATTN: Ms. Lisa Allen

October 30, 2006

SUBJECT: Chinook Ventures, Inc., Data Validation

Dear Ms. Allen,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on October 26, 2006. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 15664:

SDG #	Fraction
JY78, JZ32, F2712, K0608631, K0608716	Polynuclear Aromatic Hydrocarbons, Polychlorinated Biphenyls, Dissolved Metals, Wet Chemistry, Diesel Range Organics & Residual Range Organics

The data validation was performed under EPA Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998

Please feel free to contact us if you have any questions.

Sincerely,

Stella Cuenco

Stella S. Cuenco
Project Manager/Senior Chemist

V:\LOGIN\Anchor\Chinook\15664COV.wpd

1 WEEK TAT (25% Surcharge)

Attachment 1

1,042 Pages

LDC #15664 (Anchor Environmental-Seattle WA / Chinook Ventures, Inc.)

LDC	SDG#	DATE REC'D	(3) DATE DUE	PAHs (8270D)		PCBs (8082)		Diss. Metals (6010B)		Diss. Si (6010B)		Hg (7471A)		DRO /RRO (8015)		Alk. (2320)		Cl,F, SO4 (300.0)		T. Phos. (365.2)		Fluid Density		Free CN- (D4282)		Total CN- (335.2)		WAD CN- (4500)		F (340.2)							
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	JY78	10/26/06	11/02/06	0	3	0	5	-	-	-	-	0	5	0	7	-	-	-	-	-	-	-	-	-	-	0	3	0	3	-	-						
B	JZ32	10/26/06	11/02/06	-	-	-	-	5	0	5	0	-	-	-	-	5	0	6	0	5	0	5	0	-	-	-	-	-	-	-	-						
C	F2712	10/26/06	11/02/06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	0	-	-	-	-	-	-						
D	K0608631	10/26/06	11/02/06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	3						
E	K0608716	10/26/06	11/02/06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	3						
Total	B/SC			0	3	0	5	5	0	5	0	0	5	0	7	5	0	6	0	5	0	5	0	3	0	0	3	0	3	0	6	0	0	0	0	0	66

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS, MSD, or DUP's.

15664ST.wpd

Chinook Ventures, Inc.
Data Validation Reports
LDC# 15664

Polynuclear Aromatic Hydrocarbons

LDC

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Chinook Ventures, Inc.

Collection Date: September 28, 2006

LDC Report Date: October 28, 2006

Matrix: Soil

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: EPA Level III

Laboratory: Analytical Resources, Inc.

Sample Delivery Group (SDG): JY78

Sample Identification

S1-B-092806
S41-092806
S1-A-092806
S1-A-092806MS
S1-A-092806MSD

Introduction

This data review covers 5 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270C using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures.

Cooler temperatures for all samples were reported between 3.8°C and 6.5°C upon receipt by the laboratory.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds and system monitoring compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
S1-A-092806MS/MSD (S1-A-092806)	Naphthalene	-	-	68.5 (≤30)	J (all detects)	A
	Acenaphthene	-	-	61.5 (≤30)	UJ (all non-detects)	
	Fluoranthene	-	-	54.7 (≤30)		
	Benzo(a)anthracene	-	-	57.2 (≤30)		

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples S1-B-092806 and S41-092806 were identified as field duplicates. No polynuclear aromatic hydrocarbons were detected in any of the samples.

XVII. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG JY78

SDG	Sample	Compound	Flag	A or P	Reason
JY78	S1-A-092806	Naphthalene Acenaphthene Fluoranthene Benzo(a)anthracene	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicates (RPD)

Chinook Ventures, Inc.
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG JY78

No Sample Data Qualified in this SDG

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS

Sample ID: S1-B-092806
SAMPLE

Lab Sample ID: JY78H
LIMS ID: 06-18114
Matrix: Soil
Data Release Authorized:
Reported: 10/05/06

QC Report No: JY78-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/28/06
Date Received: 09/29/06

Date Extracted: 10/03/06
Date Analyzed: 10/05/06 12:06
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: No

Sample Amount: 7.58 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 47.7%
pH: 6.5

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	66	< 66 U
91-57-6	2-Methylnaphthalene	66	< 66 U
208-96-8	Acenaphthylene	66	< 66 U
83-32-9	Acenaphthene	66	< 66 U
86-73-7	Fluorene	66	< 66 U
85-01-8	Phenanthrene	66	< 66 U
120-12-7	Anthracene	66	< 66 U
206-44-0	Fluoranthene	66	< 66 U
129-00-0	Pyrene	66	< 66 U
56-55-3	Benzo(a)anthracene	66	< 66 U
218-01-9	Chrysene	66	< 66 U
205-99-2	Benzo(b)fluoranthene	66	< 66 U
207-08-9	Benzo(k)fluoranthene	66	< 66 U
50-32-8	Benzo(a)pyrene	66	< 66 U
193-39-5	Indeno(1,2,3-cd)pyrene	66	< 66 U
53-70-3	Dibenz(a,h)anthracene	66	< 66 U
191-24-2	Benzo(g,h,i)perylene	66	< 66 U
132-64-9	Dibenzofuran	66	< 66 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	58.0%
2-Fluorobiphenyl	67.2%

t 103006

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS

Sample ID: S41-092806
SAMPLE

Lab Sample ID: JY78I
LIMS ID: 06-18115
Matrix: Soil
Data Release Authorized:
Reported: 10/05/06

QC Report No: JY78-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/28/06
Date Received: 09/29/06

Date Extracted: 10/03/06
Date Analyzed: 10/05/06 12:38
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: No

Sample Amount: 7.72 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 51.9%
pH: 6.4

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	65	< 65 U
91-57-6	2-Methylnaphthalene	65	< 65 U
208-96-8	Acenaphthylene	65	< 65 U
83-32-9	Acenaphthene	65	< 65 U
86-73-7	Fluorene	65	< 65 U
85-01-8	Phenanthrene	65	< 65 U
120-12-7	Anthracene	65	< 65 U
206-44-0	Fluoranthene	65	< 65 U
129-00-0	Pyrene	65	< 65 U
56-55-3	Benzo(a)anthracene	65	< 65 U
218-01-9	Chrysene	65	< 65 U
205-99-2	Benzo(b)fluoranthene	65	< 65 U
207-08-9	Benzo(k)fluoranthene	65	< 65 U
50-32-8	Benzo(a)pyrene	65	< 65 U
193-39-5	Indeno(1,2,3-cd)pyrene	65	< 65 U
53-70-3	Dibenz(a,h)anthracene	65	< 65 U
191-24-2	Benzo(g,h,i)perylene	65	< 65 U
132-64-9	Dibenzofuran	65	< 65 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery	
d14-p-Terphenyl	58.4%
2-Fluorobiphenyl	67.2%

10/03/06

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS
Page 1 of 1

Sample ID: S1-A-092806
SAMPLE

Lab Sample ID: JY78J
LIMS ID: 06-18116
Matrix: Soil
Data Release Authorized:
Reported: 10/05/06

QC Report No: JY78-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/28/06
Date Received: 09/29/06

Date Extracted: 10/03/06
Date Analyzed: 10/05/06 13:10
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: No

Sample Amount: 7.72 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 44.9%
pH: 6.2

CAS Number	Analyte	RL	Result	
91-20-3	Naphthalene	65	< 65 U	UJ
91-57-6	2-Methylnaphthalene	65	< 65 U	
208-96-8	Acenaphthylene	65	< 65 U	
83-32-9	Acenaphthene	65	< 65 U	UJ
86-73-7	Fluorene	65	< 65 U	
85-01-8	Phenanthrene	65	< 65 U	
120-12-7	Anthracene	65	< 65 U	
206-44-0	**Fluoranthene**	**65**	**65**	J
129-00-0	Pyrene	65	< 65 U	
56-55-3	Benzo(a)anthracene	65	< 65 U	UJ
218-01-9	**Chrysene**	**65**	**94**	
205-99-2	**Benzo(b)fluoranthene**	**65**	**60 J**	
207-08-9	**Benzo(k)fluoranthene**	**65**	**88**	
50-32-8	Benzo(a)pyrene	65	< 65 U	
193-39-5	Indeno(1,2,3-cd)pyrene	65	< 65 U	
53-70-3	Dibenz(a,h)anthracene	65	< 65 U	
191-24-2	Benzo(g,h,i)perylene	65	< 65 U	
132-64-9	Dibenzofuran	65	< 65 U	

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	42.0%
2-Fluorobiphenyl	47.6%

KC 10/30/06

LDC #: 15664A2 **VALIDATION COMPLETENESS WORKSHEET** Date: 10/27/06

SDG #: JY78 Level III Page: 1 of 1

Laboratory: Analytical Resources, Inc. Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 9/28/06 water temp 3.8-6.5°C (text)
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	
IV.	Continuing calibration /ICV	A	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	D=1+2
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: All soil

1	S1-B-092806	11	JY78MB	21		31	
2	S41-092806	12		22		32	
3	S1-A-092806	13		23		33	
4	S1-A-092806MS	14		24		34	
5	S1-A-092806MSD	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU.
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 15661A2
SDG #: J478

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: K
2nd Reviewer: 9

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

Y N N/A Was a MS/MSD analyzed every 20 samples of each matrix?

Y N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		4/5	~~B~~ S	( )	( )	68.5 (≤30)	3	J/UJ/A
			GG	( )	( )	61.5 ( )		
			YY	( )	( )	54.7 ( )		
			CCC	( )	( )	57.2 ( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

	Compound	QC Limits (Soil)	RPD (Soil)	QC Limits (Water)	RPD (Water)		Compound	QC Limits (Soil)	RPD (Soil)	QC Limits (Water)	RPD (Water)
A.	Phenol	26-90%	≤ 35%	12-110%	≤ 42%	GG.	Acenaphthene	31-137%	≤ 19%	46-118%	≤ 31%
C.	2-Chlorophenol	25-102%	≤ 50%	27-123%	≤ 40%	II.	4-Nitrophenol	11-114%	≤ 50%	10-80%	≤ 50%
E.	1,4-Dichlorobenzene	28-104%	≤ 27%	36-97%	≤ 28%	KK.	2,4-Dinitrotoluene	28-89%	≤ 47%	24-96%	≤ 38%
J.	N-Nitroso-di-n-propylamine	41-126%	≤ 38%	41-116%	≤ 38%	TT.	Pentachlorophenol	17-109%	≤ 47%	9-103%	≤ 50%
R.	1,2,4-Trichlorobenzene	38-107%	≤ 23%	39-98%	≤ 28%	ZZ.	Pyrene	35-142%	≤ 36%	26-127%	≤ 31%
V.	4-Chloro-3-methylphenol	26-103%	≤ 33%	23-97%	≤ 42%						

Chinook Ventures, Inc.
Data Validation Reports
LDC# 15664

Polychlorinated Biphenyls

LDC

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Chinook Ventures, Inc.

Collection Date: September 28, 2006

LDC Report Date: October 28, 2006

Matrix: Soil

Parameters: Polychlorinated Biphenyl

Validation Level: EPA Level III

Laboratory: Analytical Resources, Inc.

Sample Delivery Group (SDG): JY78

Sample Identification

RY1-092806
RY2-092806
RY3-092806
RY5-092806
RY45-092806
RY3-092806MS
RY3-092806MSD

Introduction

This data review covers 7 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyl.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

EMPC Estimated Maximum Possible Concentration

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures.

Cooler temperatures for all samples were reported between 3.8°C and 6.5°C upon receipt by the laboratory.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits

The percent difference (%D) of the second source calibration standard were less than or equal to 15.0% for all compounds.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

VIa. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VIb. Internal Standards

All internal standard recoveries were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
RY1-092806	Hexabromobiphenyl	443507 (92504-370018)	Aroclor-1260	J (all detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and Reported CRQLs

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

Samples RY5-092806 and RY45-092806 were identified as field duplicates. No polychlorinated biphenyls were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD
	RY5-092806	RY45-092806	
Aroclor-1254	170	32	137
Aroclor-1260	190	50	117

XV. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Polychlorinated Biphenyl - Data Qualification Summary - SDG JY78

SDG	Sample	Compound	Flag	A or P	Reason
JY78	RY1-092806	Aroclor-1260	J (all detects)	P	Internal standards (area)

Chinook Ventures, Inc.
Polychlorinated Biphenyl - Laboratory Blank Data Qualification Summary - SDG JY78

No Sample Data Qualified in this SDG

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: RY1-092806
SAMPLE

Lab Sample ID: JY78A
LIMS ID: 06-18107
Matrix: Soil
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY78-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/28/06
Date Received: 09/29/06

Date Extracted: 10/03/06
Date Analyzed: 10/05/06 20:53
Instrument/Analyst: ECD2/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 5.65 g-dry-wt
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Silica Gel: No
pH: 7.3
Percent Moisture: 6.6%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	71	< 71 U
53469-21-9	Aroclor 1242	71	< 71 U
12672-29-6	Aroclor 1248	71	< 71 U
11097-69-1	**Aroclor 1254**	**71**	**300**
11096-82-5	Aroclor 1260	110	< 110 Y
11104-28-2	Aroclor 1221	71	< 71 U
11141-16-5	Aroclor 1232	71	< 71 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	99.2%
Tetrachlorometaxylene	102%

RC/03006

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082

Sample ID: RY2-092806
SAMPLE

Lab Sample ID: JY78B
LIMS ID: 06-18108
Matrix: Soil
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY78-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/28/06
Date Received: 09/29/06

Date Extracted: 10/03/06
Date Analyzed: 10/05/06 21:13
Instrument/Analyst: ECD2/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 5.66 g-dry-wt
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Silica Gel: No
pH: 8.0
Percent Moisture: 5.9%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	71	< 71 U
53469-21-9	Aroclor 1242	71	< 71 U
12672-29-6	Aroclor 1248	71	< 71 U
11097-69-1	**Aroclor 1254**	**71**	**180**
11096-82-5	**Aroclor 1260**	**71**	**86**
11104-28-2	Aroclor 1221	71	< 71 U
11141-16-5	Aroclor 1232	71	< 71 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	93.8%
Tetrachlorometaxylene	98.5%

R/02300L

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082

Sample ID: RY3-092806
SAMPLE

Lab Sample ID: JY78C
LIMS ID: 06-18109
Matrix: Soil
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY78-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/28/06
Date Received: 09/29/06

Date Extracted: 10/03/06
Date Analyzed: 10/05/06 21:32
Instrument/Analyst: ECD2/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.3 g-dry-wt
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Silica Gel: No
pH: 7.0
Percent Moisture: 5.5%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	**Aroclor 1254**	**32**	**70**
11096-82-5	**Aroclor 1260**	**32**	**37**
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	95.5%
Tetrachlorometaxylene	104%

10/03/06

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082

Sample ID: RY5-092806
SAMPLE

Lab Sample ID: JY78E
LIMS ID: 06-18111
Matrix: Soil
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY78-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/28/06
Date Received: 09/29/06

Date Extracted: 10/03/06
Date Analyzed: 10/05/06 22:32
Instrument/Analyst: ECD2/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 5.65 g-dry-wt
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Silica Gel: No
pH: 6.4
Percent Moisture: 6.0%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	71	< 71 U
53469-21-9	Aroclor 1242	71	< 71 U
12672-29-6	Aroclor 1248	71	< 71 U
11097-69-1	**Aroclor 1254**	**71**	**170**
11096-82-5	**Aroclor 1260**	**71**	**190**
11104-28-2	Aroclor 1221	71	< 71 U
11141-16-5	Aroclor 1232	71	< 71 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	90.2%
Tetrachlorometaxylene	96.0%

A/03005

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082

Sample ID: RY45-092806
SAMPLE

Lab Sample ID: JY78F
LIMS ID: 06-18112
Matrix: Soil
Data Release Authorized:
Reported: 10/06/06

QC Report No: JY78-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/28/06
Date Received: 09/29/06

Date Extracted: 10/03/06
Date Analyzed: 10/05/06 22:51
Instrument/Analyst: ECD2/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.2 g-dry-wt
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Silica Gel: No
pH: 6.4
Percent Moisture: 5.9%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	**Aroclor 1254**	**33**	**32 J**
11096-82-5	**Aroclor 1260**	**33**	**50**
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	70.8%
Tetrachlorometaxylene	72.2%

12/13001

LDC #: 15664A3

SDG #: JY78

Laboratory: Analytical Resources, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/27/06

Page: 1 of 1

Reviewer: M

2nd Reviewer: A

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 9/28/06 cooler temp 3.8-6.5°C (text)
II.	GC/ECD Instrument Performance Check	-	
III.	Initial calibration	A	
IV.	Continuing calibration /ICV	A	
V.	Blanks	A	
VI.	Surrogate spikes /internal Stds	SW/A/R	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional quality assurance and quality control	N	
Xa.	Florisil cartridge check	N	
Xb.	GPC Calibration	N	
XI.	Target compound identification	N	
XII.	Compound quantitation and reported CRQLs	N	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	SW	D = 4+5
XV.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: All soils

1	RY1-092806	11	MB100306	21		31	
2	RY2-092806	12		22		32	
3	RY3-092806	13		23		33	
4	RY5-092806	14		24		34	
5	RY45-092806	15		25		35	
6	RY3-092806MS	16		26		36	
7	RY3-092806MSD	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 15664A3
SDG #: JY78

VALIDATION FINDINGS WORKSHEET
Internal Standards

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/~~MS VOA~~ (EPA SW 846 Method ~~8260B~~) 8082

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Were all internal standard area counts within -50 to +100% of the associated calibration standard?

(Y) N N/A Were the retention times of the internal standards within +/- ~~30 seconds~~ 0.1 minutes of the retention times of the associated calibration standard?

#	Date	Sample ID	Internal Standard	Area (Limits)	RT (Limits)	Qualifications
		1	Hexabromobiphenyl	443507 (92504-370018)		J dets/P (A1260)

(BCM) = Bromochloromethane
(DFB) = 1,4-Difluorobenzene
(CBZ) = Chlorobenzene-d5
(PFB) = Pentafluorobenzene
(4DCB) = 1,4-Dichlorobenzene-d4
(2DCB) = 1,2-Dichlorobenzene-d4
(FBZ) = Fluorobenzene

LDC #: 15664A3
SDG #: J978

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer:
2nd reviewer:

METHOD: GC Pesticides/PCBs (EPA SW846 Method 8081/8082)

Y N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in thie field duplicate pairs?

Compound	Concentration (ug/kg) 4	5	RPD
Aroclor 1254	170	32	137
↓ 1260	190	50	117

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Chinook Ventures, Inc.
Data Validation Reports
LDC# 15664

Dissolved Metals

LDC

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Chinook Ventures, Inc.

Collection Date: September 28, 2006

LDC Report Date: October 26, 2006

Matrix: Soil

Parameters: Mercury

Validation Level: EPA Level III

Laboratory: Analytical Resources, Inc.

Sample Delivery Group (SDG): JY78

Sample Identification

RY1-092806
RY2-092806
RY3-092806
RY5-092806
RY45-092806
RY1-092806MS
RY1-092806DUP

Introduction

This data review covers 7 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 7471a for Mercury.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No mercury contaminants were found in the initial, continuing and preparation blanks.

IV. ICP Interference Check Sample (ICS) Analysis

ICP interference check sample was not required by the method.

V. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIII. Field Duplicates

Samples RY5-092806 and RY45-092806 were identified as field duplicates. No mercury was detected in any of the samples.

XIV. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Mercury - Data Qualification Summary - SDG JY78

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Mercury - Laboratory Blank Data Qualification Summary - SDG JY78

No Sample Data Qualified in this SDG

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RY1-092806
SAMPLE

Lab Sample ID: JY78A
LIMS ID: 06-18107
Matrix: Soil
Data Release Authorized:
Reported: 10/04/06

QC Report No: JY78-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/28/06
Date Received: 09/29/06

Percent Total Solids: 92.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
CLP	10/03/06	7471A	10/03/06	7439-97-6	Mercury	0.04	0.04	U

U-Analyte undetected at given RL
RL-Reporting Limit

E/03006

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RY2-092806
SAMPLE

Lab Sample ID: JY78B
LIMS ID: 06-18108
Matrix: Soil
Data Release Authorized:
Reported: 10/04/06

QC Report No: JY78-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/28/06
Date Received: 09/29/06

Percent Total Solids: 91.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
CLP	10/03/06	7471A	10/03/06	7439-97-6	Mercury	0.04	0.04	U

U-Analyte undetected at given RL
RL-Reporting Limit

K 103806

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RY3-092806
SAMPLE

Lab Sample ID: JY78C
LIMS ID: 06-18109
Matrix: Soil
Data Release Authorized:
Reported: 10/04/06

QC Report No: JY78-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/28/06
Date Received: 09/29/06

Percent Total Solids: 94.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
CLP	10/03/06	7471A	10/03/06	7439-97-6	Mercury	0.04	0.04	U

U-Analyte undetected at given RL
RL-Reporting Limit

10/03/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RY5-092806
SAMPLE

Lab Sample ID: JY78E
LIMS ID: 06-18111
Matrix: Soil
Data Release Authorized:
Reported: 10/04/06

QC Report No: JY78-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/28/06
Date Received: 09/29/06

Percent Total Solids: 94.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
CLP	10/03/06	7471A	10/03/06	7439-97-6	Mercury	0.04	0.04	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RY45-092806
SAMPLE

Lab Sample ID: JY78F
LIMS ID: 06-18112
Matrix: Soil
Data Release Authorized:
Reported: 10/04/06

QC Report No: JY78-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 09/28/06
Date Received: 09/29/06

Percent Total Solids: 94.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
CLP	10/03/06	7471A	10/03/06	7439-97-6	Mercury	0.04	0.04	U

U-Analyte undetected at given RL
RL-Reporting Limit

10/13/06

LDC #: 15664A4

SDG #: JY78

Laboratory: Analytical Resources, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/26/06

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: Mercury (EPA SW 846 Method 7471A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/28/06
II.	Calibration	A	
III.	Blanks	A	
IV.	ICP Interference Check Sample (ICS) Analysis	N	Not required.
V.	Matrix Spike Analysis	A	
VI.	Duplicate Sample Analysis	A	
VII.	Laboratory Control Samples (LCS)	A	LCS
VIII.	Internal Standard (ICP-MS)	N	Not utilized
IX.	Furnace Atomic Absorption QC	N	
X.	ICP Serial Dilution	N	
XI.	Sample Result Verification	N	
XII.	Overall Assessment of Data	A	
XIII.	Field Duplicates	ND	(4,5)
XIV.	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil

1	RY1-092806	11		21		31	
2	RY2-092806	12		22		32	
3	RY3-092806	13		23		33	
4	RY5-092806	14		24		34	
5	RY45-092806	15		25		35	
6	RY1-092806MS	16		26		36	
7	RY1-092806DUP	17		27		37	
8	PB	18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC Report# 15664B4

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Chinook Ventures, Inc.

Collection Date: October 2, 2006

LDC Report Date: October 26, 2006

Matrix: Water

Parameters: Dissolved Metals

Validation Level: EPA Level III

Laboratory: Analytical Resources, Inc.

Sample Delivery Group (SDG): JZ32

Sample Identification

PZ5-100206
PZ45-100206
G1D-100206
G3S-100206
G43S-100206
PZ5-100206MS
PZ5-100206DUP

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6010B for Dissolved Metals. The metals analyzed were Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium, and Silicon.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Analyte	RPD (Limits)	Difference (Limits)	Flag	A or P
PZ5-100206DUP (All samples in SDG JZ32)	Manganese	25.5 (≤20)	-	J (all detects) UJ (all non-detects)	A

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIII. Field Duplicates

Samples PZ5-100206 and PZ45-100206 and samples G3S-100206 and G43S-100206 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/L)		RPD
	PZ5-100206	PZ45-100206	
Aluminum	0.09	0.10	200
Calcium	46.2	47.1	0
Iron	28.0	28.0	9
Magnesium	26.7	27.1	0
Manganese	2.63	2.67	32
Potassium	3.5	3.8	0
Sodium	438	454	3
Silicon	27.3	26.6	3

Compound	Concentration (mg/L)		RPD
	G3S-100206	G43S-100206	
Aluminum	0.09	0.10	11
Calcium	46.2	47.1	2
Iron	28.0	28.0	0
Magnesium	26.7	27.1	1
Manganese	2.63	2.67	2
Potassium	3.5	3.8	8
Sodium	438	454	4
Silicon	27.3	26.6	3

XIV. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Dissolved Metals - Data Qualification Summary - SDG JZ32

SDG	Sample	Analyte	Flag	A or P	Reason
JZ32	PZ5-100206 PZ45-100206 G1D-100206 G3S-100206 G43S-100206	Manganese	J (all detects) UJ (all non-detects)	A	Duplicate analysis (RPD)

Chinook Ventures, Inc.
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG JZ32

No Sample Data Qualified in this SDG

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: PZ5-100206
SAMPLE

Lab Sample ID: JZ32A
LIMS ID: 06-18406
Matrix: Groundwater
Data Release Authorized:
Reported: 10/12/06

QC Report No: JZ32-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 10/02/06
Date Received: 10/03/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/06/06	6010B	10/09/06	7429-90-5	Aluminum	0.1	0.1	U
3010A	10/06/06	6010B	10/09/06	7440-70-2	Calcium	0.1	0.5	
3010A	10/06/06	6010B	10/09/06	7439-89-6	Iron	0.1	100	
3010A	10/06/06	6010B	10/09/06	7439-95-4	Magnesium	0.1	0.2	
3010A	10/06/06	6010B	10/09/06	7439-96-5	Manganese	0.002	0.024	J
3010A	10/06/06	6010B	10/09/06	7440-09-7	Potassium	1	14	
3010A	10/06/06	6010B	10/09/06	7440-23-5	Sodium	1	6,640	

U-Analyte undetected at given RL
RL-Reporting Limit

2/03006

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: PZ5-100206
SAMPLE

Lab Sample ID: JZ32G
LIMS ID: 06-18412
Matrix: Groundwater
Data Release Authorized:
Reported: 10/12/06

QC Report No: JZ32-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 10/02/06
Date Received: 10/03/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/06/06	6010B	10/11/06	7440-21-3	Silicon	0.6	53.2	

U-Analyte undetected at given RL
RL-Reporting Limit

12/03/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: PZ45-100206
SAMPLE

Lab Sample ID: JZ32B
LIMS ID: 06-18407
Matrix: Groundwater
Data Release Authorized:
Reported: 10/12/06

QC Report No: JZ32-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 10/02/06
Date Received: 10/03/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/06/06	6010B	10/10/06	7429-90-5	Aluminum	0.1	0.1	
3010A	10/06/06	6010B	10/10/06	7440-70-2	Calcium	0.1	0.5	
3010A	10/06/06	6010B	10/10/06	7439-89-6	Iron	0.1	109	
3010A	10/06/06	6010B	10/10/06	7439-95-4	Magnesium	0.1	0.2	
3010A	10/06/06	6010B	10/10/06	7439-96-5	Manganese	0.002	0.033	J
3010A	10/06/06	6010B	10/10/06	7440-09-7	Potassium	1	14	
3010A	10/06/06	6010B	10/10/06	7440-23-5	Sodium	1	6,810	

U-Analyte undetected at given RL
RL-Reporting Limit

R/03016

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: PZ45-100206
SAMPLE

Lab Sample ID: JZ32H
LIMS ID: 06-18413
Matrix: Groundwater
Data Release Authorized:
Reported: 10/12/06

QC Report No: JZ32-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 10/02/06
Date Received: 10/03/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/06/06	6010B	10/11/06	7440-21-3	Silicon	0.6	55.0	

U-Analyte undetected at given RL
RL-Reporting Limit

M/03056

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G1D-100206
SAMPLE

Lab Sample ID: JZ32C
LIMS ID: 06-18408
Matrix: Groundwater
Data Release Authorized:
Reported: 10/12/06

QC Report No: JZ32-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 10/02/06
Date Received: 10/03/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/06/06	6010B	10/09/06	7429-90-5	Aluminum	0.05	0.50	
3010A	10/06/06	6010B	10/09/06	7440-70-2	Calcium	0.05	148	
3010A	10/06/06	6010B	10/09/06	7439-89-6	Iron	0.05	203	
3010A	10/06/06	6010B	10/09/06	7439-95-4	Magnesium	0.05	76.4	
3010A	10/06/06	6010B	10/09/06	7439-96-5	Manganese	0.001	6.04	J
3010A	10/06/06	6010B	10/09/06	7440-09-7	Potassium	0.5	6.7	
3010A	10/06/06	6010B	10/09/06	7440-23-5	Sodium	0.5	162	

U-Analyte undetected at given RL
RL-Reporting Limit

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G1D-100206
SAMPLE

Lab Sample ID: JZ32I
LIMS ID: 06-18414
Matrix: Groundwater
Data Release Authorized:
Reported: 10/12/06

QC Report No: JZ32-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 10/02/06
Date Received: 10/03/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/06/06	6010B	10/10/06	7440-21-3	Silicon	0.3	39.1	

U-Analyte undetected at given RL
RL-Reporting Limit

10/03/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G3S-100206
SAMPLE

Lab Sample ID: JZ32D
LIMS ID: 06-18409
Matrix: Groundwater
Data Release Authorized:
Reported: 10/12/06

QC Report No: JZ32-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 10/02/06
Date Received: 10/03/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/06/06	6010B	10/09/06	7429-90-5	Aluminum	0.05	0.09	
3010A	10/06/06	6010B	10/09/06	7440-70-2	Calcium	0.05	46.2	
3010A	10/06/06	6010B	10/09/06	7439-89-6	Iron	0.05	28.0	
3010A	10/06/06	6010B	10/09/06	7439-95-4	Magnesium	0.05	26.7	
3010A	10/06/06	6010B	10/09/06	7439-96-5	Manganese	0.001	2.63	J
3010A	10/06/06	6010B	10/09/06	7440-09-7	Potassium	0.5	3.5	
3010A	10/06/06	6010B	10/09/06	7440-23-5	Sodium	0.5	438	

U-Analyte undetected at given RL
RL-Reporting Limit

10/23/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G3S-100206
SAMPLE

Lab Sample ID: JZ32J
LIMS ID: 06-18415
Matrix: Groundwater
Data Release Authorized:
Reported: 10/12/06

QC Report No: JZ32-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 10/02/06
Date Received: 10/03/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/06/06	6010B	10/10/06	7440-21-3	Silicon	0.3	27.3	

U-Analyte undetected at given RL
RL-Reporting Limit

10/03/06

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G43S-100206
SAMPLE

Lab Sample ID: JZ32E
LIMS ID: 06-18410
Matrix: Groundwater
Data Release Authorized
Reported: 10/12/06

QC Report No: JZ32-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 10/02/06
Date Received: 10/03/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	10/06/06	6010B	10/09/06	7429-90-5	Aluminum	0.05	0.10	
3010A	10/06/06	6010B	10/09/06	7440-70-2	Calcium	0.05	47.1	
3010A	10/06/06	6010B	10/09/06	7439-89-6	Iron	0.05	28.0	
3010A	10/06/06	6010B	10/09/06	7439-95-4	Magnesium	0.05	27.1	
3010A	10/06/06	6010B	10/09/06	7439-96-5	Manganese	0.001	2.67	J
3010A	10/06/06	6010B	10/09/06	7440-09-7	Potassium	0.5	3.8	
3010A	10/06/06	6010B	10/09/06	7440-23-5	Sodium	0.5	454	

U-Analyte undetected at given RL
RL-Reporting Limit

RC 10306

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G43S-100206
SAMPLE

Lab Sample ID: JZ32K
LIMS ID: 06-18416
Matrix: Groundwater
Data Release Authorized:
Reported: 10/12/06

QC Report No: JZ32-Anchor Environmental
Project: Chinook
060354-01
Date Sampled: 10/02/06
Date Received: 10/03/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	10/06/06	6010B	10/10/06	7440-21-3	Silicon	0.3	26.6	

U-Analyte undetected at given RL
RL-Reporting Limit

RL/03006

LDC #: 15664B4

SDG #: JZ32

Laboratory: Analytical Resources, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/26/06

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: Dissolved Metals (EPA SW 846 Method 6010B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/02/06
II.	Calibration	A	
III.	Blanks	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Matrix Spike Analysis	A	
VI.	Duplicate Sample Analysis	SW	
VII.	Laboratory Control Samples (LCS)	A	LCS
VIII.	Internal Standard (ICP-MS)	N	not utilized
IX.	Furnace Atomic Absorption QC	N	
X.	ICP Serial Dilution	N	not performed.
XI.	Sample Result Verification	N	
XII.	Overall Assessment of Data	A	
XIII.	Field Duplicates	SW	(1,2) (4,5)
XIV.	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: AS

1	PZ5-100206	11		21		31	
2	PZ45-100206	12		22		32	
3	G1D-100206	13		23		33	
4	G3S-100206	14		24		34	
5	G43S-100206	15		25		35	
6	PZ5-100206MS	16		26		36	
7	PZ5-100206DUP	17		27		37	
8	PB	18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 15664B4
SDG #: J232

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: MH
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-5	M2	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
6,7	6	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
ICP Trace		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,

Comments: Mercury by CVAA if performed

LDC #: 15664B4
SDG #: J232

VALIDATION FINDINGS WORKSHEET
Duplicate Analysis

Page: 1 of 1
Reviewer: MY
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a duplicate sample analyzed for each matrix in this SDG?

Y (N) N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for water samples and ≤ 35% for soil samples? If no, see qualifications below. A control limit of ±R.L. (±2X R.L for soil) was used for sample values that were <5X the R.L., including the case when only one of the duplicate sample values was <5X R.L.. If field blanks were used for laboratory duplicates, note in the Overall Assessment.

LEVEL IV ONLY:

Y N (N/A) Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Duplicate ID	Matrix	Analyte	RPD (Limits)	Difference (Limits)	Associated Samples	Qualifications
1	7	Aq	Mn	25.5 (≤20)		All	J/UJ/A

Comments:

DUP.4S2

LDC#: 15664B4
SDG#: JZ32

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: Metals (EPA Method 6010B)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (mg/L)		RPD	
	1	2		
Aluminum	0.1U	0.1	200	
Calcium	0.5	0.5	0	
Iron	100	109	9	
Magnesium	0.2	0.2	0	
Manganese	0.024	0.033	32	
Potassium	14	14	0	
Sodium	6640	6810	3	
Silicon	53.2	55.0	3	

V:\FIELD DUPLICATES\FD_inorganic\15664B4.wpd

Compound	Concentration (mg/L)		RPD	
	4	5		
Aluminum	0.09	0.10	11	
Calcium	46.2	47.1	2	
Iron	28.0	28.0	0	
Magnesium	26.7	27.1	1	
Manganese	2.63	2.67	2	
Potassium	3.5	3.8	8	
Sodium	438	454	4	
Silicon	27.3	26.6	3	

V:\FIELD DUPLICATES\FD_inorganic\15664B4.wpd

Chinook Ventures, Inc.
Data Validation Reports
LDC# 15664

Wet Chemistry

LDC

LDC Report# 15664A6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Chinook Ventures, Inc.

Collection Date: September 28, 2006

LDC Report Date: October 26, 2006

Matrix: Soil

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: Analytical Resources, Inc.

Sample Delivery Group (SDG): JY78

Sample Identification

S1-B-092806
S41-092806
S1-A-092806
S1-B-092806MS
S1-B-092806DUP

Introduction

This data review covers 5 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 335.2 for Total Cyanide and Standard Method 4500-CN-I for Weak Acid Dissociable Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

Samples S1-B-092806 and S41-092806 were identified as field duplicates. No contaminant concentrations were detected in any of the samples.

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG JY78

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG JY78

No Sample Data Qualified in this SDG

SAMPLE RESULTS-CONVENTIONALS
JY78-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized: MB
Reported: 10/06/06

Project: Chinook
Event: 060354-01
Date Sampled: 09/28/06
Date Received: 09/29/06

Client ID: S1-B-092806
ARI ID: 06-18114 JY78H

Analyte	Date	Method	Units	RL	Sample
Total Solids	10/02/06 100206#1	EPA 160.3	Percent	0.01	53.10
Total Cyanide	10/02/06 100206#1	EPA 335.2	mg/kg	0.47	< 0.47 U
Weak Acid Dissoc. Cyanide	10/03/06 100306#1	SM4500CN-I	mg/kg	0.47	< 0.47 U

RL Analytical reporting limit
U Undetected at reported detection limit

10/03/06

SAMPLE RESULTS-CONVENTIONALS
JY78-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized: MB
Reported: 10/06/06

Project: Chinook
Event: 060354-01
Date Sampled: 09/28/06
Date Received: 09/29/06

Client ID: S41-092806
ARI ID: 06-18115 JY78I

Analyte	Date	Method	Units	RL	Sample
Total Solids	10/02/06 100206#1	EPA 160.3	Percent	0.01	53.20
Total Cyanide	10/02/06 100206#1	EPA 335.2	mg/kg	0.47	< 0.47 U
Weak Acid Dissoc. Cyanide	10/03/06 100306#1	SM4500CN-I	mg/kg	0.47	< 0.47 U

RL Analytical reporting limit
U Undetected at reported detection limit

R/10/06

SAMPLE RESULTS-CONVENTIONALS
JY78-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized: MB
Reported: 10/06/06

Project: Chinook
Event: 060354-01
Date Sampled: 09/28/06
Date Received: 09/29/06

Client ID: S1-A-092806
ARI ID: 06-18116 JY78J

Analyte	Date	Method	Units	RL	Sample
Total Solids	10/02/06 100206#1	EPA 160.3	Percent	0.01	55.70
Total Cyanide	10/02/06 100206#1	EPA 335.2	mg/kg	0.45	0.90
Weak Acid Dissoc. Cyanide	10/03/06 100306#1	SM4500CN-I	mg/kg	0.45	< 0.45 U

RL Analytical reporting limit
U Undetected at reported detection limit

R/03006

LDC #: 15664A6
SDG #: JY78
Laboratory: Analytical Resources, Inc.

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 10/26/06
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Total Cyanide (EPA Method 335.2), Weak Acid Dissociable Cyanide (SM4500-CN-I)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/28/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	
V	Duplicates	A	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	ND	(1,2)
X	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Soil

1	S1-B-092806	11		21		31	
2	S41-092806	12		22		32	
3	S1-A-092806	13		23		33	
4	S1-B-092806MS	14		24		34	
5	S1-B-092806DUP	15		25		35	
6	MB	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 15664A6
SDG #: J498

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MY
2nd reviewer: A

All circled methods are applicable to each sample.

Sample ID	Parameter
1-3	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+} WAD CN
MW4,5	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+}

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	October 6, 2006
LDC Report Date:	October 30, 2006
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	JZ32

Sample Identification

PZ5-100206
PZ45-100206
G1D-100206
G3S-100206
G43S-100206
PZ5-100206MS
PZ5-100206DUP
G1D-100206MS
G1D-100206DUP
FB-100206

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Chloride, Fluoride and Sulfate, EPA Method 365.2 for Total Phosphorus, Standard Method 2320 for Alkalinity, and Fluid Density by Pychnometer .

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

Samples PZ5-100206 and PZ45-100206 and samples G3S-100206 and G43S-100206 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration		RPD
	PZ5-100206	PZ45-100206	
Alkalinity	8890 mg/L	8750 mg/L	2
Chloride	47.5 mg/L	46.6 mg/L	2
Fluoride	2470 mg/L	2440 mg/L	1
Total phosphorus	1.98 mg/L	1.98 mg/L	0
Sulfate	582 mg/L	567 mg/L	3
Fluid density	1.0162 g/mL	1.0162 g/mL	0

Analyte	Concentration		RPD
	G3S-100206	G43S-100206	
Alkalinity	1030 mg/L	1040 mg/L	1
Chloride	98.8 mg/L	101 mg/L	2
Fluoride	18.7 mg/L	19.6 mg/L	5
Total Phosphorus	2.38 mg/L	2.22 mg/L	7
Sulfate	6.4 mg/L	7.7 mg/L	18
Fluid Density	1.0017 g/mL	1.0017 g/mL	0

X. Field Blanks

Sample FB-100206 was identified as a field blank. No contaminant concentrations were found in this blank.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG JZ32

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG JZ32

No Sample Data Qualified in this SDG

SAMPLE RESULTS-CONVENTIONALS
JZ32-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Groundwater
Data Release Authorized:
Reported: 10/10/06

Project: Chinook
Event: 060354-01
Date Sampled: 10/02/06
Date Received: 10/03/06

Client ID: PZ5-100206
ARI ID: 06-18406 JZ32A

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/05/06 100506#2	SM 2320	mg/L CaCO3	1.0	8,890
Chloride	10/06/06 100606#1	EPA 300.0	mg/L	2.0	47.5
Fluoride	10/06/06 100606#1	EPA 300.0	mg/L	100	2,470
Total Phosphorus	10/06/06 100606#1	EPA 365.2	mg-P/L	0.160	1.98
Sulfate	10/06/06 100606#1	EPA 300.0	mg/L	20.0	582

RL Analytical reporting limit
U Undetected at reported detection limit

10/05/06

SAMPLE RESULTS-CONVENTIONALS
JZ32-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Groundwater
Data Release Authorized:
Reported: 10/10/06

Project: Chinook
Event: 060354-01
Date Sampled: 10/02/06
Date Received: 10/03/06

Client ID: PZ45-100206
ARI ID: 06-18407 JZ32B

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/05/06 100506#2	SM 2320	mg/L CaCO3	1.0	8,750
Chloride	10/06/06 100606#1	EPA 300.0	mg/L	2.0	46.6
Fluoride	10/06/06 100606#1	EPA 300.0	mg/L	100	2,440
Total Phosphorus	10/06/06 100606#1	EPA 365.2	mg-P/L	0.160	1.98
Sulfate	10/06/06 100606#1	EPA 300.0	mg/L	20.0	567

RL Analytical reporting limit
U Undetected at reported detection limit

9/03006

SAMPLE RESULTS-CONVENTIONALS
JZ32-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Groundwater
Data Release Authorized:
Reported: 10/10/06

Project: Chinook
Event: 060354-01
Date Sampled: 10/02/06
Date Received: 10/03/06

Client ID: G1D-100206
ARI ID: 06-18408 JZ32C

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/05/06 100506#2	SM 2320	mg/L CaCO3	1.0	944
Chloride	10/06/06 100606#1	EPA 300.0	mg/L	10.0	330
Fluoride	10/06/06 100606#1	EPA 300.0	mg/L	0.2	6.2
Total Phosphorus	10/06/06 100606#1	EPA 365.2	mg-P/L	0.160	0.700
Sulfate	10/05/06 100506#1	EPA 300.0	mg/L	1.0	32.6

RL Analytical reporting limit
U Undetected at reported detection limit

R/03006

SAMPLE RESULTS-CONVENTIONALS
JZ32-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Groundwater
Data Release Authorized:
Reported: 10/10/06

Project: Chinook
Event: 060354-01
Date Sampled: 10/02/06
Date Received: 10/03/06

Client ID: G3S-100206
ARI ID: 06-18409 JZ32D

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/05/06 100506#2	SM 2320	mg/L CaCO3	1.0	1,030
Chloride	10/06/06 100606#1	EPA 300.0	mg/L	5.0	98.8
Fluoride	10/05/06 100506#1	EPA 300.0	mg/L	1.0	18.7
Total Phosphorus	10/06/06 100606#1	EPA 365.2	mg-P/L	0.160	2.38
Sulfate	10/06/06 100606#1	EPA 300.0	mg/L	0.2	6.4

RL Analytical reporting limit
U Undetected at reported detection limit

K 103006

SAMPLE RESULTS-CONVENTIONALS
JZ32-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Groundwater
Data Release Authorized:
Reported: 10/10/06

Project: Chinook
Event: 060354-01
Date Sampled: 10/02/06
Date Received: 10/03/06

Client ID: G43S-100206
ARI ID: 06-18410 JZ32E

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/05/06 100506#2	SM 2320	mg/L CaCO3	1.0	1,040
Chloride	10/06/06 100606#1	EPA 300.0	mg/L	5.0	101
Fluoride	10/05/06 100506#1	EPA 300.0	mg/L	1.0	19.6
Total Phosphorus	10/06/06 100606#1	EPA 365.2	mg-P/L	0.160	2.22
Sulfate	10/06/06 100606#1	EPA 300.0	mg/L	0.2	7.7

RL Analytical reporting limit
U Undetected at reported detection limit

R 10/12/06

SAMPLE RESULTS-CONVENTIONALS
JZ32-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Groundwater
Data Release Authorized
Reported: 10/10/06

Project: Chinook
Event: 060354-01
Date Sampled: 10/02/06
Date Received: 10/03/06

Client ID: FB-100206
ARI ID: 06-18411 JZ32F

Analyte	Date Batch	Method	Units	RL	Sample
Chloride	10/06/06 100606#1	EPA 300.0	mg/L	0.1	< 0.1 U
Fluoride	10/06/06 100606#1	EPA 300.0	mg/L	0.1	< 0.1 U
Sulfate	10/06/06 100606#1	EPA 300.0	mg/L	0.1	< 0.1 U

RL Analytical reporting limit
U Undetected at reported detection limit

10/03/06

ANALYTICAL RESOURCES INCORPORATED

Anchor Environmental
Chinook 060354-01
Fluid Density

Sample ID	Temperature (°C)	Density (g/ml)
PZ5-100206	22.5	1.0162
PZ45-100206	22.5	1.0162
G1D-100206	22.5	1.0014
G3S-100206	22.5	1.0017
G43S-100206	22.5	1.0017

Density measured in a calibrated 500 ml flask at the indicated temperature.

JZ32

LDC #: 15664B6
SDG #: JZ32
Laboratory: Analytical Resources, Inc.

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 10/11/06
Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: Alkalinity (SM2320), Chloride, Fluoride, Sulfate (EPA Method 300.0), Total Phosphorus (EPA Method 365.2), Fluid Density (Method Rychnomatic)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/6/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	3 MS/DUP
V	Duplicates	A	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	(1,2) (4,5)
X	Field blanks	ND	FB=10

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: 12

1	PZ5-100206	11	MW3	21		31	
2	PZ45-100206	12		22		32	
3	G1D-100206	13		23		33	
4	G3S-100206	14		24		34	
5	G43S-100206	15		25		35	
6	PZ5-100206MS	16		26		36	
7	PZ5-100206DUP	17		27		37	
8	G1D-100206MS	18		28		38	
9	G1D-100206DUP	19		29		39	
10	FB-100206	20		30		40	

Notes:

LDC #: 15664B6
SDG #: J73

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MY
2nd reviewer: d

All circled methods are applicable to each sample.

Sample ID	Parameter																
1-5	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}	T-P	Fluid Density	
10	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
~ 6.7	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	~~ALK~~	CN^-	NH_3	TKN	TOC	CR^{6+}			
✓ 8.9	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}	T-P		
✓ 7	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN^-	NH_3	TKN	TOC	CR^{6+}			

Comments:

LDC#: 15664B6
SDG#: JZ32

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

Inorganics, Method See cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD	
	1	2		
Alkalinity	8890	8750	2	
Chloride	47.5	46.6	2	
Fluoride	2470	2440	1	
Total Phosphorus	1.98	1.98	0	
Sulfate	582	567	3	
Fluid Density (g/mL)	1.0162	1.0162	0	

Analyte	Concentration (mg/L)		RPD	
	4	5		
Alkalinity	1030	1040	1	
Chloride	98.8	101	2	
Fluoride	18.7	19.6	5	
Total Phosphorus	2.38	2.22	7	
Sulfate	6.4	7.7	18	
Fluid Density (g/mL)	1.0017	1.0017	0	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Chinook Ventures, Inc.

Collection Date: October 16, 2006

LDC Report Date: October 26, 2006

Matrix: Soil

Parameters: Free Cyanide

Validation Level: EPA Level III

Laboratory: CH2M Hill Analytical Services

Sample Delivery Group (SDG): F2712

Sample Identification

LY1-PW-101606
LY2-PW-101606
LY3-PW-101606

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per ASTM Method D4282 for Free Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Extraction Until Analysis	Required Holding Time From Sample Extraction Until Analysis	Flag	A or P
LY1-PW-101606 LY2-PW-101606 LY3-PW-101606	Free cyanide	4 days	24 hours	J (all detects) R (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No fluoride contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

V. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Free Cyanide - Data Qualification Summary - SDG F2712

SDG	Sample	Analyte	Flag	A or P	Reason
F2712	LY1-PW-101606 LY2-PW-101606 LY3-PW-101606	Free cyanide	J (all detects) R (all non-detects)	P	Technical holding times

Chinook Ventures, Inc.
Free Cyanide - Laboratory Blank Data Qualification Summary - SDG F2712

No Sample Data Qualified in this SDG

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

LY1-PW-101606

SDG No.: F2712

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F271201

Date Received: 10/17/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.195	B	ug/L	1	10 ML	ASTM D4282	10/20/06

J

-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

LY2-PW-101606

SDG No.: F2712

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F271202

Date Received: 10/17/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.500	U	ug/L	1	10 ML	ASTM D4282	10/20/06 R

R 10/30/06

YL061021-22:51-F2712-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

LY3-PW-101606

SDG No.: F2712

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F271203

Date Received: 10/17/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed	
57-12-5	Cyanide, Free	0.0743	0.500	0.500	U	ug/L	1	10 ML	ASTM D4282	10/20/06	R

11/03/06

YL061021-22:51-F2712-W

FORM I GEN CHEM

LDC #: 15664C6

SDG #: F2712

Laboratory: CH2M Hill Applied Sciences Laboratory

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/26/02

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: Free Cyanide (ASTM D4282)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 10/16/02
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	N	client specified.
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

1	LY1-PW-101606	11		21		31	
2	LY2-PW-101606	12		22		32	
3	LY3-PW-101606	13		23		33	
4	MB	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 15664C6
SDG #: E2712

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page: 1 of 1
Reviewer: mcy
2nd reviewer: [illegible]

All circled dates have exceeded the technical holding time.
(Y) N N/A Were all samples preserved as applicable to each method ?
(Y) N N/A Were all cooler temperatures within validation criteria?

Method:		ASTM D4282					
Parameters:		Free CN					
Technical holding time:		24 hrs					
Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
1-3	10/16/06	10/20/06	14 days				J/R/P

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Chinook Ventures, Inc.

Collection Date: September 28, 2006

LDC Report Date: October 30, 2006

Matrix: Soil

Parameters: Belleck Fluoride

Validation Level: EPA Level III

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K0608631

Sample Identification

S1-B-092806
S41-092806
S1-A-092806
S1-B-092806MS
S1-B-092806MSD
S1-B-092806DUP

Introduction

This data review covers 6 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 340.2 for Belleck Fluoride.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No fluoride contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
ICB/CCB	Belleck fluoride	0.10 mg/L	All samples in SDG K0608631

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
S1-B-092806MS/MSD (All samples in SDG K0608631)	Belleck fluoride	20 (75-125)	31 (75-125)	42 (≤20)	J (all detects) R (all non-detects)	A

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

Samples S1-B-092806 and S41-092806 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD
	S1-B-092806	S41-092806	
Belleck fluoride	99	118	18

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Belleck Fluoride - Data Qualification Summary - SDG K0608631

SDG	Sample	Analyte	Flag	A or P	Reason
K0608631	S1-B-092806 S41-092806 S1-A-092806	Belleck fluoride	J (all detects) R (all non-detects)	A	Matrix spike/Matrix spike duplicates (%R)(RPD)

Chinook Ventures, Inc.
Belleck Fluoride - Laboratory Blank Data Qualification Summary - SDG K0608631

No Sample Data Qualified in this SDG

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : Anchor Environmental
Project Name : Chinook
Project Number : NA
Sample Matrix : SOIL

Service Request : K0608631
Date Collected : 09/28/06
Date Received : 10/06/06

Fluoride, Bellack

Prep Method : 340.1
Analysis Method : 340.2
Test Notes :

Units : mg/Kg (ppm)
Basis : Dry

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
S1-B-092806	K0608631-001	67	14	1	10/09/06	10/13/06	99	J
S41-092806	K0608631-002	67	14	1	10/09/06	10/13/06	118	↓
S1-A-092806	K0608631-003	67	14	1	10/09/06	10/13/06	171	↓
Method Blank	K0608631-MB	67	14	1	10/09/06	10/13/06	ND	

R/103006

Report By: Agreer

LDC #: 15664D6

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/26/06

SDG #: K0608631

Page: 1 of 1

Laboratory: Columbia Analytical Services

Reviewer:

2nd Reviewer:

METHOD: Fluoride (EPA Method 340.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/28/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	SW	
IV	Matrix Spike/Matrix Spike Duplicates	SW	
V	Duplicates	A	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	(1,2)
X	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil

1	S1-B-092806	11		21		31	
2	S41-092806	12		22		32	
3	S1-A-092806	13		23		33	
4	S1-B-092806MS	14		24		34	
5	S1-B-092806MSD	15		25		35	
6	S1-B-092806DUP	16		26		36	
7	MB	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 15644D6
SDG #: K0608637

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: MM
2nd Reviewer: A

METHOD: Inorganics, Method 340.2

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were all samples associated with a given method blank?
Y N N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: mg/kg **Associated Samples:** All (>5x)

Analyte	Blank ID	Maximum ICB/CCB	Blank Action Limit	Sample Identification								
	MB											
Bellack F ~~F, Bellack~~		0.10 mg/L										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 1566406
SDG #: K0608621

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: MH
2nd Reviewer: ✓

METHOD: Inorganics, EPA Method 340.2

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A — Was a matrix spike analyzed for each matrix in this SDG?

Y (N) N/A — Were matrix spike percent recoveries (%R) within the control limits of (75-125)? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

Y (N) N/A — Were all duplicate sample relative percent differences (RPD) ≤ 20% for water samples and ≤35% for soil samples?

LEVEL IV ONLY:

Y N (N/A) — Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	MS/MSD ID	Matrix	Analyte	MS %Recovery	MSD %Recovery	RPD (Limits)	Associated Samples	Qualifications
1	415	soil	Bellack F	20	31	42 (≤20)	All	J/R/A

Comments:

LDC #: 1566404
SDG #: K0608631

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: WH
2nd reviewer: X

METHOD: Inorganics, Method 340.2

Y N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/kg) 1	2	RPD (Limits)	Qualifier
Bellock F, ~~Bellock~~	99	118	18	

Analyte	Concentration ( )		RPD (Limits)	Qualifier

Analyte	Concentration ( )		RPD (Limits)	Qualifier

Analyte	Concentration ( )		RPD (Limits)	Qualifier

FLDUP4QL.6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	October 4, 2006
LDC Report Date:	October 30, 2006
Matrix:	Soil
Parameters:	Belleck Fluoride
Validation Level:	EPA Level III
Laboratory:	Columbia Analytical Services, Inc.
Sample Delivery Group (SDG):	K0608716

Sample Identification

LY1-SO
LY2-SO
LY3-SO
LY3-SOMS
LY3-SOMSD
LY3-SODUP

Introduction

This data review covers 6 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 340.2 for Belleck Fluoride.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No fluoride contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
ICB/CCB	Belleck fluoride	0.10 mg/L	All samples in SDG K0608716

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
LY3-SOMS/MSD (All samples in SDG K0608716)	Belleck fluoride	64 (75-125)	-	27 (≤20)	J (all detects) UJ (all non-detects)	A

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Belleck Fluoride - Data Qualification Summary - SDG K0608716

SDG	Sample	Analyte	Flag	A or P	Reason
K0608716	LY1-SO LY2-SO LY3-SO	Belleck fluoride	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicates (%R)(RPD)

Chinook Ventures, Inc.
Belleck Fluoride - Laboratory Blank Data Qualification Summary - SDG K0608716

No Sample Data Qualified in this SDG

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : Anchor Environmental
Project Name : Chinook Ventures
Project Number : NA
Sample Matrix : SOIL

Service Request : K0608716
Date Collected : 10/04/06
Date Received : 10/10/06

Fluoride, Bellack

Prep Method : 340.1
Analysis Method : 340.2
Test Notes :

Units : mg/Kg (ppm)
Basis : Dry

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
LY1-SO	K0608716-001	46	9.2	1	10/17/06	10/17/06	523	
LY2-SO	K0608716-002	46	9.2	1	10/17/06	10/17/06	1310	
LY3-SO	K0608716-003	46	9.2	1	10/17/06	10/17/06	396	
Method Blank	K0608716-MB	46	9.2	1	10/17/06	10/17/06	ND	

a/103006

00014

Report By:Agreer

LDC #: 15664E6

SDG #: K0608716

Laboratory: Columbia Analytical Services

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/26/06

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

Bellack Bellack

METHOD: Fluoride (EPA Method 340.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/4/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	SW	
IV	Matrix Spike/Matrix Spike Duplicates	SW	
V	Duplicates	A	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil

1	LY1-SO	11		21		31	
2	LY2-SO	12		22		32	
3	LY3-SO	13		23		33	
4	LY3-SOMS	14		24		34	
5	LY3-SOMSD	15		25		35	
6	LY3-SODUP	16		26		36	
7	MB	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 15664E6
SDG #: K0608716

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: MM
2nd Reviewer: [illegible]

METHOD: Inorganics, Method 3.40.2

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were all samples associated with a given method blank?
Y N N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: mg/kg **Associated Samples:** All (75%)

Analyte	Blank ID	Maximum ICB/CCB	Blank Action Limit	Sample Identification								
Bellbach F		0.10 mg/L										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 15664Z6
SDG #: K0608716

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: MH
2nd Reviewer: [illegible]

METHOD: Inorganics, EPA Method 340.2

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

Y N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for water samples and ≤35% for soil samples?

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	MS/MSD ID	Matrix	Analyte	MS %Recovery	MSD %Recovery	RPD (Limits)	Associated Samples	Qualifications
1	415	Soil	Beryllium	64		27 (≤20)	All	J/UJ/A

Comments:

MSD.8

Chinook Ventures, Inc.
Data Validation Reports
LDC# 15664

Diesel Range Organics & Residual Range Organics

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Chinook Ventures, Inc.

Collection Date: September 28, 2006

LDC Report Date: October 28, 2006

Matrix: Soil

Parameters: Diesel Range Organics & Residual Range Organics

Validation Level: EPA Level III

Laboratory: Analytical Resources, Inc.

Sample Delivery Group (SDG): JY78

Sample Identification

RY1-092806
RY2-092806
RY3-092806
RY4-092806
RY5-092806
RY45-092806
RY6-092806
RY6-092806MS
RY6-092806MSD

Introduction

This data review covers 9 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 for Diesel Range Organics and Residual Range Organics.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures.

Cooler temperatures for all samples were reported between 3.8°C and 6.5°C upon receipt by the laboratory.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 15.0% for all compounds.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic or residual range organic contaminants were found in the method blanks.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report if data has been qualified.

IX. Field Duplicates

Samples RY5-092806 and RY45-092806 were identified as field duplicates. No diesel range organics or residual range organics were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/Kg)		RPD
	RY5-092806	RY45-092806	
TPH as diesel	15	10	40
TPH as motor oil	120	80	40

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Diesel Range Organics & Residual Range Organics - Data Qualification Summary - SDG JY78

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Diesel Range Organics & Residual Range Organics - Laboratory Blank Data Qualification Summary - SDG JY78

No Sample Data Qualified in this SDG

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Page 1 of 1
Matrix: Soil

QC Report No: JY78-Anchor Environmental
Project: Chinook
060354-01
Date Received: 09/29/06

Data Release Authorized:
Reported: 10/05/06

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
JY78A 06-18107	RY1-092806 HC ID: **DRO/RRO**	10/03/06	10/04/06 FID3A	1.0	**Diesel** **Motor Oil** o-Terphenyl	**26** **110** 79.1%
JY78B 06-18108	RY2-092806 HC ID: **DRO/MOTOR OIL**	10/03/06	10/04/06 FID3A	1.0	**Diesel** **Motor Oil** o-Terphenyl	**42** **55** 76.2%
JY78C 06-18109	RY3-092806 HC ID: **RRO**	10/03/06	10/04/06 FID3A	1.0	Diesel **Motor Oil** o-Terphenyl	< 5.3 U **20** 80.7%
JY78D 06-18110	RY4-092806 HC ID: **DRO/MOTOR OIL**	10/03/06	10/04/06 FID3A	1.0	**Diesel** **Motor Oil** o-Terphenyl	**36** **85** 81.8%
JY78E 06-18111	RY5-092806 HC ID: **DRO/MOTOR OIL**	10/03/06	10/04/06 FID3A	1.0	**Diesel** **Motor Oil** o-Terphenyl	**15** **120** 82.4%
JY78F 06-18112	RY45-092806 HC ID: **DRO/MOTOR OIL**	10/03/06	10/04/06 FID3A	1.0	**Diesel** **Motor Oil** o-Terphenyl	**10** **80** 80.2%
MB-100306 06-18113	Method Blank HC ID: ---	10/03/06	10/04/06 FID3A	1.0	Diesel Motor Oil o-Terphenyl	< 5.0 U < 10 U 76.4%
JY78G 06-18113	RY6-092806 HC ID: **DRO/MOTOR OIL**	10/03/06	10/04/06 FID3A	1.0	**Diesel** **Motor Oil** o-Terphenyl	**15** **61** 69.8%

Reported in mg/kg (ppm)

Diesel quantitation on total peaks in the range from C12 to C24.
Motor Oil quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

L 102006

0015

FORM I

LDC #: 15664A8
SDG #: JY78
Laboratory: Analytical Resources, Inc.

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 10/27/06
Page: 1 of 1
Reviewer: M
2nd Reviewer: A

METHOD: GC Diesel Range Organics & Resudual Range Organics (EPA SW846 Method 8015)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW A	Sampling dates: 9/28/06 cooler temp 3.8-6.5°C (text)
IIa.	Initial calibration	A	
IIb.	Calibration verification /ICV	A	
III.	Blanks	A	
IVa.	Surrogate recovery	A	
IVb.	Matrix spike/Matrix spike duplicates	A	
IVc.	Laboratory control samples	A	LCS
V.	Target compound identification	N	
VI.	Compound Quantitation and CRQLs	N	
VII.	System Performance	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	D = 5+6
X.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: All soils

1	RY1-092806	11	100306MB	21		31	
2	RY2-092806	12		22		32	
3	RY3-092806	13		23		33	
4	RY4-092806	14		24		34	
5	RY5-092806	15		25		35	
6	RY45-092806	16		26		36	
7	RY6-092806	17		27		37	
8	RY6-092806MS	18		28		38	
9	RY6-092806MSD	19		29		39	
10		20		30		40	

Notes:

LDC #: 156648
SDG #: J978

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: GC Pesticides/PCBs (EPA SW846 Method 8081/8082)

Y N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in thie field duplicate pairs?

Compound	Concentration (mg/kg)		RPD
	5	6	
Diesel	15	10	40
Motor Oil	120	80	40

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

Anchor Environmental, LLC
1423 3rd Avenue, Suite 300
Seattle, WA 98101-2226
ATTN: Ms. Lisa Allen

November 17, 2006

SUBJECT: Chinook Ventures, Inc., Data Validation

Dear Ms. Allen,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on November 13 and November 15, 2006. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 15788:

SDG #	Fraction
F2664, F2680, KB65, KC54, JZ95	Polynuclear Aromatic Hydrocarbons, Wet Chemistry

The data validation was performed under EPA Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998

Please feel free to contact us if you have any questions.

Sincerely,

Stella Cuenco

Stella S. Cuenco
Project Manager/Senior Chemist

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Attachment 1

448 Pages

LDC #15788 (Anchor Environmental-Seattle WA / Chinook Ventures, Inc.)

LDC	SDG#	DATE REC'D	(3) DATE DUE	PAHs (8270D)		Free CN- (D4282)		Total CN- (335.2)		WAD CN- (4500)		F (300.0)		Grain Size (D422)																							
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	F2664	11/13/06	12/06/06	-	-	3	0	-	-	-	-	-	-	-	-																						
B	F2680	11/13/06	12/06/06	-	-	3	0	-	-	-	-	-	-	-	-																						
C	KB65	11/13/06	12/06/06	-	-	-	-	9	0	9	0	9	0	-	-																						
D	KC54	11/15/06	12/08/06	6	0	-	-	-	-	-	-	-	-	-	-																						
E	JZ95	11/15/06	12/08/06	-	-	-	-	0	3	0	3	-	-	0	3																						
Total	B/SC					6	0	9	3	9	3	9	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS, MSD, or DUP's.

15788ST.wpd

Chinook Ventures, Inc.
Data Validation Reports
LDC# 15788

Polynuclear Aromatic Hydrocarbons

LDC

LDC Report# 15788D2

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	October 24, 2006
LDC Report Date:	November 17, 2006
Matrix:	Water
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	KC54

Sample Identification

G1S-PW-102406
G2S-PW-102406
G10S-PW-102406
PZ7-PW-102406
G5S-PW-102406
G4S-PW-102406

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270C using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures.

Cooler temperatures for all samples were reported at 8°C upon receipt by the laboratory.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds and system monitoring compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples G1S-PW-102406 and G10S-PW-102406 were identified as field duplicates. No polynuclear aromatic hydrocarbons were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	G1S-PW-102406	G10S-PW-102406	
Naphthalene	0.10U	0.23	200
2-Methylnaphthalene	0.10U	0.07	200
Acenaphthene	0.10U	0.48	200
Fluorene	0.10U	0.22	200
Phenanthrene	0.10U	0.73	200
Anthracene	0.10U	0.11	200
Fluoranthene	0.14	0.77	138
Pyrene	0.70	0.49	35
Benzo(a)anthracene	0.10U	0.07	200
Chrysene	0.16	0.26	48
Benzo(b)fluoranthene	0.17	0.19	11
Benzo(k)fluoranthene	0.15	0.11	31
Benzo(a)pyrene	0.10	0.07	35
Indeno(1,2,3-cd)pyrene	0.10	0.05	67
Benzo(g,h,i)perylene	0.18	0.09	67
Dibenzofuran	0.10U	0.17	200

XVII. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG KC54

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG KC54

No Sample Data Qualified in this SDG

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS

Sample ID: G1S-PW-102406
SAMPLE

Lab Sample ID: KC54A
LIMS ID: 06-20960
Matrix: Water
Data Release Authorized:
Reported: 11/09/06

QC Report No: KC54-Anchor Environmental
Project: CHINOOK VENTURES
Event: 060354-01
Date Sampled: 10/24/06
Date Received: 10/26/06

Date Extracted: 10/31/06
Date Analyzed: 11/07/06 16:09
Instrument/Analyst: NT1/VTS

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	**Fluoranthene**	**0.10**	**0.14**
129-00-0	**Pyrene**	**0.10**	**0.70**
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	**Chrysene**	**0.10**	**0.16**
205-99-2	**Benzo(b)fluoranthene**	**0.10**	**0.17**
207-08-9	**Benzo(k)fluoranthene**	**0.10**	**0.15**
50-32-8	**Benzo(a)pyrene**	**0.10**	**0.10**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**0.10**	**0.10 J**
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	**Benzo(g,h,i)perylene**	**0.10**	**0.18**
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	84.7%
d14-Dibenzo(a,h)anthracen	93.3%

r 11/6/06

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS

Sample ID: G2S-PW-102406
SAMPLE

Lab Sample ID: KC54B
LIMS ID: 06-20961
Matrix: Water
Data Release Authorized:
Reported: 11/09/06

QC Report No: KC54-Anchor Environmental
Project: CHINOOK VENTURES
Event: 060354-01
Date Sampled: 10/24/06
Date Received: 10/26/06

Date Extracted: 10/31/06
Date Analyzed: 11/07/06 16:33
Instrument/Analyst: NT1/VTS

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	0.15
91-57-6	2-Methylnaphthalene	0.10	0.05 J
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	0.29
86-73-7	Fluorene	0.10	0.14
85-01-8	Phenanthrene	0.10	0.49
120-12-7	Anthracene	0.10	0.09 J
206-44-0	Fluoranthene	0.10	0.64
129-00-0	Pyrene	0.10	0.40
56-55-3	Benzo(a)anthracene	0.10	0.07 J
218-01-9	Chrysene	0.10	0.22
205-99-2	Benzo(b)fluoranthene	0.10	0.13
207-08-9	Benzo(k)fluoranthene	0.10	0.12
50-32-8	Benzo(a)pyrene	0.10	0.07 J
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	0.07 J
132-64-9	Dibenzofuran	0.10	0.10

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	78.7%
d14-Dibenzo(a,h)anthracen	74.7%

AC 11606

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS

Sample ID: G10S-PW-102406
SAMPLE

Lab Sample ID: KC54C
LIMS ID: 06-20962
Matrix: Water
Data Release Authorized:
Reported: 11/09/06

QC Report No: KC54-Anchor Environmental
Project: CHINOOK VENTURES
Event: 060354-01
Date Sampled: 10/24/06
Date Received: 10/26/06

Date Extracted: 10/31/06
Date Analyzed: 11/07/06 16:58
Instrument/Analyst: NT1/VTS

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	0.23
91-57-6	2-Methylnaphthalene	0.10	0.07 J
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	0.48
86-73-7	Fluorene	0.10	0.22
85-01-8	Phenanthrene	0.10	0.73
120-12-7	Anthracene	0.10	0.11
206-44-0	Fluoranthene	0.10	0.77
129-00-0	Pyrene	0.10	0.49
56-55-3	Benzo(a)anthracene	0.10	0.07 J
218-01-9	Chrysene	0.10	0.26
205-99-2	Benzo(b)fluoranthene	0.10	0.19
207-08-9	Benzo(k)fluoranthene	0.10	0.11
50-32-8	Benzo(a)pyrene	0.10	0.07 J
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	0.05 J
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	0.09 J
132-64-9	Dibenzofuran	0.10	0.17

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	80.3%
d14-Dibenzo(a,h)anthracen	84.7%

r 11/6/06

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS

ANALYTICAL RESOURCES INCORPORATED

Sample ID: PZ7-PW-102406
SAMPLE

Lab Sample ID: KC54D
LIMS ID: 06-20963
Matrix: Water
Data Release Authorized:
Reported: 11/09/06

QC Report No: KC54-Anchor Environmental
Project: CHINOOK VENTURES
Event: 060354-01
Date Sampled: 10/24/06
Date Received: 10/26/06

Date Extracted: 10/31/06
Date Analyzed: 11/07/06 17:23
Instrument/Analyst: NT1/VTS

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	**Naphthalene**	**0.10**	**0.08 J**
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	**Acenaphthene**	**0.10**	**0.05 J**
86-73-7	**Fluorene**	**0.10**	**0.05 J**
85-01-8	**Phenanthrene**	**0.10**	**0.07 J**
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo(b)fluoranthene	0.10	< 0.10 U
207-08-9	Benzo(k)fluoranthene	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	77.0%
d14-Dibenzo(a,h)anthracen	53.0%

11/16/06

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS

ANALYTICAL RESOURCES INCORPORATED

Sample ID: G5S-PW-102406
SAMPLE

Lab Sample ID: KC54E
LIMS ID: 06-20964
Matrix: Water
Data Release Authorized:
Reported: 11/09/06

QC Report No: KC54-Anchor Environmental
Project: CHINOOK VENTURES
Event: 060354-01
Date Sampled: 10/24/06
Date Received: 10/26/06

Date Extracted: 10/31/06
Date Analyzed: 11/07/06 17:47
Instrument/Analyst: NT1/VTS

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo(b)fluoranthene	0.10	< 0.10 U
207-08-9	Benzo(k)fluoranthene	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	84.0%
d14-Dibenzo(a,h)anthracen	97.3%

2 111606

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS

Sample ID: G4S-PW-102406
SAMPLE

Lab Sample ID: KC54F
LIMS ID: 06-20965
Matrix: Water
Data Release Authorized:
Reported: 11/09/06

QC Report No: KC54-Anchor Environmental
Project: CHINOOK VENTURES
Event: 060354-01
Date Sampled: 10/24/06
Date Received: 10/26/06

Date Extracted: 10/31/06
Date Analyzed: 11/07/06 18:12
Instrument/Analyst: NT1/VTS

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo(b)fluoranthene	0.10	< 0.10 U
207-08-9	Benzo(k)fluoranthene	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	82.7%
d14-Dibenzo(a,h)anthracen	61.3%

rc 111606

LDC #: 15788D2

SDG #: KC54

Laboratory: Analytical Resources, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 11/16/06

Page: 1 of 1

Reviewer: a

2nd Reviewer: a

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 10/24/06 cooler temp 8°C text
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	
IV.	Continuing calibration /ICV	A	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 1 + 3
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: All HW's

1	G1S-PW-102406	11	KC54MBW1	21		31	
2	G2S-PW-102406	12		22		32	
3	G10S-PW-102406	13		23		33	
4	PZ7-PW-102406	14		24		34	
5	G5S-PW-102406	15		25		35	
6	G4S-PW-102406	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC#: 15788D2
SDG#: KC54

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer:
2nd Reviewer:

METHOD: GC/MS Semivolatile (EPA SW 846 Method 8270C)
Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD	
	1	3		
Naphthalene	0.10U	0.23	200	
2-Methylnaphthalene	0.10U	0.07	200	
Acenaphthene	0.10U	0.48	200	
Fluorene	0.10U	0.22	200	
Phenanthrene	0.10U	0.73	200	
Anthracene	0.10U	0.11	200	
Fluoranthene	0.14	0.77	138	
Pyrene	0.70	0.49	35	
Benzo(a)anthracene	0.10U	0.07	200	
Chrysene	0.16	0.26	48	
Benzo(b)fluoranthene	0.17	0.19	11	
Benzo(k)fluoranthene	0.15	0.11	31	
Benzo(a)pyrene	0.10	0.07	35	
Indeno(1,2,3-cd)pyrene	0.10	0.05	67	
Benzo(g,h,i)perylene	0.18	0.09	67	
Dibenzofuran	0.10U	0.17	200	

Chinook Ventures, Inc.
Data Validation Reports
LDC# 15788

Wet Chemistry

LDC

LDC Report# 15788A6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	October 10, 2006
LDC Report Date:	November 16, 2006
Matrix:	Water
Parameters:	Free Cyanide
Validation Level:	EPA Level III
Laboratory:	CH2M Hill Applied Sciences Laboratory
Sample Delivery Group (SDG):	F2664

Sample Identification

LY1CNFREE
LY2CNFREE
LY3CNFREE

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per ASTM Method D4282 for Free Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
All samples in SDG F2664	Free cyanide	4 days	24 hours	J (all detects) R (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No free cyanide was found in the initial, continuing and preparation blanks.

IV. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) analyses specified for the samples in this SDG, and therefore matrix spike analyses were not performed for this SDG.

V. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Free Cyanide - Data Qualification Summary - SDG F2664

SDG	Sample	Analyte	Flag	A or P	Reason
F2664	LY1CNFREE LY2CNFREE LY3CNFREE	Free cyanide	J (all detects) R (all non-detects)	P	Technical holding times

Chinook Ventures, Inc.
Free Cyanide - Laboratory Blank Data Qualification Summary - SDG F2664

No Sample Data Qualified in this SDG

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

LY1CNFREE

SDG No.: F2664

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F266401

Date Received: 10/11/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	1.41		ug/L	1	10 ML	ASTM D4282	10/14/06 J

r 111606

YL061017-11:30-F2664-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

LY2CNFREE

SDG No.: F2664

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F266402

Date Received: 10/11/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.822		ug/L	1	10 ML	ASTM D4282	10/14/06

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

LY3CNFREE

SDG No.: F2664

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F266403

Date Received: 10/11/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.227	B	ug/L	1	10 ML	ASTM D4282	10/14/06 J

LDC #: 15788A6

SDG #: F2664

Laboratory: CH2M Hill Applied Sciences Laboratory

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 11/16/06

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: Free Cyanide (ASTM D4282)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 10/10/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	N	3 client specific
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	LY1CNFREE	11		21		31	
2	LY2CNFREE	12		22		32	
3	LY3CNFREE	13		23		33	
4	MB	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 15788A6
SDG #: F2664

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

All circled dates have exceeded the technical holding time.
Y N N/A Were all samples preserved as applicable to each method ?
Y N N/A Were all cooler temperatures within validation criteria?

Method:		ASTM D4282					
Parameters:		Free CN					
Technical holding time:		24hr					
Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
1-3	10/10/06	10/14/06	(4 days)				J/R/P

LDC Report# 15788B6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	October 11, 2006
LDC Report Date:	November 16, 2006
Matrix:	Water
Parameters:	Free Cyanide
Validation Level:	EPA Level III
Laboratory:	CH2M Hill Applied Sciences Laboratory
Sample Delivery Group (SDG):	F2680

Sample Identification

LY1-PW-101106
LY2-PW-101106
LY3-PW-101106

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per ASTM Method D4282 for Free Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
All samples in SDG F2680	Free cyanide	3 days	24 hours	J (all detects) R (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No free cyanide was found in the initial, continuing and preparation blanks.

IV. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) analyses specified for the samples in this SDG, and therefore matrix spike analyses were not performed for this SDG.

V. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Free Cyanide - Data Qualification Summary - SDG F2680

SDG	Sample	Analyte	Flag	A or P	Reason
F2680	LY1-PW-101106 LY2-PW-101106 LY3-PW-101106	Free cyanide	J (all detects) R (all non-detects)	P	Technical holding times

Chinook Ventures, Inc.
Free Cyanide - Laboratory Blank Data Qualification Summary - SDG F2680

No Sample Data Qualified in this SDG

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

LY1-PW-101106

SDG No.: F2680

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F268001

Date Received: 10/12/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.596		ug/L	1	10 ML	ASTM D4282	10/14/06 J

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

LY2-PW-101106

SDG No.: F2680

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F268002

Date Received: 10/12/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.552		ug/L	1	10 ML	ASTM D4282	10/14/06

YL061017-11:25-F2680-W

FORM I GEN CHEM

1A-WC

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Field Sample ID:

LY3-PW-101106

SDG No.: F2680

Matrix: WATER

Lab Name: CH2M HILL/LAB/CVO

Lab Sample ID: F268003

Date Received: 10/12/06

CAS No.	Analyte	MDL	PQL	Result	Q	Units	DF	Sample Amount	Analysis Method	Date Analyzed
57-12-5	Cyanide, Free	0.0743	0.500	0.222	B	ug/L	1	10 ML	ASTM D4282	10/14/06 J

YL061017-11:25-F2680-W

FORM I GEN CHEM

R111606

LDC #: 15788B6

VALIDATION COMPLETENESS WORKSHEET

Level III

SDG #: F2680

Laboratory: CH2M Hill Applied Sciences Laboratory

Date: 11/16/06

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer:

METHOD: Free Cyanide (ASTM D4282)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 10/11/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	N	3 client specified
V	Duplicates	N	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	LY1-PW-101106	11		21		31	
2	LY2-PW-101106	12		22		32	
3	LY3-PW-101106	13		23		33	
4	MB	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 15788B6
SDG #: F7680

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer:

All circled dates have exceeded the technical holding time.
Y N N/A Were all samples preserved as applicable to each method ?
Y N N/A Were all cooler temperatures within validation criteria?

Method:		ASTM D4282					
Parameters:		Free CN					
Technical holding time:		24 hr					
Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
All	10/11/06	10/14/06	(3 days)				J/R/P

HT.6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Chinook Ventures, Inc.

Collection Date: October 10 through October 18, 2006

LDC Report Date: November 16, 2006

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: Analytical Resources, Inc.

Sample Delivery Group (SDG): KB65

Sample Identification

LY1-PW-101006
LY2-PW-101006
LY3-PW-101006
LY1-PW-101106
LY2-PW-101106
LY3-PW-101106
LY1-PW-101606
LY2-PW-101606
LY3-PW-101606
LY1-PW-101306
LY2-PW-101306
LY3-PW-101306
LY1-PW-101506
LY2-PW-101506
LY3-PW-101506
LY1-PW-101806
LY2-PW-101806
LY3-PW-101806
LY1-PW-101006MS
LY1-PW-101006DUP
LY1-PW-101306MS
LY1-PW-101306DUP

Introduction

This data review covers 22 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Fluoride, EPA Method 335.4 for Total Cyanide, and Standard Method SM4500-CN-I for Weak Acid Dissociable Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG KB65

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG KB65

No Sample Data Qualified in this SDG

SAMPLE RESULTS-CONVENTIONALS
KB65-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized
Reported: 10/30/06

Project: CHINOOK VENTURES
Event: 060354-01
Date Sampled: 10/13/06
Date Received: 10/19/06

Client ID: LY1-PW-101306
ARI ID: 06-20115 KB65J

Analyte	Date Batch	Method	Units	RL	Sample
Total Cyanide	10/23/06 102306#1	EPA 335.4	mg/L	0.005	0.146
Weak Acid Dissoc. Cyanide	10/23/06 102306#1	SM4500CN-I	mg/L	0.005	0.035

RL Analytical reporting limit
U Undetected at reported detection limit

R 11164

SAMPLE RESULTS-CONVENTIONALS
KB65-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/30/06

Project: CHINOOK VENTURES
Event: 060354-01
Date Sampled: 10/10/06
Date Received: 10/19/06

Client ID: LY1-PW-101006
ARI ID: 06-20106 KB65A

Analyte	Date Batch	Method	Units	RL	Sample
Fluoride	10/24/06 102406#1	EPA 300.0	mg/L	1.0	34.1

RL Analytical reporting limit
U Undetected at reported detection limit

7L 111606

SAMPLE RESULTS-CONVENTIONALS
KB65-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/30/06

Project: CHINOOK VENTURES
Event: 060354-01
Date Sampled: 10/13/06
Date Received: 10/19/06

Client ID: LY2-PW-101306
ARI ID: 06-20116 KB65K

Analyte	Date Batch	Method	Units	RL	Sample
Total Cyanide	10/23/06 102306#1	EPA 335.4	mg/L	0.025	0.775
Weak Acid Dissoc. Cyanide	10/23/06 102306#1	SM4500CN-I	mg/L	0.005	0.195

RL Analytical reporting limit
U Undetected at reported detection limit

7C 111606

SAMPLE RESULTS-CONVENTIONALS
KB65-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/30/06

Project: CHINOOK VENTURES
Event: 060354-01
Date Sampled: 10/10/06
Date Received: 10/19/06

Client ID: LY2-PW-101006
ARI ID: 06-20107 KB65B

Analyte	Date Batch	Method	Units	RL	Sample
Fluoride	10/24/06 102406#1	EPA 300.0	mg/L	2.0	58.6

RL Analytical reporting limit
U Undetected at reported detection limit

11/6/06

SAMPLE RESULTS-CONVENTIONALS
KB65-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/30/06

Project: CHINOOK VENTURES
Event: 060354-01
Date Sampled: 10/13/06
Date Received: 10/19/06

Client ID: LY3-PW-101306
ARI ID: 06-20117 KB65L

Analyte	Date Batch	Method	Units	RL	Sample
Total Cyanide	10/23/06 102306#1	EPA 335.4	mg/L	0.005	0.086
Weak Acid Dissoc. Cyanide	10/23/06 102306#1	SM4500CN-I	mg/L	0.005	0.018

RL Analytical reporting limit
U Undetected at reported detection limit

JL 111606

SAMPLE RESULTS-CONVENTIONALS
KB65-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/30/06

Project: CHINOOK VENTURES
Event: 060354-01
Date Sampled: 10/10/06
Date Received: 10/19/06

Client ID: LY3-PW-101006
ARI ID: 06-20108 KB65C

Analyte	Date Batch	Method	Units	RL	Sample
Fluoride	10/24/06 102406#1	EPA 300.0	mg/L	5.0	124

RL Analytical reporting limit
U Undetected at reported detection limit

2 11/06

SAMPLE RESULTS-CONVENTIONALS
KB65-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/30/06

Project: CHINOOK VENTURES
Event: 060354-01
Date Sampled: 10/15/06
Date Received: 10/19/06

Client ID: LY1-PW-101506
ARI ID: 06-20118 KB65M

Analyte	Date Batch	Method	Units	RL	Sample
Total Cyanide	10/23/06 102306#1	EPA 335.4	mg/L	0.005	0.165
Weak Acid Dissoc. Cyanide	10/23/06 102306#1	SM4500CN-I	mg/L	0.005	0.035

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
KB65-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized
Reported: 10/30/06

Project: CHINOOK VENTURES
Event: 060354-01
Date Sampled: 10/11/06
Date Received: 10/19/06

Client ID: LY1-PW-101106
ARI ID: 06-20109 KB65D

Analyte	Date Batch	Method	Units	RL	Sample
Fluoride	10/24/06 102406#1	EPA 300.0	mg/L	1.0	34.1

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
KB65-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized
Reported: 10/30/06

Project: CHINOOK VENTURES
Event: 060354-01
Date Sampled: 10/15/06
Date Received: 10/19/06

Client ID: LY2-PW-101506
ARI ID: 06-20119 KB65N

Analyte	Date Batch	Method	Units	RL	Sample
Total Cyanide	10/23/06 102306#1	EPA 335.4	mg/L	0.025	0.925
Weak Acid Dissoc. Cyanide	10/23/06 102306#1	SM4500CN-I	mg/L	0.005	0.240

RL Analytical reporting limit
U Undetected at reported detection limit

r 111606

SAMPLE RESULTS-CONVENTIONALS
KB65-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/30/06

Project: CHINOOK VENTURES
Event: 060354-01
Date Sampled: 10/11/06
Date Received: 10/19/06

Client ID: LY2-PW-101106
ARI ID: 06-20110 KB65E

Analyte	Date Batch	Method	Units	RL	Sample
Fluoride	10/24/06 102406#1	EPA 300.0	mg/L	2.0	60.9

RL Analytical reporting limit
U Undetected at reported detection limit

R 111606

SAMPLE RESULTS-CONVENTIONALS
KB65-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/30/06

Project: CHINOOK VENTURES
Event: 060354-01
Date Sampled: 10/15/06
Date Received: 10/19/06

Client ID: LY3-PW-101506
ARI ID: 06-20120 KB650

Analyte	Date Batch	Method	Units	RL	Sample
Total Cyanide	10/23/06 102306#1	EPA 335.4	mg/L	0.005	0.092
Weak Acid Dissoc. Cyanide	10/23/06 102306#1	SM4500CN-I	mg/L	0.005	0.015

RL Analytical reporting limit
U Undetected at reported detection limit

11/6/06

SAMPLE RESULTS-CONVENTIONALS
KB65-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/30/06

Project: CHINOOK VENTURES
Event: 060354-01
Date Sampled: 10/11/06
Date Received: 10/19/06

Client ID: LY3-PW-101106
ARI ID: 06-20111 KB65F

Analyte	Date Batch	Method	Units	RL	Sample
Fluoride	10/24/06 102406#1	EPA 300.0	mg/L	5.0	127

RL Analytical reporting limit
U Undetected at reported detection limit

4 11/6/06

SAMPLE RESULTS-CONVENTIONALS
KB65-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/30/06

Project: CHINOOK VENTURES
Event: 060354-01
Date Sampled: 10/18/06
Date Received: 10/19/06

Client ID: LY1-PW-101806
ARI ID: 06-20121 KB65P

Analyte	Date Batch	Method	Units	RL	Sample
Total Cyanide	10/23/06 102306#1	EPA 335.4	mg/L	0.005	0.188
Weak Acid Dissoc. Cyanide	10/23/06 102306#1	SM4500CN-I	mg/L	0.005	0.052

RL Analytical reporting limit
U Undetected at reported detection limit

IL 11/6/06

SAMPLE RESULTS-CONVENTIONALS
KB65-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/30/06

Project: CHINOOK VENTURES
Event: 060354-01
Date Sampled: 10/16/06
Date Received: 10/19/06

Client ID: LY1-PW-101606
ARI ID: 06-20112 KB65G

Analyte	Date Batch	Method	Units	RL	Sample
Fluoride	10/24/06 102406#1	EPA 300.0	mg/L	1.0	35.6

RL Analytical reporting limit
U Undetected at reported detection limit

r 11606

SAMPLE RESULTS-CONVENTIONALS
KB65-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/30/06

Project: CHINOOK VENTURES
Event: 060354-01
Date Sampled: 10/18/06
Date Received: 10/19/06

Client ID: LY2-PW-101806
ARI ID: 06-20122 KB65Q

Analyte	Date Batch	Method	Units	RL	Sample
Total Cyanide	10/23/06 102306#1	EPA 335.4	mg/L	0.025	0.905
Weak Acid Dissoc. Cyanide	10/23/06 102306#1	SM4500CN-I	mg/L	0.005	0.308

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
KB65-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/30/06

Project: CHINOOK VENTURES
Event: 060354-01
Date Sampled: 10/16/06
Date Received: 10/19/06

Client ID: LY2-PW-101606
ARI ID: 06-20113 KB65H

Analyte	Date Batch	Method	Units	RL	Sample
Fluoride	10/24/06 102406#1	EPA 300.0	mg/L	2.0	59.0

RL Analytical reporting limit
U Undetected at reported detection limit

TC 111606

SAMPLE RESULTS-CONVENTIONALS
KB65-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/30/06

Project: CHINOOK VENTURES
Event: 060354-01
Date Sampled: 10/18/06
Date Received: 10/19/06

Client ID: LY3-PW-101806
ARI ID: 06-20123 KB65R

Analyte	Date Batch	Method	Units	RL	Sample
Total Cyanide	10/23/06 102306#1	EPA 335.4	mg/L	0.005	0.075
Weak Acid Dissoc. Cyanide	10/23/06 102306#1	SM4500CN-I	mg/L	0.005	0.018

RL Analytical reporting limit
U Undetected at reported detection limit

E 11/6/06

SAMPLE RESULTS-CONVENTIONALS
KB65-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/30/06

Project: CHINOOK VENTURES
Event: 060354-01
Date Sampled: 10/16/06
Date Received: 10/19/06

Client ID: LY3-PW-101606
ARI ID: 06-20114 KB65I

Analyte	Date Batch	Method	Units	RL	Sample
Fluoride	10/24/06 102406#1	EPA 300.0	mg/L	5.0	136

RL Analytical reporting limit
U Undetected at reported detection limit

R 11/6/06

LDC #: 15788C6

SDG #: KB65

Laboratory: Analytical Resources, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 11/16/06

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: Total Cyanide (EPA Method 335.~~2~~ 4), Weak Acid Dissociable Cyanide (SM4500-CN-I), Fluoride (EPA Method 300.0)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/10/06 – 10/18/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/MSD
V	Duplicates	A	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: 12

1	LY1-PW-101006	11	LY2-PW-101306	21	LY1-PW-101306MS	31	
2	LY2-PW-101006	12	LY3-PW-101306	22	LY1-PW-101306DUP	32	
3	LY3-PW-101006	13	LY1-PW-101506	23	MB	33	
4	LY1-PW-101106	14	LY2-PW-101506	24		34	
5	LY2-PW-101106	15	LY3-PW-101506	25		35	
6	LY3-PW-101106	16	LY1-PW-101806	26		36	
7	LY1-PW-101606	17	LY2-PW-101806	27		37	
8	LY2-PW-101606	18	LY3-PW-101806	28		38	
9	LY3-PW-101606	19	LY1-PW-101006MS	29		39	
10	LY1-PW-101306	20	LY1-PW-101006DUP	30		40	

Notes:

LDC #: 15788C6
SDG #: KB6F

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MY
2nd reviewer: d

All circled methods are applicable to each sample.

Sample ID	Parameter
1-9	pH TDS Cl (F) NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
10-18	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK (CN) NH_3 TKN TOC CR^{6+} (WAD CN)
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
~19,20	pH TDS Cl (F) NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
✓21,22	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK (CN) NH_3 TKN TOC CR^{6+} (WAD CN)
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+}

Comments:

LDC Report# 15788E6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	October 4, 2006
LDC Report Date:	November 16, 2006
Matrix:	Soil
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	JZ95

Sample Identification

LY1-SO
LY2-SO
LY3-SO
LY1-SOMS
LY1-SODUP

Introduction

This data review covers 5 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 335.2 for Total Cyanide, ASTM MEthod D422 for Grain Size, and Standard Method SM4500-CN-I for Weak Acid Dissociable Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG JZ95

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG JZ95

No Sample Data Qualified in this SDG

SAMPLE RESULTS-CONVENTIONALS
JZ95-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 10/13/06

Project: Chinook Ventures
Event: 060354-01
Date Sampled: 10/04/06
Date Received: 10/05/06

Client ID: LY1-SO
ARI ID: 06-18844 JZ95A

Analyte	Date	Method	Units	RL	Sample
Total Solids	10/09/06 100906#1	EPA 160.3	Percent	0.01	85.60
Total Cyanide	10/11/06 101106#1	EPA 335.2	mg/kg	0.097	1.4
Weak Acid Dissoc. Cyanide	10/11/06 101106#1	SM4500CN-I	mg/kg	0.097	0.27

RL Analytical reporting limit
U Undetected at reported detection limit

1 111606

SAMPLE RESULTS-CONVENTIONALS
JZ95-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 10/13/06

Project: Chinook Ventures
Event: 060354-01
Date Sampled: 10/04/06
Date Received: 10/05/06

Client ID: LY2-SO
ARI ID: 06-18845 JZ95B

Analyte	Date	Method	Units	RL	Sample
Total Solids	10/09/06 100906#1	EPA 160.3	Percent	0.01	83.40
Total Cyanide	10/11/06 101106#1	EPA 335.2	mg/kg	0.10	1.2
Weak Acid Dissoc. Cyanide	10/11/06 101106#1	SM4500CN-I	mg/kg	0.10	0.34

RL Analytical reporting limit
U Undetected at reported detection limit

R 111606

SAMPLE RESULTS-CONVENTIONALS
JZ95-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 10/13/06

Project: Chinook Ventures
Event: 060354-01
Date Sampled: 10/04/06
Date Received: 10/05/06

Client ID: LY3-SO
ARI ID: 06-18846 JZ95C

Analyte	Date	Method	Units	RL	Sample
Total Solids	10/09/06 100906#1	EPA 160.3	Percent	0.01	83.00
Total Cyanide	10/11/06 101106#1	EPA 335.2	mg/kg	0.10	0.34
Weak Acid Dissoc. Cyanide	10/11/06 101106#1	SM4500CN-I	mg/kg	0.10	< 0.10 U

RL Analytical reporting limit
U Undetected at reported detection limit

C 111606

ANALYTICAL RESOURCES INCORPORATED

Anchor Environmental
Chinook Ventures 060354-01

Percent Finer (Passing) Than the Indicated Size

Sieve Size (microns)	2"	1"	3/4"	1/2"	3/8"	#4 (4750)	#10 (2000)	#20 (850)	#40 (425)	#60 (250)	#100 (150)	#200 (75)	32	22	13	9	7	3.2	1.3
LY1-SO	100.0	100.0	100.0	90.7	83.6	75.8	71.6	67.5	57.7	36.0	20.7	13.9	8.8	7.6	6.9	6.3	5.0	3.8	2.8
LY2-SO	100.0	100.0	95.1	90.1	84.4	74.3	67.0	58.9	41.3	23.5	15.7	11.7	9.3	8.7	6.7	5.8	5.0	3.5	2.9
LY3-SO	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.5	78.8	30.5	7.5	3.7	3.5	2.6	2.2	2.2	2.2	1.7	1.7

Testing performed according to ASTM D421/D422

JZ95

11/6/06

0052

ANALYTICAL RESOURCES INCORPORATED

Anchor Environmental
Chinook Ventures 060354-01

Percent Retained in Each Size Fraction

Description	% Gravel	% Coarse Sand	% Medium Sand	% Fine Sand	% Very Coarse Silt	% Coarse Silt	% Medium Silt	% Fine Silt	% Fine Silt	% Very Fine Silt	% Clay
Particle Size (microns)	> 4750	4750-2000	2000-425	425-75	75-32	32-22	22-13	13-9	9-7	7-3.2	<3.2
LY1-SO	24.2	4.2	13.9	43.7	5.1	1.3	0.6	0.6	1.3	1.3	3.8
LY2-SO	25.7	7.2	25.7	29.6	2.4	0.6	2.0	0.9	0.9	1.5	3.5
LY3-SO	0.0	0.1	21.1	75.2	0.2	0.9	0.4	0.0	0.0	0.4	1.7

T 11/656 JZ95

LDC #: 15788E6

SDG #: JZ95

Laboratory: Analytical Resources, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 11/16/06

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: Total Cyanide (EPA Method 335.2), Weak Acid Dissociable Cyanide (SM4500-CN-I), Grain Size (ASTM D422)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/4/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	3 MS/DMP
V	Duplicates	A	
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Soil

1	LY1-SO	11		21		31	
2	LY2-SO	12		22		32	
3	LY3-SO	13		23		33	
4	LY1-SOMS	14		24		34	
5	LY1-SODUP	15		25		35	
6	MB	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 15788 Z6
SDG #: J795

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MY
2nd reviewer: A

All circled methods are applicable to each sample.

Sample ID	Parameter				
1-3	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN⁻ NH_3 TKN TOC CR^{6+}	WAD CN	Cyanide Lib		
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN⁻ NH_3 TKN TOC CR^{6+}				
MW4,5	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN⁻ NH_3 TKN TOC CR^{6+}	WAD CN			
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN⁻ NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN⁻ NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN⁻ NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN⁻ NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN⁻ NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN⁻ NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN⁻ NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN⁻ NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN⁻ NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN⁻ NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN⁻ NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN⁻ NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN⁻ NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN⁻ NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN⁻ NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN⁻ NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN⁻ NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN⁻ NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN⁻ NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN⁻ NH_3 TKN TOC CR^{6+}				
	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN⁻ NH_3 TKN TOC CR^{6+}				

Comments:

METHODS.6

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

Anchor Environmental, LLC
1423 3rd Avenue, Suite 300
Seattle, WA 98101-2226
ATTN: Ms. Lisa Allen

January 15, 2007

SUBJECT: Chinook Ventures, Inc., Data Validation

Dear Ms. Allen,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on December 28, 2006. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 16033:

SDG #	**Fraction**
KG57, KG93	Volatiles, Semivolatiles, Polynuclear Aromatic Hydrocarbons, Chlorinated Pesticides, Polychlorinated Biphenyls, Dissolved Metals, Wet Chemistry

The data validation was performed under EPA Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998

Please feel free to contact us if you have any questions.

Sincerely,

Stella S. Cuenco
Project Manager/Senior Chemist

V:\LOGIN\Anchor\Chinook\16033COV.wpd

Attachment 1

986 Pages

LDC #16033 (Anchor Environmental-Seattle WA / Chinook Ventures, Inc.)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		SVOA (8270C)		PAHs (8270C -SIM)		Pest. (8081A)		PCBs (8082)		Diss. Metals (SW846)		Total CN- (335.2)		WAD CN- (4500)																			
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	KG57	12/28/06	01/19/07	3	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0																		
B	KG93	12/28/06	01/19/07	-	-	-	-	-	-	-	-	-	-	9	0	-	-	-	-																		
Total	B/SC			3	0	2	0	2	0	2	0	2	0	11	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS, MSD, or DUP's.

16033ST.wpd

Chinook Ventures, Inc.
Data Validation Reports
LDC# 16033

Volatiles

LDC

LDC Report# 16033A1

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	November 21, 2006
LDC Report Date:	January 8, 2007
Matrix:	Water
Parameters:	Volatiles
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	KG57

Sample Identification

G2S-112106
RLSW2-112106
RLSW2-112106RE

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

For the purposes of technical evaluation, all compounds were evaluated against the 30.0% (%RSD) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

Average relative response factors (RRF) for all volatile target compounds and system performance check compounds (SPCCs) were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs).

For the purposes of technical evaluation, all compounds were evaluated against the 25.0% (%D) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
11/27/06	Acrolein 1,2-Dibromo-3-chloropropane	27.1 35.1	All samples in SDG KG57	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
10/24/06	Acrolein 2-Chloroethylvinyl ether	39.16 162	All samples in SDG KG57	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

All of the continuing calibration RRF values were within method and validation criteria with the following exceptions:

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
11/27/06	Acrolein 2-Chloroethylvinyl ether	0.043 (≥0.05) 0.044 (≥0.05)	All samples in SDG KG57	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
RLSW2-112106	1,2-Dichlorobenzene-d4	126 (84-125)	All TCL compounds	J (all detects)	A

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Volatiles - Data Qualification Summary - SDG KG57

SDG	Sample	Compound	Flag	A or P	Reason
KG57	G2S-112106 RLSW2-112106 RLSW2-112106RE	Acrolein 1,2-Dibromo-3-chloropropane	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
KG57	G2S-112106 RLSW2-112106 RLSW2-112106RE	Acrolein 2-Chloroethylvinyl ether	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D)
KG57	G2S-112106 RLSW2-112106 RLSW2-112106RE	Acrolein 2-Chloroethylvinyl ether	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (RRF)
KG57	RLSW2-112106	All TCL compounds	J (all detects)	A	Surrogate spikes (%R)

Chinook Ventures, Inc.
Volatiles - Laboratory Blank Data Qualification Summary - SDG KG57

No Sample Data Qualified in this SDG

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260B **Sample ID: G2S-112106**
 SAMPLE

Lab Sample ID: KG57A
LIMS ID: 06-23749
Matrix: Water
Data Release Authorized:
Reported: 12/04/06

QC Report No: KG57-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 11/21/06
Date Received: 11/21/06

Instrument/Analyst: FINN3/PAB
Date Analyzed: 11/27/06 13:30

Sample Amount: 20.0 mL
Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.2	< 0.2	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.3	< 0.3	U
67-64-1	**Acetone**	**3.0**	**62**	
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	**2-Butanone**	**1.0**	**42**	
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	**Vinyl Acetate**	**0.2**	**1.7**	
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	0.5	< 0.5	U UJ
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	1.0	< 1.0	U
591-78-6	2-Hexanone	3.0	< 3.0	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	**Toluene**	**0.2**	**0.6**	
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U UJ
74-88-4	Methyl Iodide	0.2	< 0.2	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U UJ
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260B **Sample ID: G2S-112106**
 SAMPLE

Lab Sample ID: KG57A
LIMS ID: 06-23749
Matrix: Water
Date Analyzed: 11/27/06 13:30

QC Report No: KG57-Anchor Environmental
Project: CHINOOK
060354-01

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in μg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	110%
Bromofluorobenzene	95.8%
d4-1,2-Dichlorobenzene	120%

0013 R 2/1/07

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260B **Sample ID: RLSW2-112106**
 SAMPLE

Lab Sample ID: KG57B
LIMS ID: 06-23750
Matrix: Water
Data Release Authorized:
Reported: 12/04/06

QC Report No: KG57-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 11/21/06
Date Received: 11/21/06

Instrument/Analyst: FINN3/PAB
Date Analyzed: 11/27/06 13:58

Sample Amount: 20.0 mL
Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q	
74-87-3	Chloromethane	0.2	< 0.2	U	
74-83-9	Bromomethane	0.2	< 0.2	U	
75-01-4	Vinyl Chloride	0.2	< 0.2	U	
75-00-3	Chloroethane	0.2	< 0.2	U	
75-09-2	Methylene Chloride	0.3	< 0.3	U	
67-64-1	**Acetone**	**3.0**	**53**		J
75-15-0	Carbon Disulfide	0.2	< 0.2	U	
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U	
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U	
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U	
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U	
67-66-3	Chloroform	0.2	< 0.2	U	
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U	
78-93-3	**2-Butanone**	**1.0**	**30**		J
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U	
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U	
108-05-4	**Vinyl Acetate**	**0.2**	**1.6**		J
75-27-4	Bromodichloromethane	0.2	< 0.2	U	
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U	
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U	
79-01-6	Trichloroethene	0.2	< 0.2	U	
124-48-1	Dibromochloromethane	0.2	< 0.2	U	
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U	
71-43-2	Benzene	0.2	< 0.2	U	
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U	
110-75-8	2-Chloroethylvinylether	0.5	< 0.5	U	UJ
75-25-2	Bromoform	0.2	< 0.2	U	
108-10-1	4-Methyl-2-Pentanone (MIBK)	1.0	< 1.0	U	
591-78-6	2-Hexanone	3.0	< 3.0	U	
127-18-4	Tetrachloroethene	0.2	< 0.2	U	
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U	
108-88-3	**Toluene**	**0.2**	**0.6**		J
108-90-7	Chlorobenzene	0.2	< 0.2	U	
100-41-4	Ethylbenzene	0.2	< 0.2	U	
100-42-5	Styrene	0.2	< 0.2	U	
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.2	< 0.2	U	
1330-20-7	m,p-Xylene	0.4	< 0.4	U	
95-47-6	o-Xylene	0.2	< 0.2	U	
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U	
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U	
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U	
107-02-8	Acrolein	5.0	< 5.0	U	UJ
74-88-4	Methyl Iodide	0.2	< 0.2	U	
74-96-4	Bromoethane	0.2	< 0.2	U	
107-13-1	Acrylonitrile	1.0	< 1.0	U	
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U	
74-95-3	Dibromomethane	0.2	< 0.2	U	
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U	
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U	UJ
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U	

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260B **Sample ID: RLSW2-112106**
 SAMPLE

Lab Sample ID: KG57B
LIMS ID: 06-23750
Matrix: Water
Date Analyzed: 11/27/06 13:58

QC Report No: KG57-Anchor Environmental
Project: CHINOOK
060354-01

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in μg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	99.5%
d8-Toluene	106%
Bromofluorobenzene	92.2%
d4-1,2-Dichlorobenzene	126%

 R 011507

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260B **Sample ID: RLSW2-112106**
 REANALYSIS

Lab Sample ID: KG57B
LIMS ID: 06-23750
Matrix: Water
Data Release Authorized:
Reported: 12/04/06

QC Report No: KG57-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 11/21/06
Date Received: 11/21/06

Instrument/Analyst: FINN3/PAB
Date Analyzed: 11/27/06 15:45

Sample Amount: 20.0 mL
Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.2	< 0.2	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.3	< 0.3	U
67-64-1	**Acetone**	**3.0**	**54**	
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	**2-Butanone**	**1.0**	**39**	
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	**Vinyl Acetate**	**0.2**	**1.6**	
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	0.5	< 0.5	U UJ
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	1.0	< 1.0	U
591-78-6	2-Hexanone	3.0	< 3.0	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	**Toluene**	**0.2**	**0.6**	
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	0.2	< 0.2	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

0016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260B **Sample ID: RLSW2-112106**
 REANALYSIS

Lab Sample ID: KG57B
LIMS ID: 06-23750
Matrix: Water
Date Analyzed: 11/27/06 15:45

QC Report No: KG57-Anchor Environmental
Project: CHINOOK
060354-01

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in μg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	98.2%
d8-Toluene	114%
Bromofluorobenzene	87.5%
d4-1,2-Dichlorobenzene	115%

LDC #: 16033A1 **VALIDATION COMPLETENESS WORKSHEET** Date: 1/6/07
SDG #: KG57 Level III Page: 1 of 1
Laboratory: Analytical Resources, Inc. Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/21/06
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	
IV.	Continuing calibration	SW	
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	G2S-112106	11	MB-112706	21		31	
2	RLSW2-112106	12		22		32	
3	RLSW2-112106RE	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	S. Trichloroethene	KK. Trichlorofluoromethane	CCC. tert-Butylbenzene	UUU. 1,2-Dichlorotetrafluoroethane
B. Bromomethane	T. Dibromochloromethane	LL. Methyl-tert-butyl ether	DDD. 1,2,4-Trimethylbenzene	VVV. 4-Ethyltoluene
C. Vinyl choride**	U. 1,1,2-Trichloroethane	MM. 1,2-Dibromo-3-chloropropane	EEE. sec-Butylbenzene	WWW. Ethanol
D. Chloroethane	V. Benzene	NN. Methyl ethyl ketone	FFF. 1,3-Dichlorobenzene	XXX. Di-isopropyl ether
E. Methylene chloride	W. trans-1,3-Dichloropropene	OO. 2,2-Dichloropropane	GGG. p-Isopropyltoluene	YYY. tert-Butanol
F. Acetone	X. Bromoform*	PP. Bromochloromethane	HHH. 1,4-Dichlorobenzene	ZZZ. tert-Butyl alcohol
G. Carbon disulfide	Y. 4-Methyl-2-pentanone	QQ. 1,1-Dichloropropene	III. n-Butylbenzene	AAAA. Ethyl tert-butyl ether
H. 1,1-Dichloroethene**	Z. 2-Hexanone	RR. Dibromomethane	JJJ. 1,2-Dichlorobenzene	BBBB. tert-Amyl methyl ether
I. 1,1-Dichloroethane*	AA. Tetrachloroethene	SS. 1,3-Dichloropropane	KKK. 1,2,4-Trichlorobenzene	CCCC.1-Chlorohexane
J. 1,2-Dichloroethene, total	BB. 1,1,2,2-Tetrachloroethane*	TT. 1,2-Dibromoethane	LLL. Hexachlorobutadiene	DDDD. Isopropyl alcohol
K. Chloroform**	CC. Toluene**	UU. 1,1,1,2-Tetrachloroethane	MMM. Naphthalene	EEEE. Acetonitrile
L. 1,2-Dichloroethane	DD. Chlorobenzene*	VV. Isopropylbenzene	NNN. 1,2,3-Trichlorobenzene	FFFF. Acrolein
M. 2-Butanone	EE. Ethylbenzene**	WW. Bromobenzene	OOO. 1,3,5-Trichlorobenzene	GGGG. Acrylonitrile
N. 1,1,1-Trichloroethane	FF. Styrene	XX. 1,2,3-Trichloropropane	PPP. trans-1,2-Dichloroethene	HHHH. 1,4-Dioxane
O. Carbon tetrachloride	GG. Xylenes, total	YY. n-Propylbenzene	QQQ. cis-1,2-Dichloroethene	IIII. Isobutyl alcohol
P. Bromodichloromethane	HH. Vinyl acetate	ZZ. 2-Chlorotoluene	RRR. m,p-Xylenes	JJJJ. Methacrylonitrile
Q. 1,2-Dichloropropane**	II. 2-Chloroethylvinyl ether	AAA. 1,3,5-Trimethylbenzene	SSS. o-Xylene	KKKK. Propionitrile
R. cis-1,3-Dichloropropene	JJ. Dichlorodifluoromethane	BBB. 4-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	LLLL.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 16033A1
SDG #: KG57

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
(Y) N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y (N) N/A Were all %D and RRFs within the validation criteria of ≤25 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤25.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	11/27/06	CCV	FFFF	27.1	0.043	All + BLK	J/UJ/A
	1049		II		0.044	↓	↓
			MM	35.1		↓	↓
	10/24/06	ICV	FFFF	39.16		↓	J/UJ/A
	16:21		II	162		↓	↓

LDC #: 16033A1
SDG #: KG57

VALIDATION FINDINGS WORKSHEET
Surrogate Spikes

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were all surrogate %R within QC limits?

Y N N/A If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R out of outside of criteria?

#	Date	Sample ID	Surrogate	%Recovery (Limits)	Qualifications
		2	1,2-Dichlorobenzene-d4	126 (84-125)	J/A det
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

	QC Limits (Soil)	QC Limits (Water)
SMC1 (TOL) = Toluene-d8	81-117	88-110
SMC2 (BFB) = Bromofluorobenzene	74-121	86-115
SMC3 (DCE) = 1,2-Dichloroethane-d4	80-120	80-120
SMC4 (DFM) = Dibromofluoromethane	80-120	86-118

Chinook Ventures, Inc.
Data Validation Reports
LDC# 16033

Semivolatiles

LDC

LDC Report# 16033A2a

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	November 21, 2006
LDC Report Date:	January 8, 2007
Matrix:	Water
Parameters:	Semivolatiles
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	KG57

Sample Identification

G2S-112106
RLSW2-112106

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

In the case where %RSD was greater than 15.0%, the laboratory used a calibration curve to evaluate the compound. All coefficients of determination (r^2) were greater than or equal to 0.990 .

For the purposes of technical evaluation, all compounds were evaluated against the 30.0% (%RSD) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria with the following exceptions:

Date	Compound	%RSD	Associated Samples	Flag	A or P
11/30/06	2,4-Dinitrophenol	36.3	All samples in SDG KG57	J (all detects) UJ (all non-detects)	A

Average relative response factors (RRF) for all semivolatile target compounds and system performance check compounds (SPCCs) were greater than or equal to 0.05 as required.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs).

For the purposes of technical evaluation, all compounds were evaluated against the 25.0% (%D) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
12/1/06	2,4-Dinitrophenol	39.3	All samples in SDG KG57	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
11/30/06	N-Nitrosodiphenylamine	59.6	All samples in SDG KG57	J (all detects) UJ (all non-detects)	A

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS/D-112406 (All samples in SDG KG57)	Benzoic acid	4.4 (36-122)	-	91.7 (≤50)	J (all detects) R (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Semivolatiles - Data Qualification Summary - SDG KG57

SDG	Sample	Compound	Flag	A or P	Reason
KG57	G2S-112106 RLSW2-112106	2,4-Dinitrophenol	J (all detects) UJ (all non-detects)	A	Initial calibration (%RSD)
KG57	G2S-112106 RLSW2-112106	2,4-Dinitrophenol	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
KG57	G2S-112106 RLSW2-112106	N-Nitrosodiphenylamine	J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D)
KG57	G2S-112106 RLSW2-112106	Benzoic acid	J (all detects) R (all non-detects)	P	Laboratory control samples (%R)(RPD)

Chinook Ventures, Inc.
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG KG57

No Sample Data Qualified in this SDG

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

Sample ID: G2S-112106
SAMPLE

Lab Sample ID: KG57A
LIMS ID: 06-23749
Matrix: Water
Data Release Authorized:
Reported: 12/04/06

QC Report No: KG57-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 11/21/06
Date Received: 11/21/06

Date Extracted: 11/24/06
Date Analyzed: 12/01/06 11:57
Instrument/Analyst: NT6/LJR

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result	
108-95-2	Phenol	1.0	< 1.0 U	
111-44-4	Bis-(2-Chloroethyl) Ether	1.0	< 1.0 U	
95-57-8	2-Chlorophenol	1.0	< 1.0 U	
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U	
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U	
100-51-6	Benzyl Alcohol	5.0	< 5.0 U	
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U	
95-48-7	2-Methylphenol	1.0	< 1.0 U	
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U	
106-44-5	**4-Methylphenol**	**1.0**	**4.0**	
621-64-7	N-Nitroso-Di-N-Propylamine	5.0	< 5.0 U	
67-72-1	Hexachloroethane	1.0	< 1.0 U	
98-95-3	Nitrobenzene	1.0	< 1.0 U	
78-59-1	Isophorone	1.0	< 1.0 U	
88-75-5	2-Nitrophenol	5.0	< 5.0 U	
105-67-9	2,4-Dimethylphenol	1.0	< 1.0 U	
65-85-0	Benzoic Acid	10	< 10 U	R
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U	
120-83-2	2,4-Dichlorophenol	5.0	< 5.0 U	
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U	
91-20-3	Naphthalene	1.0	< 1.0 U	
106-47-8	4-Chloroaniline	5.0	< 5.0 U	
87-68-3	Hexachlorobutadiene	1.0	< 1.0 U	
59-50-7	4-Chloro-3-methylphenol	5.0	< 5.0 U	
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U	
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U	
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U	
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U	
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U	
88-74-4	2-Nitroaniline	5.0	< 5.0 U	
131-11-3	Dimethylphthalate	1.0	< 1.0 U	
208-96-8	Acenaphthylene	1.0	< 1.0 U	
99-09-2	3-Nitroaniline	5.0	< 5.0 U	
83-32-9	Acenaphthene	1.0	< 1.0 U	
51-28-5	2,4-Dinitrophenol	10	< 10 U	UJ
100-02-7	4-Nitrophenol	5.0	< 5.0 U	
132-64-9	Dibenzofuran	1.0	< 1.0 U	
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U	
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U	
84-66-2	Diethylphthalate	1.0	< 1.0 U	

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

Sample ID: G2S-112106
SAMPLE

Lab Sample ID: KG57A
LIMS ID: 06-23749
Matrix: Water
Date Analyzed: 12/01/06 11:57

QC Report No: KG57-Anchor Environmental
Project: CHINOOK
060354-01

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U UJ
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U

Reported in μg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	81.6%	2-Fluorobiphenyl	82.0%
d14-p-Terphenyl	61.2%	d4-1,2-Dichlorobenzene	78.8%
d5-Phenol	72.0%	2-Fluorophenol	66.9%
2,4,6-Tribromophenol	91.2%	d4-2-Chlorophenol	77.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

Sample ID: RLSW2-112106
SAMPLE

Lab Sample ID: KG57B
LIMS ID: 06-23750
Matrix: Water
Data Release Authorized:
Reported: 12/04/06

QC Report No: KG57-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 11/21/06
Date Received: 11/21/06

Date Extracted: 11/24/06
Date Analyzed: 12/01/06 12:29
Instrument/Analyst: NT6/LJR

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	1.0	< 1.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	1.0	< 1.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	5.0	< 5.0 U
67-72-1	Hexachloroethane	1.0	< 1.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	1.0	< 1.0 U
65-85-0	Benzoic Acid	10	< 10 U R
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	5.0	< 5.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	5.0	< 5.0 U
87-68-3	Hexachlorobutadiene	1.0	< 1.0 U
59-50-7	4-Chloro-3-methylphenol	5.0	< 5.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	5.0	< 5.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	10	< 10 U UJ
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

Sample ID: RLSW2-112106
SAMPLE

Lab Sample ID: KG57B
LIMS ID: 06-23750
Matrix: Water
Date Analyzed: 12/01/06 12:29

QC Report No: KG57-Anchor Environmental
Project: CHINOOK
060354-01

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U UJ
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U

Reported in μg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	73.6%	2-Fluorobiphenyl	68.4%
d14-p-Terphenyl	76.8%	d4-1,2-Dichlorobenzene	69.2%
d5-Phenol	64.5%	2-Fluorophenol	64.0%
2,4,6-Tribromophenol	74.1%	d4-2-Chlorophenol	70.9%

LDC #: 16033A2a **VALIDATION COMPLETENESS WORKSHEET** Date: 1/6/07

SDG #: KG57 Level III Page: 1 of 1

Laboratory: Analytical Resources, Inc. Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/21/06
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	SW	% RSD, ~~r² ≥ 0.990~~ r² ≥ 0.990
IV.	Continuing calibration	SW	ICV ≤ 25
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	~~A~~SW	LCS ID
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	G2S-112106	11	MB – 112406	21		31	
2	RLSW2-112106	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU.
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 16033A29
SDG #: K257

VALIDATION FINDINGS WORKSHEET
Initial Calibration

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Did the laboratory conduct an acceptable 5 point calibration prior to sample analysis?
Y N N/A Were percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCC's and SPCC's?
Y N N/A Was a curve fit used for evaluation? If yes, what was the acceptance criteria used for evaluation?_____
Y N N/A Did the initial calibration meet the acceptance criteria?
Y N N/A Were all %RSDs and RRFs within the validation criteria of ≤30 %RSD and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %RSD (Limit: ≤30.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	11/30/06	ICAL	HH	36.3		All + BK	J/UJ/A

INICAL2S

LDC #: 16033A29
SDG #: KG57
METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ≤25 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤25.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	11/30/06	ICV	QQ	59.6		All + BK	J/UJ/A
	12/01/06	CCV	HH	39.3		↓	↓

LDC #: 16033A29
SDG #: KG57

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: B
2nd Reviewer: A

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?

Y N N/A Were the LCS/LCSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		LCS/D-112406	PPP	4.4 (36-122)	( )	91.7 (50)	All + BLK	J/R/P
				( )	( )	( )		
				( )	( )	( )	— — —	—
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

Chinook Ventures, Inc.
Data Validation Reports
LDC# 16033

Polynuclear Aromatic Hydrocarbons

LDC

LDC Report# 16033A2b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	November 21, 2006
LDC Report Date:	January 8, 2007
Matrix:	Water
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	KG57

Sample Identification

G2S-112106
RLSW2-112106

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270C using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all target compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS/D-112806 (All samples in SDG KG57)	Benzo(a)pyrene	-	21.7 (30-160)	-	J (all detects) UJ (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG KG57

SDG	Sample	Compound	Flag	A or P	Reason
KG57	G2S-112106 RLSW2-112106	Benzo(a)pyrene	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)

Chinook Ventures, Inc.
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG KG57

No Sample Data Qualified in this SDG

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: G2S-112106
SAMPLE

Lab Sample ID: KG57A
LIMS ID: 06-23749
Matrix: Water
Data Release Authorized:
Reported: 12/05/06

QC Report No: KG57-Anchor Environmental
Project: CHINOOK
Event: 060354-01
Date Sampled: 11/21/06
Date Received: 11/21/06

Date Extracted: 11/28/06
Date Analyzed: 12/02/06 19:30
Instrument/Analyst: NT1/VTS

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.010	< 0.010 U
91-57-6	2-Methylnaphthalene	0.010	< 0.010 U
208-96-8	Acenaphthylene	0.010	< 0.010 U
83-32-9	Acenaphthene	0.010	< 0.010 U
86-73-7	Fluorene	0.010	< 0.010 U
85-01-8	Phenanthrene	0.010	< 0.010 U
120-12-7	Anthracene	0.010	< 0.010 U
206-44-0	Fluoranthene	0.010	< 0.010 U
129-00-0	Pyrene	0.010	< 0.010 U
56-55-3	Benzo(a)anthracene	0.010	< 0.010 U
218-01-9	**Chrysene**	**0.010**	**0.0060 J**
205-99-2	**Benzo(b)fluoranthene**	**0.010**	**0.0088 J**
207-08-9	**Benzo(k)fluoranthene**	**0.010**	**0.0088 J**
50-32-8	Benzo(a)pyrene	0.010	< 0.010 U UJ
193-39-5	**Indeno(1,2,3-cd)pyrene**	**0.010**	**0.0068 J**
53-70-3	Dibenz(a,h)anthracene	0.010	< 0.010 U
191-24-2	**Benzo(g,h,i)perylene**	**0.010**	**0.0095 J**
132-64-9	Dibenzofuran	0.010	< 0.010 U

Reported in $\mu g/L$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	66.7%
d14-Dibenzo(a,h)anthracen	60.7%

0036 RC01/507

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: RLSW2-112106
SAMPLE

Lab Sample ID: KG57B
LIMS ID: 06-23750
Matrix: Water
Data Release Authorized:
Reported: 12/05/06

QC Report No: KG57-Anchor Environmental
Project: CHINOOK
Event: 060354-01
Date Sampled: 11/21/06
Date Received: 11/21/06

Date Extracted: 11/28/06
Date Analyzed: 12/02/06 19:55
Instrument/Analyst: NT1/VTS

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.010	< 0.010 U
91-57-6	2-Methylnaphthalene	0.010	< 0.010 U
208-96-8	Acenaphthylene	0.010	< 0.010 U
83-32-9	Acenaphthene	0.010	< 0.010 U
86-73-7	Fluorene	0.010	< 0.010 U
85-01-8	Phenanthrene	0.010	< 0.010 U
120-12-7	Anthracene	0.010	< 0.010 U
206-44-0	Fluoranthene	0.010	< 0.010 U
129-00-0	Pyrene	0.010	< 0.010 U
56-55-3	Benzo(a)anthracene	0.010	< 0.010 U
218-01-9	Chrysene	0.010	< 0.010 U
205-99-2	Benzo(b)fluoranthene	0.010	< 0.010 U
207-08-9	Benzo(k)fluoranthene	0.010	< 0.010 U
50-32-8	Benzo(a)pyrene	0.010	< 0.010 U UJ
193-39-5	Indeno(1,2,3-cd)pyrene	0.010	< 0.010 U
53-70-3	Dibenz(a,h)anthracene	0.010	< 0.010 U
191-24-2	Benzo(g,h,i)perylene	0.010	< 0.010 U
132-64-9	Dibenzofuran	0.010	< 0.010 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	71.0%
d14-Dibenzo(a,h)anthracen	50.7%

0037 EC 011507

FORM I

LDC #: 16033A2b

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 1/6/07

SDG #: KG57

Page: 1 of 1

Laboratory: Analytical Resources, Inc.

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/21/06
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	RRF no SPCC
IV.	Continuing calibration	~~SW~~ A	ICV ≤ 25
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	~~SW~~	LCS ID
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Water

1	G2S-112106	11		21		31	
2	RLSW2-112106	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

IETHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU.
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 16033A2b
SDG #: KG57

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FZ
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?
Y N N/A Were the LCS/LCSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		LCSD-112806	III	( )	21.7 (30-160)	( )	All + BLK	J / UJ / P
				( )	( )	( )		
				( )	( )	( )	— — —	—
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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Chinook Ventures, Inc.
Data Validation Reports
LDC# 16033

Chlorinated Pesticides

LDC

LDC Report# 16033A3a

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	November 21, 2006
LDC Report Date:	January 8, 2007
Matrix:	Water
Parameters:	Chlorinated Pesticides
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	KG57

Sample Identification

G2S-112106
RLSW2-112106

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8081A for Chlorinated Pesticides.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of single and multicomponent compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Flag	A or P
12/4/06	CCV	STX-CLP1	Methoxychlor	17	All samples in SDG KG57	J (all detects) UJ (all non-detects)	A
12/4/06	CCV	STX-CLP2	Methoxychlor	19	All samples in SDG KG57	J (all detects) UJ (all non-detects)	A

The individual 4,4'-DDT and Endrin breakdowns (%BD) were less than or equal to 15.0%.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No chlorinated pesticide contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and Reported CRQLs

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Chlorinated Pesticides - Data Qualification Summary - SDG KG57

SDG	Sample	Compound	Flag	A or P	Reason
KG57	G2S-112106 RLSW2-112106	Methoxychlor	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)

Chinook Ventures, Inc.
Chlorinated Pesticides - Laboratory Blank Data Qualification Summary - SDG KG57

No Sample Data Qualified in this SDG

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides by GC/ECD Method SW8081A

Sample ID: G2S-112106
SAMPLE

Lab Sample ID: KG57A
LIMS ID: 06-23749
Matrix: Water
Data Release Authorized:
Reported: 12/06/06

QC Report No: KG57-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 11/21/06
Date Received: 11/21/06

Date Extracted: 11/28/06
Date Analyzed: 12/04/06 19:43
Instrument/Analyst: ECD3/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
pH: NA
Florisil Cleanup: No
Silica Gel: No

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.050	< 0.050 U
319-85-7	beta-BHC	0.050	< 0.050 U
319-86-8	delta-BHC	0.050	< 0.050 U
58-89-9	gamma-BHC (Lindane)	0.050	< 0.050 U
76-44-8	Heptachlor	0.050	< 0.050 U
309-00-2	Aldrin	0.050	< 0.050 U
1024-57-3	Heptachlor Epoxide	0.050	< 0.050 U
959-98-8	Endosulfan I	0.050	< 0.050 U
60-57-1	Dieldrin	0.10	< 0.10 U
72-55-9	4,4'-DDE	0.10	< 0.10 U
72-20-8	Endrin	0.10	< 0.10 U
33213-65-9	Endosulfan II	0.10	< 0.10 U
72-54-8	4,4'-DDD	0.10	< 0.10 U
1031-07-8	Endosulfan Sulfate	0.10	< 0.10 U
50-29-3	4,4'-DDT	0.10	< 0.10 U
72-43-5	Methoxychlor	0.50	< 0.50 U UJ
53494-70-5	Endrin Ketone	0.10	< 0.10 U
7421-93-4	Endrin Aldehyde	0.10	< 0.10 U
5103-74-2	gamma Chlordane	0.050	< 0.050 U
5103-71-9	alpha Chlordane	0.050	< 0.050 U
8001-35-2	Toxaphene	5.0	< 5.0 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	91.2%
Tetrachlorometaxylene	76.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides by GC/ECD Method SW8081A
Page 1 of 1

Sample ID: RLSW2-112106
SAMPLE

Lab Sample ID: KG57B
LIMS ID: 06-23750
Matrix: Water
Data Release Authorized:
Reported: 12/06/06

QC Report No: KG57-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 11/21/06
Date Received: 11/21/06

Date Extracted: 11/28/06
Date Analyzed: 12/04/06 20:12
Instrument/Analyst: ECD3/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
pH: NA
Florisil Cleanup: No
Silica Gel: No

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.050	< 0.050 U
319-85-7	beta-BHC	0.050	< 0.050 U
319-86-8	delta-BHC	0.050	< 0.050 U
58-89-9	gamma-BHC (Lindane)	0.050	< 0.050 U
76-44-8	Heptachlor	0.050	< 0.050 U
309-00-2	Aldrin	0.050	< 0.050 U
1024-57-3	Heptachlor Epoxide	0.050	< 0.050 U
959-98-8	Endosulfan I	0.050	< 0.050 U
60-57-1	Dieldrin	0.10	< 0.10 U
72-55-9	4,4'-DDE	0.10	< 0.10 U
72-20-8	Endrin	0.10	< 0.10 U
33213-65-9	Endosulfan II	0.10	< 0.10 U
72-54-8	4,4'-DDD	0.10	< 0.10 U
1031-07-8	Endosulfan Sulfate	0.10	< 0.10 U
50-29-3	4,4'-DDT	0.10	< 0.10 U
72-43-5	Methoxychlor	0.50	< 0.50 U UJ
53494-70-5	Endrin Ketone	0.10	< 0.10 U
7421-93-4	Endrin Aldehyde	0.10	< 0.10 U
5103-74-2	gamma Chlordane	0.050	< 0.050 U
5103-71-9	alpha Chlordane	0.050	< 0.050 U
8001-35-2	Toxaphene	5.0	< 5.0 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	94.5%
Tetrachlorometaxylene	81.5%

RL 1/1/07

LDC #: 16033A3a

SDG #: KG57

Laboratory: Analytical Resources, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 1/6/07

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC Chlorinated Pesticides (EPA SW 846 Method 8081A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/21/06
II.	GC/ECD Instrument Performance Check	A	
III.	Initial calibration	A	
IV.	Continuing calibration	SW	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	A	LCS/LCSD
IX.	Regional quality assurance and quality control	N	
Xa.	Florisil cartridge check	N	
Xb.	GPC Calibration	N	
XI.	Target compound identification	N	
XII.	Compound quantitation and reported CRQLs	N	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	N	
XV.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

water

1	G2S-112106	11	MB - 112806	21		31	
2	RLSW2-112106	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: Pesticide/PCBs (EPASW 846 Method 8081/8082)

A. alpha-BHC	I. Dieldrin	Q. Endrin ketone	Y. Aroclor-1242	GG.
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Aroclor-1248	HH.
C. delta-BHC	K. Endrin	S. alpha-Chlordane	AA. Aroclor-1254	II.
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ.
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. DB 608	KK.
F. Aldrin	N. Endosulfan sulfate	V. Aroclor-1016	DD. DB 1701	LL.
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE.	MM.
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF.	NN.

Notes:

LDC #: 16033A39
SDG #: KG57

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)
Please see qualifications below for all questions answered "N" Not applicable questions are identified as "N/A".

What type or calibration verification calculation was performed? ___ %D or ___ RPD

Y N N/A Were Evaluation mix standards run before initial calibration and before samples?
Y N N/A Were Endrin & 4,4'-DDT breakdowns acceptable in the Evaluation Mix standard (≤15.0% for individual breakdowns)?
Y N N/A Was at least one standard run daily to verify the working curve?
Y N N/A Did the continuing calibration standards meet the percent difference (%D) / relative percent difference (RPD) criteria of ≤15.0%?

Level IV/D Only
Y N N/A Were the retention times for all calibrated compounds within their respective acceptance windows?

#	Date	Standard ID	Column	Compound	%D / RPD (Limit ≤ 15.0)	RT (Limits)	Associated Samples	Qualifications
	12/4/06	CCV	STX-CLP1	P	17	( )	All + BLK	J/UJ/A
	1139		STX-CLP2	P	19	( )	↓	↓
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
						( )		
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						( )		
						( )		
						( )		
						( )		
						( )		
						( )		

A. alpha-BHC
B. beta-BHC
C. delta-BHC
D. gamma-BHC
E. Heptachlor
F. Aldrin
G. Heptachlor epoxide
H. Endosulfan I
I. Dieldrin
J. 4,4'-DDE
K. Endrin
L. Endosulfan II
M. 4,4'-DDD
N. Endosulfan sulfate
O. 4,4'-DDT
P. Methoxychlor
Q. Endrin ketone
R. Endrin aldehyde
S. alpha-Chlordane
T. gamma-Chlordane
U. Toxaphene
V. Aroclor-1016
W. Aroclor-1221
X. Aroclor-1232
Y. Aroclor-1242
Z. Aroclor-1248
AA. Aroclor-1254
BB. Aroclor-1260
CC. DB 608
DD. DB 1701
EE.
FF.
GG.
HH.
II.
JJ.

C:\WPDOCS\WRK\PEST\CONCAL.3S

Chinook Ventures, Inc.
Data Validation Reports
LDC# 16033

Polychlorinated Biphenyls

LDC

LDC Report# 16033A3b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	November 21, 2006
LDC Report Date:	January 8, 2007
Matrix:	Water
Parameters:	Polychlorinated Biphenyl
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	KG57

Sample Identification

G2S-112106
RLSW2-112106

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyl.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

EMPC Estimated Maximum Possible Concentration

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits

The percent difference (%D) of the second source calibration standard were less than or equal to 15.0% for all compounds.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

VIa. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VIb. Internal Standards

All internal standard recoveries were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and Reported CRQLs

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Polychlorinated Biphenyl - Data Qualification Summary - SDG KG57

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Polychlorinated Biphenyl - Laboratory Blank Data Qualification Summary - SDG KG57

No Sample Data Qualified in this SDG

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082

Sample ID: G2S-112106
SAMPLE

Lab Sample ID: KG57A
LIMS ID: 06-23749
Matrix: Water
Data Release Authorized:
Reported: 12/08/06

QC Report No: KG57-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 11/21/06
Date Received: 11/21/06

Date Extracted: 11/28/06
Date Analyzed: 12/07/06 15:22
Instrument/Analyst: ECD5/PK
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.015	< 0.015 Y
11141-16-5	Aroclor 1232	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	82.2%
Tetrachlorometaxylene	68.0%

FORM I

 12/15/07

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: RLSW2-112106
SAMPLE

Lab Sample ID: KG57B
LIMS ID: 06-23750
Matrix: Water
Data Release Authorized:
Reported: 12/08/06

QC Report No: KG57-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 11/21/06
Date Received: 11/21/06

Date Extracted: 11/28/06
Date Analyzed: 12/07/06 15:40
Instrument/Analyst: ECD5/PK
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.010	< 0.010 U

Reported in $\mu g/L$ (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	76.5%
Tetrachlorometaxylene	71.0%

FORM I

011507

LDC #: 16033A3b

SDG #: KG57

Laboratory: Analytical Resources, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 1/6/07

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/21/06
II.	GC/ECD Instrument Performance Check	NA	
III.	Initial calibration	A	
IV.	Continuing calibration	A	ICV ≤ 15
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client specific
VIII.	Laboratory control samples	A	LCS ID
IX.	Regional quality assurance and quality control	N	
Xa.	Florisil cartridge check	N	
Xb.	GPC Calibration	N	
XI.	Target compound identification	N	
XII.	Compound quantitation and reported CRQLs	N	
XIII.	Overall assessment of data	A	Internal std Acceptable
XIV.	Field duplicates	N	
XV.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

water

1	G2S-112106	11	MB - 112806	21		31	
2	RLSW2-112106	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Chinook Ventures, Inc.
Data Validation Reports
LDC# 16033

Dissolved Metals

LDC

LDC Report# 16033A4

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	November 21, 2006
LDC Report Date:	January 8, 2007
Matrix:	Water
Parameters:	Dissolved Metals
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	KG57

Sample Identification

G2S-112106
RLSW2-112106
G2S-112106MS
G2S-112106DUP

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6010B for Dissolved Metals. The metals analyzed were Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium, and Silicon.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIII. Field Duplicates

No field duplicates were identified in this SDG.

XIV. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Dissolved Metals - Data Qualification Summary - SDG KG57

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG KG57

No Sample Data Qualified in this SDG

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: G2S-112106
SAMPLE

Lab Sample ID: KG57A
LIMS ID: 06-23749
Matrix: Water
Data Release Authorized:
Reported: 12/11/06

QC Report No: KG57-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 11/21/06
Date Received: 11/21/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	11/27/06	6010B	12/07/06	7429-90-5	Aluminum	0.05	0.07	
6010B	11/27/06	6010B	12/07/06	7440-70-2	Calcium	0.05	95.5	
6010B	11/27/06	6010B	12/07/06	7439-89-6	Iron	0.05	17.7	
6010B	11/27/06	6010B	12/07/06	7439-95-4	Magnesium	0.05	62.3	
6010B	11/27/06	6010B	12/07/06	7439-96-5	Manganese	0.001	2.26	
6010B	11/27/06	6010B	12/07/06	7440-09-7	Potassium	0.5	8.8	
6010B	11/27/06	6010B	12/07/06	7440-21-3	Silicon	0.06	25.4	
6010B	11/27/06	6010B	12/07/06	7440-23-5	Sodium	0.5	812	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RLSW2-112106
SAMPLE

Lab Sample ID: KG57B
LIMS ID: 06-23750
Matrix: Water
Data Release Authorized:
Reported: 12/11/06

QC Report No: KG57-Anchor Environmental
Project: CHINOOK
060354-01
Date Sampled: 11/21/06
Date Received: 11/21/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
6010B	11/27/06	6010B	12/07/06	**7429-90-5**	**Aluminum**	0.05	1.69	
6010B	11/27/06	6010B	12/07/06	**7440-70-2**	**Calcium**	0.05	11.0	
6010B	11/27/06	6010B	12/07/06	**7439-89-6**	**Iron**	0.05	0.15	
6010B	11/27/06	6010B	12/07/06	**7439-95-4**	**Magnesium**	0.05	4.97	
6010B	11/27/06	6010B	12/07/06	**7439-96-5**	**Manganese**	0.001	0.025	
6010B	11/27/06	6010B	12/07/06	**7440-09-7**	**Potassium**	0.5	2.0	
6010B	11/27/06	6010B	12/07/06	**7440-21-3**	**Silicon**	0.06	17.2	
6010B	11/27/06	6010B	12/07/06	**7440-23-5**	**Sodium**	0.5	386	

U-Analyte undetected at given RL
RL-Reporting Limit

12/11/07

LDC #: 16033A4

SDG #: KG57

Laboratory: Analytical Resources, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 1/4/07

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: Dissolved Metals (EPA SW 846 Method 6010B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/21/06
II.	Calibration	A	
III.	Blanks	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Matrix Spike Analysis	A	
VI.	Duplicate Sample Analysis	A	
VII.	Laboratory Control Samples (LCS)	A	LCS
VIII.	Internal Standard (ICP-MS)	N	Not utilized
IX.	Furnace Atomic Absorption QC	N	
X.	ICP Serial Dilution	N	Not performed
XI.	Sample Result Verification	N	
XII.	Overall Assessment of Data	A	
XIII.	Field Duplicates	N	
XIV.	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	G2S-112106	11		21		31	
2	RLSW2-112106	12		22		32	
3	G2S-112106MS	13		23		33	
4	G2S-112106DUP	14		24		34	
5	PB	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 16033A4
SDG #: K4K7

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: MH
2nd reviewer: A

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1,2	W	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, Silicon
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___
m3,4	W	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
ICP Trace		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, Silicon
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,

Comments: Mercury by CVAA if performed

LDC Report# 16033B4

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	September 18 through September 28, 2006
LDC Report Date:	January 8, 2007
Matrix:	Water
Parameters:	Dissolved Metals
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	KG93

Sample Identification

RL-4s-092806
RL-1s-091906
RL-1d-091906
RL-5-091806
RL-3s-091906
RL-3d-091906
RL-2d-091806
RL-2s-091806
RL-4d-091906
RL-4s-092806MS
RL-4s-092806DUP

Introduction

This data review covers 11 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 200.8 for Dissolved Metals. The metals analyzed were Arsenic, Chromium, Copper, and Zinc.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIII. Field Duplicates

No field duplicates were identified in this SDG.

XIV. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Dissolved Metals - Data Qualification Summary - SDG KG93

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG KG93

No Sample Data Qualified in this SDG

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RL-4s-092806
SAMPLE

Lab Sample ID: KG93A
LIMS ID: 06-23947
Matrix: Water
Data Release Authorized:
Reported: 12/11/06

QC Report No: KG93-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/28/06
Date Received: 09/29/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	12/05/06	200.8	12/07/06	7440-38-2	Arsenic	0.2	3.4	
200.8	12/05/06	200.8	12/08/06	7440-47-3	Chromium	1	1	U
200.8	12/05/06	200.8	12/07/06	7440-50-8	Copper	0.5	0.5	
200.8	12/05/06	200.8	12/07/06	7440-02-0	Nickel	0.5	0.7	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RL-1s-091906
SAMPLE

Lab Sample ID: KG93B
LIMS ID: 06-23948
Matrix: Water
Data Release Authorized:
Reported: 12/11/06

QC Report No: KG93-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	12/05/06	200.8	12/07/06	**7440-38-2**	**Arsenic**	0.2	**0.9**	
200.8	12/05/06	200.8	12/07/06	7440-47-3	Chromium	0.5	0.5	U
200.8	12/05/06	200.8	12/07/06	7440-50-8	Copper	0.5	0.5	U
200.8	12/05/06	200.8	12/07/06	**7440-02-0**	**Nickel**	0.5	**2.2**	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RL-1d-091906
SAMPLE

Lab Sample ID: KG93C
LIMS ID: 06-23949
Matrix: Water
Data Release Authorized:
Reported: 12/11/06

QC Report No: KG93-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	12/05/06	200.8	12/07/06	**7440-38-2**	**Arsenic**	0.2	**0.8**	
200.8	12/05/06	200.8	12/08/06	7440-47-3	Chromium	1	1	U
200.8	12/05/06	200.8	12/07/06	7440-50-8	Copper	0.5	0.5	U
200.8	12/05/06	200.8	12/07/06	7440-02-0	Nickel	0.5	0.5	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RL-5-091806
SAMPLE

Lab Sample ID: KG93D
LIMS ID: 06-23950
Matrix: Water
Data Release Authorized:
Reported: 12/11/06

QC Report No: KG93-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/18/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	12/05/06	200.8	12/07/06	7440-38-2	Arsenic	0.2	0.6	
200.8	12/05/06	200.8	12/07/06	7440-47-3	Chromium	0.5	0.6	
200.8	12/05/06	200.8	12/07/06	7440-50-8	Copper	0.5	2.0	
200.8	12/05/06	200.8	12/07/06	7440-02-0	Nickel	0.5	3.8	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RL-3s-091906
SAMPLE

Lab Sample ID: KG93E
LIMS ID: 06-23951
Matrix: Water
Data Release Authorized:
Reported: 12/11/06

QC Report No: KG93-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	12/05/06	200.8	12/07/06	7440-38-2	Arsenic	0.2	5.7	
200.8	12/05/06	200.8	12/08/06	7440-47-3	Chromium	1	20	
200.8	12/05/06	200.8	12/07/06	7440-50-8	Copper	0.5	7.9	
200.8	12/05/06	200.8	12/07/06	7440-02-0	Nickel	0.5	5.2	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RL-3d-091906
SAMPLE

Lab Sample ID: KG93F
LIMS ID: 06-23952
Matrix: Water
Data Release Authorized:
Reported: 12/11/06

QC Report No: KG93-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	12/05/06	200.8	12/07/06	**7440-38-2**	**Arsenic**	0.2	**1.1**	
200.8	12/05/06	200.8	12/08/06	7440-47-3	Chromium	1	1	U
200.8	12/05/06	200.8	12/07/06	7440-50-8	Copper	0.5	0.5	U
200.8	12/05/06	200.8	12/08/06	7440-02-0	Nickel	1	1	U

U-Analyte undetected at given RL
RL-Reporting Limit

RL 01/1/07

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RL-2d-091806
SAMPLE

Lab Sample ID: KG93G
LIMS ID: 06-23953
Matrix: Water
Data Release Authorized
Reported: 12/11/06

QC Report No: KG93-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/18/06
Date Received: 09/19/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	12/05/06	200.8	12/07/06	7440-38-2	Arsenic	0.2	5.6	
200.8	12/05/06	200.8	12/08/06	7440-47-3	Chromium	1	3	
200.8	12/05/06	200.8	12/07/06	7440-50-8	Copper	0.5	0.6	
200.8	12/05/06	200.8	12/07/06	7440-02-0	Nickel	0.5	5.3	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: RL-2s-091806
SAMPLE

Lab Sample ID: KG93H
LIMS ID: 06-23954
Matrix: Water
Data Release Authorized:
Reported: 12/11/06

QC Report No: KG93-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/18/06
Date Received: 09/19/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	12/05/06	200.8	12/07/06	7440-38-2	Arsenic	0.2	29.4	
200.8	12/05/06	200.8	12/07/06	7440-47-3	Chromium	0.5	47.9	
200.8	12/05/06	200.8	12/07/06	7440-50-8	Copper	0.5	11.0	
200.8	12/05/06	200.8	12/07/06	7440-02-0	Nickel	0.5	36.4	

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: RL-4d-091906
SAMPLE

Lab Sample ID: KG93I
LIMS ID: 06-24013
Matrix: Water
Data Release Authorized:
Reported: 12/11/06

QC Report No: KG93-Anchor Environmental
Project: CHINOOK

Date Sampled: 09/19/06
Date Received: 09/20/06

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	12/05/06	200.8	12/07/06	**7440-38-2**	**Arsenic**	0.2	**1.5**	
200.8	12/05/06	200.8	12/08/06	7440-47-3	Chromium	1	1	U
200.8	12/05/06	200.8	12/07/06	7440-50-8	Copper	0.5	0.5	U
200.8	12/05/06	200.8	12/07/06	**7440-02-0**	**Nickel**	0.5	**1.5**	

U-Analyte undetected at given RL
RL-Reporting Limit

LDC #: 16033B4

SDG #: KG93

Laboratory: Analytical Resources, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 1/4/07

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: Dissolved Metals (EPA Method 200.8)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/18/06 – 9/28/06
II.	Calibration	A	
III.	Blanks	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A ~~SW~~	~~Not required~~
V.	Matrix Spike Analysis	A	
VI.	Duplicate Sample Analysis	A	
VII.	Laboratory Control Samples (LCS)	A	LCS
VIII.	Internal Standard (ICP-MS)	N	Not reviewed
IX.	Furnace Atomic Absorption QC	N	Not utilized
X.	ICP Serial Dilution	N	Not performed
XI.	Sample Result Verification	N	
XII.	Overall Assessment of Data	A	
XIII.	Field Duplicates	N	
XIV.	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: 12

1	RL-4s-092806	11	RL-4s-092806DUP	21		31	
2	RL-1s-091906	12	MB	22		32	
3	RL-1d-091906	13		23		33	
4	RL-5-091806	14		24		34	
5	RL-3s-091906	15		25		35	
6	RL-3d-091906	16		26		36	
7	RL-2d-091806	17		27		37	
8	RL-2s-091806	18		28		38	
9	RL-4d-091906	19		29		39	
10	RL-4s-092806MS	20		30		40	

Notes:

LDC #: 16033B4
SDG #: KG93

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: MH
2nd reviewer: A

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-9	A2	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
MS 10,11	A2	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
ICP Trace		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-, ___

Comments: Mercury by CVAA if performed

Chinook Ventures, Inc.
Data Validation Reports
LDC# 16033

Wet Chemistry

LDC

LDC Report# 16033A6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Chinook Ventures, Inc.
Collection Date:	November 21, 2006
LDC Report Date:	January 8, 2007
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	KG57

Sample Identification

G2S-112106
RLSW2-112106
G2S-112106MS
G2S-112106DUP

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 335.4 for Total Cyanide and Standard Method SM4500-CN-I for Weak Acid Dissociable Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

Percent recoveries (%R) of the standard reference material were within QC limits.

VII. Sample Result Verification

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Field Blanks

No field blanks were identified in this SDG.

Chinook Ventures, Inc.
Wet Chemistry - Data Qualification Summary - SDG KG57

No Sample Data Qualified in this SDG

Chinook Ventures, Inc.
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG KG57

No Sample Data Qualified in this SDG

SAMPLE RESULTS-CONVENTIONALS
KG57-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 12/07/06

Project: CHINOOK
Event: 060354-01
Date Sampled: 11/21/06
Date Received: 11/21/06

Client ID: G2S-112106
ARI ID: 06-23749 KG57A

Analyte	Date Batch	Method	Units	RL	Sample
Total Cyanide	11/27/06 112706#1	EPA 335.4	mg/L	0.025	0.370
Weak Acid Dissoc. Cyanide	12/01/06 120106#1	SM4500CN-I	mg/L	0.005	0.069

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
KG57-Anchor Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 12/07/06

Project: CHINOOK
Event: 060354-01
Date Sampled: 11/21/06
Date Received: 11/21/06

Client ID: RLSW2-112106
ARI ID: 06-23750 KG57B

Analyte	Date Batch	Method	Units	RL	Sample
Total Cyanide	11/27/06 112706#1	EPA 335.4	mg/L	0.005	0.072
Weak Acid Dissoc. Cyanide	12/01/06 120106#1	SM4500CN-I	mg/L	0.005	0.007

RL Analytical reporting limit
U Undetected at reported detection limit

LDC #: 16033A6

SDG #: KG57

Laboratory: Analytical Resources, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 1/4/07

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: Total Cyanide (EPA Method 335.~~2~~4), Weak Acid Dissociable Cyanide (SM4500-CN-I)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/21/06
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	A	
IV	Matrix Spike/Matrix Spike Duplicates	A	
V	Duplicates	A	
VI.	Laboratory control samples	A	SRM
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	G2S-112106	11		21		31	
2	RLSW2-112106	12		22		32	
3	G2S-112106MS	13		23		33	
4	G2S-112106DUP	14		24		34	
5	MB	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 16033A6
SDG #: KG57

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MY
2nd reviewer: N

All circled methods are applicable to each sample.

Sample ID	Parameter																			
1,2	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}	WAP CN					
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}						
2&3,4	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}	WAP CN					
✓ 4	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}						
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}						
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}						
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}						
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}						
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}						
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}						
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}						
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}						
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}						
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}						
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}						
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}						
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}						
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}						
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}						
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}						
	pH	TDS	Cl	F	NO_3	NO_2	SO_4	PO_4	ALK	CN⁻	NH_3	TKN	TOC	CR^{6+}						

Comments:

ANCHOR ENVIRONMENTAL, L.L.C.

Anchor Environmental, L.L.C.
1423 3rd Avenue, Suite 300
Seattle, Washington 98101
Phone 206.287.9130
Fax 206.287.9131

Data Validation Review Report

Project: Chinook Ventures

Project Number: 060354-01

Date: February 2, 2007

This report summarizes the review of analytical results for five water samples and a trip blank collected on January 5, 2007. Samples were collected by Anchor Environmental and submitted to Analytical Resources, Incorporated (ARI) in Tukwila, Washington. Samples were analyzed for semivolatile organic compounds (SVOC) by U.S. Environmental Protection Agency (USEPA) method 8270D, polynuclear aromatic hydrocarbons (PAHs) by USEPA method 8270D with selective ion monitoring (SIM), organochlorine pesticides by USEPA method 8081A, polychlorinated biphenyls (PCBs) by USEPA method 8082, volatile organic compounds by USEPA method 8260B and priority pollutant total metals by USEPA method 6010/7470.

ARI project ID KK85 was reviewed. Table 1 presents the samples reviewed in this report.

Sample ID	Lab ID	Matrix	Analysis Requested
RLSW2-010507	KK85A	Water	SVOC/PAH, VOC, PCB, pesticides, metals
G2S-010507	KK85B	Water	SVOC/PAH, VOC, PCB, pesticides, metals
G6S-010507	KK85C	Water	PAH
G6S-010507-D	KK85D	Water	PAH
G1S-010507	KK85E	Water	PAH

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QA/QC) guidelines outlined in the data quality objectives section of the Quality Assurance Project Plan (QAPP) and the statement of work. Laboratory results were reviewed following USEPA guidelines (USEPA 1999; 2004). Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

Laboratory Data Package and Field Documentation

Field documentation was checked for completeness and accuracy. The following were noted by ARI at the time of sample receipt: the samples were received in good condition, cool (2.4 and 2.6° C), and were consistent with the accompanying chain of custody as documented on the Sample Receipt Form. Two VOA samples contained air bubbles in the VOA vials (RLSW2 and G2S). The laboratory was instructed to use vials without air bubbles for the analysis.

Holding Times and Sample Preservation

Samples were appropriately preserved and analyses were conducted within holding times with the exception of the PCB analysis. The PCB samples were re-extracted three days outside the holding time. Data associated with the re-extracted PCB analysis will be qualified with a J flag to indicate the results are estimated. Samples were refrigerated upon receipt by the laboratory.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequencies. No analytes were detected in the laboratory method blanks except for the following:

- The PAH method blank contained naphthalene (0.0059 μg/L). The reported value was below the method reporting limit (MRL) and above the method detection limit (MDL) for the analyte. An action limit of five times the blank contamination was established for the analyte. Results above the action limit were reported without qualification. Results reported below the MRL were elevated to the sample concentration and qualified as non-detect with the "U" flag. Results above the MRL and below the action limit were not qualified.
- Zinc was detected in the total metals method blank at 14 μg/L. An action limit of ten times the blank contamination was established for the analyte. Results above the action limit were reported without qualification. Results reported below the MRL were elevated to the MRL and qualified as non-detect with the "U" flag. Results above the MRL and below the action limit were not qualified.

Field Quality Control

Field Duplicates

No field duplicates were identified in the chain of custody. No data were qualified due to these results.

Trip Blanks

One trip blank was submitted and analyzed with the VOC samples. Methylene chloride was detected in the trip blank at the reporting limit. Associated samples did not contain this analyte. As methylene chloride is a common laboratory contaminant, no qualification of the data was made based on this finding.

Surrogate Recoveries

Surrogates were analyzed with all organic analyses. Surrogate recoveries were within the laboratory-specified control limits for all samples.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

Matrix spike (MS) and matrix spike duplicate (MSD) samples were analyzed at the required frequency with the following exception:

- There was no MS/MSD analyzed in conjunction with the SVOC, PAH, PCB or pesticide analysis. Precision and accuracy criteria were determined from the LCS/LCSD evaluation.

Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

Laboratory control samples (LCSs) for the organics compounds were analyzed at the required frequencies. All sample replicates and LCS and LCS Duplicates (LCSD) percent recoveries were within laboratory control limits.

Method Reporting Limits

Sample results were reported using the laboratory method reporting limits, reporting limits were acceptable. The Original PCB data had elevated reporting limits due to matrix background interference. The samples were re-extracted to obtain lower reporting limits outside the recommended holding time. The second data set has been qualified with the "J" flag to indicate the values reported were estimated.

Overall Assessment

The data are judged to be acceptable for their intended use as qualified in Table 2, below.

Precision, Accuracy, and Completeness

Precision: All precision goals were met.

Accuracy: All accuracy goals were met.

Completeness: Completeness was 100 percent for all data.

Table 2
Data Qualifiers

not qualified

Analyte	Sample ID	Original Result	Qualified Result	Reason
Naphthalene	G2S-010507	0.024	0.024U	Method blank contamination
Zinc	RLSW2-010507	25	140 U	Method blank contamination
Zinc	G2S-010507	13	140 U	Method blank contamination
All PCB Aroclors	RLSW2-010507 **Reextract**	0.010 U	0.010 UJ	Holding time exceedance
All PCB Aroclors	G2S-010507 **Reextract**	0.010 U	0.010 UJ	Holding time exceedance

REFERENCES

USEPA. 1983. Methods for Chemical Analysis of Water and Wastes. U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio. EPA 600/4 79-020.

USEPA. 1986. Test methods for Evaluating Solid Waste: Physical/Chemical Methods. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA 530/SW-846.

USEPA. 1999. USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA 540/R-99/008. October.

USEPA. 2004. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation (OSRTI). EPA 540-R-04-004. October 2004.

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QA1 Data Review Report

Project: Chinook Ventures

Project Number: 060354-01 Task 10

Date: May 2, 2007

This report summarizes the review of analytical results for six soil samples which were collected on February 22, and 27, 2007 at the Chinook Ventures site. Samples were collected by Anchor Environmental, LLC (Anchor) and submitted to CH2M Hills Applied Science (CH2M) in Corvallis, Oregon on March 1, 2007 and to Columbia Analytical Services (CAS) of Kelso Washington on February 27, 2007 and March 9, 2007.

Samples were analyzed by CH2M for SPLP leachate by U.S. Environmental Protection Agency (EPA) method 1312, total cyanide by USEPA method 335.2, weak and dissociable (WAD) cyanide by Standard Methods for Water and Wastewater (SM) method SM 4500 I, and free cyanide by American Standard Test Methods (ASTM) D4282. These samples were also subcontracted for fluoride analysis on the SPLP leachates were sent to Columbia Analytical Services (CAS) of Kelso Washington on February 27, 2007 for Bellack distillation for total fluoride by USEPA method 340.2m.

A second set of samples were sent directly to CAS for SPLP leachate by USEPA method 1312, and Bellack distillation for total fluoride by USEPA method 340.2m.

This QA1 data report reviews CH2MHill project report ID G137601, CAS project report K0701562 and K0701936. Table 1 presents the samples reviewed in this report.

Table 1
Samples Reviewed

Sample ID	Date Sampled	Lab ID	Matrix	Analysis Requested
SPLP1-S-022707	02/27/07	CHM Hill G137601	Soil	SPLP leach, Cyanide-total, WAD, and free
SPLP2-S-022707	02/27/07	CHM Hill G137602	Soil	SPLP leach, Cyanide-total, WAD and free
SPLP3-S-022707	02/27/07	CHM Hill G137603	Soil	SPLP leach, Cyanide-total, WAD and free
S2-A-022707	02/22/07	CAS K0701562-001	Soil	Fluoride
S3-A-022707	02/22/07	CAS K0701562-002	Soil	Fluoride
SPLP4-WM-022707	02/22/07	CAS K0701562-003	Soil	SPLP leach, Fluoride
SPLP1-S-022707	02/27/07	CAS K0701936-001	SPLP leach	Fluoride
SPLP2-S-022707	02/27/07	CAS K0701936-002	SPLP leach	Fluoride
SPLP3-S-022707	02/27/07	CAS K0701936-003	SPLP leach	Fluoride
Blank	02/27/07	CAS K0701936-004	SPLP leach	Fluoride

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QA/QC) as stated in SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998. Data Quality Objective (DQOs) were identified in the sampling and analysis plan (SAP) (Anchor 2006). Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

Laboratory Data Package and Field Documentation

Field documentation was checked for completeness and accuracy. The chain-of-custody's (COC) for the sample delivery group was signed by CH2M lab and CAS. At the time of sample receipt, the samples were in good condition. The cooler temperatures were documented on the chain-of-custody sheets and were within EPA guidelines of 4 $\pm$

2 °C (2.0, 1.4, & 0.4 °C) with the exception of the coolers received at 1.4 and 0.4°C. As the samples were unfrozen and sample containers intact no qualification of data was necessary. The cooler received by CH2M ASL had the wrong sampling data on the COC which was confirmed by Anchor and corrected at the time of receipt. For CAS report ID K0701936 an SPLP extraction blank was received with the samples and not identified by an accompanying COC. The extraction blank was added at the time of sample receipt by CAS. The CAS data packages were submitted as a level II package with raw data or forms. The CH2M ASL data packages contained calibration and instrument information. For analyses where there were no control limits or reporting limits designated in the SAP, the laboratories in-house reporting limits and control limits were used.

Holding Times and Sample Preservation

Samples were appropriately preserved and analyses were conducted within holding times.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequencies. No analytes were detected in the laboratory method blanks above the reporting limit. No raw data was submitted with the data report to evaluate hits below the reporting level for the CAS data.

Field Quality Control

Trip Blanks

No trip blanks were required with the analyses submitted in this data set.

Field Duplicates

No field duplicates were identified in this data set.

Surrogate Recoveries

No surrogate recoveries were required for the analyses included in the data set reviewed for this report.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

All MS/MSD samples were analyzed at the required frequencies and the matrix spike percent recoveries (%R) and RPDs were within SAP control limits with the following exception:

- The MS/MSD for CAS report ID K0701938 for Bellack fluoride analysis was performed on non-site specific samples (batch QA/QC submitted).
- The MS/MSD for CAS report ID K0701562 for total fluoride analysis was performed on non-site specific samples (batch QA/QC submitted). The percent recoveries were outside the control limits due to the high level of analyte in the native sample. The sample concentration was greater than four times the spike amount. No further action required and no qualification of data was necessary.
- No matrix spikes were performed in conjunction with on the total cyanide, free cyanide or WAD cyanide analyses.

Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCSs were analyzed at the required frequencies. The LCS and LCSD percent recoveries were within SAP control limits.

Matrix Duplicates

A matrix spike duplicate was performed on the following analyses: Bellack fluoride, total fluoride, and total suspended solids. No matrix duplicate were performed for the total, WAD or free cyanide analyses.

Standard Reference Materials (SRMs)

No SRMs were performed on the analyses in this data set.

Check Standards (CS)

No check standards were performed on the datasets reviewed.

Method Reporting Limits

The reporting limits reported were in general in compliance with the SAP specified limits. The CAS data was reported on a dry weight basis and the CH2M ASL was reported on an as

received basis (100% moisture). Several parameters and samples required dilution to bring the analytes within the linear range of the calibration curve. The following deviations were noted and /or samples required dilutions:

- Sample SPLP4-WM-022707 for total fluoride was analyzed at a 20x dilution which resulted in raised reporting limits.

Initial Calibrations/Continuing Calibrations

The initial calibration verification (ICV) analysis for the WAD cyanide was low and outside the labs acceptance criteria. The associated detectable results will be qualified with the "J" flag and non-detects with the "UJ" flag to indicate the results reported have been estimated due to the ICV low recovery.

Overall Assessment

The data are judged to be acceptable as reported with qualification.

Precision, Accuracy, and Completeness

Precision: All precision goals were met.

Accuracy: All accuracy goals were met.

Completeness: Completeness was 100 percent, all data are useable as qualified or reported.

Table 2
Data Qualifiers

Sample ID	Method	Compound	Original Result	Qualified Result	Comment
SPLP1-S-022707	SM 4500 I	WAD Cyanide	0.005 U	0.005 UJ	Low ICV %R
SPLP2-S-022707	SM 4500 I	WAD Cyanide	0.005 U	0.005 UJ	Low ICV %R
SPLP3-S-022707	SM 4500 I	WAD Cyanide	0.005 U	0.005 UJ	Low ICV %R

REFERENCES

USEPA. 1983. Methods for Chemical Analysis of Water and Wastes. U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio. EPA-600/4-79-020.

USEPA. 1986. Test methods for Evaluating Solid Waste: Physical/Chemical Methods. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA-530/SW-846.

USEPA. 2004. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA 540-R-04-004. October 2004.

USEPA. 1999. USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA 540/R-99/008. October.

Laboratory Data Consultants, Inc.

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Phone 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

Anchor Environmental, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101
ATTN: Ms. Cindy Fields

November 3, 2011

SUBJECT: Millennium Bulk Terminals, Data Validation

Dear Ms. Fields,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on October 5, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26339:

SDG #	Fraction
A11G327, A11G328 A11G364, A11G365 A11G386	Polynuclear Aromatic Hydrocarbons, Metals, Wet Chemistry

The data validation was performed under EPA Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010

Please feel free to contact us if you have any questions.

Sincerely,

Stella Cuenco

Stella S. Cuenco
Data Validation Operations Manager/Senior Chemist

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Level III

LDC #26339 (Anchor Environmental-Seattle WA /Millennium Bulk Terminals)

LDC	SDG#	DATE REC'D	(3) DATE DUE	PAHs (8270D -SIM)		Metals (200.8)		Diss Metals (200.8)		Diss Si (200.7)		Alk. (2320B)		Cl, Fl SO_4 (300.0)		CN (335.4)		WAD CN (4500)		Free CN (ASTM D)		P (4500 P)		TDS (2540C)		TSS (2540D)													
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	A11G327	10/05/11	10/26/11	-	-	2	0	5	0	-	-	-	-	7	0	7	0	7	0	7	0	-	-	-	-	-	-												
B	A11G328	10/05/11	10/26/11	-	-	-	-	5	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0												
C	A11G364	10/05/11	10/26/11	-	-	-	-	4	0	-	-	-	-	4	0	4	0	4	0	4	0	-	-	-	-	-	-												
D	A11G365	10/05/11	10/26/11	3	0	-	-	4	0	4	0	4	0	4	0	4	0	4	0	4	0	4	0	4	0	4	0												
E	A11G386	10/05/11	10/26/11	5	0	-	-	6	0	6	0	6	0	6	0	6	0	6	0	6	0	6	0	6	0	6	0												
Total	A/SC			8	0	2	0	24	0	15	0	15	0	26	0	26	0	26	0	26	0	15	0	15	0	15	0	0	0	0	0	0	0	0	0	0	213		

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS, MSD, or DUP's.

Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

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Anchor Environmental, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101
ATTN: Ms. Cindy Fields

November 18, 2011

SUBJECT: Revised Millennium Bulk Terminals, Data Validation

Dear Ms. Fields,

Enclosed are the revised data validation reports for the fractions listed below. Please replace the previously submitted report with the enclosed revised report.

LDC Project # 26339:

SDG #	Fraction
A11G327, A11G328 A11G364, A11G365 A11G386	Wet Chemistry, Metals

Please feel free to contact us if you have any questions.

Sincerely,

Stella S. Cuenco
Data Validation Operations Manager/Senior Chemist

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Level III

LDC #26339 (Anchor Environmental-Seattle WA /Millennium Bulk Terminals)

LDC	SDG#	DATE REC'D	(3) DATE DUE	FI (4500)																																							
Matrix:	Water/Soil			W	S																																						
A	A11G327	10/05/11	10/26/11	7	0																																						
B	A11G328	10/05/11	10/26/11	5	0																																						
C	A11G364	10/05/11	10/26/11	4	0																																						
D	A11G365	10/05/11	10/26/11	4	0																																						
E	A11G386	10/05/11	10/26/11	6	0																																						
Total	A/SC			26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS, MSD, or DUP's.

LDC Report# 26339A4

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	July 26, 2011
LDC Report Date:	November 17, 2011
Matrix:	Water
Parameters:	Metals
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11G327

Sample Identification

MBT-072611-09
MBT-072611-10
MBT-072611-08F
MBT-072611-11F
MBT-072611-12F
MBT-072611-13F
MBT-072611-14F
MBT-072611-14FMS
MBT-072611-14FDUP

Samples appended with "F" were analyzed for dissolved metals

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 200.8 for Metals. The metals analyzed were Arsenic, Calcium, Chromium, Copper, Magnesium, Nickel, and Sodium.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Calcium Chromium Sodium	43.1 ug/L 0.400 ug/L 22.5 ug/L	MBT-072611-09 MBT-072611-10
PB (prep blank)	Calcium Chromium	29.9 ug/L 0.367 ug/L	MBT-072611-08F MBT-072611-11F MBT-072611-12F MBT-072611-13F MBT-072611-14F

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
MBT-072611-09	Chromium	0.789 ug/L	0.789U ug/L
MBT-072611-10	Chromium	0.556 ug/L	0.556U ug/L

Sample	Analyte	Reported Concentration	Modified Final Concentration
MBT-072611-08F	Chromium	1.21 ug/L	1.21U ug/L
MBT-072611-12F	Chromium	1.47 ug/L	1.47U ug/L
MBT-072611-13F	Chromium	0.989 ug/L	0.989U ug/L
MBT-072611-14F	Chromium	0.822 ug/L	0.822U ug/L

V. ICP Interference Check Sample (ICS) Analysis

ICP Interference check sample analysis was not required by the methods.

VI. Matrix Spike Analysis

Matrix spike (MS) were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this method.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to method blank contamination problems, chromium results were qualified as not detected in six samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Based upon the Level III data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Metals - Data Qualification Summary - SDG A11G327

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Metals - Laboratory Blank Data Qualification Summary - SDG A11G327

SDG	Sample	Analyte	Modified Final Concentration	A or P
A11G327	MBT-072611-09	Chromium	0.789U ug/L	A
A11G327	MBT-072611-10	Chromium	0.556U ug/L	A
A11G327	MBT-072611-08F	Chromium	1.21U ug/L	A
A11G327	MBT-072611-12F	Chromium	1.47U ug/L	A
A11G327	MBT-072611-13F	Chromium	0.989U ug/L	A
A11G327	MBT-072611-14F	Chromium	0.822U ug/L	A

LDC #: 26339A4
SDG #: A11G327
Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 10-13-11
Page: 1 of 1
Reviewer: CL
2nd Reviewer: W

METHOD: Metals (EPA Method 200.8)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/26/11
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	~~A~~ N	Not required
VI.	Matrix Spike Analysis	A	MS
VII.	Duplicate Sample Analysis	A	DUP
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	Not utilized
XI.	ICP Serial Dilution	N	Not performed
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: water

1	MBT-072611-09	11		21		31	
2	MBT-072611-10	12		22		32	
3	MBT-072611-08F	13		23		33	
4	MBT-072611-11F	14		24		34	
5	MBT-072611-12F	15		25		35	
6	MBT-072611-13F	16		26		36	
7	MBT-072611-14F	17		27		37	
8	MBT-072611-14FMS	18		28		38	
~~9~~	~~MBT-072611-14FMSD~~	19		29		39	
10	MBT-072611-14FDUP	20		30		40	

Notes: Samples appended with "F" were analyzed as dissolved

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: CR
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-7		Al, Sb, **As**, Ba, Be, Cd, **Ca**, **Cr**, Co, **Cu**, Fe, Pb, **Mg**, Mn, Hg, **Ni**, K, Se, Ag, **Na**, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
QC 8,10		Al, Sb, **As**, Ba, Be, Cd, **Ca**, **Cr**, Co, **Cu**, Fe, Pb, **Mg**, Mn, Hg, **Ni**, K, Se, Ag, **Na**, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Analysis Method
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
ICP-MS		Al, Sb, **As**, Ba, Be, Cd, **Ca**, **Cr**, Co, **Cu**, Fe, Pb, **Mg**, Mn, Hg, **Ni**, K, Se, Ag, **Na**, Tl, V, Zn, Mo, B, Si, CN^-,
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,

Comments: Mercury by CVAA if performed

LDC #: 26339A4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: 02
2nd Reviewer: [illegible]

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)
Soil preparation factor applied: NA
Sample Concentration units, unless otherwise noted: ug/L
Associated Samples: 1, 2

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Limit	1	2								
Ca		43.1		215.5										
Cr		0.400		2	0.789	0.556								
Na		22.5		112.5										

Sample Concentration units, unless otherwise noted: ug/L
Associated Samples: 3-7

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Limit	3	5	6	7						
Ca		29.9		149.5										
Cr		0.367		1.835	1.21	1.47	0.989	0.822						

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC Report# 26339A6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	July 26, 2011
LDC Report Date:	November 17, 2011
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11G327

Sample Identification

MBT-072611-08
MBT-072611-09
MBT-072611-10
MBT-072611-11
MBT-072611-12
MBT-072611-13
MBT-072611-14
MBT-072611-08DUP
MBT-072611-14MS
MBT-072611-14DUP
MBT-072611-08MS

Introduction

This data review covers 11 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Chloride, Fluoride, and Sulfate, EPA Method 335.4 for Total Cyanide, Standard Method 4500-CN for Weak Acid Dissociable Cyanide, Standard Method 4500-F-C for Fluoride, and ASTM D4282 for Free Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
MBT-072611-08 MBT-072611-14	Fluoride (SM4500-F-C)	98 days	28 days	J (all detects) R (all non-detects)	A

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
ICB/CCB	Free cyanide	4.70 ug/L	MBT-072611-14
PB (prep blank)	Fluoride (SM4500-F-C)	0.0370 mg/L	MBT-072611-08 MBT-072611-14
ICB/CCB	Fluoride (SM4500-F-C)	0.0360 mg/L	MBT-072611-08 MBT-072611-14

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
MBT-072611-08	Fluoride (SM4500-F-C)	0.177 mg/L	0.177U mg/L

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
MBT-072611-08MS All samples in SDG A11G327)	Free cyanide	62 (75-125)	J (all detects) UJ (all non-detects)	A

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to analysis holding time and MS %R problems, data were qualified as estimated in seven samples.

Due to calibration and method blank contamination problems, fluoride result was qualified as not detected in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Level III data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A11G327

SDG	Sample	Analyte	Flag	A or P	Reason
A11G327	MBT-072611-08 MBT-072611-14	Fluoride (SM4500-F-C)	J (all detects) R (all non-detects)	A	Technical holding time
A11G327	MBT-072611-08 MBT-072611-09 MBT-072611-10 MBT-072611-11 MBT-072611-12 MBT-072611-13 MBT-072611-14	Free cyanide	J (all detects) UJ (all non-detects)	A	Matrix spike analysis (%R)

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A11G327

SDG	Sample	Analyte	Modified Final Concentration	A or P
A11G327	MBT-072611-08	Fluoride (SM4500-F-C)	0.177U mg/L	A

LDC #: 26339A6
SDG #: A11G327
Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 10-13-11
Page: 1 of
Reviewer:
2nd Reviewer:

METHOD: Chloride, Fluoride, Sulfate (EPA Method 300.0), ~~SM4500-F-C~~ Total Cyanide (EPA Method 335.4), ~~Amenable Cyanide~~-Cyanide-Weak Acid dissociable (SM4500-CN), Free Cyanide (ASTM D 4282) F (SM4500-F-C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	~~A~~SW	Sampling dates: 7/26/11
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	SW	
V	Matrix Spike/Matrix Spike Duplicates	SW	MS
VI.	Duplicates	A	DUP
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	MBT-072611-08	11	MBT-072611-14DUP	21		31	
2	MBT-072611-09	12	(~~X~~1) MS	22		32	
3	MBT-072611-10	13		23		33	
4	MBT-072611-11	14		24		34	
5	MBT-072611-12	15		25		35	
6	MBT-072611-13	16		26		36	
7	MBT-072611-14	17		27		37	
8	MBT-072611-08DUP	18		28		38	
9	MBT-072611-14MS	19		29		39	
~~10~~	~~MBT-072611-14MSD~~	20		30		40	

Notes:

LDC #: 26339A6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Reviewer: CR
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter
1-7		pH TDS (Cl) F NO_3 NO_2 (SO_4) PO_4 ALK (CN) NH_3 TKN TOC CR^{6+} ClO_4 (WAD CN) (Free CN)
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 (Free CN)
QC: 8		pH TDS (Cl) (F) NO_3 NO_2 (SO_4) PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 (WAD CN)
9		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
~~10~~		pH TDS (Cl) (F) NO_3 NO_2 (SO_4) PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 (WAD CN)
11		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 (Free CN)
12		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
2-6		pH TDS Cl (F) 300.0 NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
1,7		pH TDS Cl (F) SM4500 NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4

Comments:

LDC #: 26339A6

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page 1 of
Reviewer: CR
2nd reviewer:

All circled dates have exceeded the technical holding time.
Y N N/A Were all samples preserved as applicable to each method ?
Y N N/A Were all cooler temperatures within validation criteria?

Method:		SM4500FC					
Parameters:		F					
Technical holding time:		28days					
Sample ID	**Sampling date**	**Analysis date**	**Analysis date**	**Analysis date**	**Analysis date**	**Analysis date**	**Qualifier**
1,7	7/26/11	11/1/11	(98days)				J/R/A

LDC #: 26339A6

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: OR
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were blank analyses performed as required? If no, please see qualifications below.
Y N N/A Were any activities in the blanks greater than the minimum detectable activity? If yes, please see qualifications below.

Conc. units: ug/L **Associated Samples:** 7

Analyte	Blank ID	Blank ID	Blank Action Limit											
	PB	ICB/CCB (ug/L)		No Qual, (ND)										
Free CN		4.70												

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 26339A6

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: OL
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were blank analyses performed as required? If no, please see qualifications below.
Y N N/A Were any activities in the blanks greater than the minimum detectable activity? If yes, please see qualifications below.

Conc. units: mg/L **Associated Samples:** 1, 7

Analyte	Blank ID	Blank ID	Blank Action Limit										
	PB	ICB/CCB (mg/L)		1									
F (SM4500-F-C)	0.0370	0.0360	0.185	0.177									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 26339A6

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: CR
2nd Reviewer: [illegible]

METHOD: Inorganics, Method see cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125 (85-115% for Method 300.0)? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
		12	W	FreeCN	62	All	J/UJ/A

Comments:

Millennium Bulk Terminals - LDC 26339

SDG: A11G327

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBT-072611-08	A11G327-01	Fluoride	11/1/2011	0.177		Yes	N		UJ	1,7	0.100	0.100	mg/L
MBT-072611-14	A11G327-07	Fluoride	11/1/2011	0.296		Yes	Y		J	1	0.100	0.100	mg/L

LDC Report# 26339B4

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	July 26, 2011
LDC Report Date:	November 17, 2011
Matrix:	Water
Parameters:	Metals
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11G328

Sample Identification

G4-S-072611
G6-D-072611
G6-S-072611
PZ-2-072611
PZ-1-072611
G6-D-072611MS
G6-D-072611DUP

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Methods 200.7 and 200.8 for Metals. The metals analyzed were Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium, and Silicon.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Aluminum Calcium	4.71 ug/L 36.6 ug/L	All samples in SDG A11G328
ICB/CCB	Silicon	0.108 mg/L	All samples in SDG A11G328
ICB/CCB	Sodium	19.4 ug/L	PZ-1-072611
ICB/CCB	Sodium	22.6 ug/L	G6-S-072611

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
G4-S-072611	Aluminum	7.47 ug/L	7.47U ug/L
G6-D-072611	Aluminum	6.11 ug/L	6.11U ug/L

V. ICP Interference Check Sample (ICS) Analysis

ICP Interference check sample analysis was not required by the methods.

VI. Matrix Spike Analysis

Matrix spike (MS) were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this method.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to method blank contamination problems, aluminum results were qualified as not detected in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Based upon the Level III data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Metals - Data Qualification Summary - SDG A11G328

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Metals - Laboratory Blank Data Qualification Summary - SDG A11G328

SDG	Sample	Analyte	Modified Final Concentration	A or P
A11G328	G4-S-072611	Aluminum	7.47U ug/L	A
A11G328	G6-D-072611	Aluminum	6.11U ug/L	A

LDC #: 26339B4
SDG #: A11G328
Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 10-13-11
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2nd Reviewer: ✓

METHOD: Dissolved Metals (EPA Method 200.7/200.8)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/26/11
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	SW	✓
V.	ICP Interference Check Sample (ICS) Analysis	~~A~~ N	Not required
VI.	Matrix Spike Analysis	A	MS
VII.	Duplicate Sample Analysis	A	Dup
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	Not utilized
XI.	ICP Serial Dilution	N	Not performed
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ✓

1	G4-S-072611	11		21		31	
2	G6-D-072611.	12		22		32	
3	G6-S-072611	13		23		33	
4	PZ-2-072611	14		24		34	
5	PZ-1-072611	15		25		35	
6	G6-D-072611MS	16		26		36	
~~7~~	~~G6-D-072611MSD~~	17		27		37	
8	G6-D-072611DUP	18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

.DC #: [illegible]

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer: [illegible]

ll circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-5		**Al**, Sb, As, Ba, Be, Cd, **Ca**, Cr, Co, Cu, **Fe**, Pb, **Mg, Mn**, Hg, Ni, **K**, Se, Ag, **Na**, Tl, V, Zn, Mo, B, **Si**, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
6,8		**Al**, Sb, As, Ba, Be, Cd, **Ca**, Cr, Co, Cu, **Fe**, Pb, **Mg, Mn**, Hg, Ni, **K**, Se, Ag, **Na**, Tl, V, Zn, Mo, B, **Si**, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Analysis Method
;P		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, **Si**, CN⁻,
;P-MS		**Al**, Sb, As, Ba, Be, Cd, **Ca**, Cr, Co, Cu, **Fe**, Pb, **Mg, Mn**, Hg, Ni, **K**, Se, Ag, **Na**, Tl, V, Zn, Mo, B, Si, CN⁻,
;FAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻

omments: Mercury by CVAA if performed

LDC #: 26339B4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Page: 1 of 1
Reviewer: CR
2nd Reviewer: [illegible]

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)
Soil preparation factor applied: ~~NA~~ 1-1X
Sample Concentration units, unless otherwise noted: ug/L
Associated Samples: All

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (mg/L)	Action Limit	1	2								
Al		4.71		23.55	7.47	6.11								
Ca		36.6		183										
Si			0.108	0.54										

Sample Concentration units, unless otherwise noted: ug/L
Associated Samples: 5

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Limit	No Qualifiers									
Na			19.4	~~970~~ 1067										

Sample Concentration units, unless otherwise noted: ug/L
Associated Samples: 3

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Limit	No Qualifiers									
Na			22.6	~~5650~~ 6215										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

GLDC Report# 26339B6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	July 26, 2011
LDC Report Date:	November 17, 2011
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11G328

Sample Identification

G4-S-072611
G6-D-072611
G6-S-072611
PZ-2-072611
PZ-1-072611
G4-S-072611MS
G4-S-072611DUP
G6-D-072611DUP
PZ-2-072611MS
PZ-2-072611DUP
PZ-1-072611MS
PZ-1-072611DUP

Introduction

This data review covers 12 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard method 2320B for Alkalinity, EPA Method 300.0 for Chloride, Fluoride, and Sulfate, EPA Method 335.4 for Total Cyanide, Standard Method 4500-CN for Weak Acid Dissociable Cyanide, ASTM D4282 for Free Cyanide, Standard Method 4500 P B for Total Phosphorus, Standard Method 2540C for Total Dissolved Solids, Standard Method 4500-F-C for Fluoride, and Standard Method 2540D for Total Suspended Solids.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
G6-D-072611	Fluoride (SM4500-F-C)	98 days	28 days	J (all detects) R (all non-detects)	A

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
ICB/CCB	Free cyanide Phosphorus	4.70 ug/L 0.00900 mg/L	All samples in SDG A11G328
PB (prep blank)	Fluoride (SM4500-F-C)	0.0370 mg/L	G6-D-072611
ICB/CCB	Fluoride (SM4500-F-C)	0.0360 mg/L	G6-D-072611

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
G6-D-072611	Free cyanide Phosphorus	0.00400 mg/L 0.180 mg/L	0.00400U mg/L 0.180U mg/L
G6-S-072611	Free cyanide	0.00490 mg/L	0.00490U mg/L
PZ-2-072611	Free cyanide	0.00490 mg/L	0.00490U mg/L
PZ-1-072611	Free cyanide	0.00520 mg/L	0.00520U mg/L

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
PZ-1-072611MS (PZ-1-072611)	Cyanide	73 (75-125)	J (all detects) UJ (all non-detects)	A

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to analysis holding time and MS %R problems, data were qualified as estimated two samples.

Due to method blank contamination problems, phosphorus result and free cyanide results were qualified as not detected in four samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Level III data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A11G328

SDG	Sample	Analyte	Flag	A or P	Reason
A11G328	G6-D-072611	Fluoride (SM4500-F-C)	J (all detects) R (all non-detects)	A	Technical holding time
A11G328	PZ-1-072611	Cyanide	J (all detects) UJ (all non-detects)	A	Matrix spike analysis (%R)

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A11G328

SDG	Sample	Analyte	Modified Final Concentration	A or P
A11G328	G6-D-072611	Free cyanide Phosphorus	0.00400U mg/L 0.180U mg/L	A
A11G328	G6-S-072611	Free cyanide	0.00490U mg/L	A
A11G328	PZ-2-072611	Free cyanide	0.00490U mg/L	A
A11G328	PZ-1-072611	Free cyanide	0.00520U mg/L	A

LDC #: 26339B6
SDG #: A11G328
Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 10-13-11
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Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Alkalinity (SM2320 B), Chloride, Fluoride, Sulfate (EPA Method 300.0) ~~335~~ Total Cyanide (EPA Method 335.4), ~~Amenable Cyanide~~ Cyanide-Weak Acid dissociable (SM4500-CN), Free Cyanide (ASTM D 4282), Total Phosphorus (SM4500 P B), Total Dissolved Solids (SM2540 C), Total Suspended Solids (SM2540 D) Fluoride (SM4500-F-C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	~~A~~ SW	Sampling dates: 7/26/11
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	SW	
V	Matrix Spike/Matrix Spike Duplicates	SW	MS
VI.	Duplicates	A	DUP
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	~~A~~ SW	D
X.	Field duplicates	N	
XI	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: water

1	G4-S-072611	11	PZ-2-072611DUP	21		31	
2	G6-D-072611	12	PZ-1-072611MS	22		32	
3	G6-S-072611	13	PZ-1-072611DUP	23		33	
4	PZ-2-072611	14		24		34	
5	PZ-1-072611	15		25		35	
6	G4-S-072611MS	16		26		36	
~~7~~	~~G4-S-072611MSD~~	17		27		37	
8	G4-S-072611DUP	18		28		38	
9	G6-D-072611DUP	19		29		39	
10	PZ-2-072611MS	20		30		40	

Notes:

LDC #: 26335B36

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Parameter
1-5	pH TDS Cl ~~K~~ NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 WAD CN Free CN TSS P
~~Qc~~	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 ~~F by SM4500~~
QC-6	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 WAD CN
~~7~~	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
8	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 WAD CN TSS
9	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 TSS
10	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
11	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
12	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Free CN
13	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Free CN
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
1,3-5	pH TDS Cl F 300.0 NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
2	pH TDS Cl F SM4500 NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

LDC #: 26339B6

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Reviewer: CR
2nd reviewer: [illegible]

All circled dates have exceeded the technical holding time.
Y N N/A Were all samples preserved as applicable to each method ?
Y N N/A Were all cooler temperatures within validation criteria?

Method:		SM4500-F-C					
Parameters:		F					
Technical holding time:		28 days					
Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
2	7/26/11	11/1/11	(98 days)				J/R/A

LDC #: 26339B6

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: Inorganics, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were blank analyses performed as required? If no, please see qualifications below.
Y N N/A Were any activities in the blanks greater than the minimum detectable activity? If yes, please see qualifications below.

Conc. units: mg/L **Associated Samples:** All

Analyte	Blank ID	Blank ID	Blank Action Limit											
	PB	ICB/CCB (ug/L)		2	3	4	5							
Free CN		4.70	0.0235	0.00400	0.00490	0.00490	0.00520							
Phosphorus		0.00900 mg/L	0.45	0.180										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 26339B6

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 6 of 1
Reviewer: OL
2nd Reviewer: L

METHOD: Inorganics, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were blank analyses performed as required? If no, please see qualifications below.
Y N N/A Were any activities in the blanks greater than the minimum detectable activity? If yes, please see qualifications below.

Conc. units: mg/L **Associated Samples:** 2

Analyte	Blank ID	Blank ID	Blank Action Limit										
	PB	ICB/CCB (mg/L)		No Qualifiers									
F (SM4500-F-C)	0.0370	0.0360	0.185										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 26339B6

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: OR
2nd Reviewer: KA

METHOD: Inorganics, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125 (85-115% for Method 300.0)? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
		~~10~~	~~W~~	~~CN~~	~~84~~ OR		
		12	W	CN	73	5	J/UJ/A

Comments:

SDG: A11G328

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G6-D-072611	A11G328-02	Fluoride	11/1/2011	0.484	Yes	Y		J	1	0.100	0.100	mg/L

LDC Report# 26339C4

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	July 27, 2011
LDC Report Date:	November 17, 2011
Matrix:	Water
Parameters:	Metals
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11G364

Sample Identification

MBT-072711-15
MBT-072711-16
MBT-072711-17
MBT-072711-18

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 200.8 for Metals. The metals analyzed were Arsenic, Calcium, Chromium, Copper, Magnesium, Nickel, and Sodium.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Chromium Calcium	0.311 ug/L 36.6 ug/L	All samples in SDG A11G364

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
MBT-072711-17	Chromium	0.967 ug/L	0.967U ug/L
MBT-072711-18	Chromium	1.03 ug/L	1.03U ug/L

V. ICP Interference Check Sample (ICS) Analysis

ICP Interference check sample analysis was not required by the methods.

VI. Matrix Spike Analysis

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this method.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to method blank contamination problems, chromium results were qualified as not detected in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Based upon the Level III data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Metals - Data Qualification Summary - SDG A11G364

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Metals - Laboratory Blank Data Qualification Summary - SDG A11G364

SDG	Sample	Analyte	Modified Final Concentration	A or P
A11G364	MBT-072711-17	Chromium	0.967 ug/L	A
A11G364	MBT-072711-18	Chromium	1.03 ug/L	A

LDC #: 26339C4

SDG #: A11G364

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 6-13-11

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: Dissolved Metals (EPA Method 200.8)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/27/11
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	~~A~~ N	not required
VI.	Matrix Spike Analysis	N	Client specified
VII.	Duplicate Sample Analysis	N	↓
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	Not utilized
XI.	ICP Serial Dilution	N	Not performed
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	MBT-072711-15	11		21		31	
2	MBT-072711-16	12		22		32	
3	MBT-072711-17	13		23		33	
4	MBT-072711-18	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

DC #: [illegible]

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

ll circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-4	Aq	Al, Sb, **As**, Ba, Be, Cd, **Ca**, **Cr**, Co, **Cu**, Fe, Pb, **Mg**, Mn, Hg, **Ni**, K, Se, Ag, **Na**, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,

		Analysis Method
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
ICP-MS		Al, Sb, **As**, Ba, Be, Cd, **Ca**, **Cr**, Co, **Cu**, Fe, Pb, **Mg**, Mn, Hg, **Ni**, K, Se, Ag, **Na**, Tl, V, Zn, Mo, B, Si, CN⁻,
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,

Comments: . Mercury by CVAA if performed

LDC #: 26339C4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)
Sample Concentration units, unless otherwise noted: ug/L

Soil preparation factor applied: NA
Associated Samples: All

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (mg/L)	Action Limit	3	4								
Cr		0.311		1.555	0.967	1.03								
Ca		36.6		183										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC Report# 26339C6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	July 27, 2011
LDC Report Date:	November 17, 2011
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11G364

Sample Identification

MBT-072711-15
MBT-072711-16
MBT-072711-17
MBT-072711-18
MBT-072711-15MS
MBT-072711-15DUP

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Chloride, Fluoride, and Sulfate, EPA Method 335.4 for Total Cyanide, Standard Method 4500-CN for Weak Acid Dissociable Cyanide, Standard Method 4500-F-C for Fluoride, and ASTM D4282 for Free Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
MBT-072711-17 MBT-072711-18	Fluoride (SM4500-F-C)	97 days	28 days	J (all detects) R (all non-detects)	A

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Fluoride (SM4500-F-C)	0.0370 mg/L	MBT-072711-17 MBT-072711-18
ICB/CCB	Fluoride (SM4500-F-C)	0.0360 mg/L	MBT-072711-17
ICB/CCB	Fluoride (SM4500-F-C)	0.0400 mg/L	MBT-072711-18

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to analysis holding time problems, fluoride results were qualified as estimated two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Level III data validation all other results are considered valid and usable for all purposes.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A11G364

SDG	Sample	Analyte	Flag	A or P	Reason
A11G364	MBT-072711-17 MBT-072711-18	Fluoride (SM4500-F-C)	J (all detects) R (all non-detects)	A	Technical holding time

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A11G364

No Sample Data Qualified in this SDG

LDC #: 26339C6

SDG #: A11G364

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10-13-11

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: Chloride, Fluoride, Sulfate (EPA Method 300.0), Total Cyanide (EPA Method 335.4), ~~Amenable Cyanide~~ Cyanide-Weak Acid dissociable (SM4500-CN), Free Cyanide (ASTM D 4282) F (SM4500-F-C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	~~A~~ SW	Sampling dates: 7/27/11
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	~~A~~ SW	
V	Matrix Spike/Matrix Spike Duplicates	~~A~~	MS
VI.	Duplicates	A	DUP
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	~~A~~ ~~A~~ SW	
X.	Field duplicates	N	
XI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	MBT-072711-15	11		21		31	
2	MBT-072711-16	12		22		32	
3	MBT-072711-17	13		23		33	
4	MBT-072711-18	14		24		34	
5	MBT-072711-15MS	15		25		35	
6	MBT-072711-15DUP	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

DC #: 2653966

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter
1-4		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 WAD CN / Free CN
~~3,4~~		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ~~F by SM4500~~
QC: 5,6		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 Free CN
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
1,2		pH TDS Cl F 300.0 NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
3,4		pH TDS Cl F SM4500 NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4

Comments:

METHODS.6

LDC #: 26339C6

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page: 1 of
Reviewer: 02
2nd reviewer: ✓

All circled dates have exceeded the technical holding time.
Y N N/A Were all samples preserved as applicable to each method ?
Y N N/A Were all cooler temperatures within validation criteria?

Method:		SM4500-F-C					
Parameters:		F					
Technical holding time:		28 days					
Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
3,4	7/27/11	11/1/11 (97 days)					J/R/A

HT.6

LDC #: 26339C6

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer: CC
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were blank analyses performed as required? If no, please see qualifications below.
Y N N/A Were any activities in the blanks greater than the minimum detectable activity? If yes, please see qualifications below.

Conc. units: mg/L **Associated Samples:** 3, 4

Analyte	Blank ID	Blank ID	Blank Action Limit										
	PB	ICB/CCB (mg/L)		No Qualifiers									
F (SM4500-F-C)	0.0370		0.185										

Conc. units: mg/L **Associated Samples:** 3

Analyte	Blank ID	Blank ID	Blank Action Limit										
	PB	ICB/CCB (mg/L)		No Qualifiers									
F (SM4500-F-C)		0.0360	0.18										

Conc. units: mg/L **Associated Samples:** 4

Analyte	Blank ID	Blank ID	Blank Action Limit										
	PB	ICB/CCB (mg/L)		No Qualifiers									
F (SM4500-F-C)		0.0400	0.2										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

SDG: A11G364

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBT-072711-17	A11G364-03	Fluoride	11/1/2011	0.223		Yes	Y		J	1	0.100	0.100	mg/L
MBT-072711-18	A11G364-04	Fluoride	11/1/2011	0.761		Yes	Y		J	1	0.100	0.100	mg/L

LDC Report# 26339D2b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	July 27, 2011
LDC Report Date:	October 17, 2011
Matrix:	Water
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11G365

Sample Identification

PZ-3-072711
PZ-4-072711
RL-4S-072711

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
1107432-LCS/D (All samples in SDG A11G365)	Naphthalene	-	49 (50-150)	-	J (all detects) UJ (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to LCSD %R, data were qualified as estimated in three samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Level III data validation all other results are considered valid and usable for all purposes.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A11G365

SDG	Sample	Compound	Flag	A or P	Reason
A11G365	PZ-3-072711 PZ-4-072711 RL-4S-072711	Naphthalene	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A11G365

No Sample Data Qualified in this SDG

LDC #: 26339D2b

SDG #: A11G365

Laboratory: APEX laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/12/11

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/27/11
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20, r^2
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	SW	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	~~SW~~ N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

+ 1	PZ-3-072711	− 11	1107432-MB	21		31	
2	PZ-4-072711	12		22		32	
3	RL-4S-072711	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1- Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 26339D2b

VALIDATION FINDINGS WORKSHEET
Surrogate Recovery

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were percent recoveries (%R) for surrogates within QC limits?
Y N N/A If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?
Y N N/A If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

#	Date	Sample ID	Surrogate	%R (Limits)	Qualifications
		2	FBP	33 (45-120)	no qual
				( )	
				( )	
		1107432 - MB	↓	28 (↓)	no qual
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

* QC limits are advisory	QC Limits (Soil)	QC Limits (Water)		QC Limits (Soil)	QC Limits (Water)
S1 (NBZ) = Nitrobenzene-d5	23-120	35-114	S5 (2FP)= 2-Fluorophenol	25-121	21-100
S2 (FBP) = 2-Fluorobiphenyl	30-115	43-116	S6 (TBP) = 2,4,6-Tribromophenol	19-122	10-123
S3 (TPH) = Terphenyl-d14	18-137	33-141	S7 (2CP) = 2-Chlorophenol-d4	20-130*	33-110*
S4 (PHL) = Phenol-d5	24-113	10-94	S8 (DCB) = 1,2-Dichlorobenzene-d4	20-130*	16-110*

LDC #: 26739D2h

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?

Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		1107432-lcs/D	S	* ( )	49 (50-150)	( )	All	J/UJ/P
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

LDC Report# 26339D4

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	July 27, 2011
LDC Report Date:	November 17, 2011
Matrix:	Water
Parameters:	Metals
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11G365

Sample Identification

PZ-3-072711
PZ-4-072711
PZ-7-072711
PZ-6-072711
PZ-7-072711MS

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Methods 200.7 and 200.8 for Metals. The metals analyzed were Arsenic, Calcium, Lead, Magnesium, Manganese, Potassium, Sodium, and Silicon.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Aluminum Calcium	4.71 ug/L 26.6 ug/L 34.6 ok	All samples in SDG A11G365
ICB/CCB	Sodium Silicon	21.4 mg/L 0.108 mg/L	All samples in SDG A11G365

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

V. ICP Interference Check Sample (ICS) Analysis

ICP Interference check sample analysis was not required by the methods.

VI. Matrix Spike Analysis

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this method.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Metals - Data Qualification Summary - SDG A11G365

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Metals - Laboratory Blank Data Qualification Summary - SDG A11G365

No Sample Data Qualified in this SDG

LDC #: 26339D4

SDG #: A11G365

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10-13-11

Page: 1 of 1

Reviewer: CC

2nd Reviewer: [illegible]

METHOD: Dissolved Metals (EPA Method 200.7/200.8)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/27/11
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	~~A~~ N	not required
VI.	Matrix Spike Analysis	A	MS
VII.	Duplicate Sample Analysis	A	Dup (SDG: A11G328)
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	Not utilized
XI.	ICP Serial Dilution	N	Not performed
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	PZ-3-072711	11		21		31	
2	PZ-4-072711	12		22		32	
3	PZ-7-072711	13		23		33	
4	PZ-6-072711	14		24		34	
5	PZ-7-072711MS	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

DC #: 60294

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: CR
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-4		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
QCS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,

Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,

Comments: Mercury by CVAA if performed

LDC #: 26339D4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)
Sample Concentration units, unless otherwise noted: ug/L

Soil preparation factor applied: ~~NA~~ 1-1 X
Associated Samples: All

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (mg/L)	Action Limit	No Qualifiers									
Al		4.71		23.55										
Ca		36.6		183										
Na			21.4	~~107~~ 118										
Si			0.108	0.54										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	July 27, 2011
LDC Report Date:	October 17, 2011
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11G365

Sample Identification

PZ-3-072711
PZ-4-072711
PZ-7-072711
PZ-6-072711
PZ-4-072711MS
PZ-4-072711DUP
PZ-6-072711MS
PZ-6-072711DUP

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard method 2320B for Alkalinity, EPA Method 300.0 for Chloride, Fluoride, and Sulfate, EPA Method 335.4 for Total Cyanide, Standard Method 4500-CN for Weak Acid Dissociable Cyanide, ASTM D4282 for Free Cyanide, Standard Method 4500 P B for Total Phosphorus, Standard Method 2540C for Total Dissolved Solids, and Standard Method 2540D for Total Suspended Solids.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
ICB/CCB	Phosphorus	0.00900 mg/L	All samples in SDG A11G365

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A11G365

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A11G365

No Sample Data Qualified in this SDG

LDC #: 26339D6
SDG #: A11G365
Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 10/31/11
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Alkalinity (SM2320 B), Chloride, Fluoride, Sulfate (EPA Method 300.0), Total Cyanide (EPA Method 335.4), ~~Amenable Cyanide~~-Cyanide-Weak Acid dissociable (SM4500-CN), Free Cyanide (ASTM D 4282), Total Phosphorous (SM4500 P B), Total Dissolved Solids (SM2540 C), Total Suspended Solids (SM2540 D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/27/11
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	SW	
V	Matrix Spike/Matrix Spike Duplicates	A	MS
VI.	Duplicates	A	RP
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	PZ-3-072711	11		21		31	
2	PZ-4-072711	12		22		32	
3	PZ-7-072711	13		23		33	
4	PZ-6-072711	14		24		34	
5	PZ-4-072711MS	15		25		35	
~~6~~	~~PZ-4-072711MSD~~	16		26		36	
7	PZ-4-072711DUP	17		27		37	
8	PZ-6-072711MS	18		28		38	
9	PZ-6-072711DUP	19		29		39	
10		20		30		40	

Notes:

LDC #: 26339D6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter
1-4		pH **TDS** **Cl** **F** NO_3 NO_2 **SO_4** PO_4 **ALK** **CN^-** NH_3 TKN TOC CR^{6+} ClO_4 **WAD CN** **Free CN** **TSS** **P**
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
QC: 5		pH TDS **Cl** **F** NO_3 NO_2 **SO_4** PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
6		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
7		pH TDS **Cl** **F** NO_3 NO_2 **SO_4** PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
8		pH TDS **Cl** **F** NO_3 NO_2 **SO_4** PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
9		pH TDS **Cl** **F** NO_3 NO_2 **SO_4** PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4

Comments:

LDC #: 26339D6

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: CC
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were blank analyses performed as required? If no, please see qualifications below.
Y N N/A Were any activities in the blanks greater than the minimum detectable activity? If yes, please see qualifications below.

Conc. units: mg/L **Associated Samples:** All

Analyte	Blank ID	Blank ID	Blank Action Limit										
	PB	ICB/CCB (mg/L)		No Qualifiers									
Phosphorus		0.00900	0.45										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	July 28, 2011
LDC Report Date:	October 17, 2011
Matrix:	Water
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11G386

Sample Identification

PZ-5-072811
G6-S-072811
G6-D-072811
PZ-1-072811
PZ-2-072811

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Affected Compound	Flag	A or P
8/3/11	Benzo(b)fluoranthene	21.5	All samples in SDG A11G386	Benzo(b)fluoranthene Benzo(b+k)fluoranthenes	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
1108044-MB	8/2/11	Acenaphthylene ✓	0.0142 ug/L ✓	All samples in SDG A11G386

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
G6-D-072811	Acenaphthylene	0.0122 ug/L	0.0122U ug/L ✓
PZ-1-072811 (5X)	Acenaphthylene	0.122 ug/L	0.122U ug/L ✓
PZ-2-072811 (2X)	Acenaphthylene	0.0504 ug/L	0.0504U ug/L ✓

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
1108044LCS/D (All samples in SDG A11G386)	1-Methylnaphthalene 2-Methylnaphthalene Naphthalene	49 (50-150) 49 (50-150) 45 (50-150)	- - 47 (50-150)	- - -	J (all detects) UJ (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria.

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to calibration %D and LCS/LCSD %R, data were qualified as estimated in five samples.

Due to method blank contamination problems, acenaphthylene results were qualified as not detected in three samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Level III data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A11G386

SDG	Sample	Compound	Flag	A or P	Reason
A11G386	PZ-5-072811 G6-S-072811 G6-D-072811	Benzo(b)fluoranthene	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
A11G386	PZ-1-072811 PZ-2-072811	Benzo(b+k)fluoranthenes	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
A11G386	PZ-5-072811 G6-S-072811 G6-D-072811 PZ-1-072811 PZ-2-072811	1-Methylnaphthalene 2-Methylnaphthalene Naphthalene	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A11G386

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
A11G386	G6-D-072811	Acenaphthylene	0.0122U ug/L	A
A11G386	PZ-1-072811 (5X)	Acenaphthylene	0.122U ug/L	A
A11G386	PZ-2-072811 (2X)	Acenaphthylene	0.0504U ug/L	A

LDC #: 26339E2b

SDG #: A11G386

Laboratory: APEX laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10/17/11

Page: 1 of 1

Reviewer: PR

2nd Reviewer: TL

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/28/11
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤20, r^2
IV.	Continuing calibration/ICV	SW	ICV/CCV ≤ 20
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	SW	LCS ID
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	PZ-5-072811	11	110804-MB	21		31	
2	G6-S-072811	12		22		32	
3	G6-D-072811	13		23		33	
4	PZ-1-072811	14		24		34	
5	PZ-2-072811	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1- Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 26339E2b

VALIDATION FINDINGS WORKSHEET

Continuing Calibration

Page: 1 of 1
Reviewer: FT
2nd Reviewer: R

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?

(Y) N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?

Y (N) N/A Were all %D and RRFs within the validation criteria of ≤~~25~~ 20 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤~~25.0%~~ 20)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	8/3/11 9:35	CCV	GGG	21.5		All	J/UJ/A

CONCAL.2S

LDC #: 26339E2b

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270D- SIM)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a method blank analyzed for each matrix?
Y N N/A Was a method blank analyzed for each concentration preparation level?
Y N N/A Was a method blank associated with every sample?
Y N N/A Was the blank contaminated? If yes, please see qualification below.

Blank extraction date: 8/2/11 **Blank analysis date:** 8/3/11
Conc. units: ug/L Associated Samples: All

Compound	Blank ID	5X		Sample Identification					
	1108044-MB			3	4 (5X)	5 (2X)			
DD	0.0142	0.071		0.0122 / ~~0.0187~~ U	0.122 / U	0.0504 / U			

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 26339F2b

VALIDATION FINDINGS WORKSHEET
Surrogate Recovery

Page: 1 of 1
Reviewer: FT
2nd Reviewer: K

METHOD: GC/MS BNA (EPA SW 846 Method 8270D - SIM)

Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were percent recoveries (%R) for surrogates within QC limits?
Y N N/A If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?
Y N N/A If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

#	Date	Sample ID	Surrogate	%R (Limits)	Qualifications
		1	FBP	23 (25-120)	no qual
				( )	
		5	↓	23 (↓)	no qual
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
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				( )	
				( )	
				( )	
				( )	
				( )	

* QC limits are advisory	QC Limits (Soil)	QC Limits (Water)		QC Limits (Soil)	QC Limits (Water)
S1 (NBZ) = Nitrobenzene-d5	23-120	35-114	S5 (2FP)= 2-Fluorophenol	25-121	21-100
S2 (FBP) = 2-Fluorobiphenyl	30-115	43-116	S6 (TBP) = 2,4,6-Tribromophenol	19-122	10-123
S3 (TPH) = Terphenyl-d14	18-137	33-141	S7 (2CP) = 2-Chlorophenol-d4	20-130*	33-110*
S4 (PHL) = Phenol-d5	24-113	10-94	S8 (DCB) = 1,2-Dichlorobenzene-d4	20-130*	16-110*

LDC #: 26339E26

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270D - SIM)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?

Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		1108044 LCS/LCSD	~~FIT~~	~~49 (50-150)~~	( )	( )	All	J/UJ/P
			~~W~~	~~49~~ ( )	( )	( )	↓	↓
			S	45 ( )	47 (50-150)	( )	↓	↓
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

LDC Report# 26339E4

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	July 28, 2011
LDC Report Date:	November 17, 2011
Matrix:	Water
Parameters:	Metals
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11G386

Sample Identification

G7-D-072811
G4-D-072811
G3-S-072811
G3-D-072811
G5-D-072811
G5-S-072811
G3-D-072811MS
G3-D-072811DUP
G5-S-072811MS
G5-S-072811DUP

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Methods 200.7 and 200.8 for Metals. The metals analyzed were Arsenic, Calcium, Lead, Magnesium, Manganese, Potassium, Sodium, and Silicon.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Sodium	36.0 ug/L	All samples in SDG A11G386
ICB/CCB	Sodium	22.6 mg/L	All samples in SDG A11G386

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

V. ICP Interference Check Sample (ICS) Analysis

ICP Interference check sample analysis was not required by the methods.

VI. Matrix Spike Analysis

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this method.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Metals - Data Qualification Summary - SDG A11G386

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Metals - Laboratory Blank Data Qualification Summary - SDG A11G386

No Sample Data Qualified in this SDG

LDC #: 26339E4

SDG #: A11G386

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 10-14-11

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: Dissolved Metals (EPA Method 200.7/200.8)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/28/11
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	~~A~~ N	Not required
VI.	Matrix Spike Analysis	A	MS
VII.	Duplicate Sample Analysis	A	Dup
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	Not utilized
XI.	ICP Serial Dilution	N	Not performed
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	G7-D-072811	11		21		31	
2	G4-D-072811	12		22		32	
3	G3-S-072811	13		23		33	
4	G3-D-072811	14		24		34	
5	G5-D-072811	15		25		35	
6	G5-S-072811	16		26		36	
7	G3-D-072811MS	17		27		37	
8	G3-D-072811DUP	18		28		38	
9	G5-S-072811MS	19		29		39	
10	G5-S-072811DUP	20		30		40	

Notes:

LDC #: LO1/lc1

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer: ✓

ll circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-6		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
QC7,8		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
9,10		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,

		Analysis Method
CP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
CP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,
EAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN^-,

omments: . Mercury by CVAA if performed

LDC #: 26339E4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)
Soil preparation factor applied: ~~NA~~ 1 X
Sample Concentration units, unless otherwise noted: ug/L
Associated Samples: All

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (mg/L)	Action Limit	No Qualifiers									
Na		36.0		180										

Sample Concentration units, unless otherwise noted: ug/L
Associated Samples: 2, 6

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Limit	No Qualifiers									
Na			22.6	~~130~~ 113										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC Report# 26339E6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Millennium Bulk Terminals

Collection Date: July 28, 2011

LDC Report Date: November 17, 2011

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: APEX Laboratories, LLC

Sample Delivery Group (SDG): A11G386

Sample Identification

G7-D-072811
G4-D-072811
G3-S-072811
G3-D-072811
G5-D-072811
G5-S-072811
G7-D-072811MS
G7-D-072811DUP
G5-S-072811MS
G5-S-072811DUP

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard method 2320B for Alkalinity, EPA Method 300.0 for Chloride, Fluoride, and Sulfate, EPA Method 335.4 for Total Cyanide, Standard method 4500-CN for Cyanide-Weak Acid Dissociable, ASTM D4282 for Free Cyanide, Standard Method 4500 P B for Total Phosphorus, Standard Method 2540C for Total Dissolved Solids, Standard Method 4500-F-C for Fluoride, and Standard Method 2540D for Total Suspended Solids.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
G7-D-072811 G4-D-072811 G5-D-072811 G5-S-072811	Fluoride (SM4500-F-C)	96 days	28 days	J (all detects) R (all non-detects)	A

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Fluoride (SM4500-F-C)	0.0370 mg/L	G7-D-072811 G4-D-072811 G5-D-072811 G5-S-072811
ICB/CCB	Fluoride (SM4500-F-C)	0.0400 mg/L	G7-D-072811 G4-D-072811 G5-D-072811 G5-S-072811

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
G5-D-072811	Fluoride (SM4500-F-C)	0.184 mg/L	0.184U mg/L
G5-S-072811	Fluoride (SM4500-F-C)	0.153 mg/L	0.153U mg/L

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to analysis holding time problems, fluoride results were qualified as estimated four samples.

Due to method blank contamination problems, fluoride results were qualified as not detected in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Level III data validation all other results are considered valid and usable for all purposes.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A11G386

SDG	Sample	Analyte	Flag	A or P	Reason
A11G386	G7-D-072811 G4-D-072811 G5-D-072811 G5-S-072811	Fluoride (SM4500-F-C)	J (all detects) R (all non-detects)	A	Technical holding time

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A11G386

SDG	Sample	Analyte	Modified Final Concentration	A or P
A11G386	G5-D-072811	Fluoride (SM4500-F-C)	0.184U mg/L	A
A11G386	G5-S-072811	Fluoride (SM4500-F-C)	0.153U mg/L	A

LDC #: 26339E6
SDG #: A11G386
Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 10-31-11
Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: Alkalinity (SM2320 B), Chloride, Fluoride, Sulfate (EPA Method 300.0), Total Cyanide (EPA Method 335.4), ~~Amenable Cyanide~~ Cyanide-Weak Acid dissociable (SM4500-CN), Free Cyanide (ASTM D 4282), Total Phosphorous (SM4500 P B), Total Dissolved Solids (SM2540 C), Total Suspended Solids (SM2540 D) F (SM4500-F-C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	~~A~~ SW	Sampling dates: 7/28/11
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	~~SW A~~ SW	
V	Matrix Spike/Matrix Spike Duplicates	A	MS
VI.	Duplicates	A	DUP
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	G7-D-072811	11	G5-S-072811DUP	21		31	
2	G4-D-072811	12		22		32	
3	G3-S-072811	13		23		33	
4	G3-D-072811	14		24		34	
5	G5-D-072811	15		25		35	
6	G5-S-072811	16		26		36	
7	G7-D-072811MS	17		27		37	
8	~~G7-D-072811MSD~~	18		28		38	
9	G7-D-072811DUP	19		29		39	
10	G5-S-072811MS	20		30		40	

Notes:

LDC #: 26359E6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Parameter
1-6	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 WAD CN Free CN TSS P
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
QC: 7	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
9	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
10	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 WAD CN Free CN
11	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 WAD CN Free CN
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
1,2,5,6	pH TDS Cl F SM4500 NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
3,4	pH TDS Cl F 300.0 NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

LDC #: 2635966

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Reviewer: OR
2nd reviewer: [illegible]

All circled dates have exceeded the technical holding time.
Y N N/A Were all samples preserved as applicable to each method ?
Y N N/A Were all cooler temperatures within validation criteria?

Method:		SM4500-FC					
Parameters:		F					
Technical holding time:		28days					
Sample ID	**Sampling date**	**Analysis date**	**Analysis date**	**Analysis date**	**Analysis date**	**Analysis date**	**Qualifier**
1,2,5,6	7/28/11	11/1/11	(96days)				J/R/A

LDC #: 26339E6

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: OC
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were blank analyses performed as required? If no, please see qualifications below.
Y N N/A Were any activities in the blanks greater than the minimum detectable activity? If yes, please see qualifications below.

Conc. units: mg/L **Associated Samples:** 1, 2, 5, 6

Analyte	Blank ID	Blank ID	Blank Action Limit											
	PB	ICB/CCB (mg/L)		5	6									
F (SM4500-F-C)	0.0370	0.0400	0.2	0.184	0.153									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

SDG: A11G386

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G4-D-072811	A11G386-02	Fluoride	11/1/2011	0.269	Yes	Y		J	1	0.100	0.100	mg/L
G5-D-072811	A11G386-05	Fluoride	11/1/2011	0.184	Yes	N		UJ	1,7	0.100	0.100	mg/L
G5-S-072811	A11G386-06	Fluoride	11/1/2011	0.153	Yes	N		UJ	1,7	0.100	0.100	mg/L
G7-D-072811	A11G386-01	Fluoride	11/1/2011	0.921	Yes	Y		J	1	0.100	0.100	mg/L

Millennium Bulk Terminals - LDC 26339

SDG: A11G327

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1107397-BLK1	1107397-BLK1	Cyanide, free	7/27/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
1107397-DUP1	1107397-DUP1	Cyanide, free	7/27/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
MBT-072611-08	A11G327-01	Cyanide, free	7/27/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
MBT-072611-09	A11G327-02	Cyanide, free	7/27/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
MBT-072611-10	A11G327-03	Cyanide, free	7/27/2011	0.0022		Yes	Y	J	J	8	0.00500	0.00200	mg/L
MBT-072611-11	A11G327-04	Cyanide, free	7/27/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
MBT-072611-12	A11G327-05	Cyanide, free	7/27/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
MBT-072611-13	A11G327-06	Cyanide, free	7/27/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
MBT-072611-14	A11G327-07	Cyanide, free	7/27/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1108009-BLK1	1108009-BLK1	Sodium	8/2/2011	22.5		Yes	Y	J			100	20.0	ug/L
1108009-BLK1	1108009-BLK1	Copper	8/2/2011	4		Yes	N	U			4.00	0.300	ug/L
1108009-BLK1	1108009-BLK1	Chromium	8/2/2011	0.4		Yes	Y	J			2.00	0.200	ug/L
1108009-BLK1	1108009-BLK1	Arsenic	8/2/2011	2		Yes	N	U			2.00	0.500	ug/L
1108009-BLK1	1108009-BLK1	Calcium	8/2/2011	43.1		Yes	Y	J			100	25.0	ug/L
1108009-BLK1	1108009-BLK1	Magnesium	8/2/2011	50		Yes	N	U			50.0	10.0	ug/L
1108009-BLK1	1108009-BLK1	Nickel	8/2/2011	2		Yes	N	U			2.00	0.300	ug/L
1108043-BLK1	1108043-BLK1	Copper	8/2/2011	4		Yes	N	U			4.00	0.300	ug/L
1108043-BLK1	1108043-BLK1	Magnesium	8/2/2011	50		Yes	N	U			50.0	10.0	ug/L
1108043-BLK1	1108043-BLK1	Chromium	8/2/2011	0.367		Yes	Y	J			2.00	0.200	ug/L
1108043-BLK1	1108043-BLK1	Arsenic	8/2/2011	2		Yes	N	U			2.00	0.500	ug/L
1108043-BLK1	1108043-BLK1	Sodium	8/2/2011	100		Yes	N	U			100	20.0	ug/L
1108043-BLK1	1108043-BLK1	Nickel	8/2/2011	2		Yes	N	U			2.00	0.300	ug/L

SDG: A11G327

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1108043-BLK1	1108043-BLK1	Calcium	8/2/2011	29.9	Yes	Y	J			100	25.0	ug/L
1108043-DUP1	1108043-DUP1	Chromium	8/2/2011	0.744	Yes	Y	J			2.00	0.200	ug/L
1108043-DUP1	1108043-DUP1	Copper	8/2/2011	4	Yes	N	U			4.00	0.300	ug/L
1108043-DUP1	1108043-DUP1	Arsenic	8/2/2011	1.41	Yes	Y	J			2.00	0.500	ug/L
1108043-DUP1	1108043-DUP1	Nickel	8/2/2011	0.667	Yes	Y	J			2.00	0.300	ug/L
1108043-DUP2	1108043-DUP2	Calcium	8/3/2011	43300	Yes	Y	D			1000	250	ug/L
1108043-DUP2	1108043-DUP2	Sodium	8/3/2011	23300	Yes	Y	D			1000	200	ug/L
1108043-DUP2	1108043-DUP2	Magnesium	8/3/2011	21400	Yes	Y	D			500	100	ug/L
MBT-072611-08	A11G327-01	Chromium	8/2/2011	1.21	Yes	N	J	U	7	2.00	0.200	ug/L
MBT-072611-08	A11G327-01	Copper	8/2/2011	4	Yes	N	U			4.00	0.300	ug/L
MBT-072611-08	A11G327-01	Arsenic	8/2/2011	1.37	Yes	Y	J			2.00	0.500	ug/L
MBT-072611-08	A11G327-01	Nickel	8/2/2011	0.9	Yes	Y	J			2.00	0.300	ug/L
MBT-072611-08	A11G327-01	Sodium	8/3/2011	23900	Yes	Y	D			2000	400	ug/L
MBT-072611-08	A11G327-01	Calcium	8/3/2011	111000	Yes	Y	D			2000	500	ug/L
MBT-072611-08	A11G327-01	Magnesium	8/3/2011	58900	Yes	Y	D			1000	200	ug/L
MBT-072611-09	A11G327-02	Nickel	8/2/2011	2	Yes	Y				2.00	0.300	ug/L
MBT-072611-09	A11G327-02	Arsenic	8/2/2011	3.01	Yes	Y				2.00	0.500	ug/L
MBT-072611-09	A11G327-02	Chromium	8/2/2011	0.789	Yes	N	J	U	7	2.00	0.200	ug/L
MBT-072611-09	A11G327-02	Copper	8/2/2011	1.26	Yes	Y	J			4.00	0.300	ug/L
MBT-072611-09	A11G327-02	Calcium	8/2/2011	22900	Yes	Y	D			1000	250	ug/L
MBT-072611-09	A11G327-02	Magnesium	8/2/2011	10700	Yes	Y	D			500	100	ug/L
MBT-072611-09	A11G327-02	Sodium	8/2/2011	56900	Yes	Y	D			1000	200	ug/L
MBT-072611-10	A11G327-03	Magnesium	8/2/2011	9910	Yes	Y				50.0	10.0	ug/L
MBT-072611-10	A11G327-03	Nickel	8/2/2011	1.22	Yes	Y	J			2.00	0.300	ug/L
MBT-072611-10	A11G327-03	Arsenic	8/2/2011	1.79	Yes	Y	J			2.00	0.500	ug/L

SDG: A11G327

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBT-072611-10	A11G327-03	Copper	8/2/2011	0.767		Yes	Y	J			4.00	0.300	ug/L
MBT-072611-10	A11G327-03	Chromium	8/2/2011	0.556		Yes	N	J	U	7	2.00	0.200	ug/L
MBT-072611-10	A11G327-03	Calcium	8/2/2011	21500		Yes	Y	D			500	125	ug/L
MBT-072611-10	A11G327-03	Sodium	8/2/2011	32800		Yes	Y	D			500	100	ug/L
MBT-072611-11	A11G327-04	Nickel	8/2/2011	2.71		Yes	Y				2.00	0.300	ug/L
MBT-072611-11	A11G327-04	Chromium	8/2/2011	2.64		Yes	Y				2.00	0.200	ug/L
MBT-072611-11	A11G327-04	Arsenic	8/2/2011	2.69		Yes	Y				2.00	0.500	ug/L
MBT-072611-11	A11G327-04	Copper	8/2/2011	0.322		Yes	Y	J			4.00	0.300	ug/L
MBT-072611-11	A11G327-04	Calcium	8/3/2011	73600		Yes	Y	D			5000	1250	ug/L
MBT-072611-11	A11G327-04	Magnesium	8/3/2011	39700		Yes	Y	D			2500	500	ug/L
MBT-072611-11	A11G327-04	Sodium	8/3/2011	284000		Yes	Y	D			5000	1000	ug/L
MBT-072611-12	A11G327-05	Nickel	8/2/2011	1.77		Yes	Y	J			2.00	0.300	ug/L
MBT-072611-12	A11G327-05	Copper	8/2/2011	4		Yes	N	U			4.00	0.300	ug/L
MBT-072611-12	A11G327-05	Chromium	8/2/2011	1.47		Yes	N	J	U	7	2.00	0.200	ug/L
MBT-072611-12	A11G327-05	Arsenic	8/2/2011	10.4		Yes	Y				2.00	0.500	ug/L
MBT-072611-12	A11G327-05	Sodium	8/3/2011	253000		Yes	Y	D			5000	1000	ug/L
MBT-072611-12	A11G327-05	Calcium	8/3/2011	58600		Yes	Y	D			5000	1250	ug/L
MBT-072611-12	A11G327-05	Magnesium	8/3/2011	32600		Yes	Y	D			2500	500	ug/L
MBT-072611-13	A11G327-06	Calcium	8/2/2011	7860		Yes	Y				100	25.0	ug/L
MBT-072611-13	A11G327-06	Copper	8/2/2011	11.6		Yes	Y				4.00	0.300	ug/L
MBT-072611-13	A11G327-06	Chromium	8/2/2011	0.989		Yes	N	J	U	7	2.00	0.200	ug/L
MBT-072611-13	A11G327-06	Arsenic	8/2/2011	1.33		Yes	Y	J			2.00	0.500	ug/L
MBT-072611-13	A11G327-06	Nickel	8/2/2011	4.69		Yes	Y				2.00	0.300	ug/L
MBT-072611-13	A11G327-06	Magnesium	8/2/2011	3690		Yes	Y				50.0	10.0	ug/L
MBT-072611-13	A11G327-06	Sodium	8/3/2011	124000		Yes	Y	D			2000	400	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBT-072611-14	A11G327-07	Nickel	8/2/2011	0.656	Yes	Y	J			2.00	0.300	ug/L
MBT-072611-14	A11G327-07	Arsenic	8/2/2011	1.52	Yes	Y	J			2.00	0.500	ug/L
MBT-072611-14	A11G327-07	Copper	8/2/2011	4	Yes	N	U			4.00	0.300	ug/L
MBT-072611-14	A11G327-07	Chromium	8/2/2011	0.822	Yes	N	J	U	7	2.00	0.200	ug/L
MBT-072611-14	A11G327-07	Calcium	8/3/2011	44300	Yes	Y	D			1000	250	ug/L
MBT-072611-14	A11G327-07	Sodium	8/3/2011	24400	Yes	Y	D			1000	200	ug/L
MBT-072611-14	A11G327-07	Magnesium	8/3/2011	22400	Yes	Y	D			500	100	ug/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1107394-DUP2	1107394-DUP2	Sulfate	7/27/2011	8.98	Yes	Y				1.00	1.00	mg/L
1107394-DUP2	1107394-DUP2	Fluoride	7/27/2011	1	Yes	N	U			1.00	1.00	mg/L
1107394-DUP2	1107394-DUP2	Chloride (total)	7/27/2011	10.1	Yes	Y				1.00	1.00	mg/L
MBT-072611-08	A11G327-01	Chloride (total)	7/27/2011	2.74	Yes	Y				1.00	1.00	mg/L
MBT-072611-08	A11G327-01	Fluoride	7/27/2011	1	Yes	N	U			1.00	1.00	mg/L
MBT-072611-08	A11G327-01	Sulfate	7/27/2011	1	Yes	N	U			1.00	1.00	mg/L
MBT-072611-09	A11G327-02	Sulfate	7/27/2011	3.53	Yes	Y				1.00	1.00	mg/L
MBT-072611-09	A11G327-02	Chloride (total)	7/27/2011	6.55	Yes	Y				1.00	1.00	mg/L
MBT-072611-09	A11G327-02	Fluoride	7/27/2011	2.82	Yes	Y				1.00	1.00	mg/L
MBT-072611-10	A11G327-03	Sulfate	7/27/2011	3.12	Yes	Y				1.00	1.00	mg/L
MBT-072611-10	A11G327-03	Fluoride	7/27/2011	1.43	Yes	Y				1.00	1.00	mg/L
MBT-072611-10	A11G327-03	Chloride (total)	7/27/2011	7.26	Yes	Y				1.00	1.00	mg/L
MBT-072611-11	A11G327-04	Chloride (total)	7/27/2011	28.5	Yes	Y				1.00	1.00	mg/L
MBT-072611-11	A11G327-04	Fluoride	7/27/2011	8.04	Yes	Y				1.00	1.00	mg/L
MBT-072611-11	A11G327-04	Sulfate	7/27/2011	10.4	Yes	Y				1.00	1.00	mg/L
MBT-072611-12	A11G327-05	Sulfate	7/27/2011	1	Yes	N	U			1.00	1.00	mg/L

SDG: A11G327

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBT-072611-12	A11G327-05	Chloride (total)	7/27/2011	14	Yes	Y				1.00	1.00	mg/L
MBT-072611-12	A11G327-05	Fluoride	7/27/2011	6.09	Yes	Y				1.00	1.00	mg/L
MBT-072611-13	A11G327-06	Fluoride	7/27/2011	2.39	Yes	Y				1.00	1.00	mg/L
MBT-072611-13	A11G327-06	Chloride (total)	7/27/2011	7.95	Yes	Y				1.00	1.00	mg/L
MBT-072611-13	A11G327-06RE1	Sulfate	8/1/2011	76.7	Yes	Y				5.00	5.00	mg/L
MBT-072611-14	A11G327-07	Chloride (total)	7/27/2011	10	Yes	Y				1.00	1.00	mg/L
MBT-072611-14	A11G327-07	Fluoride	7/27/2011	1	Yes	N	U			1.00	1.00	mg/L
MBT-072611-14	A11G327-07	Sulfate	7/27/2011	8.98	Yes	Y				1.00	1.00	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBT-072611-08	A11G327-01RE1	Cyanide, total	8/2/2011	0.015	Yes	N	U			0.0150	0.0150	mg/L
MBT-072611-09	A11G327-02	Cyanide, total	8/2/2011	0.0198	Yes	Y				0.00500	0.00500	mg/L
MBT-072611-10	A11G327-03	Cyanide, total	8/2/2011	0.0069	Yes	Y				0.00500	0.00500	mg/L
MBT-072611-11	A11G327-04	Cyanide, total	8/2/2011	0.258	Yes	Y				0.00500	0.00500	mg/L
MBT-072611-12	A11G327-05	Cyanide, total	8/2/2011	0.0422	Yes	Y				0.00500	0.00500	mg/L
MBT-072611-13	A11G327-06	Cyanide, total	8/2/2011	0.0288	Yes	Y				0.00500	0.00500	mg/L
MBT-072611-14	A11G327-07	Cyanide, total	8/2/2011	0.005	Yes	N	U			0.00500	0.00500	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1108045-DUP2	1108045-DUP2	Cyanide, Weak acid dissociable (WAD)	8/2/2011	0.005	Yes	N	U			0.00500	0.00500	mg/L
MBT-072611-08	A11G327-01RE1	Cyanide, Weak acid dissociable (WAD)	8/2/2011	0.015	Yes	N	U			0.0150	0.0150	mg/L
MBT-072611-09	A11G327-02	Cyanide, Weak acid dissociable (WAD)	8/2/2011	0.0063	Yes	Y				0.00500	0.00500	mg/L
MBT-072611-10	A11G327-03	Cyanide, Weak acid dissociable (WAD)	8/2/2011	0.005	Yes	N	U			0.00500	0.00500	mg/L
MBT-072611-11	A11G327-04	Cyanide, Weak acid dissociable (WAD)	8/2/2011	0.0106	Yes	Y				0.00500	0.00500	mg/L
MBT-072611-12	A11G327-05	Cyanide, Weak acid dissociable (WAD)	8/2/2011	0.01	Yes	Y				0.00500	0.00500	mg/L

SDG: A11G327

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBT-072611-13	A11G327-06	Cyanide, Weak acid dissociable (WAD)	8/2/2011	0.005	Yes	N	U			0.00500	0.00500	mg/L
MBT-072611-14	A11G327-07	Cyanide, Weak acid dissociable (WAD)	8/2/2011	0.005	Yes	N	U			0.00500	0.00500	mg/L

Millennium Bulk Terminals - LDC 26339

SDG: A11G328

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1107397-DUP2	1107397-DUP2	Cyanide, free	7/27/2011	0.0054	Yes	Y				0.00500	0.00200	mg/L
G4-S-072611	A11G328-01	Cyanide, free	7/27/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
G6-D-072611	A11G328-02	Cyanide, free	7/27/2011	0.004	Yes	N	J	U	7	0.00500	0.00200	mg/L
G6-S-072611	A11G328-03	Cyanide, free	7/27/2011	0.0049	Yes	N	J	U	7	0.00500	0.00200	mg/L
PZ-1-072611	A11G328-05	Cyanide, free	7/27/2011	0.0052	Yes	N		U	7	0.00500	0.00200	mg/L
PZ-2-072611	A11G328-04	Cyanide, free	7/27/2011	0.0049	Yes	N	J	U	7	0.00500	0.00200	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1108054-BLK2	1108054-BLK2	Silicon	8/4/2011	0.5	Yes	N	U			0.500	0.100	mg/L
1108054-DUP2	1108054-DUP2	Silicon	8/4/2011	34.1	Yes	Y				0.500	0.100	mg/L
G4-S-072611	A11G328-01	Silicon	8/4/2011	36.6	Yes	Y				0.500	0.100	mg/L
G6-D-072611	A11G328-02	Silicon	8/4/2011	33.9	Yes	Y				0.500	0.100	mg/L
G6-S-072611	A11G328-03	Silicon	8/4/2011	18.9	Yes	Y				0.500	0.100	mg/L
PZ-1-072611	A11G328-05	Silicon	8/4/2011	8.59	Yes	Y				4.50	0.900	mg/L
PZ-2-072611	A11G328-04	Silicon	8/4/2011	12	Yes	Y				4.50	0.900	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1108054-BLK1	1108054-BLK1	Chromium	8/3/2011	0.311	Yes	Y	J			2.00	0.200	ug/L
1108054-BLK1	1108054-BLK1	Copper	8/3/2011	4	Yes	N	U			4.00	0.300	ug/L
1108054-BLK1	1108054-BLK1	Arsenic	8/3/2011	2	Yes	N	U			2.00	0.500	ug/L
1108054-BLK1	1108054-BLK1	Sodium	8/3/2011	100	Yes	N	U			100	20.0	ug/L
1108054-BLK1	1108054-BLK1	Potassium	8/3/2011	100	Yes	N	U			100	10.0	ug/L
1108054-BLK1	1108054-BLK1	Nickel	8/3/2011	2	Yes	N	U			2.00	0.300	ug/L
1108054-BLK1	1108054-BLK1	Manganese	8/3/2011	1	Yes	N	U			1.00	0.333	ug/L

SDG: A11G328

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1108054-BLK1	1108054-BLK1	Magnesium	8/3/2011	50		Yes	N	U			50.0	10.0	ug/L
1108054-BLK1	1108054-BLK1	Iron	8/3/2011	50		Yes	N	U			50.0	10.0	ug/L
1108054-BLK1	1108054-BLK1	Aluminum	8/3/2011	4.71		Yes	Y	J			50.0	4.00	ug/L
1108054-BLK1	1108054-BLK1	Calcium	8/3/2011	36.6		Yes	Y	J			100	25.0	ug/L
1108054-DUP1	1108054-DUP1	Aluminum	8/3/2011	50		Yes	N	U			50.0	4.00	ug/L
1108054-DUP1	1108054-DUP1	Potassium	8/3/2011	4850		Yes	Y				100	10.0	ug/L
1108054-DUP3	1108054-DUP3	Sodium	8/4/2011	406000		Yes	Y	D			5000	1000	ug/L
1108054-DUP3	1108054-DUP3	Iron	8/4/2011	47200		Yes	Y	D			2500	500	ug/L
1108054-DUP3	1108054-DUP3	Calcium	8/4/2011	137000		Yes	Y	D			5000	1250	ug/L
1108054-DUP3	1108054-DUP3	Magnesium	8/4/2011	103000		Yes	Y	D			2500	500	ug/L
1108054-DUP3	1108054-DUP3	Manganese	8/4/2011	3190		Yes	Y	D			50.0	16.6	ug/L
G4-S-072611	A11G328-01	Potassium	8/3/2011	2490		Yes	Y				100	10.0	ug/L
G4-S-072611	A11G328-01	Aluminum	8/3/2011	7.47		Yes	N	J	U	7	50.0	4.00	ug/L
G4-S-072611	A11G328-01	Manganese	8/3/2011	2220		Yes	Y				1.00	0.333	ug/L
G4-S-072611	A11G328-01	Iron	8/4/2011	69300		Yes	Y	D			500	100	ug/L
G4-S-072611	A11G328-01	Magnesium	8/4/2011	42900		Yes	Y	D			500	100	ug/L
G4-S-072611	A11G328-01	Sodium	8/4/2011	24100		Yes	Y	D			1000	200	ug/L
G4-S-072611	A11G328-01	Calcium	8/4/2011	85700		Yes	Y	D			1000	250	ug/L
G6-D-072611	A11G328-02	Aluminum	8/3/2011	6.11		Yes	N	J	U	7	50.0	4.00	ug/L
G6-D-072611	A11G328-02	Potassium	8/3/2011	4960		Yes	Y				100	10.0	ug/L
G6-D-072611	A11G328-02	Calcium	8/4/2011	134000		Yes	Y	D			5000	1250	ug/L
G6-D-072611	A11G328-02	Manganese	8/4/2011	3190		Yes	Y	D			50.0	16.6	ug/L
G6-D-072611	A11G328-02	Magnesium	8/4/2011	102000		Yes	Y	D			2500	500	ug/L
G6-D-072611	A11G328-02	Sodium	8/4/2011	406000		Yes	Y	D			5000	1000	ug/L
G6-D-072611	A11G328-02	Iron	8/4/2011	47900		Yes	Y	D			2500	500	ug/L

SDG: A11G328

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G6-S-072611	A11G328-03	Iron	8/3/2011	546	Yes	Y				50.0	10.0	ug/L
G6-S-072611	A11G328-03	Manganese	8/3/2011	521	Yes	Y				1.00	0.333	ug/L
G6-S-072611	A11G328-03	Calcium	8/4/2011	27400	Yes	Y	D			5000	1250	ug/L
G6-S-072611	A11G328-03	Sodium	8/4/2011	465000	Yes	Y	D			5000	1000	ug/L
G6-S-072611	A11G328-03	Potassium	8/4/2011	5090	Yes	Y				100	10.0	ug/L
G6-S-072611	A11G328-03	Magnesium	8/4/2011	9170	Yes	Y				50.0	10.0	ug/L
G6-S-072611	A11G328-03	Aluminum	8/4/2011	971	Yes	Y				50.0	4.00	ug/L
PZ-1-072611	A11G328-05	Sodium	8/3/2011	793000	Yes	Y	D			9000	1800	ug/L
PZ-1-072611	A11G328-05	Magnesium	8/4/2011	373	Yes	Y	J			450	90.0	ug/L
PZ-1-072611	A11G328-05	Iron	8/4/2011	3130	Yes	Y				450	90.0	ug/L
PZ-1-072611	A11G328-05	Manganese	8/4/2011	194	Yes	Y				9.00	3.00	ug/L
PZ-1-072611	A11G328-05	Potassium	8/4/2011	1470	Yes	Y				900	90.0	ug/L
PZ-1-072611	A11G328-05	Calcium	8/4/2011	3540	Yes	Y				900	225	ug/L
PZ-1-072611	A11G328-05	Aluminum	8/4/2011	534	Yes	Y				450	36.0	ug/L
PZ-2-072611	A11G328-04	Sodium	8/4/2011	2470000	Yes	Y	D			45000	9000	ug/L
PZ-2-072611	A11G328-04	Potassium	8/4/2011	5260	Yes	Y				900	90.0	ug/L
PZ-2-072611	A11G328-04	Manganese	8/4/2011	112	Yes	Y				9.00	3.00	ug/L
PZ-2-072611	A11G328-04	Aluminum	8/4/2011	237	Yes	Y	J			450	36.0	ug/L
PZ-2-072611	A11G328-04	Iron	8/4/2011	12100	Yes	Y				450	90.0	ug/L
PZ-2-072611	A11G328-04	Calcium	8/4/2011	2290	Yes	Y				900	225	ug/L
PZ-2-072611	A11G328-04	Magnesium	8/4/2011	1150	Yes	Y				450	90.0	ug/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1107413-BLK1	1107413-BLK1	Fluoride	7/28/2011	1	Yes	N	U			1.00	1.00	mg/L
1107413-BLK1	1107413-BLK1	Sulfate	7/28/2011	1	Yes	N	U			1.00	1.00	mg/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1107413-BLK1	1107413-BLK1	Chloride (total)	7/28/2011	1		Yes	N	U			1.00	1.00	mg/L
1107413-DUP1	1107413-DUP1	Sulfate	7/28/2011	1		Yes	N	U			1.00	1.00	mg/L
1107413-DUP1	1107413-DUP1	Chloride (total)	7/28/2011	1.41		Yes	Y				1.00	1.00	mg/L
1107413-DUP1	1107413-DUP1	Fluoride	7/28/2011	1		Yes	N	U			1.00	1.00	mg/L
G4-S-072611	A11G328-01	Fluoride	7/28/2011	1		Yes	N	U			1.00	1.00	mg/L
G4-S-072611	A11G328-01	Sulfate	7/28/2011	1		Yes	N	U			1.00	1.00	mg/L
G4-S-072611	A11G328-01	Chloride (total)	7/28/2011	1.4		Yes	Y				1.00	1.00	mg/L
G6-D-072611	A11G328-02	Fluoride	7/28/2011	1		Yes	N	U			1.00	1.00	mg/L
G6-D-072611	A11G328-02RE1	Sulfate	8/1/2011	43.9		Yes	Y				3.33	3.33	mg/L
G6-D-072611	A11G328-02RE1	Chloride (total)	8/1/2011	66.1		Yes	Y				3.33	3.33	mg/L
G6-S-072611	A11G328-03	Chloride (total)	7/28/2011	5.37		Yes	Y				1.00	1.00	mg/L
G6-S-072611	A11G328-03RE1	Sulfate	8/1/2011	44.8		Yes	Y				5.00	5.00	mg/L
G6-S-072611	A11G328-03RE1	Fluoride	8/1/2011	67.8		Yes	Y				5.00	5.00	mg/L
PZ-1-072611	A11G328-05	Fluoride	7/28/2011	221		Yes	Y				20.0	20.0	mg/L
PZ-1-072611	A11G328-05	Chloride (total)	7/28/2011	20		Yes	N	U			20.0	20.0	mg/L
PZ-1-072611	A11G328-05	Sulfate	7/28/2011	80.5		Yes	Y				20.0	20.0	mg/L
PZ-2-072611	A11G328-04	Chloride (total)	7/28/2011	37.6		Yes	Y				20.0	20.0	mg/L
PZ-2-072611	A11G328-04	Sulfate	7/28/2011	65.8		Yes	Y				20.0	20.0	mg/L
PZ-2-072611	A11G328-04	Fluoride	7/28/2011	504		Yes	Y				20.0	20.0	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1108033-DUP2	1108033-DUP2	Cyanide, total	8/2/2011	32.7		Yes	Y	D			2.40	2.40	mg/L
1108065-BLK1	1108065-BLK1	Cyanide, total	8/3/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
1108065-DUP1	1108065-DUP1	Cyanide, total	8/3/2011	7.16		Yes	Y	D			0.600	0.600	mg/L
G4-S-072611	A11G328-01	Cyanide, total	8/2/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G6-D-072611	A11G328-02	Cyanide, total	8/2/2011	0.121	Yes	Y				0.00500	0.00500	mg/L
G6-S-072611	A11G328-03	Cyanide, total	8/2/2011	0.0852	Yes	Y				0.00500	0.00500	mg/L
PZ-1-072611	A11G328-05	Cyanide, total	8/3/2011	7.48	Yes	Y	D	J	8	0.600	0.600	mg/L
PZ-2-072611	A11G328-04	Cyanide, total	8/2/2011	35.3	Yes	Y	D			2.40	2.40	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1108071-BLK1	1108071-BLK1	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/8/2011	20	Yes	N	U			20.0	20.0	mg/L
1108071-BLK1	1108071-BLK1	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/8/2011	20	Yes	N	U			20.0	20.0	mg/L
1108071-BLK1	1108071-BLK1	Alkalinity, total as calcium carbonate (CaCO3)	8/8/2011	20	Yes	N	U			20.0	20.0	mg/L
G4-S-072611	A11G328-01	Alkalinity, total as calcium carbonate (CaCO3)	8/2/2011	509	Yes	Y				20.0	20.0	mg/L
G4-S-072611	A11G328-01	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/2/2011	509	Yes	Y				20.0	20.0	mg/L
G4-S-072611	A11G328-01	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/2/2011	20	Yes	N	U			20.0	20.0	mg/L
G6-D-072611	A11G328-02	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/2/2011	20	Yes	N	U			20.0	20.0	mg/L
G6-D-072611	A11G328-02	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/2/2011	2080	Yes	Y				20.0	20.0	mg/L
G6-D-072611	A11G328-02	Alkalinity, total as calcium carbonate (CaCO3)	8/2/2011	2080	Yes	Y				20.0	20.0	mg/L
G6-S-072611	A11G328-03	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/2/2011	20	Yes	N	U			20.0	20.0	mg/L
G6-S-072611	A11G328-03	Alkalinity, total as calcium carbonate (CaCO3)	8/2/2011	965	Yes	Y				20.0	20.0	mg/L
G6-S-072611	A11G328-03	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/2/2011	965	Yes	Y				20.0	20.0	mg/L
PZ-1-072611	A11G328-05	Alkalinity, total as calcium carbonate (CaCO3)	8/4/2011	1140	Yes	Y				20.0	20.0	mg/L
PZ-1-072611	A11G328-05	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/4/2011	850	Yes	Y				20.0	20.0	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-1-072611	A11G328-05	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/4/2011	290		Yes	Y				20.0	20.0	mg/L
PZ-2-072611	A11G328-04	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/8/2011	2370		Yes	Y				20.0	20.0	mg/L
PZ-2-072611	A11G328-04	Alkalinity, total as calcium carbonate (CaCO3)	8/8/2011	4170		Yes	Y				20.0	20.0	mg/L
PZ-2-072611	A11G328-04	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/8/2011	1800		Yes	Y				20.0	20.0	mg/L

Analytical Method SM2540C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1108004-BLK1	1108004-BLK1	Total dissolved solids	8/2/2011	10		Yes	N	U			10.0	10.0	mg/L
1108004-DUP1	1108004-DUP1	Total dissolved solids	8/2/2011	551		Yes	Y				10.0	10.0	mg/L
1108004-DUP2	1108004-DUP2	Total dissolved solids	8/2/2011	1770		Yes	Y				10.0	10.0	mg/L
1108004-SRM1	1108004-SRM1	Total dissolved solids	8/2/2011	999		Yes	Y						mg/L
G4-S-072611	A11G328-01	Total dissolved solids	8/2/2011	554		Yes	Y				10.0	10.0	mg/L
G6-D-072611	A11G328-02	Total dissolved solids	8/2/2011	1750		Yes	Y				10.0	10.0	mg/L
G6-S-072611	A11G328-03	Total dissolved solids	8/2/2011	1290		Yes	Y				10.0	10.0	mg/L
PZ-1-072611	A11G328-05	Total dissolved solids	8/2/2011	2090		Yes	Y				10.0	10.0	mg/L
PZ-2-072611	A11G328-04	Total dissolved solids	8/2/2011	5910		Yes	Y				10.0	10.0	mg/L

Analytical Method SM2540D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1108005-BLK1	1108005-BLK1	Total suspended solids	8/1/2011	5		Yes	N	U			5.00	5.00	mg/L
1108005-DUP1	1108005-DUP1	Total suspended solids	8/1/2011	324		Yes	Y				5.00	5.00	mg/L
1108005-DUP2	1108005-DUP2	Total suspended solids	8/1/2011	118		Yes	Y				5.00	5.00	mg/L
1108005-SRM1	1108005-SRM1	Total suspended solids	8/1/2011	90		Yes	Y						mg/L
G4-S-072611	A11G328-01	Total suspended solids	8/1/2011	326		Yes	Y				5.00	5.00	mg/L
G6-D-072611	A11G328-02	Total suspended solids	8/1/2011	126		Yes	Y				5.00	5.00	mg/L

SDG: A11G328

Analytical Method SM2540D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G6-S-072611	A11G328-03	Total suspended solids	8/1/2011	9		Yes	Y				5.00	5.00	mg/L
PZ-1-072611	A11G328-05	Total suspended solids	8/1/2011	5		Yes	N	U			5.00	5.00	mg/L
PZ-2-072611	A11G328-04	Total suspended solids	8/1/2011	5		Yes	N	U			5.00	5.00	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1108066-BLK1	1108066-BLK1	Cyanide, Weak acid dissociable (WAD)	8/3/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
1108066-DUP1	1108066-DUP1	Cyanide, Weak acid dissociable (WAD)	8/3/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
G4-S-072611	A11G328-01	Cyanide, Weak acid dissociable (WAD)	8/3/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
G6-D-072611	A11G328-02	Cyanide, Weak acid dissociable (WAD)	8/3/2011	0.0059		Yes	Y				0.00500	0.00500	mg/L
G6-S-072611	A11G328-03	Cyanide, Weak acid dissociable (WAD)	8/3/2011	0.017		Yes	Y				0.00500	0.00500	mg/L
PZ-1-072611	A11G328-05	Cyanide, Weak acid dissociable (WAD)	8/3/2011	0.217		Yes	Y				0.0300	0.0300	mg/L
PZ-2-072611	A11G328-04	Cyanide, Weak acid dissociable (WAD)	8/3/2011	0.249		Yes	Y				0.0300	0.0300	mg/L

Analytical Method SM4500P

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G4-S-072611	A11G328-01	Phosphorus	8/2/2011	1.42		Yes	Y	D			1.00	0.100	mg/L
G6-D-072611	A11G328-02	Phosphorus	8/2/2011	0.18		Yes	N	D J	U	7	1.00	0.100	mg/L
G6-S-072611	A11G328-03	Phosphorus	8/2/2011	2.3		Yes	Y	D			1.00	0.100	mg/L
PZ-1-072611	A11G328-05	Phosphorus	8/2/2011	7.8		Yes	Y	D			2.50	0.250	mg/L
PZ-2-072611	A11G328-04	Phosphorus	8/2/2011	7.1		Yes	Y	D			2.50	0.250	mg/L

Millennium Bulk Terminals - LDC 26339

SDG: A11G364

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1107420-BLK1	1107420-BLK1	Cyanide, free	7/28/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
1107420-DUP1	1107420-DUP1	Cyanide, free	7/28/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
MBT-072711-15	A11G364-01	Cyanide, free	7/28/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
MBT-072711-16	A11G364-02	Cyanide, free	7/28/2011	0.0022		Yes	Y	J			0.00500	0.00200	mg/L
MBT-072711-17	A11G364-03	Cyanide, free	7/28/2011	0.0035		Yes	Y	J			0.00500	0.00200	mg/L
MBT-072711-18	A11G364-04	Cyanide, free	7/28/2011	0.0044		Yes	Y	J			0.00500	0.00200	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBT-072711-15	A11G364-01	Chromium	8/3/2011	1.7		Yes	Y	J			2.00	0.200	ug/L
MBT-072711-15	A11G364-01	Copper	8/3/2011	2.51		Yes	Y	J			4.00	0.300	ug/L
MBT-072711-15	A11G364-01	Nickel	8/3/2011	5.04		Yes	Y				2.00	0.300	ug/L
MBT-072711-15	A11G364-01	Arsenic	8/3/2011	0.889		Yes	Y	J			2.00	0.500	ug/L
MBT-072711-15	A11G364-01	Magnesium	8/3/2011	5350		Yes	Y				50.0	10.0	ug/L
MBT-072711-15	A11G364-01	Sodium	8/4/2011	83100		Yes	Y	D			1000	200	ug/L
MBT-072711-15	A11G364-01	Calcium	8/4/2011	11400		Yes	Y	D			1000	250	ug/L
MBT-072711-16	A11G364-02	Copper	8/3/2011	1		Yes	Y	J			4.00	0.300	ug/L
MBT-072711-16	A11G364-02	Chromium	8/3/2011	5.97		Yes	Y				2.00	0.200	ug/L
MBT-072711-16	A11G364-02	Arsenic	8/3/2011	2.82		Yes	Y				2.00	0.500	ug/L
MBT-072711-16	A11G364-02	Nickel	8/3/2011	4.5		Yes	Y				2.00	0.300	ug/L
MBT-072711-16	A11G364-02	Magnesium	8/3/2011	199		Yes	Y				50.0	10.0	ug/L
MBT-072711-16	A11G364-02	Calcium	8/3/2011	1080		Yes	Y				100	25.0	ug/L
MBT-072711-16	A11G364-02	Sodium	8/4/2011	160000		Yes	Y	D			2000	400	ug/L
MBT-072711-17	A11G364-03	Arsenic	8/3/2011	1.42		Yes	Y	J			2.00	0.500	ug/L
MBT-072711-17	A11G364-03	Chromium	8/3/2011	0.967		Yes	N	J	U	7	2.00	0.200	ug/L

SDG: A11G364

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBT-072711-17	A11G364-03	Copper	8/3/2011	0.511		Yes	Y	J			4.00	0.300	ug/L
MBT-072711-17	A11G364-03	Nickel	8/3/2011	0.767		Yes	Y	J			2.00	0.300	ug/L
MBT-072711-17	A11G364-03	Magnesium	8/4/2011	52100		Yes	Y	D			1000	200	ug/L
MBT-072711-17	A11G364-03	Sodium	8/4/2011	29600		Yes	Y	D			2000	400	ug/L
MBT-072711-17	A11G364-03	Calcium	8/4/2011	100000		Yes	Y	D			2000	500	ug/L
MBT-072711-18	A11G364-04	Arsenic	8/3/2011	5.16		Yes	Y				2.00	0.500	ug/L
MBT-072711-18	A11G364-04	Chromium	8/3/2011	1.03		Yes	N	J	U	7	2.00	0.200	ug/L
MBT-072711-18	A11G364-04	Nickel	8/3/2011	1.14		Yes	Y	J			2.00	0.300	ug/L
MBT-072711-18	A11G364-04	Copper	8/3/2011	4		Yes	N	U			4.00	0.300	ug/L
MBT-072711-18	A11G364-04	Sodium	8/4/2011	33900		Yes	Y	D			1000	200	ug/L
MBT-072711-18	A11G364-04	Calcium	8/4/2011	33400		Yes	Y	D			1000	250	ug/L
MBT-072711-18	A11G364-04	Magnesium	8/4/2011	18300		Yes	Y	D			500	100	ug/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBT-072711-15	A11G364-01	Fluoride	7/28/2011	7.42		Yes	Y				1.00	1.00	mg/L
MBT-072711-15	A11G364-01	Chloride (total)	7/28/2011	3.05		Yes	Y				1.00	1.00	mg/L
MBT-072711-15	A11G364-01	Sulfate	7/28/2011	4.54		Yes	Y				1.00	1.00	mg/L
MBT-072711-16	A11G364-02	Fluoride	7/28/2011	57.1		Yes	Y				20.0	20.0	mg/L
MBT-072711-16	A11G364-02	Sulfate	7/28/2011	127		Yes	Y				20.0	20.0	mg/L
MBT-072711-16	A11G364-02	Chloride (total)	7/28/2011	31.8		Yes	Y				20.0	20.0	mg/L
MBT-072711-17	A11G364-03	Chloride (total)	7/28/2011	3.33		Yes	Y				1.00	1.00	mg/L
MBT-072711-17	A11G364-03	Sulfate	7/28/2011	1		Yes	N	U			1.00	1.00	mg/L
MBT-072711-17	A11G364-03	Fluoride	7/28/2011	1		Yes	N	U			1.00	1.00	mg/L
MBT-072711-18	A11G364-04	Chloride (total)	7/28/2011	11.1		Yes	Y				1.00	1.00	mg/L
MBT-072711-18	A11G364-04	Fluoride	7/28/2011	1		Yes	N	U			1.00	1.00	mg/L

SDG: A11G364

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBT-072711-18	A11G364-04	Sulfate	7/28/2011	1.13		Yes	Y				1.00	1.00	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBT-072711-15	A11G364-01	Cyanide, total	8/3/2011	0.008		Yes	Y				0.00500	0.00500	mg/L
MBT-072711-16	A11G364-02	Cyanide, total	8/3/2011	12.4		Yes	Y	D			0.600	0.600	mg/L
MBT-072711-17	A11G364-03	Cyanide, total	8/3/2011	0.015		Yes	N	U			0.0150	0.0150	mg/L
MBT-072711-18	A11G364-04	Cyanide, total	8/3/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBT-072711-15	A11G364-01	Cyanide, Weak acid dissociable (WAD)	8/3/2011	0.0055		Yes	Y				0.00500	0.00500	mg/L
MBT-072711-16	A11G364-02	Cyanide, Weak acid dissociable (WAD)	8/3/2011	0.14		Yes	Y				0.0300	0.0300	mg/L
MBT-072711-17	A11G364-03	Cyanide, Weak acid dissociable (WAD)	8/3/2011	0.015		Yes	N	U			0.0150	0.0150	mg/L
MBT-072711-18	A11G364-04	Cyanide, Weak acid dissociable (WAD)	8/3/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L

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SDG: A11G365

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-3-072711	A11G365-01	Cyanide, free	7/28/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
PZ-4-072711	A11G365-02	Cyanide, free	7/28/2011	0.0037		Yes	Y	J			0.00500	0.00200	mg/L
PZ-6-072711	A11G365-04	Cyanide, free	7/28/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
PZ-7-072711	A11G365-03	Cyanide, free	7/28/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-3-072711	A11G365-01	Silicon	8/4/2011	10.9		Yes	Y				0.500	0.100	mg/L
PZ-4-072711	A11G365-02	Silicon	8/4/2011	16		Yes	Y				4.50	0.900	mg/L
PZ-6-072711	A11G365-04	Silicon	8/4/2011	27.5		Yes	Y				4.50	0.900	mg/L
PZ-7-072711	A11G365-03	Silicon	8/4/2011	33.8		Yes	Y				0.500	0.100	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-3-072711	A11G365-01	Iron	8/3/2011	629		Yes	Y				50.0	10.0	ug/L
PZ-3-072711	A11G365-01	Manganese	8/3/2011	280		Yes	Y				1.00	0.333	ug/L
PZ-3-072711	A11G365-01	Sodium	8/4/2011	915000		Yes	Y	D			10000	2000	ug/L
PZ-3-072711	A11G365-01	Magnesium	8/4/2011	2550		Yes	Y	D			100	20.0	ug/L
PZ-3-072711	A11G365-01	Potassium	8/4/2011	3080		Yes	Y	D			200	20.0	ug/L
PZ-3-072711	A11G365-01	Aluminum	8/4/2011	170		Yes	Y	D			100	8.00	ug/L
PZ-3-072711	A11G365-01	Calcium	8/4/2011	5920		Yes	Y	D			200	50.0	ug/L
PZ-4-072711	A11G365-02	Sodium	8/4/2011	4170000		Yes	Y	D			45000	9000	ug/L
PZ-4-072711	A11G365-02	Magnesium	8/4/2011	2180		Yes	Y				450	90.0	ug/L
PZ-4-072711	A11G365-02	Aluminum	8/4/2011	637		Yes	Y				450	36.0	ug/L
PZ-4-072711	A11G365-02	Iron	8/4/2011	31200		Yes	Y				450	90.0	ug/L
PZ-4-072711	A11G365-02	Calcium	8/4/2011	3850		Yes	Y				900	225	ug/L

SDG: A11G365

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-4-072711	A11G365-02	Potassium	8/4/2011	6220	Yes	Y				900	90.0	ug/L
PZ-4-072711	A11G365-02	Manganese	8/4/2011	108	Yes	Y				9.00	3.00	ug/L
PZ-6-072711	A11G365-04	Calcium	8/3/2011	6000	Yes	Y				900	225	ug/L
PZ-6-072711	A11G365-04	Potassium	8/3/2011	1120	Yes	Y				900	90.0	ug/L
PZ-6-072711	A11G365-04	Magnesium	8/3/2011	457	Yes	Y				450	90.0	ug/L
PZ-6-072711	A11G365-04	Aluminum	8/3/2011	1480	Yes	Y				450	36.0	ug/L
PZ-6-072711	A11G365-04	Sodium	8/4/2011	815000	Yes	Y	D			9000	1800	ug/L
PZ-6-072711	A11G365-04	Manganese	8/4/2011	124	Yes	Y				9.00	3.00	ug/L
PZ-6-072711	A11G365-04	Iron	8/4/2011	2310	Yes	Y				450	90.0	ug/L
PZ-7-072711	A11G365-03	Calcium	8/4/2011	28500	Yes	Y	D			10000	2500	ug/L
PZ-7-072711	A11G365-03	Sodium	8/4/2011	602000	Yes	Y	D			10000	2000	ug/L
PZ-7-072711	A11G365-03	Magnesium	8/4/2011	11200	Yes	Y	D			100	20.0	ug/L
PZ-7-072711	A11G365-03	Iron	8/4/2011	11200	Yes	Y	D			100	20.0	ug/L
PZ-7-072711	A11G365-03	Manganese	8/4/2011	554	Yes	Y	D			2.00	0.666	ug/L
PZ-7-072711	A11G365-03	Potassium	8/4/2011	2470	Yes	Y	D			200	20.0	ug/L
PZ-7-072711	A11G365-03	Aluminum	8/4/2011	141	Yes	Y	D			100	8.00	ug/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1107413-DUP2	1107413-DUP2	Fluoride	7/28/2011	75.1	Yes	Y				20.0	20.0	mg/L
1107413-DUP2	1107413-DUP2	Sulfate	7/28/2011	36.1	Yes	Y				20.0	20.0	mg/L
1107413-DUP2	1107413-DUP2	Chloride (total)	7/28/2011	22.6	Yes	Y				20.0	20.0	mg/L
1108008-DUP2	1108008-DUP2	Fluoride	8/1/2011	1050	Yes	Y				100	100	mg/L
1108008-DUP2	1108008-DUP2	Sulfate	8/1/2011	116	Yes	Y				100	100	mg/L
1108008-DUP2	1108008-DUP2	Chloride (total)	8/1/2011	128	Yes	Y				100	100	mg/L
PZ-3-072711	A11G365-01	Sulfate	7/28/2011	10	Yes	N	U			10.0	10.0	mg/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-3-072711	A11G365-01	Chloride (total)	7/28/2011	25.6		Yes	Y				10.0	10.0	mg/L
PZ-3-072711	A11G365-01	Fluoride	7/28/2011	147		Yes	Y				10.0	10.0	mg/L
PZ-4-072711	A11G365-02	Chloride (total)	7/28/2011	106		Yes	Y				20.0	20.0	mg/L
PZ-4-072711	A11G365-02	Sulfate	7/28/2011	108		Yes	Y				20.0	20.0	mg/L
PZ-4-072711	A11G365-02RE1	Fluoride	8/1/2011	1070		Yes	Y				100	100	mg/L
PZ-6-072711	A11G365-04	Chloride (total)	7/28/2011	23		Yes	Y				20.0	20.0	mg/L
PZ-6-072711	A11G365-04	Sulfate	7/28/2011	36.8		Yes	Y				20.0	20.0	mg/L
PZ-6-072711	A11G365-04	Fluoride	7/28/2011	76.9		Yes	Y				20.0	20.0	mg/L
PZ-7-072711	A11G365-03	Fluoride	7/28/2011	25		Yes	Y				20.0	20.0	mg/L
PZ-7-072711	A11G365-03	Chloride (total)	7/28/2011	20		Yes	N	U			20.0	20.0	mg/L
PZ-7-072711	A11G365-03	Sulfate	7/28/2011	20		Yes	N	U			20.0	20.0	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-3-072711	A11G365-01	Cyanide, total	8/3/2011	0.177		Yes	Y				0.00500	0.00500	mg/L
PZ-4-072711	A11G365-02RE1	Cyanide, total	8/3/2011	96		Yes	Y	D			2.40	2.40	mg/L
PZ-6-072711	A11G365-04	Cyanide, total	8/3/2011	1.9		Yes	Y	D			0.300	0.300	mg/L
PZ-7-072711	A11G365-03RE1	Cyanide, total	8/3/2011	0.0498		Yes	Y				0.0300	0.0300	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-3-072711	A11G365-01	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/4/2011	20		Yes	N	U			20.0	20.0	mg/L
PZ-3-072711	A11G365-01	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/4/2011	1650		Yes	Y				20.0	20.0	mg/L
PZ-3-072711	A11G365-01	Alkalinity, total as calcium carbonate (CaCO3)	8/4/2011	1650		Yes	Y				20.0	20.0	mg/L
PZ-4-072711	A11G365-02	Alkalinity, total as calcium carbonate (CaCO3)	8/4/2011	6230		Yes	Y				20.0	20.0	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-4-072711	A11G365-02	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/4/2011	2990		Yes	Y				20.0	20.0	mg/L
PZ-4-072711	A11G365-02	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/4/2011	3240		Yes	Y				20.0	20.0	mg/L
PZ-6-072711	A11G365-04	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/4/2011	800		Yes	Y				20.0	20.0	mg/L
PZ-6-072711	A11G365-04	Alkalinity, total as calcium carbonate (CaCO3)	8/4/2011	1620		Yes	Y				20.0	20.0	mg/L
PZ-6-072711	A11G365-04	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/4/2011	820		Yes	Y				20.0	20.0	mg/L
PZ-7-072711	A11G365-03	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/4/2011	20		Yes	N	U			20.0	20.0	mg/L
PZ-7-072711	A11G365-03	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/4/2011	1410		Yes	Y				20.0	20.0	mg/L
PZ-7-072711	A11G365-03	Alkalinity, total as calcium carbonate (CaCO3)	8/4/2011	1410		Yes	Y				20.0	20.0	mg/L

Analytical Method SM2540C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-3-072711	A11G365-01	Total dissolved solids	8/2/2011	2250		Yes	Y				10.0	10.0	mg/L
PZ-4-072711	A11G365-02	Total dissolved solids	8/2/2011	10500		Yes	Y				10.0	10.0	mg/L
PZ-6-072711	A11G365-04	Total dissolved solids	8/2/2011	2230		Yes	Y				10.0	10.0	mg/L
PZ-7-072711	A11G365-03	Total dissolved solids	8/2/2011	1830		Yes	Y				10.0	10.0	mg/L

Analytical Method SM2540D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-3-072711	A11G365-01	Total suspended solids	8/1/2011	5		Yes	N	U			5.00	5.00	mg/L
PZ-4-072711	A11G365-02	Total suspended solids	8/1/2011	23		Yes	Y				5.00	5.00	mg/L
PZ-6-072711	A11G365-04	Total suspended solids	8/1/2011	9		Yes	Y				5.00	5.00	mg/L
PZ-7-072711	A11G365-03	Total suspended solids	8/1/2011	5		Yes	Y				5.00	5.00	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units

SDG: A11G365

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-3-072711	A11G365-01	Cyanide, Weak acid dissociable (WAD)	8/3/2011	0.0153		Yes	Y				0.00500	0.00500	mg/L
PZ-4-072711	A11G365-02	Cyanide, Weak acid dissociable (WAD)	8/3/2011	0.511		Yes	Y				0.0600	0.0600	mg/L
PZ-6-072711	A11G365-04	Cyanide, Weak acid dissociable (WAD)	8/3/2011	0.13		Yes	Y				0.0300	0.0300	mg/L
PZ-7-072711	A11G365-03	Cyanide, Weak acid dissociable (WAD)	8/3/2011	0.0378		Yes	Y				0.0300	0.0300	mg/L

Analytical Method SM4500P

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-3-072711	A11G365-01	Phosphorus	8/2/2011	2.68		Yes	Y	D			1.00	0.100	mg/L
PZ-4-072711	A11G365-02	Phosphorus	8/2/2011	33.1		Yes	Y	D			5.00	0.500	mg/L
PZ-6-072711	A11G365-04	Phosphorus	8/2/2011	7.8		Yes	Y	D			2.00	0.200	mg/L
PZ-7-072711	A11G365-03	Phosphorus	8/2/2011	5.36		Yes	Y	D			1.00	0.100	mg/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1107432-BLK1	1107432-BLK1	2-Methylnaphthalene	8/1/2011	0.0364		Yes	N	U			0.0364	0.0182	ug/L
1107432-BLK1	1107432-BLK1	Naphthalene	8/1/2011	0.0364		Yes	N	U			0.0364	0.0182	ug/L
1107432-BLK1	1107432-BLK1	Benzo(b,k)fluoranthene	8/1/2011	0.0364		Yes	N	U			0.0364	0.0182	ug/L
1107432-BLK1	1107432-BLK1	Dibenzo(a,h)anthracene	8/1/2011	0.0182		Yes	N	U			0.0182	0.00909	ug/L
1107432-BLK1	1107432-BLK1	Benzo(g,h,i)perylene	8/1/2011	0.0182		Yes	N	U			0.0182	0.00909	ug/L
1107432-BLK1	1107432-BLK1	Indeno(1,2,3-c,d)pyrene	8/1/2011	0.0182		Yes	N	U			0.0182	0.00909	ug/L
1107432-BLK1	1107432-BLK1	Benzo(b)fluoranthene	8/1/2011	0.0182		Yes	N	U			0.0182	0.00909	ug/L
1107432-BLK1	1107432-BLK1	Fluoranthene	8/1/2011	0.0182		Yes	N	U			0.0182	0.00909	ug/L
1107432-BLK1	1107432-BLK1	Benzo(k)fluoranthene	8/1/2011	0.0182		Yes	N	U			0.0182	0.00909	ug/L
1107432-BLK1	1107432-BLK1	Acenaphthylene	8/1/2011	0.0182		Yes	N	U			0.0182	0.00909	ug/L
1107432-BLK1	1107432-BLK1	Benzo(a)pyrene	8/1/2011	0.0182		Yes	N	U			0.0182	0.00909	ug/L
1107432-BLK1	1107432-BLK1	1-Methylnaphthalene	8/1/2011	0.0364		Yes	N	U			0.0364	0.0182	ug/L
1107432-BLK1	1107432-BLK1	Benzo(a)anthracene	8/1/2011	0.0182		Yes	N	U			0.0182	0.00909	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1107432-BLK1	1107432-BLK1	Acenaphthene	8/1/2011	0.0182	Yes	N	U			0.0182	0.00909	ug/L
1107432-BLK1	1107432-BLK1	Phenanthrene	8/1/2011	0.0182	Yes	N	U			0.0182	0.00909	ug/L
1107432-BLK1	1107432-BLK1	Fluorene	8/1/2011	0.0182	Yes	N	U			0.0182	0.00909	ug/L
1107432-BLK1	1107432-BLK1	Carbazole	8/1/2011	0.0182	Yes	N	U			0.0182	0.00909	ug/L
1107432-BLK1	1107432-BLK1	Pyrene	8/1/2011	0.0182	Yes	N	U			0.0182	0.00909	ug/L
1107432-BLK1	1107432-BLK1	Dibenzofuran	8/1/2011	0.0182	Yes	N	U			0.0182	0.00909	ug/L
1107432-BLK1	1107432-BLK1	Anthracene	8/1/2011	0.0182	Yes	N	U			0.0182	0.00909	ug/L
1107432-BLK1	1107432-BLK1	Chrysene	8/1/2011	0.0182	Yes	N	U			0.0182	0.00909	ug/L
PZ-3-072711	A11G365-01	Benzo(g,h,i)perylene	8/1/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
PZ-3-072711	A11G365-01	Pyrene	8/1/2011	4.4	Yes	Y				0.0189	0.00943	ug/L
PZ-3-072711	A11G365-01	1-Methylnaphthalene	8/1/2011	0.278	Yes	Y				0.0377	0.0189	ug/L
PZ-3-072711	A11G365-01	Indeno(1,2,3-c,d)pyrene	8/1/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
PZ-3-072711	A11G365-01	Anthracene	8/1/2011	2.58	Yes	Y				0.0189	0.00943	ug/L
PZ-3-072711	A11G365-01	2-Methylnaphthalene	8/1/2011	0.14	Yes	Y				0.0377	0.0189	ug/L
PZ-3-072711	A11G365-01	Benzo(b,k)fluoranthene	8/1/2011	0.081	Yes	Y				0.0377	0.0189	ug/L
PZ-3-072711	A11G365-01	Naphthalene	8/1/2011	0.449	Yes	Y		J	10	0.0377	0.0189	ug/L
PZ-3-072711	A11G365-01	Fluorene	8/1/2011	3.5	Yes	Y				0.0189	0.00943	ug/L
PZ-3-072711	A11G365-01	Acenaphthene	8/1/2011	2.55	Yes	Y				0.0189	0.00943	ug/L
PZ-3-072711	A11G365-01	Benzo(a)anthracene	8/1/2011	0.151	Yes	Y				0.0189	0.00943	ug/L
PZ-3-072711	A11G365-01	Dibenzo(a,h)anthracene	8/1/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
PZ-3-072711	A11G365-01	Benzo(a)pyrene	8/1/2011	0.0322	Yes	Y				0.0189	0.00943	ug/L
PZ-3-072711	A11G365-01	Chrysene	8/1/2011	0.221	Yes	Y				0.0189	0.00943	ug/L
PZ-3-072711	A11G365-01	Acenaphthylene	8/1/2011	0.0291	Yes	Y				0.0189	0.00943	ug/L
PZ-3-072711	A11G365-01	Fluoranthene	8/1/2011	6.33	Yes	Y				0.0189	0.00943	ug/L
PZ-3-072711	A11G365-01RE1	Phenanthrene	8/2/2011	20.1	Yes	Y	D			0.189	0.0943	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-4-072711	A11G365-02	Acenaphthylene	8/1/2011	0.19	Yes	N	D U			0.190	0.0952	ug/L
PZ-4-072711	A11G365-02	Pyrene	8/1/2011	2.18	Yes	Y	D			0.190	0.0952	ug/L
PZ-4-072711	A11G365-02	1-Methylnaphthalene	8/1/2011	0.494	Yes	Y	D			0.381	0.190	ug/L
PZ-4-072711	A11G365-02	Naphthalene	8/1/2011	1.52	Yes	Y	D	J	10	0.381	0.190	ug/L
PZ-4-072711	A11G365-02	2-Methylnaphthalene	8/1/2011	0.381	Yes	N	D U			0.381	0.190	ug/L
PZ-4-072711	A11G365-02	Phenanthrene	8/1/2011	5.42	Yes	Y	D			0.190	0.0952	ug/L
PZ-4-072711	A11G365-02	Anthracene	8/1/2011	1.94	Yes	Y	D			0.190	0.0952	ug/L
PZ-4-072711	A11G365-02	Fluorene	8/1/2011	0.48	Yes	Y	D			0.190	0.0952	ug/L
PZ-4-072711	A11G365-02	Benzo(g,h,i)perylene	8/1/2011	0.19	Yes	N	D U			0.190	0.0952	ug/L
PZ-4-072711	A11G365-02	Indeno(1,2,3-c,d)pyrene	8/1/2011	0.19	Yes	N	D U			0.190	0.0952	ug/L
PZ-4-072711	A11G365-02	Benzo(b)fluoranthene	8/1/2011	0.133	Yes	Y	D J			0.190	0.0952	ug/L
PZ-4-072711	A11G365-02	Acenaphthene	8/1/2011	0.818	Yes	Y	D			0.190	0.0952	ug/L
PZ-4-072711	A11G365-02	Benzo(k)fluoranthene	8/1/2011	0.19	Yes	N	D U			0.190	0.0952	ug/L
PZ-4-072711	A11G365-02	Chrysene	8/1/2011	0.377	Yes	Y	D			0.190	0.0952	ug/L
PZ-4-072711	A11G365-02	Benzo(a)pyrene	8/1/2011	0.19	Yes	N	D U			0.190	0.0952	ug/L
PZ-4-072711	A11G365-02	Dibenzo(a,h)anthracene	8/1/2011	0.19	Yes	N	D U			0.190	0.0952	ug/L
PZ-4-072711	A11G365-02	Benzo(a)anthracene	8/1/2011	0.239	Yes	Y	D			0.190	0.0952	ug/L
PZ-4-072711	A11G365-02	Fluoranthene	8/1/2011	2.96	Yes	Y	D			0.190	0.0952	ug/L
RL-4S-072711	A11G365-05	Acenaphthene	8/1/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
RL-4S-072711	A11G365-05	1-Methylnaphthalene	8/1/2011	0.0377	Yes	N	U			0.0377	0.0189	ug/L
RL-4S-072711	A11G365-05	Naphthalene	8/1/2011	0.0334	Yes	Y	J	J	10	0.0377	0.0189	ug/L
RL-4S-072711	A11G365-05	2-Methylnaphthalene	8/1/2011	0.0377	Yes	N	U			0.0377	0.0189	ug/L
RL-4S-072711	A11G365-05	Phenanthrene	8/1/2011	0.0165	Yes	Y	J			0.0189	0.00943	ug/L
RL-4S-072711	A11G365-05	Benzo(a)anthracene	8/1/2011	0.0102	Yes	Y	J			0.0189	0.00943	ug/L
RL-4S-072711	A11G365-05	Dibenzo(a,h)anthracene	8/1/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L

SDG: A11G365

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-4S-072711	A11G365-05	Benzo(a)pyrene	8/1/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
RL-4S-072711	A11G365-05	Chrysene	8/1/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
RL-4S-072711	A11G365-05	Acenaphthylene	8/1/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
RL-4S-072711	A11G365-05	Benzo(k)fluoranthene	8/1/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
RL-4S-072711	A11G365-05	Fluoranthene	8/1/2011	0.0153	Yes	Y	J			0.0189	0.00943	ug/L
RL-4S-072711	A11G365-05	Benzo(b)fluoranthene	8/1/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
RL-4S-072711	A11G365-05	Indeno(1,2,3-c,d)pyrene	8/1/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
RL-4S-072711	A11G365-05	Benzo(g,h,i)perylene	8/1/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
RL-4S-072711	A11G365-05	Pyrene	8/1/2011	0.0171	Yes	Y	J			0.0189	0.00943	ug/L
RL-4S-072711	A11G365-05	Anthracene	8/1/2011	0.0169	Yes	Y	J			0.0189	0.00943	ug/L
RL-4S-072711	A11G365-05	Fluorene	8/1/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L

Millennium Bulk Terminals - LDC 26339

SDG: A11G386

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1107448-BLK1	1107448-BLK1	Cyanide, free	7/29/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
1107448-DUP1	1107448-DUP1	Cyanide, free	7/29/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
G3-D-072811	A11G386-04	Cyanide, free	7/29/2011	0.0031		Yes	Y	J			0.00500	0.00200	mg/L
G3-S-072811	A11G386-03	Cyanide, free	7/29/2011	0.0034		Yes	Y	J			0.00500	0.00200	mg/L
G4-D-072811	A11G386-02	Cyanide, free	7/29/2011	0.0029		Yes	Y	J			0.00500	0.00200	mg/L
G5-D-072811	A11G386-05	Cyanide, free	7/29/2011	0.0025		Yes	Y	J			0.00500	0.00200	mg/L
G5-S-072811	A11G386-06	Cyanide, free	7/29/2011	0.0021		Yes	Y	J			0.00500	0.00200	mg/L
G7-D-072811	A11G386-01	Cyanide, free	7/29/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1108169-BLK2	1108169-BLK2	Silicon	8/9/2011	0.5		Yes	N	U			0.500	0.100	mg/L
1108169-DUP2	1108169-DUP2	Silicon	8/9/2011	29.2		Yes	Y				0.500	0.100	mg/L
1108173-BLK1	1108173-BLK1	Silicon	8/9/2011	0.5		Yes	N	U			0.500	0.100	mg/L
1108173-DUP1	1108173-DUP1	Silicon	8/9/2011	25.6		Yes	Y				0.500	0.100	mg/L
G3-D-072811	A11G386-04	Silicon	8/9/2011	25.1		Yes	Y				0.500	0.100	mg/L
G3-S-072811	A11G386-03	Silicon	8/9/2011	24.8		Yes	Y				0.500	0.100	mg/L
G4-D-072811	A11G386-02	Silicon	8/9/2011	30		Yes	Y				0.500	0.100	mg/L
G5-D-072811	A11G386-05	Silicon	8/9/2011	34		Yes	Y				0.500	0.100	mg/L
G5-S-072811	A11G386-06	Silicon	8/9/2011	30.1		Yes	Y				0.500	0.100	mg/L
G7-D-072811	A11G386-01	Silicon	8/9/2011	26.6		Yes	Y				0.500	0.100	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1108169-BLK1	1108169-BLK1	Magnesium	8/8/2011	50		Yes	N	U			50.0	10.0	ug/L
1108169-BLK1	1108169-BLK1	Manganese	8/8/2011	1		Yes	N	U			1.00	0.333	ug/L

SDG: A11G386

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1108169-BLK1	1108169-BLK1	Potassium	8/8/2011	100	Yes	N	U			100	10.0	ug/L
1108169-BLK1	1108169-BLK1	Sodium	8/8/2011	36	Yes	Y	J			100	20.0	ug/L
1108169-BLK1	1108169-BLK1	Calcium	8/8/2011	100	Yes	N	U			100	25.0	ug/L
1108169-BLK1	1108169-BLK1	Aluminum	8/8/2011	50	Yes	N	U			50.0	4.00	ug/L
1108169-BLK1	1108169-BLK1	Iron	8/8/2011	50	Yes	N	U			50.0	10.0	ug/L
1108169-DUP1	1108169-DUP1	Manganese	8/8/2011	3530	Yes	Y	D			10.0	3.33	ug/L
1108169-DUP1	1108169-DUP1	Iron	8/8/2011	53600	Yes	Y	D			500	100	ug/L
1108169-DUP1	1108169-DUP1	Magnesium	8/8/2011	18400	Yes	Y	D			500	100	ug/L
1108169-DUP1	1108169-DUP1	Sodium	8/8/2011	11400	Yes	Y	D			1000	200	ug/L
1108169-DUP1	1108169-DUP1	Calcium	8/8/2011	47000	Yes	Y	D			1000	250	ug/L
1108169-DUP3	1108169-DUP3	Potassium	8/9/2011	2780	Yes	Y				100	10.0	ug/L
1108169-DUP3	1108169-DUP3	Aluminum	8/9/2011	4.38	Yes	Y	J			50.0	4.00	ug/L
1108173-BLK2	1108173-BLK2	Sodium	8/9/2011	100	Yes	N	U			100	20.0	ug/L
1108173-BLK2	1108173-BLK2	Calcium	8/9/2011	100	Yes	N	U			100	25.0	ug/L
1108173-BLK2	1108173-BLK2	Magnesium	8/9/2011	50	Yes	N	U			50.0	10.0	ug/L
1108173-BLK2	1108173-BLK2	Iron	8/9/2011	50	Yes	N	U			50.0	10.0	ug/L
1108173-BLK2	1108173-BLK2	Potassium	8/9/2011	100	Yes	N	U			100	10.0	ug/L
1108173-BLK2	1108173-BLK2	Manganese	8/9/2011	1	Yes	N	U			1.00	0.333	ug/L
1108173-BLK2	1108173-BLK2	Aluminum	8/9/2011	50	Yes	N	U			50.0	4.00	ug/L
1108173-DUP2	1108173-DUP2	Calcium	8/9/2011	68500	Yes	Y	D			2000	500	ug/L
1108173-DUP2	1108173-DUP2	Sodium	8/9/2011	123000	Yes	Y	D			2000	400	ug/L
1108173-DUP2	1108173-DUP2	Magnesium	8/9/2011	38400	Yes	Y	D			1000	200	ug/L
1108173-DUP2	1108173-DUP2	Iron	8/9/2011	24000	Yes	Y	D			1000	200	ug/L
1108173-DUP3	1108173-DUP3	Manganese	8/9/2011	1980	Yes	Y				1.00	0.333	ug/L
1108173-DUP3	1108173-DUP3	Potassium	8/9/2011	6410	Yes	Y				100	10.0	ug/L

SDG: A11G386

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1108173-DUP3	1108173-DUP3	Aluminum	8/9/2011	15.5		Yes	Y	J			50.0	4.00	ug/L
G3-D-072811	A11G386-04	Magnesium	8/9/2011	38400		Yes	Y	D			1000	200	ug/L
G3-D-072811	A11G386-04	Sodium	8/9/2011	123000		Yes	Y	D			2000	400	ug/L
G3-D-072811	A11G386-04	Calcium	8/9/2011	67700		Yes	Y	D			2000	500	ug/L
G3-D-072811	A11G386-04	Iron	8/9/2011	23500		Yes	Y	D			1000	200	ug/L
G3-D-072811	A11G386-04	Manganese	8/9/2011	1980		Yes	Y				1.00	0.333	ug/L
G3-D-072811	A11G386-04	Aluminum	8/9/2011	16.1		Yes	Y	J			50.0	4.00	ug/L
G3-D-072811	A11G386-04	Potassium	8/9/2011	6360		Yes	Y				100	10.0	ug/L
G3-S-072811	A11G386-03	Manganese	8/8/2011	3170		Yes	Y	D			10.0	3.33	ug/L
G3-S-072811	A11G386-03	Iron	8/8/2011	36400		Yes	Y	D			500	100	ug/L
G3-S-072811	A11G386-03	Magnesium	8/8/2011	30800		Yes	Y	D			500	100	ug/L
G3-S-072811	A11G386-03	Calcium	8/8/2011	52500		Yes	Y	D			1000	250	ug/L
G3-S-072811	A11G386-03	Sodium	8/9/2011	450000		Yes	Y	D			5000	1000	ug/L
G3-S-072811	A11G386-03	Potassium	8/9/2011	2170		Yes	Y	D			200	20.0	ug/L
G3-S-072811	A11G386-03	Aluminum	8/9/2011	101		Yes	Y	D			100	8.00	ug/L
G4-D-072811	A11G386-02	Magnesium	8/8/2011	59100		Yes	Y	D			500	100	ug/L
G4-D-072811	A11G386-02	Iron	8/8/2011	46300		Yes	Y	D			500	100	ug/L
G4-D-072811	A11G386-02	Manganese	8/8/2011	2750		Yes	Y	D			10.0	3.33	ug/L
G4-D-072811	A11G386-02	Sodium	8/8/2011	55300		Yes	Y	D			1000	200	ug/L
G4-D-072811	A11G386-02	Calcium	8/9/2011	113000		Yes	Y	D			2000	500	ug/L
G4-D-072811	A11G386-02	Potassium	8/9/2011	4280		Yes	Y				100	10.0	ug/L
G4-D-072811	A11G386-02	Aluminum	8/9/2011	7		Yes	Y	J			50.0	4.00	ug/L
G5-D-072811	A11G386-05	Aluminum	8/9/2011	5		Yes	Y	J			50.0	4.00	ug/L
G5-D-072811	A11G386-05	Manganese	8/9/2011	2010		Yes	Y				1.00	0.333	ug/L
G5-D-072811	A11G386-05	Potassium	8/9/2011	2400		Yes	Y				100	10.0	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G5-D-072811	A11G386-05	Sodium	8/9/2011	8130		Yes	Y				100	20.0	ug/L
G5-D-072811	A11G386-05	Iron	8/9/2011	46400		Yes	Y	D			250	50.0	ug/L
G5-D-072811	A11G386-05	Magnesium	8/9/2011	14700		Yes	Y	D			250	50.0	ug/L
G5-D-072811	A11G386-05	Calcium	8/9/2011	39200		Yes	Y	D			500	125	ug/L
G5-S-072811	A11G386-06	Iron	8/8/2011	54200		Yes	Y	D			500	100	ug/L
G5-S-072811	A11G386-06	Calcium	8/8/2011	46700		Yes	Y	D			1000	250	ug/L
G5-S-072811	A11G386-06	Sodium	8/8/2011	11500		Yes	Y	D			1000	200	ug/L
G5-S-072811	A11G386-06	Manganese	8/8/2011	3580		Yes	Y	D			10.0	3.33	ug/L
G5-S-072811	A11G386-06	Magnesium	8/8/2011	18600		Yes	Y	D			500	100	ug/L
G5-S-072811	A11G386-06	Aluminum	8/9/2011	4.51		Yes	Y	J			50.0	4.00	ug/L
G5-S-072811	A11G386-06	Potassium	8/9/2011	2790		Yes	Y				100	10.0	ug/L
G7-D-072811	A11G386-01	Iron	8/8/2011	27300		Yes	Y	D			500	100	ug/L
G7-D-072811	A11G386-01	Magnesium	8/8/2011	39100		Yes	Y	D			500	100	ug/L
G7-D-072811	A11G386-01	Manganese	8/8/2011	2990		Yes	Y	D			10.0	3.33	ug/L
G7-D-072811	A11G386-01	Calcium	8/8/2011	79700		Yes	Y	D			1000	250	ug/L
G7-D-072811	A11G386-01	Sodium	8/9/2011	122000		Yes	Y	D			2000	400	ug/L
G7-D-072811	A11G386-01	Aluminum	8/9/2011	8.43		Yes	Y	J			50.0	4.00	ug/L
G7-D-072811	A11G386-01	Potassium	8/9/2011	3220		Yes	Y				100	10.0	ug/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1108008-DUP1	1108008-DUP1	Fluoride	8/1/2011	1		Yes	N	U			1.00	1.00	mg/L
1108008-DUP1	1108008-DUP1	Sulfate	8/1/2011	1		Yes	N	U			1.00	1.00	mg/L
1108008-DUP1	1108008-DUP1	Chloride (total)	8/1/2011	14.1		Yes	Y				1.00	1.00	mg/L
G3-D-072811	A11G386-04	Fluoride	8/1/2011	5.58		Yes	Y				1.00	1.00	mg/L
G3-D-072811	A11G386-04	Sulfate	8/1/2011	15.6		Yes	Y				1.00	1.00	mg/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G3-D-072811	A11G386-04RE1	Chloride (total)	8/1/2011	52.2	Yes	Y				5.00	5.00	mg/L
G3-S-072811	A11G386-03	Fluoride	8/1/2011	27.6	Yes	Y				1.00	1.00	mg/L
G3-S-072811	A11G386-03	Sulfate	8/1/2011	1	Yes	N	U			1.00	1.00	mg/L
G3-S-072811	A11G386-03RE1	Chloride (total)	8/1/2011	90.2	Yes	Y				5.00	5.00	mg/L
G4-D-072811	A11G386-02	Fluoride	8/1/2011	1	Yes	N	U			1.00	1.00	mg/L
G4-D-072811	A11G386-02	Chloride (total)	8/1/2011	2.31	Yes	Y				1.00	1.00	mg/L
G4-D-072811	A11G386-02	Sulfate	8/1/2011	1	Yes	N	U			1.00	1.00	mg/L
G5-D-072811	A11G386-05	Fluoride	8/1/2011	1	Yes	N	U			1.00	1.00	mg/L
G5-D-072811	A11G386-05	Chloride (total)	8/1/2011	14.6	Yes	Y				1.00	1.00	mg/L
G5-D-072811	A11G386-05	Sulfate	8/1/2011	1	Yes	N	U			1.00	1.00	mg/L
G5-S-072811	A11G386-06	Chloride (total)	8/1/2011	3.72	Yes	Y				1.00	1.00	mg/L
G5-S-072811	A11G386-06	Fluoride	8/1/2011	1	Yes	N	U			1.00	1.00	mg/L
G5-S-072811	A11G386-06	Sulfate	8/1/2011	1	Yes	N	U			1.00	1.00	mg/L
G7-D-072811	A11G386-01	Sulfate	8/1/2011	1	Yes	N	U			1.00	1.00	mg/L
G7-D-072811	A11G386-01	Fluoride	8/1/2011	1	Yes	N	U			1.00	1.00	mg/L
G7-D-072811	A11G386-01	Chloride (total)	8/1/2011	14.1	Yes	Y				1.00	1.00	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1108093-BLK1	1108093-BLK1	Cyanide, total	8/4/2011	0.005	Yes	N	U			0.00500	0.00500	mg/L
1108093-DUP1	1108093-DUP1	Cyanide, total	8/4/2011	0.0128	Yes	Y				0.00500	0.00500	mg/L
G3-D-072811	A11G386-04	Cyanide, total	8/4/2011	0.0788	Yes	Y				0.00500	0.00500	mg/L
G3-S-072811	A11G386-03	Cyanide, total	8/4/2011	0.0538	Yes	Y				0.00500	0.00500	mg/L
G4-D-072811	A11G386-02	Cyanide, total	8/4/2011	0.01	Yes	N	U			0.0100	0.0100	mg/L
G5-D-072811	A11G386-05	Cyanide, total	8/4/2011	0.005	Yes	N	U			0.00500	0.00500	mg/L
G5-S-072811	A11G386-06	Cyanide, total	8/4/2011	0.005	Yes	N	U			0.00500	0.00500	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G7-D-072811	A11G386-01	Cyanide, total	8/4/2011	0.0133		Yes	Y				0.00500	0.00500	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G3-D-072811	A11G386-04	Alkalinity, total as calcium carbonate (CaCO3)	8/4/2011	517		Yes	Y				20.0	20.0	mg/L
G3-D-072811	A11G386-04	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/4/2011	517		Yes	Y				20.0	20.0	mg/L
G3-D-072811	A11G386-04	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/4/2011	20		Yes	N	U			20.0	20.0	mg/L
G3-S-072811	A11G386-03	Alkalinity, total as calcium carbonate (CaCO3)	8/4/2011	1050		Yes	Y				20.0	20.0	mg/L
G3-S-072811	A11G386-03	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/4/2011	20		Yes	N	U			20.0	20.0	mg/L
G3-S-072811	A11G386-03	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/4/2011	1050		Yes	Y				20.0	20.0	mg/L
G4-D-072811	A11G386-02	Alkalinity, total as calcium carbonate (CaCO3)	8/4/2011	728		Yes	Y				20.0	20.0	mg/L
G4-D-072811	A11G386-02	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/4/2011	728		Yes	Y				20.0	20.0	mg/L
G4-D-072811	A11G386-02	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/4/2011	20		Yes	N	U			20.0	20.0	mg/L
G5-D-072811	A11G386-05	Alkalinity, total as calcium carbonate (CaCO3)	8/4/2011	200		Yes	Y				20.0	20.0	mg/L
G5-D-072811	A11G386-05	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/4/2011	200		Yes	Y				20.0	20.0	mg/L
G5-D-072811	A11G386-05	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/4/2011	20		Yes	N	U			20.0	20.0	mg/L
G5-S-072811	A11G386-06	Alkalinity, total as calcium carbonate (CaCO3)	8/8/2011	281		Yes	Y				20.0	20.0	mg/L
G5-S-072811	A11G386-06	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/8/2011	20		Yes	N	U			20.0	20.0	mg/L
G5-S-072811	A11G386-06	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/8/2011	281		Yes	Y				20.0	20.0	mg/L
G7-D-072811	A11G386-01	Alkalinity, total as calcium carbonate (CaCO3)	8/4/2011	715		Yes	Y				20.0	20.0	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G7-D-072811	A11G386-01	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/4/2011	715		Yes	Y				20.0	20.0	mg/L
G7-D-072811	A11G386-01	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/4/2011	20		Yes	N	U			20.0	20.0	mg/L

Analytical Method SM2540C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G3-D-072811	A11G386-04	Total dissolved solids	8/2/2011	658		Yes	Y				10.0	10.0	mg/L
G3-S-072811	A11G386-03	Total dissolved solids	8/2/2011	1510		Yes	Y				10.0	10.0	mg/L
G4-D-072811	A11G386-02	Total dissolved solids	8/2/2011	729		Yes	Y				10.0	10.0	mg/L
G5-D-072811	A11G386-05	Total dissolved solids	8/2/2011	311		Yes	Y				10.0	10.0	mg/L
G5-S-072811	A11G386-06	Total dissolved solids	8/2/2011	306		Yes	Y				10.0	10.0	mg/L
G7-D-072811	A11G386-01	Total dissolved solids	8/2/2011	746		Yes	Y				10.0	10.0	mg/L

Analytical Method SM2540D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G3-D-072811	A11G386-04	Total suspended solids	8/1/2011	63		Yes	Y				5.00	5.00	mg/L
G3-S-072811	A11G386-03	Total suspended solids	8/1/2011	28		Yes	Y				5.00	5.00	mg/L
G4-D-072811	A11G386-02	Total suspended solids	8/1/2011	799		Yes	Y				5.00	5.00	mg/L
G5-D-072811	A11G386-05	Total suspended solids	8/1/2011	29		Yes	Y				5.00	5.00	mg/L
G5-S-072811	A11G386-06	Total suspended solids	8/1/2011	62		Yes	Y				5.00	5.00	mg/L
G7-D-072811	A11G386-01	Total suspended solids	8/1/2011	46		Yes	Y				5.00	5.00	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1108066-DUP2	1108066-DUP2	Cyanide, Weak acid dissociable (WAD)	8/3/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
G3-D-072811	A11G386-04	Cyanide, Weak acid dissociable (WAD)	8/3/2011	0.0146		Yes	Y				0.00500	0.00500	mg/L
G3-S-072811	A11G386-03	Cyanide, Weak acid dissociable (WAD)	8/3/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
G4-D-072811	A11G386-02	Cyanide, Weak acid dissociable (WAD)	8/3/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G5-D-072811	A11G386-05	Cyanide, Weak acid dissociable (WAD)	8/3/2011	0.0055		Yes	Y				0.00500	0.00500	mg/L
G5-S-072811	A11G386-06	Cyanide, Weak acid dissociable (WAD)	8/3/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
G7-D-072811	A11G386-01	Cyanide, Weak acid dissociable (WAD)	8/3/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L

Analytical Method SM4500P

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1108139-BLK1	1108139-BLK1	Phosphorus	8/5/2011	0.1		Yes	N	U			0.100	0.0100	mg/L
G3-D-072811	A11G386-04	Phosphorus	8/5/2011	0.3		Yes	Y				0.100	0.0100	mg/L
G3-S-072811	A11G386-03	Phosphorus	8/5/2011	3.3		Yes	Y	D			1.00	0.100	mg/L
G4-D-072811	A11G386-02	Phosphorus	8/5/2011	3.54		Yes	Y	D			0.500	0.0500	mg/L
G5-D-072811	A11G386-05	Phosphorus	8/5/2011	1.42		Yes	Y	D			0.200	0.0200	mg/L
G5-S-072811	A11G386-06	Phosphorus	8/5/2011	1.07		Yes	Y	D			0.200	0.0200	mg/L
G7-D-072811	A11G386-01	Phosphorus	8/5/2011	0.24		Yes	Y				0.100	0.0100	mg/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1108044-BLK1	1108044-BLK1	2-Methylnaphthalene	8/3/2011	0.0364		Yes	N	U			0.0364	0.0182	ug/L
1108044-BLK1	1108044-BLK1	Benzo(a)pyrene	8/3/2011	0.0182		Yes	N	U			0.0182	0.00909	ug/L
1108044-BLK1	1108044-BLK1	Dibenzo(a,h)anthracene	8/3/2011	0.0182		Yes	N	U			0.0182	0.00909	ug/L
1108044-BLK1	1108044-BLK1	Benzo(a)anthracene	8/3/2011	0.0182		Yes	N	U			0.0182	0.00909	ug/L
1108044-BLK1	1108044-BLK1	Acenaphthene	8/3/2011	0.0182		Yes	N	U			0.0182	0.00909	ug/L
1108044-BLK1	1108044-BLK1	Phenanthrene	8/3/2011	0.0182		Yes	N	U			0.0182	0.00909	ug/L
1108044-BLK1	1108044-BLK1	Fluorene	8/3/2011	0.0182		Yes	N	U			0.0182	0.00909	ug/L
1108044-BLK1	1108044-BLK1	Naphthalene	8/3/2011	0.0364		Yes	N	U			0.0364	0.0182	ug/L
1108044-BLK1	1108044-BLK1	Chrysene	8/3/2011	0.0182		Yes	N	U			0.0182	0.00909	ug/L
1108044-BLK1	1108044-BLK1	Benzo(b,k)fluoranthene	8/3/2011	0.0364		Yes	N	U			0.0364	0.0182	ug/L
1108044-BLK1	1108044-BLK1	Pyrene	8/3/2011	0.0182		Yes	N	U			0.0182	0.00909	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
1108044-BLK1	1108044-BLK1	1-Methylnaphthalene	8/3/2011	0.0364	Yes	N	U			0.0364	0.0182	ug/L
1108044-BLK1	1108044-BLK1	Benzo(k)fluoranthene	8/3/2011	0.0182	Yes	N	U			0.0182	0.00909	ug/L
1108044-BLK1	1108044-BLK1	Fluoranthene	8/3/2011	0.0182	Yes	N	U			0.0182	0.00909	ug/L
1108044-BLK1	1108044-BLK1	Benzo(b)fluoranthene	8/3/2011	0.0182	Yes	N	U			0.0182	0.00909	ug/L
1108044-BLK1	1108044-BLK1	Benzo(g,h,i)perylene	8/3/2011	0.0182	Yes	N	U			0.0182	0.00909	ug/L
1108044-BLK1	1108044-BLK1	Anthracene	8/3/2011	0.0182	Yes	N	U			0.0182	0.00909	ug/L
1108044-BLK1	1108044-BLK1	Indeno(1,2,3-c,d)pyrene	8/3/2011	0.0182	Yes	N	U			0.0182	0.00909	ug/L
1108044-BLK1	1108044-BLK1	Acenaphthylene	8/3/2011	0.0142	Yes	Y	J			0.0182	0.00909	ug/L
G6-D-072811	A11G386-09	Pyrene	8/3/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
G6-D-072811	A11G386-09	Benzo(k)fluoranthene	8/3/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
G6-D-072811	A11G386-09	Fluoranthene	8/3/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
G6-D-072811	A11G386-09	Benzo(b)fluoranthene	8/3/2011	0.0187	Yes	N	U	UJ	5	0.0187	0.00935	ug/L
G6-D-072811	A11G386-09	Acenaphthylene	8/3/2011	0.0122	Yes	N	J	U	7	0.0187	0.00935	ug/L
G6-D-072811	A11G386-09	Benzo(g,h,i)perylene	8/3/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
G6-D-072811	A11G386-09	Benzo(a)anthracene	8/3/2011	0.0136	Yes	Y	J			0.0187	0.00935	ug/L
G6-D-072811	A11G386-09	Anthracene	8/3/2011	0.0815	Yes	Y				0.0187	0.00935	ug/L
G6-D-072811	A11G386-09	Indeno(1,2,3-c,d)pyrene	8/3/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
G6-D-072811	A11G386-09	Chrysene	8/3/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
G6-D-072811	A11G386-09	Dibenzo(a,h)anthracene	8/3/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
G6-D-072811	A11G386-09	Acenaphthene	8/3/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
G6-D-072811	A11G386-09	Phenanthrene	8/3/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
G6-D-072811	A11G386-09	Fluorene	8/3/2011	0.0171	Yes	Y	J			0.0187	0.00935	ug/L
G6-D-072811	A11G386-09	1-Methylnaphthalene	8/3/2011	#######	Yes	N	U	UJ	10	0.000037	0.000018	mg/L
G6-D-072811	A11G386-09	Naphthalene	8/3/2011	0.0374	Yes	N	U	UJ	10	0.0374	0.0187	ug/L
G6-D-072811	A11G386-09	2-Methylnaphthalene	8/3/2011	#######	Yes	N	U	UJ	10	0.000037	0.000018	mg/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G6-D-072811	A11G386-09	Benzo(a)pyrene	8/3/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
G6-S-072811	A11G386-08	Benzo(a)pyrene	8/3/2011	0.019	Yes	N	U			0.0190	0.00952	ug/L
G6-S-072811	A11G386-08	Dibenzo(a,h)anthracene	8/3/2011	0.019	Yes	N	U			0.0190	0.00952	ug/L
G6-S-072811	A11G386-08	Anthracene	8/3/2011	0.0469	Yes	Y				0.0190	0.00952	ug/L
G6-S-072811	A11G386-08	Pyrene	8/3/2011	0.0902	Yes	Y				0.0190	0.00952	ug/L
G6-S-072811	A11G386-08	Benzo(g,h,i)perylene	8/3/2011	0.019	Yes	N	U			0.0190	0.00952	ug/L
G6-S-072811	A11G386-08	Indeno(1,2,3-c,d)pyrene	8/3/2011	0.019	Yes	N	U			0.0190	0.00952	ug/L
G6-S-072811	A11G386-08	Benzo(b)fluoranthene	8/3/2011	0.019	Yes	N	U	UJ	5	0.0190	0.00952	ug/L
G6-S-072811	A11G386-08	Fluoranthene	8/3/2011	0.0572	Yes	Y				0.0190	0.00952	ug/L
G6-S-072811	A11G386-08	Benzo(k)fluoranthene	8/3/2011	0.019	Yes	N	U			0.0190	0.00952	ug/L
G6-S-072811	A11G386-08	Acenaphthylene	8/3/2011	0.019	Yes	N	U			0.0190	0.00952	ug/L
G6-S-072811	A11G386-08	Benzo(a)anthracene	8/3/2011	0.00977	Yes	Y	J			0.0190	0.00952	ug/L
G6-S-072811	A11G386-08	Chrysene	8/3/2011	0.019	Yes	N	U			0.0190	0.00952	ug/L
G6-S-072811	A11G386-08	Acenaphthene	8/3/2011	0.019	Yes	N	U			0.0190	0.00952	ug/L
G6-S-072811	A11G386-08	Phenanthrene	8/3/2011	0.019	Yes	N	U			0.0190	0.00952	ug/L
G6-S-072811	A11G386-08	Fluorene	8/3/2011	0.019	Yes	N	U			0.0190	0.00952	ug/L
G6-S-072811	A11G386-08	1-Methylnaphthalene	8/3/2011	#######	Yes	N	U	UJ	10	0.000038	0.000019	mg/L
G6-S-072811	A11G386-08	Naphthalene	8/3/2011	0.0381	Yes	N	U	UJ	10	0.0381	0.0190	ug/L
G6-S-072811	A11G386-08	2-Methylnaphthalene	8/3/2011	#######	Yes	N	U	UJ	10	0.000038	0.000019	mg/L
PZ-1-072811	A11G386-10	1-Methylnaphthalene	8/3/2011	#######	Yes	Y	D	J	10	0.000189	0.000094	mg/L
PZ-1-072811	A11G386-10	2-Methylnaphthalene	8/3/2011	#######	Yes	Y	D	J	10	0.000189	0.000094	mg/L
PZ-1-072811	A11G386-10	Naphthalene	8/3/2011	1.99	Yes	Y	D	J	10	0.189	0.0943	ug/L
PZ-1-072811	A11G386-10	Phenanthrene	8/3/2011	8.53	Yes	Y	D			0.0943	0.0472	ug/L
PZ-1-072811	A11G386-10	Fluorene	8/3/2011	3.36	Yes	Y	D			0.0943	0.0472	ug/L
PZ-1-072811	A11G386-10	Benzo(b,k)fluoranthene	8/3/2011	0.195	Yes	Y	D	J	5	0.189	0.0943	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-1-072811	A11G386-10	Acenaphthene	8/3/2011	1.56	Yes	Y	D			0.0943	0.0472	ug/L
PZ-1-072811	A11G386-10	Benzo(a)anthracene	8/3/2011	0.162	Yes	Y	D			0.0943	0.0472	ug/L
PZ-1-072811	A11G386-10	Anthracene	8/3/2011	1.76	Yes	Y	D			0.0943	0.0472	ug/L
PZ-1-072811	A11G386-10	Benzo(a)pyrene	8/3/2011	0.0962	Yes	Y	D			0.0943	0.0472	ug/L
PZ-1-072811	A11G386-10	Chrysene	8/3/2011	0.212	Yes	Y	D			0.0943	0.0472	ug/L
PZ-1-072811	A11G386-10	Acenaphthylene	8/3/2011	0.122	Yes	N	D	U	7	0.0943	0.0472	ug/L
PZ-1-072811	A11G386-10	Fluoranthene	8/3/2011	1.33	Yes	Y	D			0.0943	0.0472	ug/L
PZ-1-072811	A11G386-10	Benzo(g,h,i)perylene	8/3/2011	0.134	Yes	Y	D			0.0943	0.0472	ug/L
PZ-1-072811	A11G386-10	Pyrene	8/3/2011	0.996	Yes	Y	D			0.0943	0.0472	ug/L
PZ-1-072811	A11G386-10	Indeno(1,2,3-c,d)pyrene	8/3/2011	0.105	Yes	Y	D			0.0943	0.0472	ug/L
PZ-1-072811	A11G386-10	Dibenzo(a,h)anthracene	8/3/2011	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
PZ-2-072811	A11G386-11	Benzo(a)anthracene	8/3/2011	0.215	Yes	Y	D			0.0377	0.0189	ug/L
PZ-2-072811	A11G386-11	Acenaphthene	8/3/2011	0.559	Yes	Y	D			0.0377	0.0189	ug/L
PZ-2-072811	A11G386-11	Phenanthrene	8/3/2011	2.47	Yes	Y	D			0.0377	0.0189	ug/L
PZ-2-072811	A11G386-11	1-Methylnaphthalene	8/3/2011	#######	Yes	Y	D	J	10	0.000075	0.000037	mg/L
PZ-2-072811	A11G386-11	Dibenzo(a,h)anthracene	8/3/2011	0.0377	Yes	N	D U			0.0377	0.0189	ug/L
PZ-2-072811	A11G386-11	Benzo(b,k)fluoranthene	8/3/2011	0.23	Yes	Y	D	J	5	0.0755	0.0377	ug/L
PZ-2-072811	A11G386-11	Fluorene	8/3/2011	0.271	Yes	Y	D			0.0377	0.0189	ug/L
PZ-2-072811	A11G386-11	2-Methylnaphthalene	8/3/2011	#######	Yes	Y	D	J	10	0.000075	0.000037	mg/L
PZ-2-072811	A11G386-11	Chrysene	8/3/2011	0.328	Yes	Y	D			0.0377	0.0189	ug/L
PZ-2-072811	A11G386-11	Acenaphthylene	8/3/2011	0.0504	Yes	N	D	U	7	0.0377	0.0189	ug/L
PZ-2-072811	A11G386-11	Fluoranthene	8/3/2011	2.08	Yes	Y	D			0.0377	0.0189	ug/L
PZ-2-072811	A11G386-11	Indeno(1,2,3-c,d)pyrene	8/3/2011	0.0377	Yes	N	D U			0.0377	0.0189	ug/L
PZ-2-072811	A11G386-11	Benzo(g,h,i)perylene	8/3/2011	0.0204	Yes	Y	D J			0.0377	0.0189	ug/L
PZ-2-072811	A11G386-11	Pyrene	8/3/2011	1.48	Yes	Y	D			0.0377	0.0189	ug/L

SDG: A11G386

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-2-072811	A11G386-11	Anthracene	8/3/2011	2.6	Yes	Y	D			0.0377	0.0189	ug/L
PZ-2-072811	A11G386-11	Naphthalene	8/3/2011	0.784	Yes	Y	D	J	10	0.0755	0.0377	ug/L
PZ-2-072811	A11G386-11	Benzo(a)pyrene	8/3/2011	0.034	Yes	Y	D J			0.0377	0.0189	ug/L
PZ-5-072811	A11G386-07	Naphthalene	8/3/2011	0.535	Yes	Y	D	J	10	0.189	0.0943	ug/L
PZ-5-072811	A11G386-07	Dibenzo(a,h)anthracene	8/3/2011	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
PZ-5-072811	A11G386-07	Benzo(a)anthracene	8/3/2011	0.112	Yes	Y	D			0.0943	0.0472	ug/L
PZ-5-072811	A11G386-07	Acenaphthene	8/3/2011	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
PZ-5-072811	A11G386-07	Phenanthrene	8/3/2011	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
PZ-5-072811	A11G386-07	Benzo(a)pyrene	8/3/2011	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
PZ-5-072811	A11G386-07	1-Methylnaphthalene	8/3/2011	#######	Yes	N	D U	UJ	10	0.000189	0.000094	mg/L
PZ-5-072811	A11G386-07	Indeno(1,2,3-c,d)pyrene	8/3/2011	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
PZ-5-072811	A11G386-07	Fluorene	8/3/2011	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
PZ-5-072811	A11G386-07	Chrysene	8/3/2011	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
PZ-5-072811	A11G386-07	Acenaphthylene	8/3/2011	0.531	Yes	Y	D			0.0943	0.0472	ug/L
PZ-5-072811	A11G386-07	Benzo(k)fluoranthene	8/3/2011	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
PZ-5-072811	A11G386-07	Benzo(b)fluoranthene	8/3/2011	0.0943	Yes	N	D U	UJ	5	0.0943	0.0472	ug/L
PZ-5-072811	A11G386-07	Benzo(g,h,i)perylene	8/3/2011	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
PZ-5-072811	A11G386-07	Pyrene	8/3/2011	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
PZ-5-072811	A11G386-07	Anthracene	8/3/2011	0.332	Yes	Y	D			0.0943	0.0472	ug/L
PZ-5-072811	A11G386-07	2-Methylnaphthalene	8/3/2011	#######	Yes	N	D U	UJ	10	0.000189	0.000094	mg/L
PZ-5-072811	A11G386-07	Fluoranthene	8/3/2011	0.0943	Yes	N	D U			0.0943	0.0472	ug/L

Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

Anchor Environmental, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101
ATTN: Ms. Cindy Fields

October 25, 2011

SUBJECT: Millennium Bulf Terminals, Data Validation

Dear Ms. Fields,

Enclosed are the final validation reports for the fractions listed below. This SDG was received on October 11, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26374:

SDG #	**Fraction**
TL20	TPH as Extractables

The data validation was performed under EPA Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008

Please feel free to contact us if you have any questions.

Sincerely,

Stella Cuenco

Stella S. Cuenco
Data Validation Operations Manager/Senior Chemist

V:\LOGIN\Anchor\Millennium\26374COV.wpd

Attachment 1

Level III

LDC #26374 (Anchor Environmental-Seattle WA /Millennium Bulk Terminals)

LDC	SDG#	DATE REC'D	(3) DATE DUE	EPH (WA DE)																																	
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	TL20	10/11/11	11/01/11	0	3																																
Total	A/SC			0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS, MSD, or DUP's.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	August 30, 2011
LDC Report Date:	October 19, 2011
Matrix:	Soil
Parameters:	Total Petroleum Hydrocarbons as Extractables
Validation Level:	EPA Level III
Laboratory:	Analytical Resources, Inc.
Sample Delivery Group (SDG):	TL20

Sample Identification

AQ-SSA6-03-3-4
AQ-SSA6-01-3-4
AQ-SSA6-01-7-8

Introduction

This data review covers 3 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per WA Department of Ecology Method for Total Petroleum Hydrocarbons as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

XII. Field Duplicates

No field duplicates were identified in this SDG.

XIII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG TL20

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG TL20

No Sample Data Qualified in this SDG

LDC #: 26374A8
SDG #: TL20
Laboratory: Analytical Resources Inc.

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 10/18/11
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC Extractables Petroleum Hydrocarbons (WA Department Of Ecology Method)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/30/11
II	Initial calibration	A	%RSD ≤ 20
III.	Calibration verification/ICV	A	ICV/CCV ≤ 20
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	Insufficient sample
VII.	Laboratory control samples	A	LCS/D
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: All soil

1	AQ-SSA6-03-3-4	11		21		31	090911-BLK
2	AQ-SSA6-01-3-4	12		22		32	
3	AQ-SSA6-01-7-8	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 26374AB
SDG #: See Cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: WT
2nd Reviewer: [illegible]

METHOD: X GC __ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
What type of continuing calibration calculation was performed? X %D or __ RPD

N N/A Were continuing calibration standards analyzed at the required frequencies?
Y N N/A Did the continuing calibration standards meet the %D / RPD validation criteria of ≤20.0%?
Level IV Only
Y N N/A Were the retention times for all calibrated compounds within their respective acceptance windows?

#	Date	Standard ID	Detector/ Column	Compound	%D (Limit ≤ 20)	RT (limit)	Associated Samples	Qualifications
	9/16/11	0915A008.D	FID	C21-C34	34	( )	ALL	J/UJ/A
		(ICV)		Aliphatics		( )		
						( )		
						( )		
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Millennium Bulk Terminals - LDC 26374

SDG: TL20

Analytical Method WAEPH

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA6-01-3-4	11-19412-TL20B	C16-C21 Aliphatics	9/16/2011	2800000		Yes	Y				14000	14000	ug/kg
AQ-SSA6-01-3-4	11-19412-TL20B	C12-C16 Aliphatics	9/16/2011	470000		Yes	Y				14000	14000	ug/kg
AQ-SSA6-01-3-4	11-19412-TL20B	C10-C12 Aliphatics	9/16/2011	47000		Yes	Y				14000	14000	ug/kg
AQ-SSA6-01-3-4	11-19412-TL20B	C8-C10 Aliphatics	9/16/2011	14000		Yes	N	U			14000	14000	ug/kg
AQ-SSA6-01-3-4	11-19412-TL20B	C21-C34 Aliphatics	9/16/2011	3300000		Yes	Y				14000	14000	ug/kg
AQ-SSA6-01-3-4	11-19412-TL20B	C21-C34 Aromatics	9/16/2011	80000		Yes	Y				14000	14000	ug/kg
AQ-SSA6-01-3-4	11-19412-TL20B	C10-C12 Aromatics	9/16/2011	14000		Yes	N	U			14000	14000	ug/kg
AQ-SSA6-01-3-4	11-19412-TL20B	C12-C16 Aromatics	9/16/2011	54000		Yes	Y				14000	14000	ug/kg
AQ-SSA6-01-3-4	11-19412-TL20B	C16-C21 Aromatics	9/16/2011	270000		Yes	Y				14000	14000	ug/kg
AQ-SSA6-01-3-4	11-19412-TL20B	C8-C10 Aromatics	9/16/2011	14000		Yes	N	U			14000	14000	ug/kg
AQ-SSA6-01-7-8	11-19413-TL20C	C21-C34 Aliphatics	9/16/2011	2700000		Yes	Y				13000	13000	ug/kg
AQ-SSA6-01-7-8	11-19413-TL20C	C16-C21 Aliphatics	9/16/2011	2000000		Yes	Y				13000	13000	ug/kg
AQ-SSA6-01-7-8	11-19413-TL20C	C12-C16 Aliphatics	9/16/2011	80000		Yes	Y				13000	13000	ug/kg
AQ-SSA6-01-7-8	11-19413-TL20C	C8-C10 Aliphatics	9/16/2011	13000		Yes	N	U			13000	13000	ug/kg
AQ-SSA6-01-7-8	11-19413-TL20C	C10-C12 Aliphatics	9/16/2011	13000		Yes	N	U			13000	13000	ug/kg
AQ-SSA6-01-7-8	11-19413-TL20C	C10-C12 Aromatics	9/16/2011	13000		Yes	N	U			13000	13000	ug/kg
AQ-SSA6-01-7-8	11-19413-TL20C	C8-C10 Aromatics	9/16/2011	13000		Yes	N	U			13000	13000	ug/kg
AQ-SSA6-01-7-8	11-19413-TL20C	C21-C34 Aromatics	9/16/2011	41000		Yes	Y				13000	13000	ug/kg
AQ-SSA6-01-7-8	11-19413-TL20C	C12-C16 Aromatics	9/16/2011	13000		Yes	N	U			13000	13000	ug/kg
AQ-SSA6-01-7-8	11-19413-TL20C	C16-C21 Aromatics	9/16/2011	31000		Yes	Y				13000	13000	ug/kg
AQ-SSA6-03-3-4	11-19411-TL20A	C10-C12 Aliphatics	9/16/2011	16000		Yes	N	U			16000	16000	ug/kg
AQ-SSA6-03-3-4	11-19411-TL20A	C12-C16 Aliphatics	9/16/2011	16000		Yes	N	U			16000	16000	ug/kg
AQ-SSA6-03-3-4	11-19411-TL20A	C16-C21 Aliphatics	9/16/2011	130000		Yes	Y				16000	16000	ug/kg
AQ-SSA6-03-3-4	11-19411-TL20A	C21-C34 Aliphatics	9/16/2011	210000		Yes	Y				16000	16000	ug/kg

SDG: TL20

Analytical Method WAEPH

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA6-03-3-4	11-19411-TL20A	C8-C10 Aliphatics	9/16/2011	16000		Yes	N	U			16000	16000	ug/kg
AQ-SSA6-03-3-4	11-19411-TL20A	C8-C10 Aromatics	9/16/2011	16000		Yes	N	U			16000	16000	ug/kg
AQ-SSA6-03-3-4	11-19411-TL20A	C10-C12 Aromatics	9/16/2011	16000		Yes	N	U			16000	16000	ug/kg
AQ-SSA6-03-3-4	11-19411-TL20A	C12-C16 Aromatics	9/16/2011	16000		Yes	N	U			16000	16000	ug/kg
AQ-SSA6-03-3-4	11-19411-TL20A	C16-C21 Aromatics	9/16/2011	16000		Yes	N	U			16000	16000	ug/kg
AQ-SSA6-03-3-4	11-19411-TL20A	C21-C34 Aromatics	9/16/2011	38000		Yes	Y				16000	16000	ug/kg

Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

Anchor Environmental, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101
ATTN: Ms. Cindy Fields

November 29, 2011

SUBJECT: Millennium Bulk Terminals, Data Validation

Dear Ms. Fields,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on November 15, 2011. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 26627:

SDG #	Fraction
A11G307, A11G308 A11H018, A11H037 A11J099, A11J117 A11J118, A11J072 A11J097, A11J137 A11J138, A11J154 A11J155	Wet Chemistry, Metals, Polynuclear Aromatic Hydrocarbons (PAH)

The data validation was performed under EPA Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Stella S. Cuenco
Data Validation Operations Manager/Senior Chemist

L:\Anchor\Millennium\26627COV.wpd

Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

Anchor Environmental, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101
ATTN: Ms. Cindy Fields

December 13, 2011

SUBJECT: Millennium Bulk Terminals, Data Validation

Dear Ms. Fields,

Enclosed is the revised data validation report for the fraction listed below. Please replace the previously submitted report with the enclosed revised report.

LDC Project # 26627:

SDG #	Fraction
A11J072	Polynuclear Aromatic Hydrocarbons

Please feel free to contact us if you have any questions.

Sincerely,

Stella S. Cuenco
Data Validation Operations Manager/Senior Chemist

L:\Anchor\Millennium\26627REV.wpd

Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

Anchor Environmental, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101
ATTN: Ms. Cindy Fields

January 18, 2012

SUBJECT: Millennium Bulk Terminals, Data Validation

Dear Ms. Fields,

Enclosed is the revised data validation report for the fraction listed below. Please replace the previously submitted report with the enclosed revised report and EDD printout.

LDC Project # 26627:

SDG #	**Fraction**
A11J097	Wet Chemistry

Please feel free to contact us if you have any questions.

Sincerely,

Stella Cuenco

Stella S. Cuenco
Data Validation Operations Manager/Senior Chemist

L:\Anchor\Millennium\26627REV2.wpd

Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

Anchor Environmental, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101
ATTN: Ms. Cindy Fields

February 3, 2012

SUBJECT: Revised Millennium Bulk Terminals, Data Validation

Dear Ms. Fields,

Enclosed is the revised data validation report for the fraction listed below. Please replace the previously submitted report with the enclosed revised report

LDC Project # 26627:

SDG #	**Fraction**
A11J097	Wet Chemistry

Please feel free to contact us if you have any questions.

Sincerely,

Ming-Hwa Hwang
Project Manager/Senior Chemist

L:\Anchor\Millennium\26627REV3.wpd

Level III

LDC #26627 (Anchor Environmental-Seattle WA /Millennium Bulk Terminals)

LDC	SDG#	DATE REC'D	(3) DATE DUE	PAHs (8270D -SIM)		Diss Metals (200.8)		Diss Si (200.7)		Alk. (2320B)		Anion (300.0)		CN (335.4)		Diss CN (335.4)		WAD CN (4500)		D.WAD CN (4500)		Free CN (D4282)		D.Free CN (D4282)		P (4500 P)		TDS (2540C)		TSS (2540D)		F (4500)		Diss F (4500)			
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	A11G307	11/15/11	12/02/11	-	-	-	-	-	-	-	-	7	0	7	0	-	-	7	0	-	-	7	0	-	-	-	-	-	-	-	-	2	0	-	-		
B	A11G308	11/15/11	12/02/11	-	-	6	0	6	0	6	0	6	0	6	0	-	-	6	0	-	-	6	0	-	-	6	0	6	0	6	0	2	0	-	-		
C	A11H018	11/15/11	12/02/11	-	-	8	0	8	0	8	0	8	0	8	0	-	-	8	0	-	-	8	0	-	-	8	0	8	0	8	0	6	0	-	-		
D	A11H037	11/15/11	12/02/11	6	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
E	A11J099	11/15/11	12/02/11	-	-	2	0	-	-	-	-	2	0	2	0	-	-	2	0	-	-	2	0	-	-	-	-	-	-	-	-	1	0	-	-		
F	A11J117	11/15/11	12/02/11	3	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	3	0	3	0		
G	A11J118	11/15/11	12/02/11	-	-	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	-	-	-	-		
H	A11J072	11/15/11	12/02/11	7	0	7	0	7	0	7	0	7	0	7	0	7	0	7	0	7	0	7	0	7	0	7	0	7	0	7	0	2	0	2	0		
I	A11J097	11/15/11	12/02/11	1	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	4	0	4	0		
J	A11J137	11/15/11	12/02/11	4	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0	1	0	1	0		
K	A11J138	11/15/11	12/02/11	-	-	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	-	-	-	-		
L	A11J154	11/15/11	12/02/11	-	-	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	-	-	-	-		
M	A11J155	11/15/11	12/02/11	-	-	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	3	0	3	0		
Total	A/SC			21	0	57	0	55	0	55	0	64	0	64	0	41	0	64	0	41	0	64	0	41	0	55	0	55	0	55	0	24	0	13	0	0	769

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS, MSD, or DUP's.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	July 25, 2011
LDC Report Date:	November 23, 2011
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11G307

Sample Identification

MBT-072511-01
MBT-072511-02
MBT-072511-03
MBT-072511-04
MBT-072511-05
MBT-072511-06
MBT-072511-07
MBT-072511-01MS
MBT-072511-01DUP
MBT-072511-03MS
MBT-072511-03DUP
MBT-072511-04MS
MBT-072511-04DUP

Introduction

This data review covers 13 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Chloride and Fluoride, EPA Method 335.4 for Total Cyanide, Standard Method 4500-CN (I/E) for Weak Acid Dissociable Cyanide, ASTM D4282 for Free Cyanide, and Standard Method 4500-F-C for Fluoride.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
MBT-072511-04 MBT-072511-07 MBT-072511-04MS MBT-072511-04DUP	Fluoride	99 days	28 days	J (all detects) R (all non-detects)	A

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Fluoride	0.0370 mg/L	MBT-072511-04 MBT-072511-07
ICB/CCB	Fluoride	0.0360 mg/L	MBT-072511-04 MBT-072511-07
ICB/CCB	Weak acid dissociable cyanide	0.0118 mg/L	MBT-072511-01 MBT-072511-02 MBT-072511-04 MBT-072511-05 MBT-072511-06

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
MBT-072511-01	Weak acid dissociable cyanide	0.0175 mg/L	0.0175U mg/L
MBT-072511-02	Weak acid dissociable cyanide	0.0178 mg/L	0.0178U mg/L
MBT-072511-04	Weak acid dissociable cyanide	0.0501 mg/L	0.0501U mg/L
MBT-072511-05	Weak acid dissociable cyanide	0.0295 mg/L	0.0295U mg/L
MBT-072511-06	Weak acid dissociable cyanide	0.0293 mg/L	0.0293U mg/L

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
MBT-072511-01MS (All samples in SDG A11G307)	Free cyanide	62 (75-125)	J (all detects) UJ (all non-detects)	A

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to holding time and MS%R problems, data were qualified as estimated in seven samples.

Due to calibration blank contamination problems, data were qualified as not detected in five samples.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples MBT-072511-05 and MBT-072511-06 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD
	MBT-072511-05	MBT-072511-06	
Chloride	8.66	8.66	0
Fluoride	8.25	8.28	0
Cyanide, Total	0.0250	0.0245	2
Cyanide, WAD	0.0295	0.0293	1

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A11G307

SDG	Sample	Analyte	Flag	A or P	Reason
A11G307	MBT-072511-04 MBT-072511-07	Fluoride	J (all detects) R (all non-detects)	A	Technical holding time
A11G307	MBT-072511-01 MBT-072511-02 MBT-072511-03 MBT-072511-04 MBT-072511-05 MBT-072511-06 MBT-072511-07	Free cyanide	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A11G307

SDG	Sample	Analyte	Modified Final Concentration	A or P
A11G307	MBT-072511-01	Weak acid dissociable cyanide	0.0175U mg/L	A
A11G307	MBT-072511-02	Weak acid dissociable cyanide	0.0178U mg/L	A
A11G307	MBT-072511-04	Weak acid dissociable cyanide	0.0501U mg/L	A
A11G307	MBT-072511-05	Weak acid dissociable cyanide	0.0295U mg/L	A
A11G307	MBT-072511-06	Weak acid dissociable cyanide	0.0293U mg/L	A

LDC #: 26627A6
SDG #: A11G307
Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 11/17/11
Page: 1 of 1
Reviewer: W
2nd Reviewer: A

METHOD: Chloride, Fluoride (EPA Method 300.0), Total Cyanide (EPA Method 335.4), Weak Acid dissociable Cyanide (SM4500-CN (I/E)), Free Cyanide (ASTM D 4282), Fluoride (SM4500-F-C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 9/25/11
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	SW	
V	Matrix Spike/Matrix Spike Duplicates	SW	
VI.	Duplicates	A	
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	SW	(5, 6)
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	MBT-072511-01	11	MBT-072511-03DUP	21	MB	31	
2	MBT-072511-02	12	MBT-072511-04MS	22		32	
3	MBT-072511-03	13	MBT-072511-04DUP	23		33	
4	MBT-072511-04	14		24		34	
5	MBT-072511-05	15		25		35	
6	MBT-072511-06	16		26		36	
7	MBT-072511-07	17		27		37	
8	MBT-072511-01MS	18		28		38	
9	MBT-072511-01DUP	19		29		39	
10	MBT-072511-03MS	20		30		40	

Notes:

LDC #: 26677A6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MM
2nd reviewer: A

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter
1-7	AQ	pH TDS (Cl) (F) NO_3 NO_2 SO_4 PO_4 ALK (CN-) NH_3 TKN TOC CR^{6+} ClO_4 (WAD CN) (Total CN)
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
8,9	AQ	pH TDS (Cl) (F) NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 (WAD CN) (Total CN)
10,11	AQ	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 (WAD CN) ____
12,13	AQ	pH TDS Cl (F) NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____

Comments:

LDC #: 26697A6

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

All circled dates have exceeded the technical holding time.
(Y) N N/A Were all samples preserved as applicable to each method ?
(Y) N N/A Were all cooler temperatures within validation criteria?

Method:	SM4500-F-C					
Parameters:	F					
Technical holding time:	28 days					

Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
4, 7, 12, 13	7/25/11	11/01/11	(99 days)				J/R/A

HT.6

LDC #: 26627A6

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: Inorganics, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were all samples associated with a given method blank?
Y N N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: mg/L **Associated Samples:** 4,7 (>5X)

Analyte	Blank ID		Blank Action Limit											
	MB	ICB/CCB												
Fluoride	0.0370	0.0360	0.185											

Conc. units: mg/L **Associated Samples:** 1,2,4,5,6

Analyte	Blank ID		Blank Action Limit											
	MB	ICB/CCB		1	2	4	5	6						
WAD Cyanide		0.0118	0.059	0.0175	0.0178	0.0501	0.0295	0.0293						

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 26627A6
SDG #: See cover

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125 (85-115% for Method 300.0)? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
1	8	AQ	Free CN	65 (75-125)	All	J/UJ/A

Comments:

LDC# 26627A6

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer: W
2nd Reviewer: C

Inorganics, Method See Cover

Y/N NA Were field duplicate pairs identified in this SDG?
Y/N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD	
	5	6		
Chloride	8.66	8.66	0	
Fluoride	8.25	8.28	0	
Cyanide, Total	0.0250	0.0245	2	
Cyanide, WAD	0.0295	0.0293	1	

V:\FIELD DUPLICATES\FD_inorganic\26627A6.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	July 25, 2011
LDC Report Date:	November 20, 2011
Matrix:	Water
Parameters:	Dissolved Metals
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11G308

Sample Identification

G1-D-072511
G1-S-072511
G1-S-D-072511
G2-D-072511
G2-S-072511
PZ-5-072511
G1-D-072511MS
G1-D-072511DUP

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Methods 200.7 and 200.8 for Dissolved Metals. The metals analyzed were Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Silicon, and Sodium.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No dissolved metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
ICB/CCB	Silicon	0.108 mg/L	All samples in SDG A11G308
ICB/CCB	Sodium	25.1 ug/L	G1-S-072511 G1-S-D-072511

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

V. ICP Interference Check Sample (ICS) Analysis

ICP Interference check sample analysis was not required by the methods.

VI. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

Samples G1-S-072511 and G1-S-D-072511 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD
	G1-S-072511	G1-S-D-072511	
Silicon	13.9	13.9	0
Aluminum	0.810	0.779	4
Calcium	32.9	33.1	1

Analyte	Concentration (mg/L)		RPD
	G1-S-072511	G1-S-D-072511	
Iron	2.41	2.12	13
Magnesium	16.9	16.6	2
Manganese	0.202	0.202	0
Potassium	14.6	14.5	1
Sodium	73.2	71.7	2

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Dissolved Metals - Data Qualification Summary - SDG A11G308

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG A11G308

No Sample Data Qualified in this SDG

LDC #: 26627B4
SDG #: A11G308
Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 11/19/11
Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: Dissolved Metals (EPA Method 200.7/200.8)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 7/25/11
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	N	Not required
VI.	Matrix Spike Analysis	A	3 MS/Dup. Mg, Mn, Ca, Fe, Na >4X, No qual
VII.	Duplicate Sample Analysis	A	
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not relevant
X.	Furnace Atomic Absorption QC	N	Not utilized
XI.	ICP Serial Dilution	N	Not performed.
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	SW	(2, 3)
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	G1-D-072511	11	MB	21		31	
2	G1-S-072511	12		22		32	
3	G1-S-D-072511	13		23		33	
4	G2-D-072511	14		24		34	
5	G2-S-072511	15		25		35	
6	PZ-5-072511	16		26		36	
7	G1-D-072511MS	17		27		37	
8	G1-D-072511DUP	18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 26627B4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: h
2nd reviewer: C

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-6	Aq	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
7, 8	Aq	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,

Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,

Comments: Mercury by CVAA if performed

LDC #: 26627B4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer:
2nd Reviewer:

METHOD: Trace Metals (EPA 200.7/200.8) Soil preparation factor applied: 1.1X except #6: 5X
Sample Concentration units, unless otherwise noted: mg/L Associated Samples: All (>5X)

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (mg/L)	Maximum ICB/CCB[a] (mg/L)	Blank Action Limit											
Si			0.108	0.6											

Sample Concentration units, unless otherwise noted: mg/L Associated Samples: Na: 2,3 (>5X)

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (mg/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit											
Na			25.1	0.14											

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet.
These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 26627B4

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: Metals (EPA Method 200.7/200.8)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD	
	2	3		
Silicon	13.9	13.9	0	
Aluminum	0.810	0.779	4	
Calcium	32.9	33.1	1	
Iron	2.41	2.12	13	
Magnesium	16.9	16.6	2	
Manganese	0.202	0.202	0	
Potassium	14.6	14.5	1	
Sodium	73.2	71.7	2	

V:\FIELD DUPLICATES\FD_inorganic\26627B4.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	July 25, 2011
LDC Report Date:	November 21, 2011
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11G308

Sample Identification

G1-D-072511
G1-S-072511
G1-S-D-072511
G2-D-072511
G2-S-072511
PZ-5-072511
G1-D-072511MS
G1-D-072511DUP
G1-S-072511DUP
G1-S-D-072511MS
G1-S-D-072511DUP
G2-D-072511DUP
PZ-5-072511MS
PZ-5-072511DUP
G2-D-072511MS

Introduction

This data review covers 15 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard method 2320B for Alkalinity, EPA Method 300.0 for Chloride, Fluoride, and Sulfate, EPA Method 335.4 for Total Cyanide, Standard Method 4500-CN (I/E) for Weak Acid Dissociable Cyanide, ASTM D4282 for Free Cyanide, Standard Method 4500 P B for Total Phosphorus, Standard Method 2540C for Total Dissolved Solids, Standard Method 2540D for Total Suspended Solids, and Standard Method 4500-F-C for Fluoride.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
G1-D-072511 G2-D-072511	Fluoride	99 days	28 days	J (all detects) R (all non-detects)	A

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Fluoride	0.0370 mg/L	G1-D-072511 G2-D-072511
ICB/CCB	Fluoride	0.0360 mg/L	G1-D-072511 G2-D-072511
ICB/CCB	Total phosphorus	0.0090 mg/L	All samples in SDG A11G308

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
G1-S-072511	Total phosphorus	0.084 mg/L	0.084U mg/L

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
PZ-5-072511MS (All samples in SDG A11G308)	Free cyanide	49 (75-125)	J (all detects) UJ (all non-detects)	A

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to holding time and MS%R problems, data were qualified as estimated in six samples.

Due to calibration blank contamination problems, data were qualified as not detected in one sample.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples G1-S-072511 and G1-S-D-072511 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD
	G1-S-072511	G1-S-D-072511	
Chloride	4.54	4.52	0
Fluoride	18.9	19.2	2
Sulfate	10.6	10.7	1
Total dissolved solids	5.00	6.00	18
Total suspended solids	395	386	2
Total alkalinity	315	314	0
Bicarbonate alkalinity	315	314	0
Total phosphorus	0.0840	0.118	34

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A11G308

SDG	Sample	Analyte	Flag	A or P	Reason
A11G308	G1-D-072511 G2-D-072511	Fluoride	J (all detects) R (all non-detects)	A	Technical holding time
A11G308	G1-D-072511 G1-S-072511 G1-S-D-072511 G2-D-072511 G2-S-072511 PZ-5-072511	Free cyanide	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A11G308

SDG	Sample	Analyte	Modified Final Concentration	A or P
A11G308	G1-S-072511	Total phosphorus	0.084U mg/L	A

LDC #: 26627B6
SDG #: A11G308
Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 11/17/11
Page: 1 of 1
Reviewer: W
2nd Reviewer: C

METHOD: Alkalinity (SM2320 B), Chloride, Fluoride, Sulfate (EPA Method 300.0), Total Cyanide (EPA Method 335.4), Weak Acid dissociable Cyanide (SM4500-CN (I/E)), Free Cyanide (ASTM D 4282), Total Phosphorus (SM4500 P B), Total Dissolved Solids (SM2540 C), Total Suspended Solids (SM2540 D), Fluoride (SM4500-F-C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 7/25/11
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	SW	
V	Matrix Spike/Matrix Spike Duplicates	SW	3 MS/Dup
VI.	Duplicates	A	
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	SW	(2, 3)
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: A2

1	G1-D-072511	11	G1-S-D-072511DUP	21	MB	31	
2	G1-S-072511	12	G2-D-072511DUP	22		32	
3	G1-S-D-072511	13	PZ-5-072511MS	23		33	
4	G2-D-072511	14	PZ-5-072511DUP	24		34	
5	G2-S-072511	15	# 4 MS	25		35	
6	PZ-5-072511	16		26		36	
7	G1-D-072511MS	17		27		37	
8	G1-D-072511DUP	18		28		38	
9	G1-S-072511DUP	19		29		39	
10	G1-S-D-072511MS	20		30		40	

Notes:

Sample Specific Analysis Reference

Reviewer: _____
2nd reviewer: _____

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter			
1-6	AQ	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	WAD CN	free CN	TSS
1-6	AQ	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4			P
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4			
7,8	AQ	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4			P
10,11	↓	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4			
12,15	↓	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4			
13,14	↓	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	free CN		
8	↓	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4			TSS
9	↓	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4			
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4			
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4			
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4			
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4			
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4			
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4			
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4			
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4			
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4			
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4			
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4			
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4			
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4			
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4			
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4			
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4			

Comments: _____

LDC #: 26697B2

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Reviewer: [illegible]
2nd reviewer: [illegible]

All circled dates have exceeded the technical holding time.
(Y) N N/A Were all samples preserved as applicable to each method ?
(Y) N N/A Were all cooler temperatures within validation criteria?

Method:		SM4500-F-C					
Parameters:		F					
Technical holding time:		28 days					
Sample ID	**Sampling date**	**Analysis date**	**Analysis date**	**Analysis date**	**Analysis date**	**Analysis date**	**Qualifier**
1,4	7/25/11	11/01/11	(99 days)				J/K/A

LDC #: 26627B6

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were all samples associated with a given method blank?
~~Y~~ N N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: mg/L **Associated Samples:** 1,4 (>5X)

Analyte	Blank ID		Blank Action Limit											
	MB	ICB/CCB												
Fluoride	0.0370	0.0360	0.185											

Conc. units: mg/L **Associated Samples:** All

Analyte	Blank ID		Blank Action Limit											
	MB	ICB/CCB		2										
Phosphorus		0.009	0.090	0.084										

@ P: 25 ml → 50 ml (prep.)

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 26629B6
SDG #: See cover

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125 (85-115% for Method 300.0)? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
1	13	AQ	Free CN	49 (75-125)	All	J/UJ/A

Comments:

MS.8

LDC# 26627B6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer:
2nd Reviewer:

Inorganics, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD	
	2	3		
Chloride	4.54	4.52	0	
Fluoride	18.9	19.2	2	
Sulfate	10.6	10.7	1	
TDS	5.00	6.00	18	
TSS	395	386	2	
Total Alkalinity	315	314	0	
Bicarbonate Alkalinity	315	314	0	
Phosphorus	0.0840	0.118	34	

V:\FIELD DUPLICATES\FD_inorganic\26627B6.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	August 1, 2011
LDC Report Date:	November 28, 2011
Matrix:	Water
Parameters:	Dissolved Metals
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11H018

Sample Identification

W6-080111
W7-080111
W1-080111
W2-080111
W2-080111-D
W3-080111
W4-080111
W5-080111
W5-080111MS

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Methods 200.7 and 200.8 for Dissolved Metals. The metals analyzed were Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Silicon, and Sodium.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No dissolved metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Sodium	0.0360 mg/L	All samples in SDG A11H018

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

V. ICP Interference Check Sample (ICS) Analysis

ICP Interference check sample analysis was not required by the methods.

VI. Matrix Spike Analysis

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

Samples W2-080111 and W2-080111-D were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD
	W2-080111	W2-080111-D	
Silicon	20.5	20.5	0
Aluminum	0.00400U	0.00694	200
Calcium	19.3	19.4	1

Analyte	Concentration (mg/L)		RPD
	W2-080111	W2-080111-D	
Iron	0.434	0.446	3
Magnesium	9.08	9.19	1
Manganese	0.670	0.673	0
Potassium	2.30	2.35	2
Sodium	13.5	13.5	0

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Dissolved Metals - Data Qualification Summary - SDG A11H018

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG A11H018

No Sample Data Qualified in this SDG

LDC #: 26627C4
SDG #: A11H018
Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 11/17/11
Page: 1 of 1
Reviewer: MY
2nd Reviewer: C

METHOD: Dissolved Metals (EPA Method 200.7/200.8)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 08/01/11
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	N	not required
VI.	Matrix Spike Analysis	A	3 MS/Dup
VII.	Duplicate Sample Analysis	A	Dup from SDG A11G386.
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	not reviewed
X.	Furnace Atomic Absorption QC	N	not utilized
XI.	ICP Serial Dilution	N	Not performed
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	SW	(4, 5)
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	W6-080111	11	MB	21		31	
2	W7-080111	12		22		32	
3	W1-080111	13		23		33	
4	W2-080111	14		24		34	
5	W2-080111-D	15		25		35	
6	W3-080111	16		26		36	
7	W4-080111	17		27		37	
8	W5-080111	18		28		38	
9	W5-080111MS	19		29		39	
10		20		30		40	

Notes:

LDC #: 26629C4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-8	Aq	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
9	Aq	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻

Comments: Mercury by CVAA if performed

LDC #: 26627C4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: L
2nd Reviewer: CA

METHOD: Trace Metals (EPA 200.7/200.8) Soil preparation factor applied: 1.1X
Sample Concentration units, unless otherwise noted: mg/L Associated Samples: All (>5X)

					Sample Identification											
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (mg/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit												
Na		0.0360		0.18												

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet.
These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 26627C4

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: Metals (EPA Method 200.7/200.8)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD	
	4	5		
Silicon	20.5	20.5	0	
Aluminum	0.00400U	0.00694	200	
Calcium	19.3	19.4	1	
Iron	0.434	0.446	3	
Magnesium	9.08	9.19	1	
Manganese	0.670	0.673	0	
Potassium	2.30	2.35	2	
Sodium	13.5	13.5	0	

V:\FIELD DUPLICATES\FD_inorganic\26627C4.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	August 1, 2011
LDC Report Date:	November 28, 2011
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11H018

Sample Identification

W6-080111
W7-080111
W1-080111
W2-080111
W2-080111-D
W3-080111
W4-080111
W5-080111
W6-080111MS
W6-080111DUP
W7-080111MS
W7-080111DUP
W5-080111DUP

Introduction

This data review covers 13 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard method 2320B for Alkalinity, EPA Method 300.0 for Chloride, Fluoride, and Sulfate, EPA Method 335.4 for Total Cyanide, Standard Method 4500-CN (I/E) for Weak Acid Dissociable Cyanide, ASTM D4282 for Free Cyanide, Standard Method 4500 P B for Total Phosphorus, Standard Method 2540C for Total Dissolved Solids, Standard Method 2540D for Total Suspended Solids, and Standard Method 4500-F-C for Fluoride.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
W6-080111 W7-080111 W1-080111 W2-080111 W2-080111-D W5-080111	Fluoride	92 days	28 days	J (all detects) R (all non-detects)	A

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Fluoride	0.0370 mg/L	W6-080111 W7-080111 W1-080111 W2-080111 W2-080111-D W5-080111
ICB/CCB	Fluoride	0.0400 mg/L	W6-080111 W7-080111 W1-080111 W2-080111 W2-080111-D W5-080111
ICB/CCB	Free Cyanide	2.20 ug/L	W4-080111 W5-080111

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Total phosphorus	0.042 mg/L	W4-080111 W5-080111
ICB/CCB	Total phosphorus	0.00600 mg/L	W4-080111 W5-080111

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
W6-080111	Fluoride	0.165 mg/L	0.165U mg/L
W7-080111	Fluoride	0.150 mg/L	0.150U mg/L
W1-080111	Fluoride	0.168 mg/L	0.168U mg/L
W2-080111	Fluoride	0.186 mg/L	0.186U mg/L
W2-080111-D	Fluoride	0.187 mg/L	0.187U mg/L
W5-080111	Free Cyanide Total phosphorus	0.00240 mg/L 0.0380 mg/L	0.00240U mg/L 0.0380U mg/L

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to holding time problems, data were qualified as estimated in six samples.

Due to method and calibration blank contamination problems, data were qualified as not detected in six samples.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples W2-080111 and W2-080111-D were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD
	W2-080111	W2-080111-D	
Chloride	9.45	9.46	0
Fluoride	0.186	0.187	1
Sulfate	2.94	2.95	0
Total dissolved solids	164	158	4
Total suspended solids	5.00U	6.00	200
Total alkalinity	106	105	1
Bicarbonate alkalinity	106	105	1
Total phosphorus	0.0700	0.0700	0

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A11H018

SDG	Sample	Analyte	Flag	A or P	Reason
A11H018	W6-080111 W7-080111 W1-080111 W2-080111 W2-080111-D W5-080111	Fluoride	J (all detects) R (all non-detects)	A	Technical holding time

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A11H018

SDG	Sample	Analyte	Modified Final Concentration	A or P
A11H018	W6-080111	Fluoride	0.165U mg/L	A
A11H018	W7-080111	Fluoride	0.150U mg/L	A
A11H018	W1-080111	Fluoride	0.168U mg/L	A
A11H018	W2-080111	Fluoride	0.186U mg/L	A
A11H018	W2-080111-D	Fluoride	0.187U mg/L	A
A11H018	W5-080111	Free Cyanide Total phosphorus	0.00240U mg/L 0.0380U mg/L	A

LDC #: 26627C6

SDG #: A11H018

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 11/17/11

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: Alkalinity (SM2320 B), Chloride, Fluoride, Sulfate (EPA Method 300.0), Total Cyanide (EPA Method 335.4), Weak Acid dissociable Cyanide (SM4500-CN (I/E)), Free Cyanide (ASTM D 4282), Total Phosphorus (SM4500 P B), Total Dissolved Solids (SM2540 C), Total Suspended Solids (SM2540 D), Fluoride (SM4500-F-C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 8/01/11
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	SW	
V	Matrix Spike/Matrix Spike Duplicates	A	3 MS/DUP
VI.	Duplicates	A	
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	SW	(4.5)
XI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: A2

1	W6-080111	11	W7-080111MS	21	MB	31	
2	W7-080111	12	W7-080111DUP	22		32	
3	W1-080111	13	~~W5-080111MS~~	23		33	
4	W2-080111	14	W5-080111DUP	24		34	
5	W2-080111-D	15		25		35	
6	W3-080111	16		26		36	
7	W4-080111	17		27		37	
8	W5-080111	18		28		38	
9	W6-080111MS	19		29		39	
10	W6-080111DUP	20		30		40	

Notes:

LDC #: 26697c6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter
1-8	AQ	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 WAD CN Free CN P TSS
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
9,10	AQ	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 WAD CN Free CN
11	↓	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+} ClO_4
14	↓	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
10	✓	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 TSS
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4

Comments:

METHODS.6

LDC #: 26627G

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page: 1 of 1
Reviewer:
2nd reviewer:

All circled dates have exceeded the technical holding time.
Y N N/A Were all samples preserved as applicable to each method ?
Y N N/A Were all cooler temperatures within validation criteria?

Method:		SM4500-F-C					
Parameters:		F					
Technical holding time:		28 days					
Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
1-5, 8	8/01/11	11/1/11	(92 days)				J/~~R~~/A

LDC #: 26627C6

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer:
2nd Reviewer:

METHOD: Inorganics, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were all samples associated with a given method blank?
Y N N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: mg/L **Associated Samples:** 1-5,8

Analyte	Blank ID		Blank Action Limit											
	MB	ICB/CCB		1	2	3	4	5						
Fluoride	0.0370	0.0400	0.2	0.165	0.150	0.168	0.186	0.187						

Conc. units: mg/L **Associated Samples:** 7,8

Analyte	Blank ID		Blank Action Limit											
	MB	ICB/CCB		8										
Free CN		2.20 ug/L	0.011	0.00240										

Conc. units: mg/L **Associated Samples:** 7,8

Analyte	Blank ID		Blank Action Limit											
	MB	ICB/CCB		8										
Phosphorus	0.042	0.00600	0.21	0.0380										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC# 26627C6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer:
2nd Reviewer:

Inorganics, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD	
	4	5		
Chloride	9.45	9.46	0	
Fluoride	0.186	0.187	1	
Sulfate	2.94	2.95	0	
TDS	164	158	4	
TSS	5.00U	6.00	200	
Total Alkalinity	106	105	1	
Bicarbonate Alkalinity	106	105	1	
Phosphorus	0.0700	0.0700	0	

V:\FIELD DUPLICATES\FD_inorganic\26627C6.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	August 2, 2011
LDC Report Date:	November 20, 2011
Matrix:	Water
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11H037

Sample Identification

R2-080211
R3-080211
R1-D-080211
R1-S-080211
R4-S-080211
R-4D-080211

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
R3-080211	Terphenyl-d14	13 (30-120)	All TCL compounds	J (all detects) UJ (all non-detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria with the following exceptions:

Sample	Compound	Finding	Flag	A or P
R-4D-080211	Benzo(b)fluoranthene Benzo(k)fluoranthene	Due to lack of resolution between these compounds in the samples, the laboratory performed the quantitation using the total peak area.	J (all detects) J (all detects)	A

The reported results for the compounds listed above are biased high. The actual values of these compounds are lower than the values reported by the laboratory.

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to surrogate %R and compound quantitation problems, data were qualified as estimated in two samples.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A11H037

SDG	Sample	Compound	Flag	A or P	Reason
A11H037	R3-080211	All TCL compounds	J (all detects) UJ (all non-detects)	P	Surrogate spikes (%R)
A11H037	R-4D-080211	Benzo(b)fluoranthene Benzo(k)fluoranthene	J (all detects) J (all detects)	A	Compound quantitation and RLs (peak resolution)

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A11H037

No Sample Data Qualified in this SDG

LDC #: 26627D2b
SDG #: A11H037
Laboratory: APEX laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 11/17/11
Page: 1 of 1
Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/02/11
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20 % [illegible]
IV.	Continuing calibration/ICV	A	CCV/ICV ≤ 20 %
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	N	Insufficient vol.
VIII.	Laboratory control samples	~~SW~~ A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	SW	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

Water

1	R2-080211	11	1108103-BLK1	21		31	
2	R3-080211	12		22		32	
3	R1-D-080211	13		23		33	
4	R1-S-080211	14		24		34	
5	R4-S-080211	15		25		35	
6	R-4D-080211	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

Notes:* = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

LDC #: 26627 D26

VALIDATION FINDINGS WORKSHEET
Surrogate Recovery

Page: 1 of 1
Reviewer: NG
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270D SIM)

Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Were percent recoveries (%R) for surrogates within QC limits?

Y (N) N/A If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?

Y N (N/A) If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

#	Date	Sample ID	Surrogate	%R (Limits)	Qualifications
		2	TPH	13 (30-120)	J / UJ / P
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
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				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

* QC limits are advisory	QC Limits (Soil)	QC Limits (Water)		QC Limits (Soil)	QC Limits (Water)
S1 (NBZ) = Nitrobenzene-d5	23-120	35-114	S5 (2FP)= 2-Fluorophenol	25-121	21-100
S2 (FBP) = 2-Fluorobiphenyl	30-115	43-116	S6 (TBP) = 2,4,6-Tribromophenol	19-122	10-123
S3 (TPH) = Terphenyl-d14	18-137	33-141	S7 (2CP) = 2-Chlorophenol-d4	20-130*	33-110*
S4 (PHL) = Phenol-d5	24-113	10-94	S8 (DCB) = 1,2-Dichlorobenzene-d4	20-130*	16-110*

LDC #: 26627 D26

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Page: 1 of 1
Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Compound	Finding	Qualifications
		6	GGG, HHH peaks	coeluted	J dets /A

Comments: _____

OVR.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 6, 2011
LDC Report Date:	November 23, 2011
Matrix:	Water
Parameters:	Metals
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11J099

Sample Identification

MBT-100611-01
MBT-100611-02

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 200.8 for Metals. The metals analyzed were Arsenic, Calcium, Chromium, Copper, Magnesium, Nickel, and Sodium.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Chromium	0.000700 mg/L	All samples in SDG A11J099

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
MBT-100611-01	Chromium	0.00118 mg/L	0.00118U mg/L
MBT-100611-02	Chromium	0.000911 mg/L	0.000911U mg/L

V. ICP Interference Check Sample (ICS) Analysis

ICP Interference check sample analysis was not required by the methods.

VI. Matrix Spike Analysis

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to method blank contamination problems, data were qualified as not detected in two samples.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Metals - Data Qualification Summary - SDG A11J099

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Metals - Laboratory Blank Data Qualification Summary - SDG A11J099

SDG	Sample	Analyte	Modified Final Concentration	A or P
A11J099	MBT-100611-01	Chromium	0.00118U mg/L	A
A11J099	MBT-100611-02	Chromium	0.000911U mg/L	A

LDC #: 26627E4
SDG #: A11K099
Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 11/17/11
Page: 1 of 1
Reviewer: MM
2nd Reviewer: e

METHOD: Metals (EPA Method 200.8)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/06/11
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	N	not required
VI.	Matrix Spike Analysis	N	client specific
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	not reviewed
X.	Furnace Atomic Absorption QC	N	not validated
XI.	ICP Serial Dilution	N	not performed
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

1	MBT-100611-01	11	MB	21		31	
2	MBT-100611-02	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 26924

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: [illegible]
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1, 2	As	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,

Comments: Mercury by CVAA if performed

LDC #: 26627E4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer:
2nd Reviewer:

METHOD: Trace Metals (EPA 200.7/200.8) Soil preparation factor applied: 1.1X
Sample Concentration units, unless otherwise noted: mg/L Associated Samples: All

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (mg/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	1	2									
Cr		0.000700		0.0035	0.00118	0.000911									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 6, 2011
LDC Report Date:	November 23, 2011
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11J099

Sample Identification

MBT-100611-01
MBT-100611-02
MBT-100611-02MS
MBT-100611-02DUP

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Chloride and Fluoride, EPA Method 335.4 for Total Cyanide, Standard Method 4500-CN (I/E) for Weak Acid Dissociable Cyanide, ASTM D4282 for Free Cyanide, and Standard Method 4500-F-C for Fluoride.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable with the following exceptions:

Date	Lab. Reference/ID	Analyte	%R (Limits)	Associated Samples	Flag	A or P
10/7/11	CCV3	Free cyanide	80 (90-110)	MBT-100611-01 MBT-100611-02	J (all detects) UJ (all non-detects)	P

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Fluoride	0.0370 mg/L	MBT-100611-02
ICB/CCB	Fluoride	0.0400 mg/L	MBT-100611-02

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to calibration %R problems, data were qualified as estimated in two samples.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A11J099

SDG	Sample	Analyte	Flag	A or P	Reason
A11J099	MBT-100611-01 MBT-100611-02	Free cyanide	J (all detects) UJ (all non-detects)	P	Calibration verification

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A11J099

No Sample Data Qualified in this SDG

LDC #: 26627E6

SDG #: A11J099

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 11/17/11

Page: 1 of 1

Reviewer: MY

2nd Reviewer: [illegible]

METHOD: Chloride, Fluoride (EPA Method 300.0), Total Cyanide (EPA Method 335.4), Weak Acid dissociable Cyanide (SM4500-CN (I/E)), Free Cyanide (ASTM D 4282), Fluoride (SM4500-F-C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/6/11
II	Initial calibration	A	
III.	Calibration verification	SW	
IV	Blanks	SW	
V	Matrix Spike/Matrix Spike Duplicates	A	3 MS/Dup from SDG A11J118, A11J139, A11J099
VI.	Duplicates	A	
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: AA

1	MBT-100611-01	11	MB	21		31	
2	MBT-100611-02	12		22		32	
3	↓ MS	13		23		33	
4	↓ Dup	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 26627E6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Reviewer: MH
2nd reviewer: C

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter
1-2	AQ	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 Wat CN Free CN
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
~3-4	AQ	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ____ ____

Comments:

LDC #: 26697C6
SDG #: See cover

VALIDATION FINDINGS WORKSHEET
Calibration

Page: 1 of 1
Reviewer: MH
2nd Reviewer: [illegible]

METHOD: Inorganics, EPA Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were all instruments calibrated daily, each set-up time, and were the proper number of standards used?
Y N N/A Were all initial and continuing calibration verification percent recoveries (%R) within the control limits of 90-110% ? ~~BS 115% for CN~~
Y N N/A Are all correlation coefficients ≥0.995 ?

LEVEL IV/D ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Initial and Continuing Calibration Recaluculation Worksheet for recalulations.
Y N N/A Was a balance check conducted prior to the TDS analysis.?
Y N N/A Was the titrant normality checked?

#	Date	Calibration ID	Analyte	%R	Associated Samples	Qualifications
1	10/7/11	CCV3	free CN	80 (90-110)	1,2	J/UJ/P

Comments:

CAL6

LDC #: 26627D6

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: Inorganics, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were all samples associated with a given method blank?
Y N N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: mg/L **Associated Samples:** 2 (>5X)

Analyte	Blank ID		Blank Action Limit											
	MB	ICB/CCB												
Fluoride	0.0370	0.0400	0.200											

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 7, 2011
LDC Report Date:	November 23, 2011
Matrix:	Water
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11J117

Sample Identification

PZ-2-100711
PZ-1-100711
PZ-3-100711

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
1110215-BLK1	10/12/11	Benzo(a)anthracene Chrysene Fluoranthene	0.0114 ug/L 0.0103 ug/L 0.0126 ug/L	All samples in SDG A11J117

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria with the following exceptions:

Sample	Compound	Finding	Flag	A or P
PZ-2-100711 PZ-1-100711 PZ-3-100711	Benzo(b)fluoranthene Benzo(k)fluoranthene	Due to lack of resolution between these compounds in the samples, the laboratory performed the quantitation using the total peak area.	J (all detects) J (all detects)	A

The reported results for the compounds listed above are biased high. The actual values of these compounds are lower than the values reported by the laboratory.

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to compound quantitation problems, data were qualified as estimated in three samples.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A11J117

SDG	Sample	Compound	Flag	A or P	Reason
A11J117	PZ-2-100711 PZ-1-100711 PZ-3-100711	Benzo(b)fluoranthene Benzo(k)fluoranthene	J (all detects) J (all detects)	A	Compound quantitation and RLs (peak resolution)

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A11J117

No Sample Data Qualified in this SDG

LDC #: 26627F2b
SDG #: A11HJ117
Laboratory: APEX laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 11/17/11
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/07/11
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20% r✓
IV.	Continuing calibration/ICV	A	CCV/ICV ≤ 20%
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Insufficient vol
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	SW	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Water

	1	PZ-2-100711	11	1102/5-BK1	21		31	
20x	2	PZ-1-100711	12		22		32	
20x	3	PZ-3-100711	13		23		33	
	4		14		24		34	
	5		15		25		35	
	6		16		26		36	
	7		17		27		37	
	8		18		28		38	
	9		19		29		39	
	10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

Notes:* = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

LDC #: 26627 F2b

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a method blank analyzed for each matrix?
Y N N/A Was a method blank analyzed for each concentration preparation level?
Y N N/A Was a method blank associated with every sample?
Y N N/A Was the blank contaminated? If yes, please see qualification below.

Blank extraction date: 10/12/11 **Blank analysis date:** 10/13/11
Conc. units: ug/L Associated Samples: All

	Compound	Blank ID	Sample Identification							
5X		1110215-Blk1								
0.057	CCC	0.0114		All results > 5X Blk						
0.055	DDD	0.0103								
0.063	YY	0.0126								

Blank extraction date:_____ **Blank analysis date:**_____
Conc. units:_____ Associated Samples:_____

Compound	Blank ID	Sample Identification							

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 26627 F26

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Page: 1 of 1
Reviewer: JVG
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Compound	Finding	Qualifications
		1, 2, 3	GGG, HHH peaks coeluted		J data/A

Comments: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 7, 2011
LDC Report Date:	November 23, 2011
Matrix:	Water
Parameters:	Dissolved Metals
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11J117

Sample Identification

G7-D-100711
PZ-7-100711
PZ-6-100711
G5-D-100711
G5-S-100711
PZ-2-100711
PZ-1-100711
PZ-3-100711
PZ-3-100711MS

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Methods 200.7 and 200.8 for Dissolved Metals. The metals analyzed were Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Silicon, and Sodium.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No dissolved metal contaminants were found in the initial, continuing and preparation blanks.

V. ICP Interference Check Sample (ICS) Analysis

ICP Interference check sample analysis was not required by the methods.

VI. Matrix Spike Analysis

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Dissolved Metals - Data Qualification Summary - SDG A11J117

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG A11J117

No Sample Data Qualified in this SDG

LDC #: 26627F4

SDG #: A11J117

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 11/18/11

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: Dissolved Metals (EPA Method 200.7/200.8)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/7/11
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	N	not required
VI.	Matrix Spike Analysis	A	MS >4x,
VII.	Duplicate Sample Analysis	A	dup from SDG A11J097
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	not reviewed
X.	Furnace Atomic Absorption QC	N	not utilized
XI.	ICP Serial Dilution	N	not performed
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	G7-D-100711	11	MB	21		31	
2	PZ-7-100711	12		22		32	
3	PZ-6-100711	13		23		33	
4	G5-D-100711	14		24		34	
5	G5-S-100711	15		25		35	
6	PZ-2-100711	16		26		36	
7	PZ-1-100711	17		27		37	
8	PZ-3-100711	18		28		38	
9	PZ-3-100711MS	19		29		39	
10		20		30		40	

Notes:

LDC #: 26697F4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: [illegible]
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-8	Ma	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
m-9	Ma	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,

		Analysis Method
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,

Comments: Mercury by CVAA if performed

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 7, 2011
LDC Report Date:	November 21, 2011
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11J117

Sample Identification

G7-D-100711
PZ-7-100711
PZ-6-100711
G5-D-100711
G5-S-100711
PZ-2-100711
PZ-1-100711
PZ-3-100711
G7-D-100711MS
G7-D-100711DUP
PZ-6-100711MS
PZ-6-100711DUP
G5-S-100711MS
PZ-1-100711MS
PZ-1-100711DUP
PZ-3-100711MS
PZ-3-100711DUP

Introduction

This data review covers 17 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2320B for Alkalinity, EPA Method 300.0 for Chloride, Total and Dissolved Fluoride, and Sulfate, EPA Method 335.4 for Total and Dissolved Cyanide, Standard Method 4500-CN (I/E) for Total and Dissolved Weak Acid Dissociable Cyanide, ASTM D4282 for Total and Dissolved Free Cyanide, Standard Method 4500 P B for Total Phosphorus, Standard Method 2540C for Total Dissolved Solids, Standard Method 2540D for Total Suspended Solids, and Standard Method 4500-F-C for Total and Dissolved Fluoride.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Fluoride Dissolved fluoride	0.02000 mg/L 0.02100 mg/L	G7-D-100711 G5-D-100711 G5-S-100711
ICB/CCB	Fluoride Dissolved fluoride	0.0280 mg/L 0.0240 mg/L	G7-D-100711 G5-D-100711 G5-S-100711

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

The results for the dissolved cyanide sample analysis were greater than the total cyanide sample analysis as follows:

Analyte	Concentration (mg/L)	
	G7-D-100711(Dissolved)	G7-D-100711(Total)
Cyanide	7.02	4.04

Analyte	Concentration (mg/L)	
	PZ-7-100711 (dissolved)	PZ-7-100711 (total)
Cyanide	29.0	26.7

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A11J117

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A11J117

No Sample Data Qualified in this SDG

LDC #: 26627F6

SDG #: A11J117

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 11/18/11

Page: 1 of 1

Reviewer: MM

2nd Reviewer: C

METHOD: Alkalinity (SM2320 B), Chloride, Fluoride, Sulfate (EPA Method 300.0), Total Cyanide (EPA Method 335.4), Weak Acid dissociable Cyanide (SM4500-CN (I/E)), Free Cyanide (ASTM D 4282), Total Phosphorus (SM4500 P B), Total Dissolved Solids (SM2540 C), Total Suspended Solids (SM2540 D), Fluoride (SM4500-F-C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/7/11
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	SW	
V	Matrix Spike/Matrix Spike Duplicates	A SW	A 15 Diss Cr 7 LAX
VI.	Duplicates	A	
VII.	Laboratory control samples	A	
VIII.	Sample result verification	SW	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: All

1	G7-D-100711	11	PZ-6-100711MS	21	MD	31	
2	PZ-7-100711	12	PZ-6-100711DUP	22		32	
3	PZ-6-100711	13	G5-S-100711MS	23		33	
4	G5-D-100711	~~14~~	~~G5-S-100711DUP~~	24		34	
5	G5-S-100711	15	PZ-1-100711MS	25		35	
6	PZ-2-100711	16	PZ-1-100711DUP	26		36	
7	PZ-1-100711	17	PZ-3-100711MS	27		37	
8	PZ-3-100711	18	PZ-3-100711DUP	28		38	
9	G7-D-100711MS	19		29		39	
10	G7-D-100711DUP	20		30		40	

Notes:

LDC #: [illegible]

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter	
1-B	AQ	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	WAD CN, Free CN, P, TSS
1-B	AQ	pH TDS Cl F (DISS) NO_3 NO_2 SO_4 PO_4 ALK CN^- (DISS) NH_3 TKN TOC CR^{6+} ClO_4	DISS WAD CN, DISS Free CN
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
11,12,17,18	AQ	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
13		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
9,10		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	Free CN, P
17,18,15,16		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- (DISS) NH_3 TKN TOC CR^{6+} ClO_4	DISS
17,18		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	~~Free~~ WAD CN
9,10		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	DISS Free CN
10		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	TSS
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	

Comments:

METHODS.6

LDC #: 26627F6

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: Inorganics, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were all samples associated with a given method blank?
Y N N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: mg/L **Associated Samples:** 1,4,5 (>5X)

Analyte	Blank ID		Blank Action Limit											
	MB	ICB/CCB												
Fluoride	0.02000	0.0280	0.140											
Diss Fluoride	0.02100	0.0240	0.120											

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 26677 F1

VALIDATION FINDINGS WORKSHEET
Sample Result Verification

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

#	Date	Matrix	Analyte	Diss (mg/L) Finding	Total (mg/L)	Associated Samples	Qualifications
1			CN	~~4.04~~ 7.02	~~7.02~~ 4.04	3	Text. Diss > Total
2			↓	29.0	26.7	6	↓

Comments:

SMPRESV.6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 7, 2011
LDC Report Date:	November 20, 2011
Matrix:	Water
Parameters:	Dissolved Metals
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11J118

Sample Identification

RL-5-100711
RL-5-100711MS

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Methods 200.7 and 200.8 for Dissolved Metals. The metals analyzed were Aluminum, Arsenic, Calcium, Chromium, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silicon, and Sodium.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No dissolved metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Chromium	0.000756 mg/L	All samples in SDG A11J118

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
RL-5-100711	Chromium	0.00200 mg/L	0.00200U mg/L

V. ICP Interference Check Sample (ICS) Analysis

ICP Interference check sample analysis was not required by the methods.

VI. Matrix Spike Analysis

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to method blank contamination problems, data were qualified as not detected in one sample.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Dissolved Metals - Data Qualification Summary - SDG A11J118

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG A11J118

SDG	Sample	Analyte	Modified Final Concentration	A or P
A11J118	RL-5-100711	Chromium	0.00200U mg/L	A

LDC #: 26627G4
SDG #: A11J118
Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 11/18/11
Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: Dissolved Metals (EPA Method 200.7/200.8)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/07/11
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	N	Not required
VI.	Matrix Spike Analysis	A	Na > 4X
VII.	Duplicate Sample Analysis	A	Dup from SDG A11J097
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	Not utilized
XI.	ICP Serial Dilution	N	Not performed.
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

1	RL-5-100711	11	MB	21		31	
2	RL-5-100711MS	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 26627G4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: [illegible]
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1	AQ	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
MS	AQ	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,

Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,

Comments: Mercury by CVAA if performed

LDC #: 26627G4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer:
2nd Reviewer:

METHOD: Trace Metals (EPA 200.7/200.8) Soil preparation factor applied: 1.1X
Sample Concentration units, unless otherwise noted: mg/L Associated Samples: All

					Sample Identification											
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (mg/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	1											
Cr		0.000756		0.00378	0.00200											

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 7, 2011
LDC Report Date:	November 21, 2011
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11J118

Sample Identification

RL-5-100711
RL-5-100711MS
RL-5-100711DUP

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2320B for Alkalinity, EPA Method 300.0 for Chloride, Total and Dissolved Fluoride, and Sulfate, EPA Method 335.4 for Total and Dissolved Cyanide, Standard Method 4500-CN (I/E) for Total and Dissolved Weak Acid Dissociable Cyanide, ASTM D4282 for Total and Dissolved Free Cyanide, Standard Method 4500 P B for Total Phosphorus, Standard Method 2540C for Total Dissolved Solids, and Standard Method 2540D for Total Suspended Solids.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A11J118

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A11J118

No Sample Data Qualified in this SDG

LDC #: 26627G6

SDG #: A11J118

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 11/18/11

Page: 1 of 1

Reviewer: MY

2nd Reviewer: [illegible]

METHOD: Alkalinity (SM2320 B), Chloride, Total and Dissolved Fluoride, Sulfate (EPA Method 300.0), Total and Dissolved Cyanide (EPA Method 335.4), Total and Dissolved Weak Acid dissociable Cyanide (SM4500-CN (I/E)), Total and Dissolved Free Cyanide (ASTM D 4282), Total Phosphorus (SM4500 P B), Total Dissolved Solids (SM2540 C), Total Suspended Solids (SM2540 D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/07/11
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	A	
VI.	Duplicates	A	
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	RL-5-100711	11	MB	21		31	
2	RL-5-100711MS	12		22		32	
3	RL-5-100711DUP	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 26019

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter	
1	Aq	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	WAD CN, Free CN, P, TSS
1	↓	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	Diss WAD CN, Diss Free CN
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
2,3	Aq	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	Free CN
↓	↓	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	Diss Free CN
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4	

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 5, 2011
LDC Report Date:	December 12, 2011
Matrix:	Water
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11J072

Sample Identification

R-1S-100511
R-4D-100511
R-3-100511
R-53-100511
R-2-100511
R-1D-10511
R-4S-100511

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

*V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
1110215-BLK1	10/12/11	Benzo(a)anthracene Chrysene Fluoranthene	0.0114 ug/L 0.0103 ug/L 0.0126 ug/L	All samples in SDG A11J072

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
R-4D-100511	Benzo(a)anthracene Chrysene Fluoranthene	0.0208 ug/L 0.0114 ug/L 0.0110 ug/L	0.0208U ug/L 0.0114U ug/L 0.0110U ug/L
R-4S-100511	Benzo(a)anthracene	0.0448 ug/L	0.0448U ug/L
*R-1D-10511	Benzo(a)anthracene Chrysene	0.0122 ug/L 0.0146 ug/L	0.0122U ug/L 0.0146U ug/L

*Added sample to table above.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
R-3-100511	Terphenyl-d14	17 (30-120)	All TCL compounds	J (all detects) UJ (all non-detects)	P
R-53-100511	Terphenyl-d14	15 (30-120)	All TCL compounds	J (all detects) UJ (all non-detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

All compound quantitation and RLs were within validation criteria with the following exceptions:

Sample	Compound	Finding	Flag	A or P
R-1D-10511	Benzo(b)fluoranthene Benzo(k)fluoranthene	Due to lack of resolution between these compounds in the samples, the laboratory performed the quantitation using the total peak area.	J (all detects) J (all detects)	A

The reported results for the compounds listed above are biased high. The actual values of these compounds are lower than the values reported by the laboratory.

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to surrogate %R and compound quantitation problems, data were qualified as estimated in three samples.

Due to method blank contamination problems, data were qualified as not detected in two samples.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples R-3-100511 and R-53-100511 were identified as field duplicates. No polynuclear aromatic hydrocarbons were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	R-3-100511	R-53-100511	
Acenaphthene	0.0381U	0.0286	200
Anthracene	0.949	0.853	11
Benzo(a)anthracene	0.305	0.260	16
Chrysene	0.0190U	0.284	200
Dibenzofuran	0.0388	0.0190U	200
Fluorene	0.0621	0.0674	8
1-Methylnaphthalene	0.0595	0.0578	3
2-Methylnaphthalene	0.0992	0.108	8
Naphthalene	0.157	0.146	7
Phenanthrene	0.0184	0.0199	8

XVII. Field Blanks

No field blanks were identified in this SDG.

*Indicates change as the result of report review. SDG A11J072
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Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A11J072

SDG	Sample	Compound	Flag	A or P	Reason
A11J072	R-3-100511 R-53-100511	All TCL compounds	J (all detects) UJ (all non-detects)	P	Surrogate spikes (%R)
A11J072	R-1D-10511	Benzo(b)fluoranthene Benzo(k)fluoranthene	J (all detects) J (all detects)	A	Compound quantitation and RLs (peak resolution)

*Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A11J072

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
A11J072	R-4D-100511	Benzo(a)anthracene Chrysene Fluoranthene	0.0208U ug/L 0.0114U ug/L 0.0110U ug/L	A
A11J072	R-4S-100511	Benzo(a)anthracene	0.0448U ug/L	A
*A11J072	R-1D-10511	Benzo(a)anthracene Chrysene	0.0122U ug/L 0.0146U ug/L	A

LDC #: 26627H2b

SDG #: A11HJ072

Laboratory: APEX laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 11/17/11

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/05/11
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20 % [illegible]
IV.	Continuing calibration/ICV	A	CCV/ICV ≤ 20 %
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	N	Insufficient vol.
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	SW	
XVI.	Field duplicates	SW	D = 3, 4
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Water

1	R-1S-100511	11	1110215_BLK1	21		31	
2	R-4D-100511	12		22		32	
3	R-3-100511 D	13		23		33	
4	R-53-100511 D	14		24		34	
5	R-2-100511	15		25		35	
6	R-1D-10511	16		26		36	
7	R-4S-100511	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

Notes:* = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

LDC #: 26627 H26

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: SVG
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a method blank analyzed for each matrix?
Y N N/A Was a method blank analyzed for each concentration preparation level?
Y N N/A Was a method blank associated with every sample?
Y N N/A Was the blank contaminated? If yes, please see qualification below.

Blank extraction date: 10/12/11 **Blank analysis date:** 10/13/11
Conc. units: ug/L Associated Samples: All

	Compound	Blank ID	Sample Identification							
5X		111021S-Blk1	2	7	6					
0.057	CCC	0.0114	0.0208/u	0.0448/u	0.0122/u					
0.0515	DDD	0.0103	0.0114/		0.0146/					
0.063	YY	0.0126	0.010/							
			(All others either ND or > 5x Blk)							

Blank extraction date:_____ **Blank analysis date:**_____
Conc. units:_____ Associated Samples:_____

Compound	Blank ID	Sample Identification							

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 26627 A2b

VALIDATION FINDINGS WORKSHEET
Surrogate Recovery

Reviewer: [signature]
2nd Reviewer: [signature]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Were percent recoveries (%R) for surrogates within QC limits?
Y (N) N/A If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?
Y N (N/A) If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

#	Date	Sample ID	Surrogate	%R (Limits)	Qualifications
		3	TPH	17 (30–120)	J/UJ/P
			↓	(↓)	↓
		4	↓	15 (↓)	↓
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
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				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

* QC limits are advisory	QC Limits (Soil)	QC Limits (Water)		QC Limits (Soil)	QC Limits (Water)
S1 (NBZ) = Nitrobenzene-d5	23-120	35-114	S5 (2FP)= 2-Fluorophenol	25-121	21-100
S2 (FBP) = 2-Fluorobiphenyl	30-115	43-116	S6 (TBP) = 2,4,6-Tribromophenol	19-122	10-123
S3 (TPH) = Terphenyl-d14	18-137	33-141	S7 (2CP) = 2-Chlorophenol-d4	20-130*	33-110*
S4 (PHL) = Phenol-d5	24-113	10-94	S8 (DCB) = 1,2-Dichlorobenzene-d4	20-130*	16-110*

LDC #: 26627 H26

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: DM
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Compound	Finding	Qualifications
		6	GGG, HHH peaks coeluted		J dets /A

Comments: _____

LDC#:26627H2b

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: SV
2nd Reviewer:

METHOD: GC MS PAH (EPA SW 846 Method 8270D-SIM)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD (≤35%)	Qualifications
	3	4		
Anthracene	0.949	0.853	11	
Benzo(a)anthracene	0.305	0.260	16	
Chrysene	0.0190U	0.284	200	
Dibenzofuran	0.0388	0.0190U	200	
Fluorene	0.0621	0.0674	8	
1-Methylnaphthalene	0.0595	0.0578	3	
2-Methylnaphthalene	0.0992	0.108	8	
Naphthalene	0.157	0.146	7	
Phenanthrene	0.0184	0.0199	8	

V:\FIELD DUPLICATES\26627H2b.wpd

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06	Cyanide, free	10/7/2011	0.0036		Yes	Y	J			0.00500	0.00200	mg/L
R-1D-100511	A11J072-06	Cyanide, free	10/7/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
R-1S-100511	A11J072-01	Cyanide, free	10/7/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
R-1S-100511	A11J072-01	Cyanide, free	10/7/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
R-2-100511	A11J072-05	Cyanide, free	10/7/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
R-2-100511	A11J072-05	Cyanide, free	10/7/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
R-3-100511	A11J072-03	Cyanide, free	10/7/2011	0.0038		Yes	Y	J			0.00500	0.00200	mg/L
R-3-100511	A11J072-03	Cyanide, free	10/7/2011	0.0062		Yes	Y				0.00500	0.00200	mg/L
R-4D-100511	A11J072-02	Cyanide, free	10/7/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
R-4D-100511	A11J072-02	Cyanide, free	10/7/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
R-4S-100511	A11J072-07	Cyanide, free	10/7/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
R-4S-100511	A11J072-07	Cyanide, free	10/7/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
R-53-100511	A11J072-04	Cyanide, free	10/7/2011	0.0049		Yes	Y	J			0.00500	0.00200	mg/L
R-53-100511	A11J072-04	Cyanide, free	10/7/2011	0.0049		Yes	Y	J			0.00500	0.00200	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06	Silicon	10/20/2011	30.2		Yes	Y				0.500	0.100	mg/L
R-1S-100511	A11J072-01	Silicon	10/20/2011	26.3		Yes	Y				0.500	0.100	mg/L
R-2-100511	A11J072-05	Silicon	10/20/2011	30.6		Yes	Y				0.500	0.100	mg/L
R-3-100511	A11J072-03	Silicon	10/20/2011	29.2		Yes	Y				4.50	0.900	mg/L
R-4D-100511	A11J072-02	Silicon	10/20/2011	33		Yes	Y				0.500	0.100	mg/L
R-4S-100511	A11J072-07	Silicon	10/20/2011	27.6		Yes	Y				0.500	0.100	mg/L
R-53-100511	A11J072-04	Silicon	10/20/2011	32		Yes	Y				4.50	0.900	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06	Manganese	10/22/2011	5590		Yes	Y	D			5.00	2.50	ug/L
R-1D-100511	A11J072-06	Calcium	10/22/2011	123000		Yes	Y	D			500	250	ug/L
R-1D-100511	A11J072-06	Aluminum	10/22/2011	250		Yes	N	D U			250	125	ug/L
R-1D-100511	A11J072-06	Iron	10/22/2011	145000		Yes	Y	D			250	125	ug/L
R-1D-100511	A11J072-06	Magnesium	10/22/2011	60900		Yes	Y	D			250	125	ug/L
R-1D-100511	A11J072-06	Potassium	10/22/2011	1950		Yes	Y	D			500	250	ug/L
R-1D-100511	A11J072-06	Sodium	10/22/2011	136000		Yes	Y	D			500	250	ug/L
R-1S-100511	A11J072-01	Iron	10/20/2011	6800		Yes	Y				50.0	25.0	ug/L
R-1S-100511	A11J072-01	Calcium	10/20/2011	16900		Yes	Y				100	50.0	ug/L
R-1S-100511	A11J072-01	Aluminum	10/20/2011	189		Yes	Y				50.0	25.0	ug/L
R-1S-100511	A11J072-01	Potassium	10/20/2011	2600		Yes	Y				100	50.0	ug/L
R-1S-100511	A11J072-01	Manganese	10/20/2011	1180		Yes	Y				1.00	0.500	ug/L
R-1S-100511	A11J072-01	Magnesium	10/20/2011	7110		Yes	Y				50.0	25.0	ug/L
R-1S-100511	A11J072-01	Sodium	10/21/2011	71400		Yes	Y	D			500	250	ug/L
R-2-100511	A11J072-05	Manganese	10/21/2011	2030		Yes	Y				1.00	0.500	ug/L
R-2-100511	A11J072-05	Iron	10/21/2011	33800		Yes	Y				100	25.0	ug/L
R-2-100511	A11J072-05	Potassium	10/21/2011	1170		Yes	Y	D			500	250	ug/L
R-2-100511	A11J072-05	Sodium	10/21/2011	25200		Yes	Y	D			500	250	ug/L
R-2-100511	A11J072-05	Calcium	10/21/2011	26000		Yes	Y	D			500	250	ug/L
R-2-100511	A11J072-05	Aluminum	10/21/2011	250		Yes	N	D U			250	125	ug/L
R-2-100511	A11J072-05	Magnesium	10/21/2011	12500		Yes	Y	D			250	125	ug/L
R-3-100511	A11J072-03	Sodium	10/21/2011	7250000		Yes	Y	D			18000	9000	ug/L
R-3-100511	A11J072-03	Aluminum	10/21/2011	900		Yes	N	D U			900	450	ug/L
R-3-100511	A11J072-03	Potassium	10/21/2011	11900		Yes	Y	D			3600	900	ug/L
R-3-100511	A11J072-03	Calcium	10/21/2011	1230		Yes	Y	D J			1800	900	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-3-100511	A11J072-03	Iron	10/21/2011	123000		Yes	Y	D			1800	450	ug/L
R-3-100511	A11J072-03	Magnesium	10/21/2011	900		Yes	N	D U			900	450	ug/L
R-3-100511	A11J072-03	Manganese	10/21/2011	15.8		Yes	Y	D J			18.0	9.00	ug/L
R-4D-100511	A11J072-02	Aluminum	10/20/2011	50		Yes	N	U			50.0	25.0	ug/L
R-4D-100511	A11J072-02	Magnesium	10/20/2011	41100		Yes	Y				50.0	25.0	ug/L
R-4D-100511	A11J072-02	Potassium	10/20/2011	2110		Yes	Y				100	50.0	ug/L
R-4D-100511	A11J072-02	Iron	10/21/2011	127000		Yes	Y	D			500	125	ug/L
R-4D-100511	A11J072-02	Manganese	10/21/2011	4770		Yes	Y	D			5.00	2.50	ug/L
R-4D-100511	A11J072-02	Sodium	10/21/2011	96400		Yes	Y	D			500	250	ug/L
R-4D-100511	A11J072-02	Calcium	10/21/2011	73200		Yes	Y	D			500	250	ug/L
R-4S-100511	A11J072-07	Iron	10/21/2011	92500		Yes	Y	D			200	50.0	ug/L
R-4S-100511	A11J072-07	Calcium	10/21/2011	80800		Yes	Y	D			500	250	ug/L
R-4S-100511	A11J072-07	Aluminum	10/21/2011	250		Yes	N	D U			250	125	ug/L
R-4S-100511	A11J072-07	Manganese	10/21/2011	5300		Yes	Y	D			5.00	2.50	ug/L
R-4S-100511	A11J072-07	Magnesium	10/21/2011	37200		Yes	Y	D			250	125	ug/L
R-4S-100511	A11J072-07	Potassium	10/21/2011	1930		Yes	Y	D			500	250	ug/L
R-4S-100511	A11J072-07	Sodium	10/22/2011	319000		Yes	Y	D			1000	500	ug/L
R-53-100511	A11J072-04	Sodium	10/21/2011	7630000		Yes	Y	D			18000	9000	ug/L
R-53-100511	A11J072-04	Calcium	10/21/2011	1580		Yes	Y	D J			1800	900	ug/L
R-53-100511	A11J072-04	Potassium	10/21/2011	12900		Yes	Y	D			3600	900	ug/L
R-53-100511	A11J072-04	Manganese	10/21/2011	15.8		Yes	Y	D J			18.0	9.00	ug/L
R-53-100511	A11J072-04	Magnesium	10/21/2011	900		Yes	N	D U			900	450	ug/L
R-53-100511	A11J072-04	Iron	10/21/2011	128000		Yes	Y	D			1800	450	ug/L
R-53-100511	A11J072-04	Aluminum	10/21/2011	900		Yes	N	D U			900	450	ug/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06	Chloride (total)	10/11/2011	105		Yes	Y				10.0	10.0	mg/L
R-1D-100511	A11J072-06RE1	Sulfate	10/24/2011	1		Yes	N	U			1.00	1.00	mg/L
R-1S-100511	A11J072-01	Chloride (total)	10/11/2011	2.38		Yes	Y				1.00	1.00	mg/L
R-1S-100511	A11J072-01	Sulfate	10/11/2011	1		Yes	N	U			1.00	1.00	mg/L
R-1S-100511	A11J072-01	Fluoride	10/11/2011	31		Yes	Y				1.00	1.00	mg/L
R-1S-100511	A11J072-01	Fluoride	10/14/2011	30.1		Yes	Y				2.00	2.00	mg/L
R-2-100511	A11J072-05	Chloride (total)	10/11/2011	5.95		Yes	Y				1.00	1.00	mg/L
R-2-100511	A11J072-05	Sulfate	10/11/2011	1		Yes	N	U			1.00	1.00	mg/L
R-3-100511	A11J072-03	Sulfate	10/11/2011	114		Yes	Y				57.1	57.1	mg/L
R-3-100511	A11J072-03	Chloride (total)	10/11/2011	74.7		Yes	Y				57.1	57.1	mg/L
R-3-100511	A11J072-03	Fluoride	10/11/2011	2180		Yes	Y				57.1	57.1	mg/L
R-3-100511	A11J072-03	Fluoride	10/14/2011	2190		Yes	Y				100	100	mg/L
R-4D-100511	A11J072-02	Fluoride	10/11/2011	1.54		Yes	Y				1.00	1.00	mg/L
R-4D-100511	A11J072-02	Chloride (total)	10/11/2011	8.99		Yes	Y				1.00	1.00	mg/L
R-4D-100511	A11J072-02	Sulfate	10/11/2011	1		Yes	N	U			1.00	1.00	mg/L
R-4D-100511	A11J072-02	Fluoride	10/14/2011	1.59		Yes	Y				1.00	1.00	mg/L
R-4S-100511	A11J072-07	Chloride (total)	10/11/2011	9.49		Yes	Y				3.33	3.33	mg/L
R-4S-100511	A11J072-07	Fluoride	10/11/2011	11.4		Yes	Y				3.33	3.33	mg/L
R-4S-100511	A11J072-07	Fluoride	10/14/2011	10.7		Yes	Y				1.00	1.00	mg/L
R-4S-100511	A11J072-07RE1	Sulfate	10/24/2011	1		Yes	N	U			1.00	1.00	mg/L
R-53-100511	A11J072-04	Sulfate	10/11/2011	119		Yes	Y				57.1	57.1	mg/L
R-53-100511	A11J072-04	Chloride (total)	10/11/2011	75		Yes	Y				57.1	57.1	mg/L
R-53-100511	A11J072-04	Fluoride	10/11/2011	2180		Yes	Y				57.1	57.1	mg/L
R-53-100511	A11J072-04	Fluoride	10/14/2011	2190		Yes	Y				100	100	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06RE1	Cyanide, total	10/7/2011	0.0537		Yes	Y				0.00500	0.00500	mg/L
R-1S-100511	A11J072-01	Cyanide, total	10/7/2011	0.0331		Yes	Y				0.00500	0.00500	mg/L
R-2-100511	A11J072-05RE1	Cyanide, total	10/7/2011	0.0055		Yes	Y				0.00500	0.00500	mg/L
R-3-100511	A11J072-03RE1	Cyanide, total	10/7/2011	376		Yes	Y	D			6.00	6.00	mg/L
R-4D-100511	A11J072-02	Cyanide, total	10/7/2011	0.0259		Yes	Y				0.00500	0.00500	mg/L
R-4S-100511	A11J072-07	Cyanide, total	10/7/2011	0.0238		Yes	Y				0.00500	0.00500	mg/L
R-53-100511	A11J072-04RE1	Cyanide, total	10/7/2011	391		Yes	Y	D			6.00	6.00	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2011	879		Yes	Y				20.0	20.0	mg/L
R-1D-100511	A11J072-06	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
R-1D-100511	A11J072-06	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/17/2011	879		Yes	Y				20.0	20.0	mg/L
R-1D-100511	A11J072-06	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
R-1S-100511	A11J072-01	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2011	233		Yes	Y				20.0	20.0	mg/L
R-1S-100511	A11J072-01	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
R-1S-100511	A11J072-01	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
R-1S-100511	A11J072-01	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/17/2011	233		Yes	Y				20.0	20.0	mg/L
R-2-100511	A11J072-05	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
R-2-100511	A11J072-05	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
R-2-100511	A11J072-05	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2011	175		Yes	Y				20.0	20.0	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-2-100511	A11J072-05	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/17/2011	175		Yes	Y				20.0	20.0	mg/L
R-3-100511	A11J072-03	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/17/2011	2740		Yes	Y				20.0	20.0	mg/L
R-3-100511	A11J072-03	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
R-3-100511	A11J072-03	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/17/2011	8420		Yes	Y				20.0	20.0	mg/L
R-3-100511	A11J072-03	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2011	11200		Yes	Y				20.0	20.0	mg/L
R-4D-100511	A11J072-02	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2011	576		Yes	Y				20.0	20.0	mg/L
R-4D-100511	A11J072-02	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
R-4D-100511	A11J072-02	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/17/2011	576		Yes	Y				20.0	20.0	mg/L
R-4D-100511	A11J072-02	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
R-4S-100511	A11J072-07	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2011	1050		Yes	Y				20.0	20.0	mg/L
R-4S-100511	A11J072-07	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
R-4S-100511	A11J072-07	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
R-4S-100511	A11J072-07	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/17/2011	1050		Yes	Y				20.0	20.0	mg/L
R-53-100511	A11J072-04	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/17/2011	8620		Yes	Y				20.0	20.0	mg/L
R-53-100511	A11J072-04	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/17/2011	2730		Yes	Y				20.0	20.0	mg/L
R-53-100511	A11J072-04	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
R-53-100511	A11J072-04	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2011	11400		Yes	Y				20.0	20.0	mg/L

Analytical Method SM2540C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06	Total dissolved solids	10/10/2011	1250		Yes	Y				10.0	10.0	mg/L
R-1S-100511	A11J072-01	Total dissolved solids	10/10/2011	308		Yes	Y				10.0	10.0	mg/L
R-2-100511	A11J072-05	Total dissolved solids	10/10/2011	321		Yes	Y				10.0	10.0	mg/L
R-3-100511	A11J072-03	Total dissolved solids	10/10/2011	17800		Yes	Y				10.0	10.0	mg/L
R-4D-100511	A11J072-02	Total dissolved solids	10/10/2011	822		Yes	Y				10.0	10.0	mg/L
R-4S-100511	A11J072-07	Total dissolved solids	10/10/2011	1450		Yes	Y				10.0	10.0	mg/L
R-53-100511	A11J072-04	Total dissolved solids	10/10/2011	17900		Yes	Y				10.0	10.0	mg/L

Analytical Method SM2540D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06	Total suspended solids	10/7/2011	116		Yes	Y				5.00	5.00	mg/L
R-1S-100511	A11J072-01	Total suspended solids	10/7/2011	11		Yes	Y				5.00	5.00	mg/L
R-2-100511	A11J072-05	Total suspended solids	10/7/2011	37		Yes	Y				5.00	5.00	mg/L
R-3-100511	A11J072-03	Total suspended solids	10/7/2011	17		Yes	Y				5.00	5.00	mg/L
R-4D-100511	A11J072-02	Total suspended solids	10/7/2011	99		Yes	Y				5.00	5.00	mg/L
R-4S-100511	A11J072-07	Total suspended solids	10/7/2011	14		Yes	Y				5.00	5.00	mg/L
R-53-100511	A11J072-04	Total suspended solids	10/7/2011	9		Yes	Y				5.00	5.00	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.0235		Yes	Y				0.00500	0.00500	mg/L
R-1D-100511	A11J072-06	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.0067		Yes	Y				0.00500	0.00500	mg/L
R-1S-100511	A11J072-01	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.0123		Yes	Y				0.00500	0.00500	mg/L
R-1S-100511	A11J072-01	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.0098		Yes	Y				0.00500	0.00500	mg/L
R-2-100511	A11J072-05	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
R-2-100511	A11J072-05	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
R-3-100511	A11J072-03	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.488		Yes	Y				0.0300	0.0300	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-3-100511	A11J072-03	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.521		Yes	Y				0.0300	0.0300	mg/L
R-4D-100511	A11J072-02	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.0063		Yes	Y				0.00500	0.00500	mg/L
R-4D-100511	A11J072-02	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
R-4S-100511	A11J072-07	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.0097		Yes	Y				0.00500	0.00500	mg/L
R-4S-100511	A11J072-07	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.0105		Yes	Y				0.00500	0.00500	mg/L
R-53-100511	A11J072-04	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.518		Yes	Y				0.0300	0.0300	mg/L
R-53-100511	A11J072-04	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.542		Yes	Y				0.0300	0.0300	mg/L

Analytical Method SM4500P

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06	Phosphorus	10/13/2011	1.49		Yes	Y	D			0.500	0.0500	mg/L
R-1S-100511	A11J072-01	Phosphorus	10/13/2011	0.536		Yes	Y				0.100	0.0100	mg/L
R-2-100511	A11J072-05	Phosphorus	10/13/2011	1.74		Yes	Y	D			0.500	0.0500	mg/L
R-3-100511	A11J072-03RE1	Phosphorus	10/13/2011	24.8		Yes	Y	D			2.50	0.250	mg/L
R-4D-100511	A11J072-02	Phosphorus	10/13/2011	1.22		Yes	Y	D			0.500	0.0500	mg/L
R-4S-100511	A11J072-07	Phosphorus	10/13/2011	1.9		Yes	Y	D			0.500	0.0500	mg/L
R-53-100511	A11J072-04RE1	Phosphorus	10/13/2011	23.9		Yes	Y	D			2.50	0.250	mg/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06	2-Methylnaphthalene	10/13/2011	0.0377		Yes	N	U			0.0377	0.0189	ug/L
R-1D-100511	A11J072-06	Naphthalene	10/13/2011	0.03		Yes	Y	J			0.0377	0.0189	ug/L
R-1D-100511	A11J072-06	1-Methylnaphthalene	10/13/2011	0.0377		Yes	N	U			0.0377	0.0189	ug/L
R-1D-100511	A11J072-06	Benzo(b,k)fluoranthene	10/13/2011	0.0212		Yes	Y	J	J	15	0.0377	0.0189	ug/L
R-1D-100511	A11J072-06	Fluorene	10/13/2011	0.0189		Yes	N	U			0.0189	0.00943	ug/L
R-1D-100511	A11J072-06	Phenanthrene	10/13/2011	0.0108		Yes	Y	J			0.0189	0.00943	ug/L
R-1D-100511	A11J072-06	Acenaphthene	10/13/2011	0.0189		Yes	N	U			0.0189	0.00943	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06	Benzo(a)anthracene	10/13/2011	0.0122	Yes	N	J	U	7	0.0189	0.00943	ug/L
R-1D-100511	A11J072-06	Benzo(a)pyrene	10/13/2011	0.0104	Yes	Y	J			0.0189	0.00943	ug/L
R-1D-100511	A11J072-06	Anthracene	10/13/2011	0.0173	Yes	Y	J			0.0189	0.00943	ug/L
R-1D-100511	A11J072-06	Chrysene	10/13/2011	0.0146	Yes	N	J	U	7	0.0189	0.00943	ug/L
R-1D-100511	A11J072-06	Acenaphthylene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1D-100511	A11J072-06	Fluoranthene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1D-100511	A11J072-06	Indeno(1,2,3-c,d)pyrene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1D-100511	A11J072-06	Benzo(g,h,i)perylene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1D-100511	A11J072-06	Dibenzofuran	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1D-100511	A11J072-06	Pyrene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1D-100511	A11J072-06	Dibenzo(a,h)anthracene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Dibenzofuran	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	1-Methylnaphthalene	10/13/2011	0.0377	Yes	N	U			0.0377	0.0189	ug/L
R-1S-100511	A11J072-01	Pyrene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Benzo(g,h,i)perylene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Indeno(1,2,3-c,d)pyrene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Benzo(b)fluoranthene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Fluoranthene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Benzo(k)fluoranthene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Acenaphthylene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Chrysene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Benzo(a)pyrene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Dibenzo(a,h)anthracene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Benzo(a)anthracene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Acenaphthene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1S-100511	A11J072-01	Fluorene	10/13/2011	0.0189		Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Anthracene	10/13/2011	0.0189		Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Naphthalene	10/13/2011	0.0377		Yes	N	U			0.0377	0.0189	ug/L
R-1S-100511	A11J072-01	2-Methylnaphthalene	10/13/2011	0.0377		Yes	N	U			0.0377	0.0189	ug/L
R-1S-100511	A11J072-01	Phenanthrene	10/13/2011	0.0189		Yes	N	U			0.0189	0.00943	ug/L
R-2-100511	A11J072-05	Indeno(1,2,3-c,d)pyrene	10/13/2011	0.0192		Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Benzo(a)pyrene	10/13/2011	0.0192		Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	2-Methylnaphthalene	10/13/2011	0.0385		Yes	N	U			0.0385	0.0192	ug/L
R-2-100511	A11J072-05	Naphthalene	10/13/2011	0.0385		Yes	N	U			0.0385	0.0192	ug/L
R-2-100511	A11J072-05	1-Methylnaphthalene	10/13/2011	0.0385		Yes	N	U			0.0385	0.0192	ug/L
R-2-100511	A11J072-05	Fluorene	10/13/2011	0.0192		Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Phenanthrene	10/13/2011	0.0104		Yes	Y	J			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Benzo(g,h,i)perylene	10/13/2011	0.0192		Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Pyrene	10/13/2011	0.0192		Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Benzo(a)anthracene	10/13/2011	0.0192		Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Chrysene	10/13/2011	0.0192		Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Acenaphthene	10/13/2011	0.0192		Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Anthracene	10/13/2011	0.0138		Yes	Y	J			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Dibenzofuran	10/13/2011	0.0192		Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Acenaphthylene	10/13/2011	0.0192		Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Benzo(k)fluoranthene	10/13/2011	0.0192		Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Fluoranthene	10/13/2011	0.0192		Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Benzo(b)fluoranthene	10/13/2011	0.0192		Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Dibenzo(a,h)anthracene	10/13/2011	0.0192		Yes	N	U			0.0192	0.00962	ug/L
R-3-100511	A11J072-03	Indeno(1,2,3-c,d)pyrene	10/13/2011	0.019		Yes	N	U	UJ	13	0.0190	0.00952	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-3-100511	A11J072-03	Anthracene	10/13/2011	0.949	Yes	Y		J	13	0.0190	0.00952	ug/L
R-3-100511	A11J072-03	Fluorene	10/13/2011	0.0621	Yes	Y		J	13	0.0190	0.00952	ug/L
R-3-100511	A11J072-03	Pyrene	10/13/2011	0.019	Yes	N	U	UJ	13	0.0190	0.0190	ug/L
R-3-100511	A11J072-03	Dibenzofuran	10/13/2011	0.0388	Yes	Y		J	13	0.0190	0.00952	ug/L
R-3-100511	A11J072-03	Benzo(g,h,i)perylene	10/13/2011	0.019	Yes	N	U	UJ	13	0.0190	0.00952	ug/L
R-3-100511	A11J072-03	Fluoranthene	10/13/2011	0.019	Yes	N	U	UJ	13	0.0190	0.00952	ug/L
R-3-100511	A11J072-03	Acenaphthylene	10/13/2011	1.05	Yes	N	U	UJ	13	1.05	1.05	ug/L
R-3-100511	A11J072-03	Chrysene	10/13/2011	0.019	Yes	N	U	UJ	13	0.0190	0.0190	ug/L
R-3-100511	A11J072-03	Benzo(a)pyrene	10/13/2011	0.019	Yes	N	U	UJ	13	0.0190	0.00952	ug/L
R-3-100511	A11J072-03	Dibenzo(a,h)anthracene	10/13/2011	0.019	Yes	N	U	UJ	13	0.0190	0.00952	ug/L
R-3-100511	A11J072-03	Benzo(a)anthracene	10/13/2011	0.305	Yes	Y		J	13	0.0190	0.00952	ug/L
R-3-100511	A11J072-03	Phenanthrene	10/13/2011	0.0184	Yes	Y	J	J	13	0.0190	0.00952	ug/L
R-3-100511	A11J072-03	1-Methylnaphthalene	10/13/2011	0.0595	Yes	Y		J	13	0.0381	0.0190	ug/L
R-3-100511	A11J072-03	Naphthalene	10/13/2011	0.157	Yes	Y		J	13	0.0381	0.0190	ug/L
R-3-100511	A11J072-03	2-Methylnaphthalene	10/13/2011	0.0992	Yes	Y		J	13	0.0381	0.0190	ug/L
R-3-100511	A11J072-03	Benzo(b,k)fluoranthene	10/13/2011	0.0381	Yes	N	U	UJ	13	0.0381	0.0190	ug/L
R-3-100511	A11J072-03	Acenaphthene	10/13/2011	0.0381	Yes	N	U	UJ	13	0.0381	0.0381	ug/L
R-4D-100511	A11J072-02	Pyrene	10/13/2011	0.00975	Yes	Y	J			0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	Chrysene	10/13/2011	0.0114	Yes	N	J	U	7	0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	Benzo(g,h,i)perylene	10/13/2011	0.019	Yes	N	U			0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	Anthracene	10/13/2011	0.0389	Yes	Y				0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	Dibenzofuran	10/13/2011	0.019	Yes	N	U			0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	Indeno(1,2,3-c,d)pyrene	10/13/2011	0.019	Yes	N	U			0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	Acenaphthylene	10/13/2011	0.019	Yes	N	U			0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	Benzo(a)pyrene	10/13/2011	0.0106	Yes	Y	J			0.0190	0.00952	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-4D-100511	A11J072-02	Dibenzo(a,h)anthracene	10/13/2011	0.019	Yes	N	U			0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	Benzo(a)anthracene	10/13/2011	0.0208	Yes	N		U	7	0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	2-Methylnaphthalene	10/13/2011	0.0381	Yes	N	U			0.0381	0.0190	ug/L
R-4D-100511	A11J072-02	Fluoranthene	10/13/2011	0.011	Yes	N	J	U	7	0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	Benzo(b,k)fluoranthene	10/13/2011	0.0381	Yes	N	U			0.0381	0.0190	ug/L
R-4D-100511	A11J072-02	Acenaphthene	10/13/2011	0.019	Yes	N	U			0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	Naphthalene	10/13/2011	0.0381	Yes	N	U			0.0381	0.0190	ug/L
R-4D-100511	A11J072-02	1-Methylnaphthalene	10/13/2011	0.0381	Yes	N	U			0.0381	0.0190	ug/L
R-4D-100511	A11J072-02	Fluorene	10/13/2011	0.019	Yes	N	U			0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	Phenanthrene	10/13/2011	0.0197	Yes	Y				0.0190	0.00952	ug/L
R-4S-100511	A11J072-07	Chrysene	10/13/2011	0.025	Yes	N	U			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Naphthalene	10/13/2011	0.0304	Yes	Y	J			0.0500	0.0250	ug/L
R-4S-100511	A11J072-07	Acenaphthylene	10/13/2011	0.025	Yes	N	U			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Fluorene	10/13/2011	0.0213	Yes	Y	J			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Phenanthrene	10/13/2011	0.0178	Yes	Y	J			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Acenaphthene	10/13/2011	0.025	Yes	N	U			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Benzo(a)anthracene	10/13/2011	0.0448	Yes	N		U	7	0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Dibenzo(a,h)anthracene	10/13/2011	0.025	Yes	N	U			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	2-Methylnaphthalene	10/13/2011	0.05	Yes	N	U			0.0500	0.0250	ug/L
R-4S-100511	A11J072-07	1-Methylnaphthalene	10/13/2011	0.05	Yes	N	U			0.0500	0.0250	ug/L
R-4S-100511	A11J072-07	Anthracene	10/13/2011	0.0973	Yes	Y				0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Fluoranthene	10/13/2011	0.025	Yes	N	U			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Benzo(b)fluoranthene	10/13/2011	0.025	Yes	N	U			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Benzo(a)pyrene	10/13/2011	0.025	Yes	N	U			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Indeno(1,2,3-c,d)pyrene	10/13/2011	0.025	Yes	N	U			0.0250	0.0125	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-4S-100511	A11J072-07	Benzo(g,h,i)perylene	10/13/2011	0.025	Yes	N	U			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Dibenzofuran	10/13/2011	0.025	Yes	N	U			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Pyrene	10/13/2011	0.025	Yes	N	U			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Benzo(k)fluoranthene	10/13/2011	0.025	Yes	N	U			0.0250	0.0125	ug/L
R-53-100511	A11J072-04	Dibenzo(a,h)anthracene	10/13/2011	0.019	Yes	N	U	UJ	13	0.0190	0.00952	ug/L
R-53-100511	A11J072-04	Benzo(a)anthracene	10/13/2011	0.26	Yes	Y		J	13	0.0190	0.00952	ug/L
R-53-100511	A11J072-04	Acenaphthene	10/13/2011	0.0286	Yes	N	U	UJ	13	0.0286	0.0286	ug/L
R-53-100511	A11J072-04	Phenanthrene	10/13/2011	0.0199	Yes	Y		J	13	0.0190	0.00952	ug/L
R-53-100511	A11J072-04	Fluorene	10/13/2011	0.0674	Yes	Y		J	13	0.0190	0.00952	ug/L
R-53-100511	A11J072-04	Benzo(a)pyrene	10/13/2011	0.019	Yes	N	U	UJ	13	0.0190	0.00952	ug/L
R-53-100511	A11J072-04	Naphthalene	10/13/2011	0.146	Yes	Y		J	13	0.0381	0.0190	ug/L
R-53-100511	A11J072-04	Benzo(g,h,i)perylene	10/13/2011	0.019	Yes	N	U	UJ	13	0.0190	0.00952	ug/L
R-53-100511	A11J072-04	2-Methylnaphthalene	10/13/2011	0.108	Yes	Y		J	13	0.0381	0.0190	ug/L
R-53-100511	A11J072-04	Benzo(b,k)fluoranthene	10/13/2011	0.0381	Yes	N	U	UJ	13	0.0381	0.0190	ug/L
R-53-100511	A11J072-04	1-Methylnaphthalene	10/13/2011	0.0578	Yes	Y		J	13	0.0381	0.0190	ug/L
R-53-100511	A11J072-04	Chrysene	10/13/2011	0.284	Yes	Y		J	13	0.0190	0.00952	ug/L
R-53-100511	A11J072-04	Acenaphthylene	10/13/2011	1.14	Yes	N	U	UJ	13	1.14	1.14	ug/L
R-53-100511	A11J072-04	Indeno(1,2,3-c,d)pyrene	10/13/2011	0.019	Yes	N	U	UJ	13	0.0190	0.00952	ug/L
R-53-100511	A11J072-04	Dibenzofuran	10/13/2011	0.019	Yes	N	U	UJ	13	0.0190	0.00952	ug/L
R-53-100511	A11J072-04	Pyrene	10/13/2011	0.019	Yes	N	U	UJ	13	0.0190	0.00952	ug/L
R-53-100511	A11J072-04	Anthracene	10/13/2011	0.853	Yes	Y		J	13	0.0190	0.00952	ug/L
R-53-100511	A11J072-04	Fluoranthene	10/13/2011	0.0286	Yes	N	U	UJ	13	0.0286	0.0286	ug/L

Analytical Method SW9014

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06	Cyanide, total	10/11/2011	0.0266	Yes	Y				0.00500	0.00500	mg/L

SDG: A11J072

Analytical Method SW9014

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1S-100511	A11J072-01	Cyanide, total	10/11/2011	0.0329		Yes	Y				0.00500	0.00500	mg/L
R-2-100511	A11J072-05	Cyanide, total	10/11/2011	0.0058		Yes	Y				0.00500	0.00500	mg/L
R-3-100511	A11J072-03	Cyanide, total	10/11/2011	372		Yes	Y	D			6.00	6.00	mg/L
R-4D-100511	A11J072-02	Cyanide, total	10/11/2011	0.0234		Yes	Y				0.00500	0.00500	mg/L
R-4S-100511	A11J072-07	Cyanide, total	10/11/2011	0.0245		Yes	Y				0.00500	0.00500	mg/L
R-53-100511	A11J072-04	Cyanide, total	10/11/2011	411		Yes	Y	D			6.00	6.00	mg/L

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 5, 2011
LDC Report Date:	November 20, 2011
Matrix:	Water
Parameters:	Dissolved Metals
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11J072

Sample Identification

R-1S-100511
R-4D-100511
R-3-100511
R-53-100511
R-2-100511
R-1D-10511
R-4S-100511
R-1S-100511DUP
R-4D-100511MS

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Methods 200.7 and 200.8 for Dissolved Metals. The metals analyzed were Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Silicon, and Sodium.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No dissolved metal contaminants were found in the initial, continuing and preparation blanks.

V. ICP Interference Check Sample (ICS) Analysis

ICP Interference check sample analysis was not required by the methods.

VI. Matrix Spike Analysis

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

Samples R-3-100511 and R-53-100511 were identified as field duplicates. No dissolved metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD
	R-3-100511	R-53-100511	
Silicon	29.2	32.0	9
Calcium	1.23	1.58	25
Iron	123	128	4
Manganese	0.0158	0.0158	0
Potassium	11.9	12.9	8
Sodium	7250	7630	5

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Dissolved Metals - Data Qualification Summary - SDG A11J072

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG A11J072

No Sample Data Qualified in this SDG

LDC #: 26627F4 H

SDG #: A11J072

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 11/18/11

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: Dissolved Metals (EPA Method 200.7/200.8)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/05/11
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	N	Not required
VI.	Matrix Spike Analysis	A	Ca, Mg, Fe, Na > 4X
VII.	Duplicate Sample Analysis	A	
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	Not utilized
XI.	ICP Serial Dilution	N	Not performed
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	SW	(3,4)
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: All

1	R-1S-100511	11	MB	21		31	
2	R-4D-100511	12		22		32	
3	R-3-100511	13		23		33	
4	R-53-100511	14		24		34	
5	R-2-100511	15		25		35	
6	R-1D-10511	16		26		36	
7	R-4S-100511	17		27		37	
~~8~~	~~R-1S-100511MS~~	18		28		38	
9	R-1S-100511DUP	19		29		39	
10	R-4D-100511MS	20		30		40	

Notes:

LDC #: 266744

Reviewer: [illegible]
2nd reviewer: [illegible]

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-7	Aq	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
~ 9,10	Aq	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Analysis Method
CP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
CP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻

Comments: Mercury by CVAA if performed

LDC#: 26627H4

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Metals (EPA Method 200.7/200.8)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD	
	3	4		
Silicon	29.2	32.0	9	
Calcium	1.23	1.58	25	
Iron	123	128	4	
Manganese	0.0158	0.0158	0	
Potassium	11.9	12.9	8	
Sodium	7250	7630	5	

V:\FIELD DUPLICATES\FD_inorganic\26627H4.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 5, 2011
LDC Report Date:	November 21, 2011
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11J072

Sample Identification

R-1S-100511
R-4D-100511
R-3-100511
R-53-100511
R-2-100511
R-1D-10511
R-4S-100511
R-1S-100511MS
R-1S-100511DUP
R-2-100511MS
R-2-100511DUP
R-4S-100511MS
R-4S-100511DUP

Introduction

This data review covers 13 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2320B for Alkalinity, EPA Method 300.0 for Chloride, Total and Dissolved Fluoride, and Sulfate, EPA Method 335.4 for Total and Dissolved Cyanide, Standard Method 4500-CN (I/E) for Total and Dissolved Weak Acid Dissociable Cyanide, ASTM D4282 for Total and Dissolved Free Cyanide, Standard Method 4500 P B for Total Phosphorus, Standard Method 2540C for Total Dissolved Solids, Standard Method 2540D for Total Suspended Solids, and Standard Method 4500-F-C for Total and Dissolved Fluoride.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Fluoride Dissolved fluoride	0.02000 mg/L 0.02100 mg/L	R-2-100511 R-1D-10511

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

X. Field Duplicates

Samples R-3-100511 and R-53-100511 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD
	R-3-100511	R-53-100511	
Chloride	74.7	75.0	0
Fluoride	2180	2180	0
Fluoride, Dissolved	2190	2190	0
Sulfate	114	119	4
Cyanide, Total	376	391	4
Cyanide, Dissolved	372	411	10
Cyanide, WAD	0.488	0.518	6
Cyanide, Dissolved WAD	0.521	0.542	4
Cyanide, Free	0.00620	0.00490	23
Cyanide, Dissolved Free	0.00380	0.00490	25
Total Dissolved Solids	17800	17900	1
Total Suspended Solids	17.0	9.00	62
Alkalinity, Total	11200	11400	2
Alkalinity, Bicarbonate	2740	2730	0

Analyte	Concentration (mg/L)		RPD
	R-3-100511	R-53-100511	
Alkalinity, Carbonate	8420	8620	2
Phosphorus	24.8	23.9	4

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A11J072

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A11J072

No Sample Data Qualified in this SDG

LDC #: 26627H6
SDG #: A11J072
Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 11/18/11
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Alkalinity (SM2320 B), Chloride, Total and Dissolved Fluoride, Sulfate (EPA Method 300.0), Total and Dissolved Cyanide (EPA Method 335.4), Total and Dissolved Weak Acid dissociable Cyanide (SM4500-CN (I/E)), Total and Dissolved Free Cyanide (ASTM D 4282), Total Phosphorus (SM4500 P B), Total Dissolved Solids (SM2540 C), Total Suspended Solids (SM2540 D),Totals and Dissolved Fluoride (SM4500-F-C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/5/11
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	SW	
V	Matrix Spike/Matrix Spike Duplicates	A	
VI.	Duplicates	A	#9. DISSWAD CN. <5X RL + difference <RL. No qual
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	SW	(3, 4)
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: AR

1	R-1S-100511	11	R-2-100511MS	21	MB	31	
2	R-4D-100511	12	R-2-100511DUP	22		32	
3	R-3-100511	13	R-4S-100511MS	23		33	
4	R-53-100511	14	R-4S-100511DUP	24		34	
5	R-2-100511	15		25		35	
6	R-1D-10511	16		26		36	
7	R-4S-100511	17		27		37	
8	R-1S-100511MS	18		28		38	
9	R-1S-100511DUP	19		29		39	
~~10~~	~~R-4D-100511MS~~ [illegible]	20		30		40	

Notes:

LDC #: 26[illegible] [illegible]

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter
1-7	AQ	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 WAD CN Free CN P TSS
1-7	AQ	pH TDS Cl F (Diss) NO_3 NO_2 SO_4 PO_4 ALK CN^- (Diss) NH_3 TKN TOC CR^{6+} ClO_4 Diss WAD CN Diss Free CN
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
8,9	AQ	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 WAD CN Free CN P
8,9		pH TDS Cl F (Diss) NO_3 NO_2 SO_4 PO_4 ALK (Diss) NH_3 TKN TOC CR^{6+} ClO_4 Diss WAD CN
11		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
11,12		pH TDS Cl F (Diss) NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
13,14		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 Free CN
8,9,13,14		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 ~~Diss~~ Free CN
9		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 TSS
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4

Comments:

LDC #: 26627H6

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were all samples associated with a given method blank?
Y N N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: mg/L **Associated Samples:** 5,6 (>5X)

Analyte	Blank ID		Blank Action Limit											
	MB	ICB/CCB												
Fluoride	0.02000		0.100											
Diss Fluoride	0.02100		0.105											

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC# 26627H6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 6 of 7
Reviewer:
2nd Reviewer:

Inorganics, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD	
	3	4		
Chloride	74.7	75.0	0	
Fluoride	2180	2180	0	
Dissolved Fluoride	2190	2190	0	
Sulfate	114	119	4	
Total Cyanide	376	391	4	
Dissolved Cyanide	372	411	10	
WAD Cyanide	0.488	0.518	6	
Dissolved WAD Cyanide	0.521	0.542	4	
Free Cyanide	0.00620	0.00490	23	
Dissolved Free Cyanide	0.00380	0.00490	25	
TDS	17800	17900	1	
TSS	17.0	9.00	62	
Total Alkalinity	11200	11400	2	
Bicarbonate Alkalinity	2740	2730	0	
Carbonate Alkalinity	8420	8620	2	
Phosphorus	24.8	23.9	4	

V:\FIELD DUPLICATES\FD_inorganic\26627H6.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 6, 2011
LDC Report Date:	November 20, 2011
Matrix:	Water
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11J097

Sample Identification

RL-4S-100611

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
1110215-BLK1	10/12/11	Benzo(a)anthracene Chrysene Fluoranthene	0.0114 ug/L 0.0103 ug/L 0.0126 ug/L	All samples in SDG A11J097

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
RL-4S-100611	Benzo(a)anthracene	0.0108 ug/L	0.0108U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A11J097

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A11J097

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
A11J097	RL-4S-100611	Benzo(a)anthracene	0.0108U ug/L	A

LDC #: 26627I2b

SDG #: A11J097

Laboratory: APEX laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 11/17/11

Page: 1 of 1

Reviewer: DG

2nd Reviewer: V

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/06/11
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤20% r
IV.	Continuing calibration/ICV	A	CCV/ICV ≤20%
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Insufficient vol
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

Water ✓

1	RL-4S-100611	+ 11	1110215_BK1	21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

Notes:* = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

LDC #: 26627 I 26

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: DMG
2nd Reviewer: ✓

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a method blank analyzed for each matrix?
Y N N/A Was a method blank analyzed for each concentration preparation level?
Y N N/A Was a method blank associated with every sample?
Y N N/A Was the blank contaminated? If yes, please see qualification below.

Blank extraction date: 10/12/11 **Blank analysis date:** 10/13/11
Conc. units: ug/L Associated Samples: All

Compound	Blank ID	Sample Identification							
	1110215-BK1		1						
CCC	0.0114		0.0108 /U						
DDD	0.0103								
YY	0.0126								

Blank extraction date:_____ **Blank analysis date:**_____
Conc. units:_____ Associated Samples:_____

Compound	Blank ID	Sample Identification							

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 6, 2011
LDC Report Date:	November 20, 2011
Matrix:	Water
Parameters:	Dissolved Metals
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11J097

Sample Identification

RL-IS-100611
RL-ID-100611
RL-2S-100611
RL-2D-100611
RL-3D-100611
RL-4S-100611
RL-4D-100611
RL-3S-100611
RL-2D-100611MS
RL-2D-100611DUP
RL-3D-100611DUP
RL-4D-100611MS

Introduction

This data review covers 12 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Methods 200.7 and 200.8 for Dissolved Metals. The metals analyzed were Aluminum, Arsenic, Calcium, Chromium, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silicon, and Sodium.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No dissolved metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Chromium	0.000756 mg/L	All samples in SDG A11J097

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
RL-IS-100611	Chromium	0.00232 mg/L	0.00232U mg/L
RL-ID-100611	Chromium	0.00162 mg/L	0.00162U mg/L
RL-3D-100611	Chromium	0.00189 mg/L	0.00189U mg/L
RL-4S-100611	Chromium	0.00169 mg/L	0.00169U mg/L
RL-4D-100611	Chromium	0.00149 mg/L	0.00149U mg/L

Sample	Analyte	Reported Concentration	Modified Final Concentration
RL-3S-100611	Chromium	0.00198 mg/L	0.00198U mg/L

V. ICP Interference Check Sample (ICS) Analysis

ICP Interference check sample analysis was not required by the methods.

VI. Matrix Spike Analysis

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to method blank contamination problems, data were qualified as not detected in six samples.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes. Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Dissolved Metals - Data Qualification Summary - SDG A11J097

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG A11J097

SDG	Sample	Analyte	Modified Final Concentration	A or P
A11J097	RL-IS-100611	Chromium	0.00232U mg/L	A
A11J097	RL-ID-100611	Chromium	0.00162U mg/L	A
A11J097	RL-3D-100611	Chromium	0.00189U mg/L	A
A11J097	RL-4S-100611	Chromium	0.00169U mg/L	A
A11J097	RL-4D-100611	Chromium	0.00149U mg/L	A
A11J097	RL-3S-100611	Chromium	0.00198U mg/L	A

LDC #: 26627I4

SDG #: A11J097

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 11/18/11

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: Dissolved Metals (EPA Method 200.7/200.8)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/6/11
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	N	not required
VI.	Matrix Spike Analysis	A	Ca, Fe, Mg, Mn, Na >4X
VII.	Duplicate Sample Analysis	A	
VIII.	Laboratory Control Samples (LCS)	A	Leg
IX.	Internal Standard (ICP-MS)	N	not required
X.	Furnace Atomic Absorption QC	N	not utilized
XI.	ICP Serial Dilution	N	not performed
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	RL-IS-100611	11	RL-2D-100611MS	21	MB	31	
2	RL-ID-100611	12	RL-2D-100611DUP	22		32	
3	RL-2S-100611	13	RL-3D-100611MS Dup	23		33	
4	RL-2D-100611	14	RL-4D-100611MS	24		34	
5	RL-3D-100611	~~15~~	~~RL-3S-100611MS~~	25		35	
6	RL-4S-100611	16		26		36	
7	RL-4D-100611	17		27		37	
8	RL-3S-100611	18		28		38	
9	~~RL-IS-100611MS~~	19		29		39	
10	~~RL-IS-100611DUP~~	20		30		40	

Notes:

LDC #: 26647I4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: h
2nd reviewer: C

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-8	AQ	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
9-10, 14	AQ	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
11, 12	↓	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,

Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻

Comments: Mercury by CVAA if performed

LDC #: 26627I4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA 200.7/200.8) Soil preparation factor applied: 1.1X
Sample Concentration units, unless otherwise noted: mg/L Associated Samples: All

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (mg/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	1	2	5	6	7	8					
Cr		0.000756		0.00378	0.00232	0.00162	0.00189	0.00169	0.00149	0.00198					

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Millennium Bulk Terminals

Collection Date: October 6, 2011

LDC Report Date: February 3, 2012

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level III

Laboratory: APEX Laboratories, LLC

***Sample Delivery Group (SDG):** A11J097

Sample Identification

RL-IS-100611
RL-ID-100611
RL-2S-100611
RL-2D-100611
RL-3D-100611
RL-4S-100611
RL-4D-100611
RL-3S-100611
RL-IS-100611MS
RL-IS-100611DUP
RL-4D-100611MS
RL-4D-100611DUP
RL-3S-100611MS
RL-3S-100611DUP

*Removed RL-2S-100611MS and RL-2S-100611DUP from report

Introduction

This data review covers 14 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2320B for Alkalinity, EPA Method 300.0 for Chloride, Total and Dissolved Fluoride, and Sulfate, EPA Method 335.4 for Total and Dissolved Cyanide, Standard Method 4500-CN (I/E) for Total and Dissolved Weak Acid Dissociable Cyanide, ASTM D4282 for Total and Dissolved Free Cyanide, Standard Method 4500 P B for Total Phosphorus, Standard Method 2540C for Total Dissolved Solids, Standard Method 2540D for Total Suspended Solids, and Standard Method 4500-F-C for Total and Dissolved Fluoride.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

*I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

*Removed holding time qualification table.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

*III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable with the following exceptions:

Date	Lab. Reference/ID	Analyte	%R (Limits)	Associated Samples	Flag	A or P
10/7/11	CCV3 (21:56)	Free cyanide	80 (90-110)	RL-IS-100611 RL-ID-100611 RL-2D-100611 RL-3D-100611 RL-4S-100611 RL-4D-100611 RL-3S-100611 RL-2S-100611	J (all detects) UJ (all non-detects)	P
10/7/11	CCV3 (21:56)	Dissolved free cyanide	80 (90-110)	RL-4D-100611 RL-3S-100611	J (all detects) UJ (all non-detects)	P

*Added associated sample in first row

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Fluoride Dissolved fluoride	0.02000 mg/L 0.02100 mg/L	RL-ID-100611 RL-3D-100611 RL-4S-100611 RL-4D-100611

*Indicates change as the result of report review. SDG A11J097
V:\LOGIN\ANCHOR\MILLENNIUM\2662716 AN3 RV2.DOC

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

***V. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

*Removed MS qualification table.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

Due to severe problems with the holding time, data were rejected in one sample.

Due to calibration %R problems, data were qualified as estimated in seven samples.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes. Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

*Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A11J097

SDG	Sample	Analyte	Flag	A or P	Reason
A11J097	RL-IS-100611 RL-ID-100611 RL-2D-100611 RL-3D-100611 RL-4S-100611 RL-4D-100611 RL-3S-100611 RL-2S-100611	Free cyanide	J (all detects) UJ (all non-detects)	P	Calibration (CCV %R)
A11J097	RL-4D-100611 RL-3S-100611	Dissolved free cyanide	J (all detects) UJ (all non-detects)	P	Calibration (CCV %R)

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A11J097

No Sample Data Qualified in this SDG

LDC #: 26627I6
SDG #: A11J072 9A
Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 11/18/11
Page: 1 of 1
Reviewer: MY
2nd Reviewer: C

METHOD: Alkalinity (SM2320 B), Chloride, Total and Dissolved Fluoride, Sulfate (EPA Method 300.0), Total and Dissolved Cyanide (EPA Method 335.4), Total and Dissolved Weak Acid dissociable Cyanide (SM4500-CN (I/E)), Total and Dissolved Free Cyanide (ASTM D 4282), Total Phosphorus (SM4500 P B), Total Dissolved Solids (SM2540 C), Total Suspended Solids (SM2540 D), Totals and Dissolved Fluoride (SM4500-F-C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area	✓	Comments
I.	Technical holding times	A ~~SW~~	Sampling dates: 10/06/11
II	Initial calibration	A	
III.	Calibration verification	SW	
IV	Blanks	SW	
V	Matrix Spike/Matrix Spike Duplicates	~~SW~~ A	
VI.	Duplicates	A	#10 Total CN <5xRL + Difference >RPD w/ final.
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

1	RL-IS-100611	11	~~RL-2S-100611MS~~	21	MB	31	
2	RL-ID-100611	12	~~RL-2S-100611DUP~~	22		32	
3	RL-2S-100611	13	~~RL-2D-100611MS~~	23		33	
4	RL-2D-100611	14	~~RL-2D-100611DUP~~	24		34	
5	RL-3D-100611	15	~~RL-3D-100611MS~~	25		35	
6	RL-4S-100611	16	RL-4D-100611MS	26		36	
7	RL-4D-100611	17	RL-4D-100611DUP	27		37	
8	RL-3S-100611	18	RL-3S-100611MS	28		38	
9	RL-IS-100611MS	19	RL-3S-100611DUP	29		39	
10	RL-IS-100611DUP	20		30		40	

Notes:

LDC #: [illegible]

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter
1-8	Aq	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 WAD CN Free CN P TSS
1-8		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 Diss WAD CN Diss Free CN
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
12, 9, 10	Aq	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+} ClO_4 Free CN
16, 17		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 WAD CN
18, 19		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 WAD CN Free CN
~~11, 12~~		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 Free CN
9, 10		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+} ClO_4 Diss WAD CN Diss Free CN
18, 19		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 Diss Free CN
10		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 TSS
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4

Comments:

METHODS.6

LDC #: 76671 76
SDG #: See cover

VALIDATION FINDINGS WORKSHEET
Calibration

Page: 1 of 1
Reviewer: MH
2nd Reviewer: [illegible]

METHOD: Inorganics, EPA Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were all instruments calibrated daily, each set-up time, and were the proper number of standards used?
Y (N) N/A Were all initial and continuing calibration verification percent recoveries (%R) within the control limits of 90-110% ?
(Y) N N/A Are all correlation coefficients ≥0.995 ?

LEVEL IV/D ONLY:

Y N (N/A) Were recalculated results acceptable? See Level IV Initial and Continuing Calibration Recaluculation Worksheet for recalulations.
Y N (N/A) Was a balance check conducted prior to the TDS analysis.?
Y N (N/A) Was the titrant normality checked?

#	Date	Calibration ID	Analyte	%R	Associated Samples	Qualifications
1	10/7/11 (21:56)	CCV3	Free CN	80 (90-110)	~~1-8~~	J/nJ/p
2	10/7/11 (21:56)	CCV3	Diss Free CN	✓	7, 8	J/nJ/p

Comments:

CAL8

LDC #: 26627I6

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

All circled dates have exceeded the technical holding time.
Y N N/A Were all samples preserved as applicable to each method ?
(Y) N N/A Were all cooler temperatures within validation criteria?

Method:		ASTM D4282					
Parameters:		Free CN					
Technical holding time:		48 hr					
Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
3, 11, 12	10/6/11	10/13/11	(7 day)				U/R/A (review)

HT.6

LDC #: 26627I6

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: W
2nd Reviewer: A

METHOD: Inorganics, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were all samples associated with a given method blank?
Y N N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: mg/L **Associated Samples:** 2,5,6,7 (>5X)

Analyte	Blank ID		Blank Action Limit											
	MB	ICB/CCB												
Fluoride	0.02000		0.100											
Diss Fluoride	0.02100		0.105											

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 26697J6
SDG #: See cover

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125 (85-115% for Method 300.0)? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
1	11	AQ	Free CN	67 (75-125)	3	UJ/nJ/A

Comments:

MS.6

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-2D-100611	A11J097-04	Cyanide, free	10/7/2011	0.005	Yes	N	U	UJ	5	0.00500	0.00200	mg/L
RL-2D-100611	A11J097-04	Cyanide, free	10/7/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
RL-2S-100611	A11J097-03	Cyanide, free	10/7/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
RL-2S-100611	A11J097-03RE1	Cyanide, free	10/13/2011	0.005	Yes	N	U	R	1	0.00500	0.00200	mg/L
RL-3D-100611	A11J097-05	Cyanide, free	10/7/2011	0.005	Yes	N	U	UJ	5	0.00500	0.00200	mg/L
RL-3D-100611	A11J097-05	Cyanide, free	10/7/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
RL-3S-100611	A11J097-08	Cyanide, free	10/7/2011	0.005	Yes	N	U	UJ	5	0.00500	0.00200	mg/L
RL-3S-100611	A11J097-08	Cyanide, free	10/7/2011	0.005	Yes	N	U	UJ	5	0.00500	0.00200	mg/L
RL-4D-100611	A11J097-07	Cyanide, free	10/7/2011	0.005	Yes	N	U	UJ	5	0.00500	0.00200	mg/L
RL-4D-100611	A11J097-07	Cyanide, free	10/7/2011	0.005	Yes	N	U	UJ	5	0.00500	0.00200	mg/L
RL-4S-100611	A11J097-06	Cyanide, free	10/7/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
RL-4S-100611	A11J097-06	Cyanide, free	10/7/2011	0.005	Yes	N	U	UJ	5	0.00500	0.00200	mg/L
RL-ID-100611	A11J097-02	Cyanide, free	10/7/2011	0.005	Yes	N	U	UJ	5	0.00500	0.00200	mg/L
RL-ID-100611	A11J097-02	Cyanide, free	10/7/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
RL-IS-100611	A11J097-01	Cyanide, free	10/7/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
RL-IS-100611	A11J097-01	Cyanide, free	10/7/2011	0.005	Yes	N	U	UJ	5	0.00500	0.00200	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-2D-100611	A11J097-04	Silicon	10/17/2011	37	Yes	Y				1.00	0.100	mg/L
RL-2S-100611	A11J097-03	Silicon	10/17/2011	15.6	Yes	Y				1.00	0.100	mg/L
RL-3D-100611	A11J097-05	Silicon	10/17/2011	32.4	Yes	Y				1.00	0.100	mg/L
RL-3S-100611	A11J097-08	Silicon	10/17/2011	27.9	Yes	Y				1.00	0.100	mg/L
RL-4D-100611	A11J097-07	Silicon	10/17/2011	33.5	Yes	Y				1.00	0.100	mg/L
RL-4S-100611	A11J097-06	Silicon	10/17/2011	28.9	Yes	Y				1.00	0.100	mg/L
RL-ID-100611	A11J097-02	Silicon	10/17/2011	32.6	Yes	Y				1.00	0.100	mg/L

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 10, 2011
LDC Report Date:	November 20, 2011
Matrix:	Water
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11J137

Sample Identification

G-6-S-101011
G-6-D-101011
PZ-5-101011
PZ-4-101011

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
1110215-BLK1	10/12/11	Benzo(a)anthracene Chrysene Fluoranthene	0.0114 ug/L 0.0103 ug/L 0.0126 ug/L	All samples in SDG A11J137

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
G-6-S-101011	Benzo(a)anthracene	0.0124 ug/L	0.0124U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
PZ-5-101011	2-Fluorobiphenyl Terphenyl-d14	21 (25-120) 14 (30-120)	All TCL compounds	J (all detects) UJ (all non-detects)	A
PZ-4-101011	2-Fluorobiphenyl Terphenyl-d14	19 (30-120) 13 (30-120)	All TCL compounds	J (all detects) UJ (all non-detects)	A

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to surrogate %R problems, data were qualified as estimated in two samples.

Due to method blank contamination problems, data were qualified as not detected in one sample.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A11J137

SDG	Sample	Compound	Flag	A or P	Reason
A11J137	PZ-5-101011 PZ-4-101011	All TCL compounds	J (all detects) UJ (all non-detects)	A	Surrogate spikes (%R)

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A11J137

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
A11J137	G-6-S-101011	Benzo(a)anthracene	0.0124U ug/L	A

LDC #: 26627J2b

SDG #: A11J137

Laboratory: APEX laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 11/17/11

Page: 1 of 1

Reviewer: SVG

2nd Reviewer: V

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/10/11
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20% r2
IV.	Continuing calibration/ICV	A	CW/ICV ≤ 20%
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	N	Insufficient vol.
VIII.	Laboratory control samples	A	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Water

1	G-6-S-101011	11	110215-BLK1	21		31	
2	G-6-D-101011	12		22		32	
3	PZ-5-101011	13		23		33	
4	PZ-4-101011	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

Notes:* = System performance check compound (SPCC) for RRF; ** = Calibration check compound (CCC) for %RSD.

LDC #: 26627 J26

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: DC
2nd Reviewer: ✓

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a method blank analyzed for each matrix?
Y N N/A Was a method blank analyzed for each concentration preparation level?
Y N N/A Was a method blank associated with every sample?
Y N N/A Was the blank contaminated? If yes, please see qualification below.

Blank extraction date: 10/12/11 **Blank analysis date:** 10/13/11
Conc. units: ug/L Associated Samples: All

	Compound	Blank ID	Sample Identification							
5x		1110215-Blk1		1						
0.057	CCC	0.0114		0.0124/U						
0.0515	DDD	0.0103								
0.063	YY	0.0126								
				(All others either ND or >5x blk)						

Blank extraction date:_____ **Blank analysis date:**_____
Conc. units:_____ Associated Samples:_____

Compound	Blank ID	Sample Identification							

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 26627 J26

VALIDATION FINDINGS WORKSHEET
Surrogate Recovery

Page: 1 of 1
Reviewer: DG
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Were percent recoveries (%R) for surrogates within QC limits?
Y N N/A If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?
Y N N/A If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

#	Date	Sample ID	Surrogate	%R (Limits)	Qualifications
		3	FBP	21 (25-120)	J/UJ/A
			TPH	14 (30-120)	
				( )	
		4	FBP	19 ( )	
			TPH	13 ( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
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				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

* QC limits are advisory	QC Limits (Soil)	QC Limits (Water)		QC Limits (Soil)	QC Limits (Water)
S1 (NBZ) = Nitrobenzene-d5	23-120	35-114	S5 (2FP)= 2-Fluorophenol	25-121	21-100
S2 (FBP) = 2-Fluorobiphenyl	30-115	43-116	S6 (TBP) = 2,4,6-Tribromophenol	19-122	10-123
S3 (TPH) = Terphenyl-d14	18-137	33-141	S7 (2CP) = 2-Chlorophenol-d4	20-130*	33-110*
S4 (PHL) = Phenol-d5	24-113	10-94	S8 (DCB) = 1,2-Dichlorobenzene-d4	20-130*	16-110*

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 10, 2011
LDC Report Date:	November 20, 2011
Matrix:	Water
Parameters:	Dissolved Metals
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11J137

Sample Identification

G-6-S-101011
G-6-D-101011
PZ-5-101011
PZ-4-101011
G-4-S-101011

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Methods 200.7 and 200.8 for Dissolved Metals. The metals analyzed were Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Silicon, and Sodium.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No dissolved metal contaminants were found in the initial, continuing and preparation blanks.

V. ICP Interference Check Sample (ICS) Analysis

ICP Interference check sample analysis was not required by the methods.

VI. Matrix Spike Analysis

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Dissolved Metals - Data Qualification Summary - SDG A11J137

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG A11J137

No Sample Data Qualified in this SDG

LDC #: 26627J4

SDG #: A11J137

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 11/18/11

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: Dissolved Metals (EPA Method 200.7/200.8)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/10/11
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	N	Not required
VI.	Matrix Spike Analysis	A	3 MS/Dup from SDG A11J192, A11J138
VII.	Duplicate Sample Analysis	A	MS: Ca, Mn, Na, Fe >4X, No flags
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	Not utilized
XI.	ICP Serial Dilution	N	Not performed
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: All

1	G-6-S-101011	11	MS	21		31	
2	G-6-D-101011	12		22		32	
3	PZ-5-101011	13		23		33	
4	PZ-4-101011	14		24		34	
5	G-4-S-101011	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 2662J4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: [signature]
2nd reviewer: [signature]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-5	Aq	**Al**, Sb, As, Ba, Be, Cd, **Ca**, Cr, Co, Cu, **Fe**, Pb, **Mg**, **Mn**, Hg, Ni, **K**, Se, Ag, **Na**, Tl, V, Zn, Mo, B, **Si**, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,

Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, **Si**, CN⁻,
ICP-MS		**Al**, Sb, As, Ba, Be, Cd, **Ca**, Cr, Co, Cu, **Fe**, Pb, **Mg**, **Mn**, Hg, Ni, **K**, Se, Ag, **Na**, Tl, V, Zn, Mo, B, Si, CN⁻,
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,

Comments: Mercury by CVAA if performed

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 10, 2011
LDC Report Date:	November 21, 2011
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11J137

Sample Identification

G-6-S-101011
G-6-D-101011
PZ-5-101011
PZ-4-101011
G-4-S-101011
G-6-S-101011MS
G-6-S-101011DUP
G-6-D-101011MS
G-6-D-101011DUP
PZ-5-101011MS
PZ-5-101011DUP
PZ-4-101011MS
PZ-4-101011DUP

Introduction

This data review covers 13 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2320B for Alkalinity, EPA Method 300.0 for Chloride, Total and Dissolved Fluoride, and Sulfate, EPA Method 335.4 for Total and Dissolved Cyanide, Standard Method 4500-CN (I/E) for Total and Dissolved Weak Acid Dissociable Cyanide, ASTM D4282 for Total and Dissolved Free Cyanide, Standard Method 4500 P B for Total Phosphorus, Standard Method 2540C for Total Dissolved Solids, Standard Method 2540D for Total Suspended Solids, and Standard Method 4500-F-C for Total and Dissolved Fluoride.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Fluoride Dissolved fluoride	0.02000 mg/L 0.02100 mg/L	G-4-S-101011
ICB/CCB	Fluoride Dissolved fluoride	0.0280 mg/L 0.0240 mg/L	G-4-S-101011

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
G-6-S-101011MS (All samples in SDG A11J137)	Free cyanide Dissolved free cyanide	48 (75-125) 48 (75-125)	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

The results for the dissolved cyanide sample analysis were greater than the total cyanide sample analysis as follows:

Analyte	Concentration (mg/L)	
	G-6-D-101011 (Dissolved)	G-6-D-101011 (Total)
Cyanide	0.136	0.0652

Analyte	Concentration (mg/L)	
	PZ-5-101011 (Dissolved)	PZ-5-101011 (Total)
Cyanide	282	147

Analyte	Concentration (mg/L)	
	PZ-4-101011 (Dissolved)	PZ-4-101011 (Total)
Cyanide	105	98.8

Analyte	Concentration (mg/L)	
	PZ-4-101011 (Dissolved)	PZ-4-101011 (Total)
Weak acid dissociable cyanide	0.743	0.116

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS %R problems, data were qualified as estimated in five samples.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A11J137

SDG	Sample	Analyte	Flag	A or P	Reason
A11J137	G-6-S-101011 G-6-D-101011 PZ-5-101011 PZ-4-101011 G-4-S-101011	Free cyanide Dissolved free cyanide	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Matrix spike (%R)

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A11J137

No Sample Data Qualified in this SDG

LDC #: 26627J6
SDG #: A11J137
Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 11/18/11
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Alkalinity (SM2320 B), Chloride, Total and Dissolved Fluoride, Sulfate (EPA Method 300.0), Total and Dissolved Cyanide (EPA Method 335.4), Total and Dissolved Weak Acid dissociable Cyanide (SM4500-CN (I/E)), Total and Dissolved Free Cyanide (ASTM D 4282), Total Phosphorus (SM4500 P B), Total Dissolved Solids (SM2540 C), Total Suspended Solids (SM2540 D),Totals and Dissolved Fluoride (SM4500-F-C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/10/11
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	SW	
V	Matrix Spike/Matrix Spike Duplicates	SW	3ms/1dup
VI.	Duplicates	A	
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	SW	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: [illegible]

1	G-6-S-101011	11	PZ-5-101011DUP	21	MW	31	
2	G-6-D-101011	12	PZ-4-101011MS	22		32	
3	PZ-5-101011	13	PZ-4-101011DUP	23		33	
4	PZ-4-101011	14		24		34	
5	G-4-S-101011	15		25		35	
6	G-6-S-101011MS	16		26		36	
7	G-6-S-101011DUP	17		27		37	
8	G-6-D-101011MS	18		28		38	
9	G-6-D-101011DUP	19		29		39	
10	PZ-5-101011MS	20		30		40	

Notes:

LDC #: [illegible]

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter
1-5	A2	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 WAD CN Free CN P TSS
1-5	↓	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 Diss WAD CN Diss Free CN
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
10,11	A2	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 WAD CN
12,13		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 WAD CN
6,7	↓	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 Free CN P
6,7		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 Diss Free CN
7		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 TSS
9		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
8,9		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 P
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4

Comments:

METHODS.6

LDC #: 26627J6

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer:
2nd Reviewer:

METHOD: Inorganics, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were all samples associated with a given method blank?
Y N N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: mg/L **Associated Samples:** 5 (>5X)

Analyte	Blank ID		Blank Action Limit											
	MB	ICB/CCB												
Fluoride	0.02000	0.0280	0.140											
Diss Fluoride	0.02100	0.0240	0.120											

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 26 6 7 JB
SDG #: See cover

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125 (85-115% for Method 300.0)? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
1	6	As	Free CN	48 (75-125)	All	J/UJ/R
			Diss Free CN	48 (75-125)	↓	↓
2						

Comments: #6 P > 4X, No qual.

MS.6

LDC #: 26627J6

VALIDATION FINDINGS WORKSHEET
Sample Result Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

#	Date	Matrix	Analyte	Diss (mg/L) Finding	Total (mg/L)	Associated Samples	Qualifications
1			CN	0.136	0.062	2	Diss > Total, Total
2			↓	282	147	3	↓
3			↓	105	98.8	4	↓
4			WAD CN	0.743	0.116	4	↓

Comments:

SMPRESV.6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 10, 2011
LDC Report Date:	November 21, 2011
Matrix:	Water
Parameters:	Dissolved Metals
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11J138

Sample Identification

RLSW-4-101011
RLSW-1-101011
RLSW-1-101011MS
RLSW-1-101011DUP

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Methods 200.7 and 200.8 for Dissolved Metals. The metals analyzed were Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Silicon, and Sodium.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No dissolved metal contaminants were found in the initial, continuing and preparation blanks.

V. ICP Interference Check Sample (ICS) Analysis

ICP Interference check sample analysis was not required by the methods.

VI. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
RLSW-1-101011MS (All samples in SDG A11J138)	Magnesium Calcium	130 (80-120) 126 (80-120)	J (all detects) J (all detects)	A

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS %R problems, data were qualified as estimated in two samples.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Dissolved Metals - Data Qualification Summary - SDG A11J138

SDG	Sample	Analyte	Flag	A or P	Reason
A11J138	RLSW-4-101011 RLSW-1-101011	Magnesium Calcium	J (all detects) J (all detects)	A	Matrix spike (%R)

Millennium Bulk Terminals
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG A11J138

No Sample Data Qualified in this SDG

LDC #: 26627K4

SDG #: A11J138

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 11/18/11

Page: 1 of 1

Reviewer: MH

2nd Reviewer: C

METHOD: Dissolved Metals (EPA Method 200.7/200.8)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/10/11
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	N	Not required
VI.	Matrix Spike Analysis	SW	3 MS/DMS
VII.	Duplicate Sample Analysis	A	
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not required -
X.	Furnace Atomic Absorption QC	N	Not utilized
XI.	ICP Serial Dilution	N	Not performed
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: AA

1	RLSW-4-101011	11	MB	21		31	
2	RLSW-1-101011	12		22		32	
3	RLSW-1-101011MS	13		23		33	
4	RLSW-1-101011DUP	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 26627K4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: [handwritten initials]
2nd reviewer: [handwritten initials]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1,2	Aq	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
1-3,4	Aq	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
L 3	L	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,

Comments: Mercury by CVAA if performed

LDC #: 26b-MK4

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of ~~75-125~~? 80-120 If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

Y N N/A Was a post digestion spike analyzed for ICP elements that did not meet the required criteria for matrix spike recovery?

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
1		3	M	Mg	130	All	J+/A
				Ca	126	✓	✓

Comments: ~~Ca~~, Na >4X

MS.4SW

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 10, 2011
LDC Report Date:	November 21, 2011
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11J138

Sample Identification

RLSW-4-101011
RLSW-1-101011
RLSW-4-101011MS
RLSW-4-101011DUP
RLSW-1-101011MS
RLSW-1-101011DUP

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2320B for Alkalinity, EPA Method 300.0 for Chloride, Total and Dissolved Fluoride, and Sulfate, EPA Method 335.4 for Total and Dissolved Cyanide, Standard Method 4500-CN (I/E) for Total and Dissolved Weak Acid Dissociable Cyanide, ASTM D4282 for Total and Dissolved Free Cyanide, Standard Method 4500 P B for Total Phosphorus, Standard Method 2540C for Total Dissolved Solids, and Standard Method 2540D for Total Suspended Solids.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
RLSW-1-101011MS (All samples in SDG A11J138)	Free cyanide Dissolved free cyanide	49 (75-125) 49 (75-125)	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A
RLSW-1-101011MS (All samples in SDG A11J138)	Total cyanide	135 (75-125)	J (all detects)	A

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS %R problems, data were qualified as estimated in two samples.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A11J138

SDG	Sample	Analyte	Flag	A or P	Reason
A11J138	RLSW-4-101011 RLSW-1-101011	Free cyanide Dissolved free cyanide	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Matrix spike (%R)
A11J138	RLSW-4-101011 RLSW-1-101011	Total cyanide	J (all detects)	A	Matrix spike (%R)

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A11J138

No Sample Data Qualified in this SDG

LDC #: 26627K6

SDG #: A11J138

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 11/18/11

Page: 1 of 1

Reviewer: MM

2nd Reviewer: A

METHOD: Alkalinity (SM2320 B), Chloride, Total and Dissolved Fluoride, Sulfate (EPA Method 300.0), Total and Dissolved Cyanide (EPA Method 335.4), Total and Dissolved Weak Acid dissociable Cyanide (SM4500-CN (I/E)), Total and Dissolved Free Cyanide (ASTM D 4282), Total Phosphorus (SM4500 P B), Total Dissolved Solids (SM2540 C), Total Suspended Solids (SM2540 D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/10/11
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	SW	~~Fluoride, Phos~~
VI.	Duplicates	A	
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: A2

1	RLSW-4-101011	11	MS	21		31	
2	RLSW-1-101011	12		22		32	
3	RLSW-4-101011MS	13		23		33	
4	RLSW-4-101011DUP	14		24		34	
5	RLSW-1-101011MS	15		25		35	
6	RLSW-1-101011DUP	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Reviewer: [illegible]
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter
1,2	AQ	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 WAD CN Free CN P TSS
1,2	AQ	pH TDS Cl F (Diss) NO_3 NO_2 SO_4 PO_4 ALK CN^- (Diss) NH_3 TKN TOC CR^{6+} ClO_4 Diss WAD CN Diss Free CN
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
5 & 6	AQ	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 Free CN
3,4 ~~5~~	✓	pH TDS Cl F (Diss) NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
5,6	✓	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 Diss Free CN
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4

Comments:

LDC #: 26627K6

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125 (85-115% for Method 300.0)? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
1		5	A2	Free CN	49	All	J/UJ/A
				Diss Free CN	49	↓	↓
				Total CN	135		J UJ/A

Comments:

MS.6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 11, 2011
LDC Report Date:	November 21, 2011
Matrix:	Water
Parameters:	Dissolved Metals
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11J154

Sample Identification

RLSW-3-101111
RLSW-2-101111

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Methods 200.7 and 200.8 for Dissolved Metals. The metals analyzed were Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Silicon, and Sodium.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No dissolved metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
ICB/CCB	Sodium	49.5 ug/L	RLSW-2-101111

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

V. ICP Interference Check Sample (ICS) Analysis

ICP Interference check sample analysis was not required by the methods.

VI. Matrix Spike Analysis

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Dissolved Metals - Data Qualification Summary - SDG A11J154

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG A11J154

No Sample Data Qualified in this SDG

LDC #: 26627L4
SDG #: A11J154
Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 11/11/11
Page: 1 of 1
Reviewer: WM
2nd Reviewer: A

METHOD: Dissolved Metals (EPA Method 200.7/200.8)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/11/11
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	N	Not required
VI.	Matrix Spike Analysis	A	3 MS/MSD from smp A11J155, Na > 4X
VII.	Duplicate Sample Analysis	A	
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not required
X.	Furnace Atomic Absorption QC	N	Not utilized
XI.	ICP Serial Dilution	N	Not performed
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: AR

1	RLSW-3-101111	11	MB	21		31	
2	RLSW-2-101111	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 26627L4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: [illegible]
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1,2	Aq	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,

Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻

Comments: Mercury by CVAA if performed

LDC #: 26627L4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer:
2nd Reviewer:

METHOD: Trace Metals (EPA 200.7/200.8) Soil preparation factor applied: 1.1X
Sample Concentration units, unless otherwise noted: mg/L Associated Samples: 2 (>5X)

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (mg/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit											
Na			49.5	0.272											

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 11, 2011
LDC Report Date:	November 21, 2011
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11J154

Sample Identification

RLSW-3-101111
RLSW-2-101111
RLSW-3-101111MS
RLSW-3-101111DUP
RLSW-2-101111DUP

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2320B for Alkalinity, EPA Method 300.0 for Chloride, Total and Dissolved Fluoride, and Sulfate, EPA Method 335.4 for Total and Dissolved Cyanide, Standard Method 4500-CN (I/E) for Total and Dissolved Weak Acid Dissociable Cyanide, ASTM D4282 for Total and Dissolved Free Cyanide, Standard Method 4500 P B for Total Phosphorus, Standard Method 2540C for Total Dissolved Solids, and Standard Method 2540D for Total Suspended Solids.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
RLSW-3-101111MS (All samples in SDG A11J154)	Free cyanide Dissolved free cyanide	46 (75-125) 46 (75-125)	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

The results for the dissolved fluoride sample analysis were greater than the total fluoride sample analysis as follows:

Analyte	Concentration (mg/L)	
	RLSW-3-101111 (Dissolved)	RLSW-3-101111 (Total)
Fluoride	7.17	5.62

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS %R problems, data were qualified as estimated in two samples.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A11J154

SDG	Sample	Analyte	Flag	A or P	Reason
A11J154	RLSW-3-101111 RLSW-2-101111	Free cyanide Dissolved free cyanide	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Matrix spike (%R)

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A11J154

No Sample Data Qualified in this SDG

LDC #: 26627L6
SDG #: A11J154
Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 11/21/11
Page: 1 of 1
Reviewer: MM
2nd Reviewer: [illegible]

METHOD: Alkalinity (SM2320 B), Chloride, Total and Dissolved Fluoride, Sulfate (EPA Method 300.0), Total and Dissolved Cyanide (EPA Method 335.4), Total and Dissolved Weak Acid dissociable Cyanide (SM4500-CN (I/E)), Total and Dissolved Free Cyanide (ASTM D 4282), Total Phosphorus (SM4500 P B), Total Dissolved Solids (SM2540 C), Total Suspended Solids (SM2540 D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/11/11
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	SW	3 MS/Dup
VI.	Duplicates	A	
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	SW	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: [illegible]

1	RLSW-3-101111	11	MB	21		31	
2	RLSW-2-101111	12		22		32	
3	RLSW-3-101111MS	13		23		33	
4	RLSW-3-101111DUP	14		24		34	
5	RLSW-2-101111DUP	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: [illegible]

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter
1,2	AR	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 WAD CN Free CN P TSS
1,2	1	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 Diss WAD CN Diss Free CN
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
M 3	NO	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN NH_3 TKN TOC CR^{6+} ClO_4
3,4	1	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 Free CN
5		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4 TSS
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN^- NH_3 TKN TOC CR^{6+} ClO_4

Comments:

LDC #: 16676

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See Comm

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125 (85-115% for Method 300.0)? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
1		3	Air	Free CN	46	All	J/UJ/A
				Diss Free CN	✓	✓	✓

Comments:

MS.6

LDC #: 26694

VALIDATION FINDINGS WORKSHEET
Sample Result Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See com

#	Date	Matrix	Analyte	Diss (mg/L) Finding	Total (mg/L)	Associated Samples	Qualifications
1		AQ	F	7.17	5.62	Diss > Total	Test. (#1)

Comments:

SMPRESV.6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 11, 2011
LDC Report Date:	November 21, 2011
Matrix:	Water
Parameters:	Dissolved Metals
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11J155

Sample Identification

G4-D-101111
G3-S-101111
G3-D-101111
G1-S-101111
G51-S-101111
G1-D-101111
G2-D-101111
G2-S-101111
G4-D-101111DUP
G3-S-101111MS

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Methods 200.7 and 200.8 for Dissolved Metals. The metals analyzed were Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Silicon, and Sodium.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5% .

III. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No dissolved metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
ICB/CCB	Sodium	49.5 ug/L	G1-S-101111 G51-S-101111 G2-S-101111
ICB/CCB	Magnesium	57.6 ug/L	G1-S-101111

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

V. ICP Interference Check Sample (ICS) Analysis

ICP Interference check sample analysis was not required by the methods.

VI. Matrix Spike Analysis

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

Samples G1-S-101111 and G51-S-101111 were identified as field duplicates. No dissolved metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD
	G1-S-101111	G51-S-101111	
Silicon	12.7	12.5	2
Aluminum	0.587	0.601	2
Calcium	46.5	47.4	2

Analyte	Concentration (mg/L)		RPD
	G1-S-101111	G51-S-101111	
Iron	2.69	2.67	1
Magnesium	23.5	24.8	5
Manganese	0.256	0.257	0
Potassium	20.2	20.5	1
Sodium	87.7	89.3	2

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Dissolved Metals - Data Qualification Summary - SDG A11J155

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG A11J155

No Sample Data Qualified in this SDG

LDC #: 26627M4
SDG #: A11J155
Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 11/21/11
Page: 1 of 1
Reviewer: MU
2nd Reviewer: [illegible]

METHOD: Dissolved Metals (EPA Method 200.7/200.8)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/11/11
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	N	Not required
VI.	Matrix Spike Analysis	A	Na > 4 X
VII.	Duplicate Sample Analysis	A	
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not required
X.	Furnace Atomic Absorption QC	N	Not utilized
XI.	ICP Serial Dilution	N	Not performed
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	SW	(4, 5)
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: M

1	G4-D-101111	11	MU	21		31	
2	G3-S-101111	12		22		32	
3	G3-D-101111	13		23		33	
4	G1-S-101111	14		24		34	
5	G51-S-101111	15		25		35	
6	G1-D-101111	16		26		36	
7	G2-D-101111	17		27		37	
8	G2-S-101111	18		28		38	
9	G4-D-101111DUP	19		29		39	
10	G3-S-101111MS	20		30		40	

Notes:

LDC #: 26627MF

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: W
2nd reviewer: C

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-8	W	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,
9, 10	W	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,

Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-,
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN-

Comments: Mercury by CVAA if performed

LDC #: 26627M4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: Trace Metals (EPA 200.7/200.8) Soil preparation factor applied: 1.1X
Sample Concentration units, unless otherwise noted: mg/L Associated Samples: 4,5,8 (>5X)

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (mg/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit											
Na			49.5	0.272											

Sample Concentration units, unless otherwise noted: mg/L Associated Samples: 4 (>5X)

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (mg/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit											
Mg			57.6	0.317											

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 26627M4

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer:
2nd Reviewer:

METHOD: Metals (EPA Method 200.7/200.8)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD	
	4	5		
Silicon	12.7	12.5	2	
Aluminum	0.587	0.601	2	
Calcium	46.5	47.4	2	
Iron	2.69	2.67	1	
Magnesium	23.5	24.8	5	
Manganese	0.256	0.257	0	
Potassium	20.2	20.5	1	
Sodium	87.7	89.3	2	

V:\FIELD DUPLICATES\FD_inorganic\26627M4.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 11, 2011
LDC Report Date:	November 21, 2011
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11J155

Sample Identification

G4-D-101111
G3-S-101111
G3-D-101111
G1-S-101111
G51-S-101111
G1-D-101111
G2-D-101111
G2-S-101111
G4-D-101111DUP
G3-S-101111MS
G3-S-101111DUP
G3-D-101111DUP
G51-S-101111MS
G51-S-101111DUP
G2-D-101111MS
G2-D-101111DUP
G2-S-101111MS
G2-S-101111DUP

Introduction

This data review covers 18 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2320B for Alkalinity, EPA Method 300.0 for Chloride, Total and Dissolved Fluoride, and Sulfate, EPA Method 335.4 for Total and Dissolved Cyanide, Standard Method 4500-CN (I/E) for Total and Dissolved Weak Acid Dissociable Cyanide, ASTM D4282 for Total and Dissolved Free Cyanide, Standard Method 4500 P B for Total Phosphorus, Standard Method 2540C for Total Dissolved Solids, Standard Method 2540D for Total Suspended Solids, and Standard Method 4500-F-C for Total and Dissolved Fluoride.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
PB (prep blank)	Fluoride Dissolved fluoride	0.02000 mg/L 0.02100 mg/L	G4-D-101111 G1-D-101111 G2-D-101111
ICB/CCB	Fluoride Dissolved fluoride	0.0280 mg/L 0.0240 mg/L	G4-D-101111 G1-D-101111 G2-D-101111

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Affected Analyte	Flag	A or P
G2-S-101111MS (All samples in SDG A11J155)	Dissolved free cyanide	30 (75-125)	Total cyanide Dissolved free cyanide	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS %R problems, data were qualified as estimated in eight samples.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples G1-S-101111 and G51-S-101111 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD
	G1-S-101111	G51-S-101111	
Chloride	7.28	8.34	14
Fluoride	9.76	9.70	1
Dissolved fluoride	10.2	10.3	1
Sulfate	151	157	4
Total dissolved solids	569	559	2
Total suspended solids	5.00U	7.00	200

Analyte	Concentration (mg/L)		RPD
	G1-S-101111	G51-S-101111	
Total alkalinity	281	240	16
Bicarbonate alkalinity	281	240	16
Total phosphorus	0.430	0.420	2

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A11J155

SDG	Sample	Analyte	Flag	A or P	Reason
A11J155	G4-D-101111 G3-S-101111 G3-D-101111 G1-S-101111 G51-S-101111 G1-D-101111 G2-D-101111 G2-S-101111	Total cyanide Dissolved free cyanide	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Matrix spike (%R)

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A11J155

No Sample Data Qualified in this SDG

LDC #: 26627M6
SDG #: A11J155
Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 11/21/11
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Alkalinity (SM2320 B), Chloride, Total and Dissolved Fluoride, Sulfate (EPA Method 300.0), Total and Dissolved Cyanide (EPA Method 335.4), Total and Dissolved Weak Acid dissociable Cyanide (SM4500-CN (I/E)), Total and Dissolved Free Cyanide (ASTM D 4282), Total Phosphorus (SM4500 P B), Total Dissolved Solids (SM2540 C), Total Suspended Solids (SM2540 D),Totals and Dissolved Fluoride (SM4500-F-C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/11/11
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	SW	
V	Matrix Spike/Matrix Spike Duplicates	SW	
VI.	Duplicates	A	#11, WAD CN, Total + ~~Dissolved~~ Free CN.
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	SW	(4,5)
XI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: All

1	G4-D-101111	11	G3-S-101111DUP	21	MB	31	
2	G3-S-101111	~~12~~	~~G3-D-101111MS~~	22		32	
3	G3-D-101111	13	G3-D-101111DUP	23		33	
4	G1-S-101111	14	G51-S-101111MS	24		34	
5	G51-S-101111	15	G51-S-101111DUP	25		35	
6	G1-D-101111	16	G2-D-101111MS	26		36	
7	G2-D-101111	17	G2-D-101111DUP	27		37	
8	G2-S-101111	18	G2-S-101111MS	28		38	
9	G4-D-101111DUP	19	G2-S-101111DUP	29		39	
10	G3-S-101111MS	20		30		40	

Notes:

EDC #: [illegible] M

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: M
2nd reviewer: C

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter
1-8	Aq	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4 (WAD CN) (Free CN) (P) (TSS)
1-8	Aq	pH TDS Cl F (Dis) NO_3 NO_2 SO_4 PO_4 ALK CN- (Dis) NH_3 TKN TOC CR^{6+} ClO_4 (Dis WAD CN) (Dis Free CN)
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4
M 14,15	M	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4
18, 19	↓	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4 (Total TDS) (Free CN)
10, 11		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4 (WAD CN)
13		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4 (Dis WAD CN)
9		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4 (TSS)
16, 17		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4 (P)
19	✓	pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4 (P)
15		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4
		pH TDS Cl F NO_3 NO_2 SO_4 PO_4 ALK CN- NH_3 TKN TOC CR^{6+} ClO_4

Comments:

LDC #: 26627M6

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer:
2nd Reviewer:

METHOD: Inorganics, Method See Cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were all samples associated with a given method blank?
Y N N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: mg/L **Associated Samples:** 1,6,7 (>5X)

Analyte	Blank ID		Blank Action Limit											
	MB	ICB/CCB												
Fluoride	0.02000	0.0280	0.140											
Diss Fluoride	0.02100	0.0240	0.120											

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 26627M6

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125 (85-115% for Method 300.0)? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
1		18	AQ	~~Free CN~~	~~30~~	All	J/UJ/A (Qual Total + Diss CN)
				Diss Free CN			

Comments: #18 P > 4X, No qual

MS.6

LDC# 26627M6

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer:
2nd Reviewer:

Inorganics, Method See Cover

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/L)		RPD	
	4	5		
Chloride	7.28	8.34	14	
Fluoride	9.76	9.70	1	
Dissolved Fluoride	10.2	10.3	1	
Sulfate	151	157	4	
TDS	569	559	2	
TSS	5.00U	7.00	200	
Total Alkalinity	281	240	16	
Bicarbonate Alkalinity	281	240	16	
Phosphorus	0.430	0.420	2	

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Millennium Bulk Terminals - LDC 26627

SDG: A11G307

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBT-072511-01	A11G307-01	Cyanide, free	7/26/2011	0.005	Yes	N	U	UJ	8	0.00500	0.00200	mg/L
MBT-072511-02	A11G307-02	Cyanide, free	7/26/2011	0.005	Yes	N	U	UJ	8	0.00500	0.00200	mg/L
MBT-072511-03	A11G307-03	Cyanide, free	7/26/2011	0.0072	Yes	Y		J	8	0.00500	0.00200	mg/L
MBT-072511-04	A11G307-04	Cyanide, free	7/26/2011	0.0066	Yes	Y		J	8	0.00500	0.00200	mg/L
MBT-072511-05	A11G307-05	Cyanide, free	7/26/2011	0.005	Yes	N	U	UJ	8	0.00500	0.00200	mg/L
MBT-072511-06	A11G307-06	Cyanide, free	7/26/2011	0.005	Yes	N	U	UJ	8	0.00500	0.00200	mg/L
MBT-072511-07	A11G307-07	Cyanide, free	7/26/2011	0.005	Yes	N	U	UJ	8	0.00500	0.00200	mg/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBT-072511-01	A11G307-01	Chloride (total)	7/26/2011	8.89	Yes	Y				1.00	1.00	mg/L
MBT-072511-01	A11G307-01	Fluoride	7/26/2011	1.83	Yes	Y				1.00	1.00	mg/L
MBT-072511-02	A11G307-02	Fluoride	7/26/2011	32.5	Yes	Y				1.00	1.00	mg/L
MBT-072511-02	A11G307-02	Chloride (total)	7/26/2011	2.24	Yes	Y				1.00	1.00	mg/L
MBT-072511-03	A11G307-03	Chloride (total)	7/26/2011	47.6	Yes	Y	D			20.0	20.0	mg/L
MBT-072511-03	A11G307-03RE1	Fluoride	8/1/2011	2100	Yes	Y				100	100	mg/L
MBT-072511-04	A11G307-04	Fluoride	7/26/2011	1	Yes	N	U			1.00	1.00	mg/L
MBT-072511-04	A11G307-04RE1	Chloride (total)	8/1/2011	108	Yes	Y				5.00	5.00	mg/L
MBT-072511-05	A11G307-05	Chloride (total)	7/26/2011	8.66	Yes	Y				1.00	1.00	mg/L
MBT-072511-05	A11G307-05	Fluoride	7/26/2011	8.25	Yes	Y				1.00	1.00	mg/L
MBT-072511-06	A11G307-06	Fluoride	7/26/2011	8.28	Yes	Y				1.00	1.00	mg/L
MBT-072511-06	A11G307-06	Chloride (total)	7/26/2011	8.66	Yes	Y				1.00	1.00	mg/L
MBT-072511-07	A11G307-07	Chloride (total)	7/26/2011	5.73	Yes	Y				1.00	1.00	mg/L
MBT-072511-07	A11G307-07	Fluoride	7/26/2011	1	Yes	N	U			1.00	1.00	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBT-072511-01	A11G307-01	Cyanide, total	7/28/2011	0.038		Yes	Y				0.00500	0.00500	mg/L
MBT-072511-02	A11G307-02	Cyanide, total	7/28/2011	0.0199		Yes	Y				0.00500	0.00500	mg/L
MBT-072511-03	A11G307-03	Cyanide, total	7/28/2011	368		Yes	Y	D			6.00	6.00	mg/L
MBT-072511-04	A11G307-04RE1	Cyanide, total	7/28/2011	0.0432		Yes	Y				0.0150	0.0150	mg/L
MBT-072511-05	A11G307-05	Cyanide, total	7/28/2011	0.025		Yes	Y				0.00500	0.00500	mg/L
MBT-072511-06	A11G307-06	Cyanide, total	7/28/2011	0.0245		Yes	Y				0.00500	0.00500	mg/L
MBT-072511-07	A11G307-07	Cyanide, total	7/28/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBT-072511-01	A11G307-01	Cyanide, Weak acid dissociable (WAD)	8/1/2011	0.0175		Yes	N		U	7	0.00500	0.00500	mg/L
MBT-072511-02	A11G307-02	Cyanide, Weak acid dissociable (WAD)	8/1/2011	0.0178		Yes	N		U	7	0.00500	0.00500	mg/L
MBT-072511-03	A11G307-03RE2	Cyanide, Weak acid dissociable (WAD)	8/2/2011	0.734		Yes	Y	D			0.0900	0.0900	mg/L
MBT-072511-04	A11G307-04	Cyanide, Weak acid dissociable (WAD)	8/1/2011	0.0501		Yes	N		U	7	0.0150	0.0150	mg/L
MBT-072511-05	A11G307-05	Cyanide, Weak acid dissociable (WAD)	8/1/2011	0.0295		Yes	N		U	7	0.00500	0.00500	mg/L
MBT-072511-06	A11G307-06	Cyanide, Weak acid dissociable (WAD)	8/1/2011	0.0293		Yes	N		U	7	0.00500	0.00500	mg/L
MBT-072511-07	A11G307-07RE1	Cyanide, Weak acid dissociable (WAD)	8/2/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBT-072511-04	A11G307-04	Fluoride	11/1/2011	0.586		Yes	Y		J	1	0.100	0.100	mg/L
MBT-072511-07	A11G307-07	Fluoride	11/1/2011	0.478		Yes	Y		J	1	0.100	0.100	mg/L

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-072511	A11G308-01	Cyanide, free	7/26/2011	0.0054		Yes	Y		J	8	0.00500	0.00200	mg/L
G1-S-072511	A11G308-02	Cyanide, free	7/26/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
G1-S-D-072511	A11G308-03	Cyanide, free	7/26/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
G2-D-072511	A11G308-04	Cyanide, free	7/26/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
G2-S-072511	A11G308-05	Cyanide, free	7/26/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
PZ-5-072511	A11G308-06	Cyanide, free	7/26/2011	0.007		Yes	Y		J	8	0.00500	0.00200	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-072511	A11G308-01	Silicon	8/4/2011	39.3		Yes	Y				0.500	0.100	mg/L
G1-S-072511	A11G308-02	Silicon	8/4/2011	13.9		Yes	Y				0.500	0.100	mg/L
G1-S-D-072511	A11G308-03	Silicon	8/4/2011	13.9		Yes	Y				0.500	0.100	mg/L
G2-D-072511	A11G308-04	Silicon	8/4/2011	29.8		Yes	Y				0.500	0.100	mg/L
G2-S-072511	A11G308-05	Silicon	8/4/2011	24.3		Yes	Y				0.500	0.100	mg/L
PZ-5-072511	A11G308-06	Silicon	8/4/2011	37.1		Yes	Y				2.25	0.450	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-072511	A11G308-01	Magnesium	8/4/2011	77800		Yes	Y	D			500	100	ug/L
G1-D-072511	A11G308-01	Manganese	8/4/2011	5600		Yes	Y	D			10.0	3.33	ug/L
G1-D-072511	A11G308-01	Sodium	8/5/2011	218000		Yes	Y	D			2500	500	ug/L
G1-D-072511	A11G308-01	Calcium	8/5/2011	157000		Yes	Y	D			2500	625	ug/L
G1-D-072511	A11G308-01	Iron	8/5/2011	241000		Yes	Y	D			1250	250	ug/L
G1-D-072511	A11G308-01	Potassium	8/5/2011	1930		Yes	Y				100	10.0	ug/L
G1-D-072511	A11G308-01	Aluminum	8/5/2011	7.87		Yes	Y	J			50.0	4.00	ug/L
G1-S-072511	A11G308-02	Calcium	8/4/2011	32900		Yes	Y	D			1000	250	ug/L
G1-S-072511	A11G308-02	Sodium	8/4/2011	73200		Yes	Y	D			1000	200	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-S-072511	A11G308-02	Potassium	8/4/2011	14600		Yes	Y	D			1000	100	ug/L
G1-S-072511	A11G308-02	Manganese	8/4/2011	202		Yes	Y	D			10.0	3.33	ug/L
G1-S-072511	A11G308-02	Magnesium	8/4/2011	16900		Yes	Y	D			500	100	ug/L
G1-S-072511	A11G308-02	Iron	8/4/2011	2410		Yes	Y	D			500	100	ug/L
G1-S-072511	A11G308-02	Aluminum	8/4/2011	810		Yes	Y	D			500	40.0	ug/L
G1-S-D-072511	A11G308-03	Calcium	8/4/2011	33100		Yes	Y	D			1000	250	ug/L
G1-S-D-072511	A11G308-03	Sodium	8/4/2011	71700		Yes	Y	D			1000	200	ug/L
G1-S-D-072511	A11G308-03	Potassium	8/4/2011	14500		Yes	Y	D			1000	100	ug/L
G1-S-D-072511	A11G308-03	Manganese	8/4/2011	202		Yes	Y	D			10.0	3.33	ug/L
G1-S-D-072511	A11G308-03	Magnesium	8/4/2011	16600		Yes	Y	D			500	100	ug/L
G1-S-D-072511	A11G308-03	Aluminum	8/4/2011	779		Yes	Y	D			500	40.0	ug/L
G1-S-D-072511	A11G308-03	Iron	8/4/2011	2120		Yes	Y	D			500	100	ug/L
G2-D-072511	A11G308-04	Calcium	8/4/2011	60400		Yes	Y	D			1000	250	ug/L
G2-D-072511	A11G308-04	Magnesium	8/4/2011	32500		Yes	Y	D			500	100	ug/L
G2-D-072511	A11G308-04	Sodium	8/5/2011	854000		Yes	Y	D			10000	2000	ug/L
G2-D-072511	A11G308-04	Potassium	8/5/2011	3810		Yes	Y	D			200	20.0	ug/L
G2-D-072511	A11G308-04	Iron	8/5/2011	6460		Yes	Y	D			100	20.0	ug/L
G2-D-072511	A11G308-04	Aluminum	8/5/2011	11.8		Yes	Y	D J			100	8.00	ug/L
G2-D-072511	A11G308-04	Manganese	8/5/2011	904		Yes	Y	D			2.00	0.666	ug/L
G2-S-072511	A11G308-05	Calcium	8/4/2011	77800		Yes	Y	D			1000	250	ug/L
G2-S-072511	A11G308-05	Magnesium	8/4/2011	54900		Yes	Y	D			500	100	ug/L
G2-S-072511	A11G308-05	Iron	8/4/2011	22100		Yes	Y	D			500	100	ug/L
G2-S-072511	A11G308-05	Sodium	8/5/2011	790000		Yes	Y	D			10000	2000	ug/L
G2-S-072511	A11G308-05	Aluminum	8/5/2011	70.4		Yes	Y	D J			100	8.00	ug/L
G2-S-072511	A11G308-05	Manganese	8/5/2011	2690		Yes	Y	D			2.00	0.666	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-S-072511	A11G308-05	Potassium	8/5/2011	9330		Yes	Y	D			200	20.0	ug/L
PZ-5-072511	A11G308-06	Sodium	8/5/2011	6520000		Yes	Y	D			90000	18000	ug/L
PZ-5-072511	A11G308-06	Calcium	8/5/2011	1030		Yes	Y	D J			2250	563	ug/L
PZ-5-072511	A11G308-06	Potassium	8/5/2011	10900		Yes	Y	D			2250	225	ug/L
PZ-5-072511	A11G308-06	Manganese	8/5/2011	36		Yes	Y	D			22.5	7.49	ug/L
PZ-5-072511	A11G308-06	Magnesium	8/5/2011	292		Yes	Y	D J			1120	225	ug/L
PZ-5-072511	A11G308-06	Iron	8/5/2011	108000		Yes	Y	D			1120	225	ug/L
PZ-5-072511	A11G308-06	Aluminum	8/5/2011	228		Yes	Y	D J			1120	90.0	ug/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-072511	A11G308-01	Sulfate	7/27/2011	1		Yes	N	U			1.00	1.00	mg/L
G1-D-072511	A11G308-01	Fluoride	7/27/2011	1		Yes	N	U			1.00	1.00	mg/L
G1-D-072511	A11G308-01RE1	Chloride (total)	7/27/2011	332		Yes	Y				50.0	50.0	mg/L
G1-S-072511	A11G308-02	Fluoride	7/27/2011	18.9		Yes	Y				1.00	1.00	mg/L
G1-S-072511	A11G308-02	Chloride (total)	7/27/2011	4.54		Yes	Y				1.00	1.00	mg/L
G1-S-072511	A11G308-02	Sulfate	7/27/2011	10.6		Yes	Y				1.00	1.00	mg/L
G1-S-D-072511	A11G308-03	Chloride (total)	7/27/2011	4.52		Yes	Y				1.00	1.00	mg/L
G1-S-D-072511	A11G308-03	Fluoride	7/27/2011	19.2		Yes	Y				1.00	1.00	mg/L
G1-S-D-072511	A11G308-03	Sulfate	7/27/2011	10.7		Yes	Y				1.00	1.00	mg/L
G2-D-072511	A11G308-04	Fluoride	7/27/2011	1		Yes	N	U			1.00	1.00	mg/L
G2-D-072511	A11G308-04RE1	Sulfate	8/1/2011	100		Yes	Y				5.00	5.00	mg/L
G2-D-072511	A11G308-04RE1	Chloride (total)	8/1/2011	133		Yes	Y				5.00	5.00	mg/L
G2-S-072511	A11G308-05	Sulfate	7/27/2011	1		Yes	N	U			1.00	1.00	mg/L
G2-S-072511	A11G308-05	Fluoride	7/27/2011	23		Yes	Y				1.00	1.00	mg/L
G2-S-072511	A11G308-05RE1	Chloride (total)	8/1/2011	85.5		Yes	Y				5.00	5.00	mg/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-5-072511	A11G308-06	Chloride (total)	7/27/2011	51.9		Yes	Y	D			20.0	20.0	mg/L
PZ-5-072511	A11G308-06	Sulfate	7/27/2011	503		Yes	Y	D			20.0	20.0	mg/L
PZ-5-072511	A11G308-06RE1	Fluoride	8/1/2011	2560		Yes	Y				100	100	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-072511	A11G308-01	Cyanide, total	7/28/2011	0.0779		Yes	Y				0.00500	0.00500	mg/L
G1-S-072511	A11G308-02	Cyanide, total	7/28/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
G1-S-D-072511	A11G308-03	Cyanide, total	7/28/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
G2-D-072511	A11G308-04RE1	Cyanide, total	8/2/2011	0.245		Yes	Y				0.00500	0.00500	mg/L
G2-S-072511	A11G308-05	Cyanide, total	8/2/2011	0.245		Yes	Y				0.00500	0.00500	mg/L
PZ-5-072511	A11G308-06RE1	Cyanide, total	8/2/2011	347		Yes	Y	D			12.0	12.0	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-072511	A11G308-01	Alkalinity, total as calcium carbonate (CaCO3)	8/2/2011	838		Yes	Y				20.0	20.0	mg/L
G1-D-072511	A11G308-01	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/2/2011	838		Yes	Y				20.0	20.0	mg/L
G1-D-072511	A11G308-01	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/2/2011	20		Yes	N	U			20.0	20.0	mg/L
G1-S-072511	A11G308-02	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/2/2011	20		Yes	N	U			20.0	20.0	mg/L
G1-S-072511	A11G308-02	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/2/2011	315		Yes	Y				20.0	20.0	mg/L
G1-S-072511	A11G308-02	Alkalinity, total as calcium carbonate (CaCO3)	8/2/2011	315		Yes	Y				20.0	20.0	mg/L
G1-S-D-072511	A11G308-03	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/2/2011	20		Yes	N	U			20.0	20.0	mg/L
G1-S-D-072511	A11G308-03	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/2/2011	314		Yes	Y				20.0	20.0	mg/L
G1-S-D-072511	A11G308-03	Alkalinity, total as calcium carbonate (CaCO3)	8/2/2011	314		Yes	Y				20.0	20.0	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-D-072511	A11G308-04	Alkalinity, total as calcium carbonate (CaCO3)	8/2/2011	1870		Yes	Y				20.0	20.0	mg/L
G2-D-072511	A11G308-04	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/2/2011	20		Yes	N	U			20.0	20.0	mg/L
G2-D-072511	A11G308-04	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/2/2011	1870		Yes	Y				20.0	20.0	mg/L
G2-S-072511	A11G308-05	Alkalinity, total as calcium carbonate (CaCO3)	8/2/2011	1990		Yes	Y				20.0	20.0	mg/L
G2-S-072511	A11G308-05	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/2/2011	1990		Yes	Y				20.0	20.0	mg/L
G2-S-072511	A11G308-05	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/2/2011	20		Yes	N	U			20.0	20.0	mg/L
PZ-5-072511	A11G308-06	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/4/2011	7960		Yes	Y				20.0	20.0	mg/L
PZ-5-072511	A11G308-06	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/4/2011	540		Yes	Y				20.0	20.0	mg/L
PZ-5-072511	A11G308-06	Alkalinity, total as calcium carbonate (CaCO3)	8/4/2011	8500		Yes	Y				20.0	20.0	mg/L

Analytical Method SM2540C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-072511	A11G308-01	Total dissolved solids	7/27/2011	1740		Yes	Y				10.0	10.0	mg/L
G1-S-072511	A11G308-02	Total dissolved solids	7/27/2011	395		Yes	Y				10.0	10.0	mg/L
G1-S-D-072511	A11G308-03	Total dissolved solids	7/27/2011	386		Yes	Y				10.0	10.0	mg/L
G2-D-072511	A11G308-04	Total dissolved solids	7/27/2011	2550		Yes	Y				10.0	10.0	mg/L
G2-S-072511	A11G308-05	Total dissolved solids	7/27/2011	2460		Yes	Y				10.0	10.0	mg/L
PZ-5-072511	A11G308-06	Total dissolved solids	7/28/2011	15200		Yes	Y				10.0	10.0	mg/L

Analytical Method SM2540D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-072511	A11G308-01	Total suspended solids	7/26/2011	87		Yes	Y				5.00	5.00	mg/L
G1-S-072511	A11G308-02	Total suspended solids	7/26/2011	5		Yes	Y				5.00	5.00	mg/L
G1-S-D-072511	A11G308-03	Total suspended solids	7/26/2011	6		Yes	Y				5.00	5.00	mg/L

Analytical Method SM2540D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-D-072511	A11G308-04	Total suspended solids	7/26/2011	10		Yes	Y				5.00	5.00	mg/L
G2-S-072511	A11G308-05	Total suspended solids	7/26/2011	17		Yes	Y				5.00	5.00	mg/L
PZ-5-072511	A11G308-06	Total suspended solids	7/26/2011	10		Yes	Y				5.00	5.00	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-072511	A11G308-01RE1	Cyanide, Weak acid dissociable (WAD)	8/2/2011	0.0288		Yes	Y				0.0150	0.0150	mg/L
G1-S-072511	A11G308-02RE1	Cyanide, Weak acid dissociable (WAD)	8/2/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
G1-S-D-072511	A11G308-03RE1	Cyanide, Weak acid dissociable (WAD)	8/2/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
G2-D-072511	A11G308-04RE1	Cyanide, Weak acid dissociable (WAD)	8/2/2011	0.0184		Yes	Y				0.00500	0.00500	mg/L
G2-S-072511	A11G308-05RE1	Cyanide, Weak acid dissociable (WAD)	8/2/2011	0.0324		Yes	Y				0.00500	0.00500	mg/L
PZ-5-072511	A11G308-06RE1	Cyanide, Weak acid dissociable (WAD)	8/2/2011	0.898		Yes	Y	D			0.0900	0.0900	mg/L

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-072511	A11G308-01	Fluoride	11/1/2011	0.49		Yes	Y		J	1	0.100	0.100	mg/L
G2-D-072511	A11G308-04	Fluoride	11/1/2011	0.607		Yes	Y		J	1	0.100	0.100	mg/L

Analytical Method SM4500P

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-072511	A11G308-01	Phosphorus	8/2/2011	1.09		Yes	Y	D			0.200	0.0200	mg/L
G1-S-072511	A11G308-02	Phosphorus	8/2/2011	0.084		Yes	N	J	U	7	0.100	0.0100	mg/L
G1-S-D-072511	A11G308-03	Phosphorus	8/2/2011	0.118		Yes	Y				0.100	0.0100	mg/L
G2-D-072511	A11G308-04	Phosphorus	8/2/2011	2.44		Yes	Y	D			1.00	0.100	mg/L
G2-S-072511	A11G308-05	Phosphorus	8/2/2011	1.8		Yes	Y	D			1.00	0.100	mg/L
PZ-5-072511	A11G308-06	Phosphorus	8/2/2011	17.2		Yes	Y	D			2.50	0.250	mg/L

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W1-080111	A11H018-03	Cyanide, free	8/2/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
W2-080111	A11H018-04	Cyanide, free	8/2/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
W2-080111-D	A11H018-05	Cyanide, free	8/2/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
W3-080111	A11H018-06	Cyanide, free	8/2/2011	0.0022	Yes	Y	J			0.00500	0.00200	mg/L
W4-080111	A11H018-07	Cyanide, free	8/2/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
W5-080111	A11H018-08	Cyanide, free	8/2/2011	0.0024	Yes	N	J	U	7	0.00500	0.00200	mg/L
W6-080111	A11H018-01	Cyanide, free	8/2/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
W7-080111	A11H018-02	Cyanide, free	8/2/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W1-080111	A11H018-03	Silicon	8/9/2011	23	Yes	Y				0.500	0.100	mg/L
W2-080111	A11H018-04	Silicon	8/9/2011	20.5	Yes	Y				0.500	0.100	mg/L
W2-080111-D	A11H018-05	Silicon	8/9/2011	20.5	Yes	Y				0.500	0.100	mg/L
W3-080111	A11H018-06	Silicon	8/9/2011	17.5	Yes	Y				0.500	0.100	mg/L
W4-080111	A11H018-07	Silicon	8/9/2011	16.4	Yes	Y				0.500	0.100	mg/L
W5-080111	A11H018-08	Silicon	8/9/2011	4.15	Yes	Y				0.500	0.100	mg/L
W6-080111	A11H018-01	Silicon	8/9/2011	16.5	Yes	Y				0.500	0.100	mg/L
W7-080111	A11H018-02	Silicon	8/9/2011	23.3	Yes	Y				0.500	0.100	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W1-080111	A11H018-03	Calcium	8/8/2011	16000	Yes	Y	D			1000	250	ug/L
W1-080111	A11H018-03	Sodium	8/8/2011	11900	Yes	Y	D			1000	200	ug/L
W1-080111	A11H018-03	Potassium	8/9/2011	2040	Yes	Y				100	10.0	ug/L
W1-080111	A11H018-03	Manganese	8/9/2011	968	Yes	Y				1.00	0.333	ug/L
W1-080111	A11H018-03	Magnesium	8/9/2011	8770	Yes	Y				50.0	10.0	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W1-080111	A11H018-03	Iron	8/9/2011	6240		Yes	Y				50.0	10.0	ug/L
W1-080111	A11H018-03	Aluminum	8/9/2011	4.08		Yes	Y	J			50.0	4.00	ug/L
W2-080111	A11H018-04	Calcium	8/8/2011	19300		Yes	Y	D			1000	250	ug/L
W2-080111	A11H018-04	Sodium	8/8/2011	13500		Yes	Y	D			1000	200	ug/L
W2-080111	A11H018-04	Potassium	8/9/2011	2300		Yes	Y				100	10.0	ug/L
W2-080111	A11H018-04	Manganese	8/9/2011	670		Yes	Y				1.00	0.333	ug/L
W2-080111	A11H018-04	Magnesium	8/9/2011	9080		Yes	Y				50.0	10.0	ug/L
W2-080111	A11H018-04	Iron	8/9/2011	434		Yes	Y				50.0	10.0	ug/L
W2-080111	A11H018-04	Aluminum	8/9/2011	50		Yes	N	U			50.0	4.00	ug/L
W2-080111-D	A11H018-05	Calcium	8/8/2011	19400		Yes	Y	D			1000	250	ug/L
W2-080111-D	A11H018-05	Sodium	8/8/2011	13500		Yes	Y	D			1000	200	ug/L
W2-080111-D	A11H018-05	Magnesium	8/9/2011	9190		Yes	Y				50.0	10.0	ug/L
W2-080111-D	A11H018-05	Iron	8/9/2011	446		Yes	Y				50.0	10.0	ug/L
W2-080111-D	A11H018-05	Potassium	8/9/2011	2350		Yes	Y				100	10.0	ug/L
W2-080111-D	A11H018-05	Aluminum	8/9/2011	6.94		Yes	Y	J			50.0	4.00	ug/L
W2-080111-D	A11H018-05	Manganese	8/9/2011	673		Yes	Y				1.00	0.333	ug/L
W3-080111	A11H018-06	Magnesium	8/8/2011	10000		Yes	Y	D			500	100	ug/L
W3-080111	A11H018-06	Calcium	8/8/2011	21500		Yes	Y	D			1000	250	ug/L
W3-080111	A11H018-06	Sodium	8/8/2011	30500		Yes	Y	D			1000	200	ug/L
W3-080111	A11H018-06	Manganese	8/9/2011	1000		Yes	Y				1.00	0.333	ug/L
W3-080111	A11H018-06	Aluminum	8/9/2011	5.93		Yes	Y	J			50.0	4.00	ug/L
W3-080111	A11H018-06	Iron	8/9/2011	494		Yes	Y				50.0	10.0	ug/L
W3-080111	A11H018-06	Potassium	8/10/2011	2030		Yes	Y				100	10.0	ug/L
W4-080111	A11H018-07	Magnesium	8/8/2011	10600		Yes	Y	D			500	100	ug/L
W4-080111	A11H018-07	Sodium	8/8/2011	54900		Yes	Y	D			1000	200	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W4-080111	A11H018-07	Calcium	8/8/2011	23300		Yes	Y	D			1000	250	ug/L
W4-080111	A11H018-07	Aluminum	8/9/2011	5.02		Yes	Y	J			50.0	4.00	ug/L
W4-080111	A11H018-07	Manganese	8/9/2011	677		Yes	Y				1.00	0.333	ug/L
W4-080111	A11H018-07	Iron	8/9/2011	631		Yes	Y				50.0	10.0	ug/L
W4-080111	A11H018-07	Potassium	8/10/2011	1940		Yes	Y				100	10.0	ug/L
W5-080111	A11H018-08	Calcium	8/8/2011	13300		Yes	Y	D			1000	250	ug/L
W5-080111	A11H018-08	Iron	8/9/2011	63.9		Yes	Y				50.0	10.0	ug/L
W5-080111	A11H018-08	Aluminum	8/9/2011	6.73		Yes	Y	J			50.0	4.00	ug/L
W5-080111	A11H018-08	Sodium	8/9/2011	5680		Yes	Y				100	20.0	ug/L
W5-080111	A11H018-08	Magnesium	8/9/2011	3780		Yes	Y				50.0	10.0	ug/L
W5-080111	A11H018-08	Manganese	8/9/2011	2.98		Yes	Y				1.00	0.333	ug/L
W5-080111	A11H018-08	Potassium	8/10/2011	938		Yes	Y				100	10.0	ug/L
W6-080111	A11H018-01	Calcium	8/8/2011	21000		Yes	Y	D			1000	250	ug/L
W6-080111	A11H018-01	Sodium	8/8/2011	12100		Yes	Y	D			1000	200	ug/L
W6-080111	A11H018-01	Manganese	8/9/2011	358		Yes	Y				1.00	0.333	ug/L
W6-080111	A11H018-01	Magnesium	8/9/2011	8460		Yes	Y				50.0	10.0	ug/L
W6-080111	A11H018-01	Aluminum	8/9/2011	8.8		Yes	Y	J			50.0	4.00	ug/L
W6-080111	A11H018-01	Potassium	8/9/2011	1270		Yes	Y				100	10.0	ug/L
W6-080111	A11H018-01	Iron	8/9/2011	610		Yes	Y				50.0	10.0	ug/L
W7-080111	A11H018-02	Calcium	8/8/2011	16800		Yes	Y	D			1000	250	ug/L
W7-080111	A11H018-02	Sodium	8/8/2011	12300		Yes	Y	D			1000	200	ug/L
W7-080111	A11H018-02	Potassium	8/9/2011	2020		Yes	Y				100	10.0	ug/L
W7-080111	A11H018-02	Manganese	8/9/2011	986		Yes	Y				1.00	0.333	ug/L
W7-080111	A11H018-02	Aluminum	8/9/2011	6.11		Yes	Y	J			50.0	4.00	ug/L
W7-080111	A11H018-02	Iron	8/9/2011	7310		Yes	Y				50.0	10.0	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W7-080111	A11H018-02	Magnesium	8/9/2011	8760		Yes	Y				50.0	10.0	ug/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W1-080111	A11H018-03	Fluoride	8/4/2011	1		Yes	N	U			1.00	1.00	mg/L
W1-080111	A11H018-03	Chloride (total)	8/4/2011	6.92		Yes	Y				1.00	1.00	mg/L
W1-080111	A11H018-03RE1	Sulfate	8/9/2011	3.23		Yes	Y				1.00	1.00	mg/L
W2-080111	A11H018-04	Fluoride	8/4/2011	1		Yes	N	U			1.00	1.00	mg/L
W2-080111	A11H018-04	Chloride (total)	8/4/2011	9.45		Yes	Y				1.00	1.00	mg/L
W2-080111	A11H018-04RE1	Sulfate	8/9/2011	2.94		Yes	Y				1.00	1.00	mg/L
W2-080111-D	A11H018-05	Fluoride	8/4/2011	1		Yes	N	U			1.00	1.00	mg/L
W2-080111-D	A11H018-05	Chloride (total)	8/4/2011	9.46		Yes	Y				1.00	1.00	mg/L
W2-080111-D	A11H018-05RE1	Sulfate	8/9/2011	2.95		Yes	Y				1.00	1.00	mg/L
W3-080111	A11H018-06	Chloride (total)	8/4/2011	7.79		Yes	Y				1.00	1.00	mg/L
W3-080111	A11H018-06	Fluoride	8/4/2011	1.23		Yes	Y				1.00	1.00	mg/L
W3-080111	A11H018-06RE1	Sulfate	8/10/2011	3.08		Yes	Y				1.00	1.00	mg/L
W4-080111	A11H018-07	Chloride (total)	8/4/2011	6.86		Yes	Y				1.00	1.00	mg/L
W4-080111	A11H018-07	Fluoride	8/4/2011	2.64		Yes	Y				1.00	1.00	mg/L
W4-080111	A11H018-07RE1	Sulfate	8/10/2011	3.42		Yes	Y				1.00	1.00	mg/L
W5-080111	A11H018-08	Chloride (total)	8/4/2011	3.82		Yes	Y				1.00	1.00	mg/L
W5-080111	A11H018-08	Fluoride	8/4/2011	1		Yes	N	U			1.00	1.00	mg/L
W5-080111	A11H018-08RE1	Sulfate	8/10/2011	7.42		Yes	Y				1.00	1.00	mg/L
W6-080111	A11H018-01	Fluoride	8/4/2011	1		Yes	N	U			1.00	1.00	mg/L
W6-080111	A11H018-01	Chloride (total)	8/4/2011	12.2		Yes	Y				1.00	1.00	mg/L
W6-080111	A11H018-01RE1	Sulfate	8/9/2011	2.1		Yes	Y				1.00	1.00	mg/L
W7-080111	A11H018-02	Chloride (total)	8/4/2011	6.96		Yes	Y				1.00	1.00	mg/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W7-080111	A11H018-02	Fluoride	8/4/2011	1		Yes	N	U			1.00	1.00	mg/L
W7-080111	A11H018-02RE1	Sulfate	8/9/2011	3.21		Yes	Y				1.00	1.00	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W1-080111	A11H018-03	Cyanide, total	8/5/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
W2-080111	A11H018-04	Cyanide, total	8/5/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
W2-080111-D	A11H018-05	Cyanide, total	8/5/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
W3-080111	A11H018-06	Cyanide, total	8/5/2011	0.0056		Yes	Y				0.00500	0.00500	mg/L
W4-080111	A11H018-07	Cyanide, total	8/5/2011	0.0199		Yes	Y				0.00500	0.00500	mg/L
W5-080111	A11H018-08	Cyanide, total	8/5/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
W6-080111	A11H018-01	Cyanide, total	8/4/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
W7-080111	A11H018-02	Cyanide, total	8/5/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W1-080111	A11H018-03	Alkalinity, total as calcium carbonate (CaCO3)	8/8/2011	101		Yes	Y				20.0	20.0	mg/L
W1-080111	A11H018-03	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/8/2011	101		Yes	Y				20.0	20.0	mg/L
W1-080111	A11H018-03	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/8/2011	20		Yes	N	U			20.0	20.0	mg/L
W2-080111	A11H018-04	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/8/2011	20		Yes	N	U			20.0	20.0	mg/L
W2-080111	A11H018-04	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/8/2011	106		Yes	Y				20.0	20.0	mg/L
W2-080111	A11H018-04	Alkalinity, total as calcium carbonate (CaCO3)	8/8/2011	106		Yes	Y				20.0	20.0	mg/L
W2-080111-D	A11H018-05	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/8/2011	20		Yes	N	U			20.0	20.0	mg/L
W2-080111-D	A11H018-05	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/8/2011	105		Yes	Y				20.0	20.0	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W2-080111-D	A11H018-05	Alkalinity, total as calcium carbonate (CaCO3)	8/8/2011	105		Yes	Y				20.0	20.0	mg/L
W3-080111	A11H018-06	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/8/2011	154		Yes	Y				20.0	20.0	mg/L
W3-080111	A11H018-06	Alkalinity, total as calcium carbonate (CaCO3)	8/8/2011	154		Yes	Y				20.0	20.0	mg/L
W3-080111	A11H018-06	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/8/2011	20		Yes	N	U			20.0	20.0	mg/L
W4-080111	A11H018-07	Alkalinity, total as calcium carbonate (CaCO3)	8/8/2011	210		Yes	Y				20.0	20.0	mg/L
W4-080111	A11H018-07	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/8/2011	210		Yes	Y				20.0	20.0	mg/L
W4-080111	A11H018-07	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/8/2011	20		Yes	N	U			20.0	20.0	mg/L
W5-080111	A11H018-08	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/8/2011	20		Yes	N	U			20.0	20.0	mg/L
W5-080111	A11H018-08	Alkalinity, total as calcium carbonate (CaCO3)	8/8/2011	50.4		Yes	Y				20.0	20.0	mg/L
W5-080111	A11H018-08	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/8/2011	50.4		Yes	Y				20.0	20.0	mg/L
W6-080111	A11H018-01	Alkalinity, total as calcium carbonate (CaCO3)	8/8/2011	101		Yes	Y				20.0	20.0	mg/L
W6-080111	A11H018-01	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/8/2011	101		Yes	Y				20.0	20.0	mg/L
W6-080111	A11H018-01	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/8/2011	20		Yes	N	U			20.0	20.0	mg/L
W7-080111	A11H018-02	Alkalinity, total as calcium carbonate (CaCO3)	8/8/2011	115		Yes	Y				20.0	20.0	mg/L
W7-080111	A11H018-02	Alkalinity, Carbonate as calcium cabonate (CaCO3)	8/8/2011	20		Yes	N	U			20.0	20.0	mg/L
W7-080111	A11H018-02	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	8/8/2011	115		Yes	Y				20.0	20.0	mg/L

Analytical Method SM2540C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W1-080111	A11H018-03	Total dissolved solids	8/4/2011	166		Yes	Y				10.0	10.0	mg/L

Analytical Method SM2540C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W2-080111	A11H018-04	Total dissolved solids	8/4/2011	164		Yes	Y				10.0	10.0	mg/L
W2-080111-D	A11H018-05	Total dissolved solids	8/4/2011	158		Yes	Y				10.0	10.0	mg/L
W3-080111	A11H018-06	Total dissolved solids	8/4/2011	213		Yes	Y				10.0	10.0	mg/L
W4-080111	A11H018-07	Total dissolved solids	8/4/2011	265		Yes	Y				10.0	10.0	mg/L
W5-080111	A11H018-08	Total dissolved solids	8/4/2011	70		Yes	Y				10.0	10.0	mg/L
W6-080111	A11H018-01	Total dissolved solids	8/4/2011	159		Yes	Y				10.0	10.0	mg/L
W7-080111	A11H018-02	Total dissolved solids	8/4/2011	164		Yes	Y				10.0	10.0	mg/L

Analytical Method SM2540D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W1-080111	A11H018-03	Total suspended solids	8/4/2011	15		Yes	Y				5.00	5.00	mg/L
W2-080111	A11H018-04	Total suspended solids	8/4/2011	5		Yes	N	U			5.00	5.00	mg/L
W2-080111-D	A11H018-05	Total suspended solids	8/4/2011	6		Yes	Y				5.00	5.00	mg/L
W3-080111	A11H018-06	Total suspended solids	8/4/2011	12		Yes	Y				5.00	5.00	mg/L
W4-080111	A11H018-07	Total suspended solids	8/4/2011	19		Yes	Y				5.00	5.00	mg/L
W5-080111	A11H018-08	Total suspended solids	8/3/2011	5		Yes	N	U			5.00	5.00	mg/L
W6-080111	A11H018-01	Total suspended solids	8/3/2011	5		Yes	N	U			5.00	5.00	mg/L
W7-080111	A11H018-02	Total suspended solids	8/4/2011	27		Yes	Y				5.00	5.00	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W1-080111	A11H018-03	Cyanide, Weak acid dissociable (WAD)	8/4/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
W2-080111	A11H018-04	Cyanide, Weak acid dissociable (WAD)	8/4/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
W2-080111-D	A11H018-05	Cyanide, Weak acid dissociable (WAD)	8/4/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
W3-080111	A11H018-06	Cyanide, Weak acid dissociable (WAD)	8/4/2011	0.0064		Yes	Y				0.00500	0.00500	mg/L
W4-080111	A11H018-07	Cyanide, Weak acid dissociable (WAD)	8/4/2011	0.0058		Yes	Y				0.00500	0.00500	mg/L
W5-080111	A11H018-08	Cyanide, Weak acid dissociable (WAD)	8/4/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W6-080111	A11H018-01	Cyanide, Weak acid dissociable (WAD)	8/4/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
W7-080111	A11H018-02	Cyanide, Weak acid dissociable (WAD)	8/4/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W1-080111	A11H018-03	Fluoride	11/1/2011	0.168		Yes	N		UJ	1,7	0.100	0.100	mg/L
W2-080111	A11H018-04	Fluoride	11/1/2011	0.186		Yes	N		UJ	1,7	0.100	0.100	mg/L
W2-080111-D	A11H018-05	Fluoride	11/1/2011	0.187		Yes	N		UJ	1,7	0.100	0.100	mg/L
W5-080111	A11H018-08	Fluoride	11/1/2011	0.1		Yes	N	U	R	1	0.100	0.100	mg/L
W6-080111	A11H018-01	Fluoride	11/1/2011	0.165		Yes	N		UJ	1,7	0.100	0.100	mg/L
W7-080111	A11H018-02	Fluoride	11/1/2011	0.15		Yes	N		UJ	1,7	0.100	0.100	mg/L

Analytical Method SM4500P

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W1-080111	A11H018-03	Phosphorus	8/5/2011	0.244		Yes	Y				0.100	0.0100	mg/L
W2-080111	A11H018-04	Phosphorus	8/5/2011	0.07		Yes	Y	J			0.100	0.0100	mg/L
W2-080111-D	A11H018-05	Phosphorus	8/5/2011	0.07		Yes	Y	J			0.100	0.0100	mg/L
W3-080111	A11H018-06	Phosphorus	8/5/2011	0.168		Yes	Y				0.100	0.0100	mg/L
W4-080111	A11H018-07	Phosphorus	8/8/2011	0.326		Yes	Y				0.100	0.0100	mg/L
W5-080111	A11H018-08	Phosphorus	8/8/2011	0.038		Yes	N	J	U	7	0.100	0.0100	mg/L
W6-080111	A11H018-01	Phosphorus	8/5/2011	0.072		Yes	Y	J			0.100	0.0100	mg/L
W7-080111	A11H018-02	Phosphorus	8/5/2011	0.302		Yes	Y				0.100	0.0100	mg/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R1-D-080211	A11H037-03	Fluorene	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R1-D-080211	A11H037-03	Benzo(k)fluoranthene	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R1-D-080211	A11H037-03	Fluoranthene	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R1-D-080211	A11H037-03	Benzo(b)fluoranthene	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R1-D-080211	A11H037-03	Indeno(1,2,3-c,d)pyrene	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R1-D-080211	A11H037-03	Benzo(g,h,i)perylene	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R1-D-080211	A11H037-03	Dibenzofuran	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R1-D-080211	A11H037-03	Pyrene	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R1-D-080211	A11H037-03	2-Methylnaphthalene	8/5/2011	0.0377	Yes	N	U			0.0377	0.0189	ug/L
R1-D-080211	A11H037-03	Chrysene	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R1-D-080211	A11H037-03	1-Methylnaphthalene	8/5/2011	0.0377	Yes	N	U			0.0377	0.0189	ug/L
R1-D-080211	A11H037-03	Acenaphthylene	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R1-D-080211	A11H037-03	Phenanthrene	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R1-D-080211	A11H037-03	Acenaphthene	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R1-D-080211	A11H037-03	Benzo(a)anthracene	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R1-D-080211	A11H037-03	Dibenzo(a,h)anthracene	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R1-D-080211	A11H037-03	Benzo(a)pyrene	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R1-D-080211	A11H037-03	Anthracene	8/5/2011	0.0284	Yes	Y				0.0189	0.00943	ug/L
R1-D-080211	A11H037-03	Naphthalene	8/5/2011	0.0293	Yes	Y	J			0.0377	0.0189	ug/L
R1-S-080211	A11H037-04	Anthracene	8/5/2011	0.0102	Yes	Y	J			0.0187	0.00935	ug/L
R1-S-080211	A11H037-04	Pyrene	8/5/2011	0.0108	Yes	Y	J			0.0187	0.00935	ug/L
R1-S-080211	A11H037-04	Benzo(a)anthracene	8/5/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R1-S-080211	A11H037-04	1-Methylnaphthalene	8/5/2011	0.0374	Yes	N	U			0.0374	0.0187	ug/L
R1-S-080211	A11H037-04	Benzo(a)pyrene	8/5/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R1-S-080211	A11H037-04	Naphthalene	8/5/2011	0.0304	Yes	Y	J			0.0374	0.0187	ug/L

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R1-S-080211	A11H037-04	Dibenzofuran	8/5/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R1-S-080211	A11H037-04	Fluorene	8/5/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R1-S-080211	A11H037-04	Phenanthrene	8/5/2011	0.0158	Yes	Y	J			0.0187	0.00935	ug/L
R1-S-080211	A11H037-04	2-Methylnaphthalene	8/5/2011	0.0374	Yes	N	U			0.0374	0.0187	ug/L
R1-S-080211	A11H037-04	Acenaphthene	8/5/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R1-S-080211	A11H037-04	Chrysene	8/5/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R1-S-080211	A11H037-04	Acenaphthylene	8/5/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R1-S-080211	A11H037-04	Benzo(k)fluoranthene	8/5/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R1-S-080211	A11H037-04	Fluoranthene	8/5/2011	0.0216	Yes	Y				0.0187	0.00935	ug/L
R1-S-080211	A11H037-04	Benzo(b)fluoranthene	8/5/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R1-S-080211	A11H037-04	Indeno(1,2,3-c,d)pyrene	8/5/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R1-S-080211	A11H037-04	Benzo(g,h,i)perylene	8/5/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R1-S-080211	A11H037-04	Dibenzo(a,h)anthracene	8/5/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R2-080211	A11H037-01	Benzo(g,h,i)perylene	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R2-080211	A11H037-01	Phenanthrene	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R2-080211	A11H037-01	Benzo(a)anthracene	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R2-080211	A11H037-01	Dibenzo(a,h)anthracene	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R2-080211	A11H037-01	Benzo(a)pyrene	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R2-080211	A11H037-01	Chrysene	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R2-080211	A11H037-01	Acenaphthylene	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R2-080211	A11H037-01	Benzo(k)fluoranthene	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R2-080211	A11H037-01	Fluoranthene	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R2-080211	A11H037-01	Anthracene	8/5/2011	0.012	Yes	Y	J			0.0189	0.00943	ug/L
R2-080211	A11H037-01	Indeno(1,2,3-c,d)pyrene	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R2-080211	A11H037-01	Dibenzofuran	8/5/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R2-080211	A11H037-01	Acenaphthene	8/5/2011	0.0189		Yes	N	U			0.0189	0.00943	ug/L
R2-080211	A11H037-01	Benzo(b)fluoranthene	8/5/2011	0.0189		Yes	N	U			0.0189	0.00943	ug/L
R2-080211	A11H037-01	1-Methylnaphthalene	8/5/2011	0.0377		Yes	N	U			0.0377	0.0189	ug/L
R2-080211	A11H037-01	Naphthalene	8/5/2011	0.0377		Yes	N	U			0.0377	0.0189	ug/L
R2-080211	A11H037-01	2-Methylnaphthalene	8/5/2011	0.0377		Yes	N	U			0.0377	0.0189	ug/L
R2-080211	A11H037-01	Fluorene	8/5/2011	0.0189		Yes	N	U			0.0189	0.00943	ug/L
R2-080211	A11H037-01	Pyrene	8/5/2011	0.0189		Yes	N	U			0.0189	0.00943	ug/L
R3-080211	A11H037-02	1-Methylnaphthalene	8/5/2011	0.135		Yes	N	D U	UJ	13	0.135	0.135	ug/L
R3-080211	A11H037-02	Naphthalene	8/5/2011	0.105		Yes	Y	D	J	13	0.0769	0.0385	ug/L
R3-080211	A11H037-02	Fluorene	8/5/2011	0.041		Yes	Y	D	J	13	0.0385	0.0192	ug/L
R3-080211	A11H037-02	Phenanthrene	8/5/2011	0.026		Yes	Y	D J	J	13	0.0385	0.0192	ug/L
R3-080211	A11H037-02	Acenaphthene	8/5/2011	0.0385		Yes	N	D U	UJ	13	0.0385	0.0192	ug/L
R3-080211	A11H037-02	Benzo(a)anthracene	8/5/2011	0.282		Yes	Y	D	J	13	0.0385	0.0192	ug/L
R3-080211	A11H037-02	Dibenzo(a,h)anthracene	8/5/2011	0.0385		Yes	N	D U	UJ	13	0.0385	0.0192	ug/L
R3-080211	A11H037-02	Benzo(a)pyrene	8/5/2011	0.0385		Yes	N	D U	UJ	13	0.0385	0.0192	ug/L
R3-080211	A11H037-02	Anthracene	8/5/2011	1.02		Yes	Y	D	J	13	0.0385	0.0192	ug/L
R3-080211	A11H037-02	Acenaphthylene	8/5/2011	2.12		Yes	N	D U	UJ	13	2.12	2.12	ug/L
R3-080211	A11H037-02	Benzo(k)fluoranthene	8/5/2011	0.0385		Yes	N	D U	UJ	13	0.0385	0.0192	ug/L
R3-080211	A11H037-02	Fluoranthene	8/5/2011	0.0385		Yes	N	D U	UJ	13	0.0385	0.0192	ug/L
R3-080211	A11H037-02	Benzo(b)fluoranthene	8/5/2011	0.0385		Yes	N	D U	UJ	13	0.0385	0.0192	ug/L
R3-080211	A11H037-02	Indeno(1,2,3-c,d)pyrene	8/5/2011	0.0385		Yes	N	D U	UJ	13	0.0385	0.0192	ug/L
R3-080211	A11H037-02	Benzo(g,h,i)perylene	8/5/2011	0.0385		Yes	N	D U	UJ	13	0.0385	0.0192	ug/L
R3-080211	A11H037-02	Dibenzofuran	8/5/2011	0.0385		Yes	N	D U	UJ	13	0.0385	0.0385	ug/L
R3-080211	A11H037-02	Pyrene	8/5/2011	0.0385		Yes	N	D U	UJ	13	0.0385	0.0192	ug/L
R3-080211	A11H037-02	2-Methylnaphthalene	8/5/2011	0.0962		Yes	N	D U	UJ	13	0.0962	0.0962	ug/L

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R3-080211	A11H037-02	Chrysene	8/5/2011	0.0385	Yes	N	D U	UJ	13	0.0385	0.0192	ug/L
R-4D-080211	A11H037-06	Chrysene	8/5/2011	0.0503	Yes	Y				0.0187	0.00935	ug/L
R-4D-080211	A11H037-06	Acenaphthylene	8/5/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R-4D-080211	A11H037-06	Fluoranthene	8/5/2011	0.021	Yes	Y				0.0187	0.00935	ug/L
R-4D-080211	A11H037-06	Indeno(1,2,3-c,d)pyrene	8/5/2011	0.0142	Yes	Y	J			0.0187	0.00935	ug/L
R-4D-080211	A11H037-06	Benzo(g,h,i)perylene	8/5/2011	0.014	Yes	Y	J			0.0187	0.00935	ug/L
R-4D-080211	A11H037-06	Benzo(a)pyrene	8/5/2011	0.0209	Yes	Y				0.0187	0.00935	ug/L
R-4D-080211	A11H037-06	Pyrene	8/5/2011	0.0271	Yes	Y				0.0187	0.00935	ug/L
R-4D-080211	A11H037-06	Naphthalene	8/5/2011	0.0274	Yes	Y	J			0.0374	0.0187	ug/L
R-4D-080211	A11H037-06	Dibenzofuran	8/5/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R-4D-080211	A11H037-06	Dibenzo(a,h)anthracene	8/5/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R-4D-080211	A11H037-06	Benzo(a)anthracene	8/5/2011	0.0403	Yes	Y				0.0187	0.00935	ug/L
R-4D-080211	A11H037-06	Acenaphthene	8/5/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R-4D-080211	A11H037-06	Phenanthrene	8/5/2011	0.0212	Yes	Y				0.0187	0.00935	ug/L
R-4D-080211	A11H037-06	1-Methylnaphthalene	8/5/2011	0.0374	Yes	N	U			0.0374	0.0187	ug/L
R-4D-080211	A11H037-06	2-Methylnaphthalene	8/5/2011	0.0374	Yes	N	U			0.0374	0.0187	ug/L
R-4D-080211	A11H037-06	Benzo(b,k)fluoranthene	8/5/2011	0.0623	Yes	Y		J	15	0.0374	0.0187	ug/L
R-4D-080211	A11H037-06	Anthracene	8/5/2011	0.0676	Yes	Y				0.0187	0.00935	ug/L
R-4D-080211	A11H037-06	Fluorene	8/5/2011	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R4-S-080211	A11H037-05	Dibenzo(a,h)anthracene	8/5/2011	0.0192	Yes	N	U			0.0192	0.00962	ug/L
R4-S-080211	A11H037-05	Dibenzofuran	8/5/2011	0.0192	Yes	N	U			0.0192	0.00962	ug/L
R4-S-080211	A11H037-05	Indeno(1,2,3-c,d)pyrene	8/5/2011	0.0192	Yes	N	U			0.0192	0.00962	ug/L
R4-S-080211	A11H037-05	Benzo(b)fluoranthene	8/5/2011	0.0192	Yes	N	U			0.0192	0.00962	ug/L
R4-S-080211	A11H037-05	Fluoranthene	8/5/2011	0.0192	Yes	N	U			0.0192	0.00962	ug/L
R4-S-080211	A11H037-05	Benzo(k)fluoranthene	8/5/2011	0.0192	Yes	N	U			0.0192	0.00962	ug/L

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R4-S-080211	A11H037-05	Acenaphthylene	8/5/2011	0.0192		Yes	N	U			0.0192	0.00962	ug/L
R4-S-080211	A11H037-05	Anthracene	8/5/2011	0.114		Yes	Y				0.0192	0.00962	ug/L
R4-S-080211	A11H037-05	Benzo(a)pyrene	8/5/2011	0.0192		Yes	N	U			0.0192	0.00962	ug/L
R4-S-080211	A11H037-05	Pyrene	8/5/2011	0.0192		Yes	N	U			0.0192	0.00962	ug/L
R4-S-080211	A11H037-05	Benzo(a)anthracene	8/5/2011	0.0494		Yes	Y				0.0192	0.00962	ug/L
R4-S-080211	A11H037-05	Acenaphthene	8/5/2011	0.0192		Yes	N	U			0.0192	0.00962	ug/L
R4-S-080211	A11H037-05	Phenanthrene	8/5/2011	0.0124		Yes	Y	J			0.0192	0.00962	ug/L
R4-S-080211	A11H037-05	Fluorene	8/5/2011	0.0172		Yes	Y	J			0.0192	0.00962	ug/L
R4-S-080211	A11H037-05	1-Methylnaphthalene	8/5/2011	0.0385		Yes	N	U			0.0385	0.0192	ug/L
R4-S-080211	A11H037-05	Naphthalene	8/5/2011	0.0225		Yes	Y	J			0.0385	0.0192	ug/L
R4-S-080211	A11H037-05	2-Methylnaphthalene	8/5/2011	0.0385		Yes	N	U			0.0385	0.0192	ug/L
R4-S-080211	A11H037-05	Chrysene	8/5/2011	0.0192		Yes	N	U			0.0192	0.00962	ug/L
R4-S-080211	A11H037-05	Benzo(g,h,i)perylene	8/5/2011	0.0192		Yes	N	U			0.0192	0.00962	ug/L

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06	Cyanide, free	10/7/2011	0.0036		Yes	Y	J			0.00500	0.00200	mg/L
R-1D-100511	A11J072-06	Cyanide, free	10/7/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
R-1S-100511	A11J072-01	Cyanide, free	10/7/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
R-1S-100511	A11J072-01	Cyanide, free	10/7/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
R-2-100511	A11J072-05	Cyanide, free	10/7/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
R-2-100511	A11J072-05	Cyanide, free	10/7/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
R-3-100511	A11J072-03	Cyanide, free	10/7/2011	0.0062		Yes	Y				0.00500	0.00200	mg/L
R-3-100511	A11J072-03	Cyanide, free	10/7/2011	0.0038		Yes	Y	J			0.00500	0.00200	mg/L
R-4D-100511	A11J072-02	Cyanide, free	10/7/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
R-4D-100511	A11J072-02	Cyanide, free	10/7/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
R-4S-100511	A11J072-07	Cyanide, free	10/7/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
R-4S-100511	A11J072-07	Cyanide, free	10/7/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
R-53-100511	A11J072-04	Cyanide, free	10/7/2011	0.0049		Yes	Y	J			0.00500	0.00200	mg/L
R-53-100511	A11J072-04	Cyanide, free	10/7/2011	0.0049		Yes	Y	J			0.00500	0.00200	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06	Silicon	10/20/2011	30.2		Yes	Y				0.500	0.100	mg/L
R-1S-100511	A11J072-01	Silicon	10/20/2011	26.3		Yes	Y				0.500	0.100	mg/L
R-2-100511	A11J072-05	Silicon	10/20/2011	30.6		Yes	Y				0.500	0.100	mg/L
R-3-100511	A11J072-03	Silicon	10/20/2011	29.2		Yes	Y				4.50	0.900	mg/L
R-4D-100511	A11J072-02	Silicon	10/20/2011	33		Yes	Y				0.500	0.100	mg/L
R-4S-100511	A11J072-07	Silicon	10/20/2011	27.6		Yes	Y				0.500	0.100	mg/L
R-53-100511	A11J072-04	Silicon	10/20/2011	32		Yes	Y				4.50	0.900	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06	Sodium	10/22/2011	136000		Yes	Y	D			500	250	ug/L
R-1D-100511	A11J072-06	Manganese	10/22/2011	5590		Yes	Y	D			5.00	2.50	ug/L
R-1D-100511	A11J072-06	Potassium	10/22/2011	1950		Yes	Y	D			500	250	ug/L
R-1D-100511	A11J072-06	Iron	10/22/2011	145000		Yes	Y	D			250	125	ug/L
R-1D-100511	A11J072-06	Aluminum	10/22/2011	250		Yes	N	D U			250	125	ug/L
R-1D-100511	A11J072-06	Calcium	10/22/2011	123000		Yes	Y	D			500	250	ug/L
R-1D-100511	A11J072-06	Magnesium	10/22/2011	60900		Yes	Y	D			250	125	ug/L
R-1S-100511	A11J072-01	Calcium	10/20/2011	16900		Yes	Y				100	50.0	ug/L
R-1S-100511	A11J072-01	Potassium	10/20/2011	2600		Yes	Y				100	50.0	ug/L
R-1S-100511	A11J072-01	Manganese	10/20/2011	1180		Yes	Y				1.00	0.500	ug/L
R-1S-100511	A11J072-01	Magnesium	10/20/2011	7110		Yes	Y				50.0	25.0	ug/L
R-1S-100511	A11J072-01	Iron	10/20/2011	6800		Yes	Y				50.0	25.0	ug/L
R-1S-100511	A11J072-01	Aluminum	10/20/2011	189		Yes	Y				50.0	25.0	ug/L
R-1S-100511	A11J072-01	Sodium	10/21/2011	71400		Yes	Y	D			500	250	ug/L
R-2-100511	A11J072-05	Iron	10/21/2011	33800		Yes	Y				100	25.0	ug/L
R-2-100511	A11J072-05	Manganese	10/21/2011	2030		Yes	Y				1.00	0.500	ug/L
R-2-100511	A11J072-05	Calcium	10/21/2011	26000		Yes	Y	D			500	250	ug/L
R-2-100511	A11J072-05	Sodium	10/21/2011	25200		Yes	Y	D			500	250	ug/L
R-2-100511	A11J072-05	Potassium	10/21/2011	1170		Yes	Y	D			500	250	ug/L
R-2-100511	A11J072-05	Magnesium	10/21/2011	12500		Yes	Y	D			250	125	ug/L
R-2-100511	A11J072-05	Aluminum	10/21/2011	250		Yes	N	D U			250	125	ug/L
R-3-100511	A11J072-03	Sodium	10/21/2011	7250000		Yes	Y	D			18000	9000	ug/L
R-3-100511	A11J072-03	Calcium	10/21/2011	1230		Yes	Y	D J			1800	900	ug/L
R-3-100511	A11J072-03	Potassium	10/21/2011	11900		Yes	Y	D			3600	900	ug/L
R-3-100511	A11J072-03	Manganese	10/21/2011	15.8		Yes	Y	D J			18.0	9.00	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-3-100511	A11J072-03	Magnesium	10/21/2011	900		Yes	N	D U			900	450	ug/L
R-3-100511	A11J072-03	Iron	10/21/2011	123000		Yes	Y	D			1800	450	ug/L
R-3-100511	A11J072-03	Aluminum	10/21/2011	900		Yes	N	D U			900	450	ug/L
R-4D-100511	A11J072-02	Aluminum	10/20/2011	50		Yes	N	U			50.0	25.0	ug/L
R-4D-100511	A11J072-02	Magnesium	10/20/2011	41100		Yes	Y				50.0	25.0	ug/L
R-4D-100511	A11J072-02	Potassium	10/20/2011	2110		Yes	Y				100	50.0	ug/L
R-4D-100511	A11J072-02	Manganese	10/21/2011	4770		Yes	Y	D			5.00	2.50	ug/L
R-4D-100511	A11J072-02	Iron	10/21/2011	127000		Yes	Y	D			500	125	ug/L
R-4D-100511	A11J072-02	Calcium	10/21/2011	73200		Yes	Y	D			500	250	ug/L
R-4D-100511	A11J072-02	Sodium	10/21/2011	96400		Yes	Y	D			500	250	ug/L
R-4S-100511	A11J072-07	Iron	10/21/2011	92500		Yes	Y	D			200	50.0	ug/L
R-4S-100511	A11J072-07	Calcium	10/21/2011	80800		Yes	Y	D			500	250	ug/L
R-4S-100511	A11J072-07	Aluminum	10/21/2011	250		Yes	N	D U			250	125	ug/L
R-4S-100511	A11J072-07	Magnesium	10/21/2011	37200		Yes	Y	D			250	125	ug/L
R-4S-100511	A11J072-07	Manganese	10/21/2011	5300		Yes	Y	D			5.00	2.50	ug/L
R-4S-100511	A11J072-07	Potassium	10/21/2011	1930		Yes	Y	D			500	250	ug/L
R-4S-100511	A11J072-07	Sodium	10/22/2011	319000		Yes	Y	D			1000	500	ug/L
R-53-100511	A11J072-04	Sodium	10/21/2011	7630000		Yes	Y	D			18000	9000	ug/L
R-53-100511	A11J072-04	Magnesium	10/21/2011	900		Yes	N	D U			900	450	ug/L
R-53-100511	A11J072-04	Calcium	10/21/2011	1580		Yes	Y	D J			1800	900	ug/L
R-53-100511	A11J072-04	Manganese	10/21/2011	15.8		Yes	Y	D J			18.0	9.00	ug/L
R-53-100511	A11J072-04	Iron	10/21/2011	128000		Yes	Y	D			1800	450	ug/L
R-53-100511	A11J072-04	Potassium	10/21/2011	12900		Yes	Y	D			3600	900	ug/L
R-53-100511	A11J072-04	Aluminum	10/21/2011	900		Yes	N	D U			900	450	ug/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06	Chloride (total)	10/11/2011	105		Yes	Y				10.0	10.0	mg/L
R-1D-100511	A11J072-06RE1	Sulfate	10/24/2011	1		Yes	N	U			1.00	1.00	mg/L
R-1S-100511	A11J072-01	Sulfate	10/11/2011	1		Yes	N	U			1.00	1.00	mg/L
R-1S-100511	A11J072-01	Fluoride	10/11/2011	31		Yes	Y				1.00	1.00	mg/L
R-1S-100511	A11J072-01	Chloride (total)	10/11/2011	2.38		Yes	Y				1.00	1.00	mg/L
R-1S-100511	A11J072-01	Fluoride	10/14/2011	30.1		Yes	Y				2.00	2.00	mg/L
R-2-100511	A11J072-05	Sulfate	10/11/2011	1		Yes	N	U			1.00	1.00	mg/L
R-2-100511	A11J072-05	Chloride (total)	10/11/2011	5.95		Yes	Y				1.00	1.00	mg/L
R-3-100511	A11J072-03	Fluoride	10/11/2011	2180		Yes	Y				57.1	57.1	mg/L
R-3-100511	A11J072-03	Chloride (total)	10/11/2011	74.7		Yes	Y				57.1	57.1	mg/L
R-3-100511	A11J072-03	Sulfate	10/11/2011	114		Yes	Y				57.1	57.1	mg/L
R-3-100511	A11J072-03	Fluoride	10/14/2011	2190		Yes	Y				100	100	mg/L
R-4D-100511	A11J072-02	Fluoride	10/11/2011	1.54		Yes	Y				1.00	1.00	mg/L
R-4D-100511	A11J072-02	Chloride (total)	10/11/2011	8.99		Yes	Y				1.00	1.00	mg/L
R-4D-100511	A11J072-02	Sulfate	10/11/2011	1		Yes	N	U			1.00	1.00	mg/L
R-4D-100511	A11J072-02	Fluoride	10/14/2011	1.59		Yes	Y				1.00	1.00	mg/L
R-4S-100511	A11J072-07	Chloride (total)	10/11/2011	9.49		Yes	Y				3.33	3.33	mg/L
R-4S-100511	A11J072-07	Fluoride	10/11/2011	11.4		Yes	Y				3.33	3.33	mg/L
R-4S-100511	A11J072-07	Fluoride	10/14/2011	10.7		Yes	Y				1.00	1.00	mg/L
R-4S-100511	A11J072-07RE1	Sulfate	10/24/2011	1		Yes	N	U			1.00	1.00	mg/L
R-53-100511	A11J072-04	Chloride (total)	10/11/2011	75		Yes	Y				57.1	57.1	mg/L
R-53-100511	A11J072-04	Sulfate	10/11/2011	119		Yes	Y				57.1	57.1	mg/L
R-53-100511	A11J072-04	Fluoride	10/11/2011	2180		Yes	Y				57.1	57.1	mg/L
R-53-100511	A11J072-04	Fluoride	10/14/2011	2190		Yes	Y				100	100	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06RE1	Cyanide, total	10/7/2011	0.0537		Yes	Y				0.00500	0.00500	mg/L
R-1S-100511	A11J072-01	Cyanide, total	10/7/2011	0.0331		Yes	Y				0.00500	0.00500	mg/L
R-2-100511	A11J072-05RE1	Cyanide, total	10/7/2011	0.0055		Yes	Y				0.00500	0.00500	mg/L
R-3-100511	A11J072-03RE1	Cyanide, total	10/7/2011	376		Yes	Y	D			6.00	6.00	mg/L
R-4D-100511	A11J072-02	Cyanide, total	10/7/2011	0.0259		Yes	Y				0.00500	0.00500	mg/L
R-4S-100511	A11J072-07	Cyanide, total	10/7/2011	0.0238		Yes	Y				0.00500	0.00500	mg/L
R-53-100511	A11J072-04RE1	Cyanide, total	10/7/2011	391		Yes	Y	D			6.00	6.00	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
R-1D-100511	A11J072-06	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/17/2011	879		Yes	Y				20.0	20.0	mg/L
R-1D-100511	A11J072-06	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
R-1D-100511	A11J072-06	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2011	879		Yes	Y				20.0	20.0	mg/L
R-1S-100511	A11J072-01	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
R-1S-100511	A11J072-01	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/17/2011	233		Yes	Y				20.0	20.0	mg/L
R-1S-100511	A11J072-01	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
R-1S-100511	A11J072-01	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2011	233		Yes	Y				20.0	20.0	mg/L
R-2-100511	A11J072-05	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/17/2011	175		Yes	Y				20.0	20.0	mg/L
R-2-100511	A11J072-05	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
R-2-100511	A11J072-05	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-2-100511	A11J072-05	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2011	175		Yes	Y				20.0	20.0	mg/L
R-3-100511	A11J072-03	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2011	11200		Yes	Y				20.0	20.0	mg/L
R-3-100511	A11J072-03	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
R-3-100511	A11J072-03	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/17/2011	2740		Yes	Y				20.0	20.0	mg/L
R-3-100511	A11J072-03	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/17/2011	8420		Yes	Y				20.0	20.0	mg/L
R-4D-100511	A11J072-02	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
R-4D-100511	A11J072-02	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2011	576		Yes	Y				20.0	20.0	mg/L
R-4D-100511	A11J072-02	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/17/2011	576		Yes	Y				20.0	20.0	mg/L
R-4D-100511	A11J072-02	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
R-4S-100511	A11J072-07	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
R-4S-100511	A11J072-07	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
R-4S-100511	A11J072-07	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2011	1050		Yes	Y				20.0	20.0	mg/L
R-4S-100511	A11J072-07	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/17/2011	1050		Yes	Y				20.0	20.0	mg/L
R-53-100511	A11J072-04	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2011	11400		Yes	Y				20.0	20.0	mg/L
R-53-100511	A11J072-04	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
R-53-100511	A11J072-04	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/17/2011	8620		Yes	Y				20.0	20.0	mg/L
R-53-100511	A11J072-04	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/17/2011	2730		Yes	Y				20.0	20.0	mg/L

Analytical Method SM2540C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06	Total dissolved solids	10/10/2011	1250		Yes	Y				10.0	10.0	mg/L
R-1S-100511	A11J072-01	Total dissolved solids	10/10/2011	308		Yes	Y				10.0	10.0	mg/L
R-2-100511	A11J072-05	Total dissolved solids	10/10/2011	321		Yes	Y				10.0	10.0	mg/L
R-3-100511	A11J072-03	Total dissolved solids	10/10/2011	17800		Yes	Y				10.0	10.0	mg/L
R-4D-100511	A11J072-02	Total dissolved solids	10/10/2011	822		Yes	Y				10.0	10.0	mg/L
R-4S-100511	A11J072-07	Total dissolved solids	10/10/2011	1450		Yes	Y				10.0	10.0	mg/L
R-53-100511	A11J072-04	Total dissolved solids	10/10/2011	17900		Yes	Y				10.0	10.0	mg/L

Analytical Method SM2540D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06	Total suspended solids	10/7/2011	116		Yes	Y				5.00	5.00	mg/L
R-1S-100511	A11J072-01	Total suspended solids	10/7/2011	11		Yes	Y				5.00	5.00	mg/L
R-2-100511	A11J072-05	Total suspended solids	10/7/2011	37		Yes	Y				5.00	5.00	mg/L
R-3-100511	A11J072-03	Total suspended solids	10/7/2011	17		Yes	Y				5.00	5.00	mg/L
R-4D-100511	A11J072-02	Total suspended solids	10/7/2011	99		Yes	Y				5.00	5.00	mg/L
R-4S-100511	A11J072-07	Total suspended solids	10/7/2011	14		Yes	Y				5.00	5.00	mg/L
R-53-100511	A11J072-04	Total suspended solids	10/7/2011	9		Yes	Y				5.00	5.00	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.0235		Yes	Y				0.00500	0.00500	mg/L
R-1D-100511	A11J072-06	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.0067		Yes	Y				0.00500	0.00500	mg/L
R-1S-100511	A11J072-01	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.0123		Yes	Y				0.00500	0.00500	mg/L
R-1S-100511	A11J072-01	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.0098		Yes	Y				0.00500	0.00500	mg/L
R-2-100511	A11J072-05	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
R-2-100511	A11J072-05	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
R-3-100511	A11J072-03	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.488		Yes	Y				0.0300	0.0300	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-3-100511	A11J072-03	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.521		Yes	Y				0.0300	0.0300	mg/L
R-4D-100511	A11J072-02	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.0063		Yes	Y				0.00500	0.00500	mg/L
R-4D-100511	A11J072-02	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
R-4S-100511	A11J072-07	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.0097		Yes	Y				0.00500	0.00500	mg/L
R-4S-100511	A11J072-07	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.0105		Yes	Y				0.00500	0.00500	mg/L
R-53-100511	A11J072-04	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.518		Yes	Y				0.0300	0.0300	mg/L
R-53-100511	A11J072-04	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.542		Yes	Y				0.0300	0.0300	mg/L

Analytical Method SM4500P

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06	Phosphorus	10/13/2011	1.49		Yes	Y	D			0.500	0.0500	mg/L
R-1S-100511	A11J072-01	Phosphorus	10/13/2011	0.536		Yes	Y				0.100	0.0100	mg/L
R-2-100511	A11J072-05	Phosphorus	10/13/2011	1.74		Yes	Y	D			0.500	0.0500	mg/L
R-3-100511	A11J072-03RE1	Phosphorus	10/13/2011	24.8		Yes	Y	D			2.50	0.250	mg/L
R-4D-100511	A11J072-02	Phosphorus	10/13/2011	1.22		Yes	Y	D			0.500	0.0500	mg/L
R-4S-100511	A11J072-07	Phosphorus	10/13/2011	1.9		Yes	Y	D			0.500	0.0500	mg/L
R-53-100511	A11J072-04RE1	Phosphorus	10/13/2011	23.9		Yes	Y	D			2.50	0.250	mg/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06	Benzo(b,k)fluoranthene	10/13/2011	0.0212		Yes	Y	J	J	15	0.0377	0.0189	ug/L
R-1D-100511	A11J072-06	2-Methylnaphthalene	10/13/2011	0.0377		Yes	N	U			0.0377	0.0189	ug/L
R-1D-100511	A11J072-06	Anthracene	10/13/2011	0.0173		Yes	Y	J			0.0189	0.00943	ug/L
R-1D-100511	A11J072-06	Pyrene	10/13/2011	0.0189		Yes	N	U			0.0189	0.00943	ug/L
R-1D-100511	A11J072-06	Dibenzofuran	10/13/2011	0.0189		Yes	N	U			0.0189	0.00943	ug/L
R-1D-100511	A11J072-06	Benzo(g,h,i)perylene	10/13/2011	0.0189		Yes	N	U			0.0189	0.00943	ug/L
R-1D-100511	A11J072-06	Benzo(a)anthracene	10/13/2011	0.0122		Yes	Y	J			0.0189	0.00943	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06	Naphthalene	10/13/2011	0.03	Yes	Y	J			0.0377	0.0189	ug/L
R-1D-100511	A11J072-06	Phenanthrene	10/13/2011	0.0108	Yes	Y	J			0.0189	0.00943	ug/L
R-1D-100511	A11J072-06	Fluoranthene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1D-100511	A11J072-06	Acenaphthylene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1D-100511	A11J072-06	Chrysene	10/13/2011	0.0146	Yes	Y	J			0.0189	0.00943	ug/L
R-1D-100511	A11J072-06	Benzo(a)pyrene	10/13/2011	0.0104	Yes	Y	J			0.0189	0.00943	ug/L
R-1D-100511	A11J072-06	Dibenzo(a,h)anthracene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1D-100511	A11J072-06	1-Methylnaphthalene	10/13/2011	0.0377	Yes	N	U			0.0377	0.0189	ug/L
R-1D-100511	A11J072-06	Fluorene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1D-100511	A11J072-06	Acenaphthene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1D-100511	A11J072-06	Indeno(1,2,3-c,d)pyrene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Benzo(b)fluoranthene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Dibenzo(a,h)anthracene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Anthracene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Pyrene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Dibenzofuran	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Benzo(g,h,i)perylene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Indeno(1,2,3-c,d)pyrene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Chrysene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Acenaphthylene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Benzo(a)pyrene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	2-Methylnaphthalene	10/13/2011	0.0377	Yes	N	U			0.0377	0.0189	ug/L
R-1S-100511	A11J072-01	Benzo(a)anthracene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Acenaphthene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Phenanthrene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1S-100511	A11J072-01	Fluorene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	1-Methylnaphthalene	10/13/2011	0.0377	Yes	N	U			0.0377	0.0189	ug/L
R-1S-100511	A11J072-01	Naphthalene	10/13/2011	0.0377	Yes	N	U			0.0377	0.0189	ug/L
R-1S-100511	A11J072-01	Fluoranthene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-1S-100511	A11J072-01	Benzo(k)fluoranthene	10/13/2011	0.0189	Yes	N	U			0.0189	0.00943	ug/L
R-2-100511	A11J072-05	Benzo(k)fluoranthene	10/13/2011	0.0192	Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Acenaphthene	10/13/2011	0.0192	Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Anthracene	10/13/2011	0.0138	Yes	Y	J			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Pyrene	10/13/2011	0.0192	Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Dibenzofuran	10/13/2011	0.0192	Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Benzo(g,h,i)perylene	10/13/2011	0.0192	Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Indeno(1,2,3-c,d)pyrene	10/13/2011	0.0192	Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Fluoranthene	10/13/2011	0.0192	Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Acenaphthylene	10/13/2011	0.0192	Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Naphthalene	10/13/2011	0.0385	Yes	N	U			0.0385	0.0192	ug/L
R-2-100511	A11J072-05	Phenanthrene	10/13/2011	0.0104	Yes	Y	J			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Benzo(b)fluoranthene	10/13/2011	0.0192	Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	1-Methylnaphthalene	10/13/2011	0.0385	Yes	N	U			0.0385	0.0192	ug/L
R-2-100511	A11J072-05	Chrysene	10/13/2011	0.0192	Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	2-Methylnaphthalene	10/13/2011	0.0385	Yes	N	U			0.0385	0.0192	ug/L
R-2-100511	A11J072-05	Benzo(a)anthracene	10/13/2011	0.0192	Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Dibenzo(a,h)anthracene	10/13/2011	0.0192	Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Benzo(a)pyrene	10/13/2011	0.0192	Yes	N	U			0.0192	0.00962	ug/L
R-2-100511	A11J072-05	Fluorene	10/13/2011	0.0192	Yes	N	U			0.0192	0.00962	ug/L
R-3-100511	A11J072-03	Fluoranthene	10/13/2011	0.019	Yes	N	U	UJ	13	0.0190	0.00952	ug/L

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-3-100511	A11J072-03	Pyrene	10/13/2011	0.019	Yes	N	U	UJ	13	0.0190	0.0190	ug/L
R-3-100511	A11J072-03	Anthracene	10/13/2011	0.949	Yes	Y		J	13	0.0190	0.00952	ug/L
R-3-100511	A11J072-03	Dibenzofuran	10/13/2011	0.0388	Yes	Y		J	13	0.0190	0.00952	ug/L
R-3-100511	A11J072-03	Benzo(g,h,i)perylene	10/13/2011	0.019	Yes	N	U	UJ	13	0.0190	0.00952	ug/L
R-3-100511	A11J072-03	Indeno(1,2,3-c,d)pyrene	10/13/2011	0.019	Yes	N	U	UJ	13	0.0190	0.00952	ug/L
R-3-100511	A11J072-03	2-Methylnaphthalene	10/13/2011	0.0992	Yes	Y		J	13	0.0381	0.0190	ug/L
R-3-100511	A11J072-03	Acenaphthylene	10/13/2011	1.05	Yes	N	U	UJ	13	1.05	1.05	ug/L
R-3-100511	A11J072-03	Benzo(b,k)fluoranthene	10/13/2011	0.0381	Yes	N	U	UJ	13	0.0381	0.0190	ug/L
R-3-100511	A11J072-03	Naphthalene	10/13/2011	0.157	Yes	Y		J	13	0.0381	0.0190	ug/L
R-3-100511	A11J072-03	1-Methylnaphthalene	10/13/2011	0.0595	Yes	Y		J	13	0.0381	0.0190	ug/L
R-3-100511	A11J072-03	Fluorene	10/13/2011	0.0621	Yes	Y		J	13	0.0190	0.00952	ug/L
R-3-100511	A11J072-03	Phenanthrene	10/13/2011	0.0184	Yes	Y	J	J	13	0.0190	0.00952	ug/L
R-3-100511	A11J072-03	Chrysene	10/13/2011	0.019	Yes	N	U	UJ	13	0.0190	0.0190	ug/L
R-3-100511	A11J072-03	Acenaphthene	10/13/2011	0.0381	Yes	N	U	UJ	13	0.0381	0.0381	ug/L
R-3-100511	A11J072-03	Benzo(a)anthracene	10/13/2011	0.305	Yes	Y		J	13	0.0190	0.00952	ug/L
R-3-100511	A11J072-03	Dibenzo(a,h)anthracene	10/13/2011	0.019	Yes	N	U	UJ	13	0.0190	0.00952	ug/L
R-3-100511	A11J072-03	Benzo(a)pyrene	10/13/2011	0.019	Yes	N	U	UJ	13	0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	Fluoranthene	10/13/2011	0.011	Yes	N	J	U	7	0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	Indeno(1,2,3-c,d)pyrene	10/13/2011	0.019	Yes	N	U			0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	Naphthalene	10/13/2011	0.0381	Yes	N	U			0.0381	0.0190	ug/L
R-4D-100511	A11J072-02	Benzo(g,h,i)perylene	10/13/2011	0.019	Yes	N	U			0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	Dibenzofuran	10/13/2011	0.019	Yes	N	U			0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	Pyrene	10/13/2011	0.00975	Yes	Y	J			0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	Anthracene	10/13/2011	0.0389	Yes	Y				0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	Benzo(a)anthracene	10/13/2011	0.0208	Yes	N		U	7	0.0190	0.00952	ug/L

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-4D-100511	A11J072-02	2-Methylnaphthalene	10/13/2011	0.0381		Yes	N	U			0.0381	0.0190	ug/L
R-4D-100511	A11J072-02	Chrysene	10/13/2011	0.0114		Yes	N	J	U	7	0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	Fluorene	10/13/2011	0.019		Yes	N	U			0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	Benzo(a)pyrene	10/13/2011	0.0106		Yes	Y	J			0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	1-Methylnaphthalene	10/13/2011	0.0381		Yes	N	U			0.0381	0.0190	ug/L
R-4D-100511	A11J072-02	Benzo(b,k)fluoranthene	10/13/2011	0.0381		Yes	N	U			0.0381	0.0190	ug/L
R-4D-100511	A11J072-02	Dibenzo(a,h)anthracene	10/13/2011	0.019		Yes	N	U			0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	Phenanthrene	10/13/2011	0.0197		Yes	Y				0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	Acenaphthene	10/13/2011	0.019		Yes	N	U			0.0190	0.00952	ug/L
R-4D-100511	A11J072-02	Acenaphthylene	10/13/2011	0.019		Yes	N	U			0.0190	0.00952	ug/L
R-4S-100511	A11J072-07	Fluorene	10/13/2011	0.0213		Yes	Y	J			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Benzo(a)anthracene	10/13/2011	0.0448		Yes	N		U	7	0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Acenaphthene	10/13/2011	0.025		Yes	N	U			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Phenanthrene	10/13/2011	0.0178		Yes	Y	J			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Acenaphthylene	10/13/2011	0.025		Yes	N	U			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	1-Methylnaphthalene	10/13/2011	0.05		Yes	N	U			0.0500	0.0250	ug/L
R-4S-100511	A11J072-07	Dibenzofuran	10/13/2011	0.025		Yes	N	U			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	2-Methylnaphthalene	10/13/2011	0.05		Yes	N	U			0.0500	0.0250	ug/L
R-4S-100511	A11J072-07	Naphthalene	10/13/2011	0.0304		Yes	Y	J			0.0500	0.0250	ug/L
R-4S-100511	A11J072-07	Dibenzo(a,h)anthracene	10/13/2011	0.025		Yes	N	U			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Pyrene	10/13/2011	0.025		Yes	N	U			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Benzo(g,h,i)perylene	10/13/2011	0.025		Yes	N	U			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Indeno(1,2,3-c,d)pyrene	10/13/2011	0.025		Yes	N	U			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Benzo(b)fluoranthene	10/13/2011	0.025		Yes	N	U			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Fluoranthene	10/13/2011	0.025		Yes	N	U			0.0250	0.0125	ug/L

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-4S-100511	A11J072-07	Benzo(k)fluoranthene	10/13/2011	0.025		Yes	N	U			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Chrysene	10/13/2011	0.025		Yes	N	U			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Benzo(a)pyrene	10/13/2011	0.025		Yes	N	U			0.0250	0.0125	ug/L
R-4S-100511	A11J072-07	Anthracene	10/13/2011	0.0973		Yes	Y				0.0250	0.0125	ug/L
R-53-100511	A11J072-04	Dibenzofuran	10/13/2011	0.019		Yes	N	U	UJ	13	0.0190	0.00952	ug/L
R-53-100511	A11J072-04	Acenaphthene	10/13/2011	0.0286		Yes	N	U	UJ	13	0.0286	0.0286	ug/L
R-53-100511	A11J072-04	2-Methylnaphthalene	10/13/2011	0.108		Yes	Y		J	13	0.0381	0.0190	ug/L
R-53-100511	A11J072-04	Naphthalene	10/13/2011	0.146		Yes	Y		J	13	0.0381	0.0190	ug/L
R-53-100511	A11J072-04	Benzo(b,k)fluoranthene	10/13/2011	0.0381		Yes	N	U	UJ	13	0.0381	0.0190	ug/L
R-53-100511	A11J072-04	1-Methylnaphthalene	10/13/2011	0.0578		Yes	Y		J	13	0.0381	0.0190	ug/L
R-53-100511	A11J072-04	Fluorene	10/13/2011	0.0674		Yes	Y		J	13	0.0190	0.00952	ug/L
R-53-100511	A11J072-04	Phenanthrene	10/13/2011	0.0199		Yes	Y		J	13	0.0190	0.00952	ug/L
R-53-100511	A11J072-04	Benzo(a)anthracene	10/13/2011	0.26		Yes	Y		J	13	0.0190	0.00952	ug/L
R-53-100511	A11J072-04	Dibenzo(a,h)anthracene	10/13/2011	0.019		Yes	N	U	UJ	13	0.0190	0.00952	ug/L
R-53-100511	A11J072-04	Chrysene	10/13/2011	0.284		Yes	Y		J	13	0.0190	0.00952	ug/L
R-53-100511	A11J072-04	Fluoranthene	10/13/2011	0.0286		Yes	N	U	UJ	13	0.0286	0.0286	ug/L
R-53-100511	A11J072-04	Benzo(g,h,i)perylene	10/13/2011	0.019		Yes	N	U	UJ	13	0.0190	0.00952	ug/L
R-53-100511	A11J072-04	Pyrene	10/13/2011	0.019		Yes	N	U	UJ	13	0.0190	0.00952	ug/L
R-53-100511	A11J072-04	Anthracene	10/13/2011	0.853		Yes	Y		J	13	0.0190	0.00952	ug/L
R-53-100511	A11J072-04	Acenaphthylene	10/13/2011	1.14		Yes	N	U	UJ	13	1.14	1.14	ug/L
R-53-100511	A11J072-04	Indeno(1,2,3-c,d)pyrene	10/13/2011	0.019		Yes	N	U	UJ	13	0.0190	0.00952	ug/L
R-53-100511	A11J072-04	Benzo(a)pyrene	10/13/2011	0.019		Yes	N	U	UJ	13	0.0190	0.00952	ug/L

Analytical Method SW9014

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1D-100511	A11J072-06	Cyanide, total	10/11/2011	0.0266		Yes	Y				0.00500	0.00500	mg/L

Analytical Method SW9014

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-1S-100511	A11J072-01	Cyanide, total	10/11/2011	0.0329		Yes	Y				0.00500	0.00500	mg/L
R-2-100511	A11J072-05	Cyanide, total	10/11/2011	0.0058		Yes	Y				0.00500	0.00500	mg/L
R-3-100511	A11J072-03	Cyanide, total	10/11/2011	372		Yes	Y	D			6.00	6.00	mg/L
R-4D-100511	A11J072-02	Cyanide, total	10/11/2011	0.0234		Yes	Y				0.00500	0.00500	mg/L
R-4S-100511	A11J072-07	Cyanide, total	10/11/2011	0.0245		Yes	Y				0.00500	0.00500	mg/L
R-53-100511	A11J072-04	Cyanide, total	10/11/2011	411		Yes	Y	D			6.00	6.00	mg/L

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-2D-100611	A11J097-04	Cyanide, free	10/7/2011	0.005	Yes	N	U	UJ	5	0.00500	0.00200	mg/L
RL-2D-100611	A11J097-04	Cyanide, free	10/7/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
RL-2S-100611	A11J097-03	Cyanide, free	10/7/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
RL-2S-100611	A11J097-03RE1	Cyanide, free	10/13/2011	0.005	Yes	N	U	R	1	0.00500	0.00200	mg/L
RL-3D-100611	A11J097-05	Cyanide, free	10/7/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
RL-3D-100611	A11J097-05	Cyanide, free	10/7/2011	0.005	Yes	N	U	UJ	5	0.00500	0.00200	mg/L
RL-3S-100611	A11J097-08	Cyanide, free	10/7/2011	0.005	Yes	N	U	UJ	5	0.00500	0.00200	mg/L
RL-3S-100611	A11J097-08	Cyanide, free	10/7/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
RL-4D-100611	A11J097-07	Cyanide, free	10/7/2011	0.005	Yes	N	U	UJ	5	0.00500	0.00200	mg/L
RL-4D-100611	A11J097-07	Cyanide, free	10/7/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
RL-4S-100611	A11J097-06	Cyanide, free	10/7/2011	0.005	Yes	N	U	UJ	5	0.00500	0.00200	mg/L
RL-4S-100611	A11J097-06	Cyanide, free	10/7/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
RL-ID-100611	A11J097-02	Cyanide, free	10/7/2011	0.005	Yes	N	U	UJ	5	0.00500	0.00200	mg/L
RL-ID-100611	A11J097-02	Cyanide, free	10/7/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
RL-IS-100611	A11J097-01	Cyanide, free	10/7/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
RL-IS-100611	A11J097-01	Cyanide, free	10/7/2011	0.005	Yes	N	U	UJ	5	0.00500	0.00200	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-2D-100611	A11J097-04	Silicon	10/17/2011	37	Yes	Y				1.00	0.100	mg/L
RL-2S-100611	A11J097-03	Silicon	10/17/2011	15.6	Yes	Y				1.00	0.100	mg/L
RL-3D-100611	A11J097-05	Silicon	10/17/2011	32.4	Yes	Y				1.00	0.100	mg/L
RL-3S-100611	A11J097-08	Silicon	10/17/2011	27.9	Yes	Y				1.00	0.100	mg/L
RL-4D-100611	A11J097-07	Silicon	10/17/2011	33.5	Yes	Y				1.00	0.100	mg/L
RL-4S-100611	A11J097-06	Silicon	10/17/2011	28.9	Yes	Y				1.00	0.100	mg/L
RL-ID-100611	A11J097-02	Silicon	10/17/2011	32.6	Yes	Y				1.00	0.100	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-IS-100611	A11J097-01	Silicon	10/17/2011	21.1		Yes	Y				1.00	0.100	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-2D-100611	A11J097-04	Aluminum	10/19/2011	0.0443		Yes	Y	J			0.0500	0.0250	mg/L
RL-2D-100611	A11J097-04	Potassium	10/19/2011	3.59		Yes	Y				0.200	0.0500	mg/L
RL-2D-100611	A11J097-04	Copper	10/19/2011	0.004		Yes	N	U			0.00400	0.00200	mg/L
RL-2D-100611	A11J097-04	Nickel	10/19/2011	0.00663		Yes	Y				0.00200	0.000500	mg/L
RL-2D-100611	A11J097-04	Magnesium	10/19/2011	32.3		Yes	Y				0.0500	0.0250	mg/L
RL-2D-100611	A11J097-04	Manganese	10/19/2011	1.56		Yes	Y				0.00100	0.000500	mg/L
RL-2D-100611	A11J097-04	Chromium	10/19/2011	0.00997		Yes	Y				0.00200	0.000500	mg/L
RL-2D-100611	A11J097-04	Arsenic	10/19/2011	0.00584		Yes	Y				0.00200	0.000500	mg/L
RL-2D-100611	A11J097-04	Sodium	10/19/2011	590		Yes	Y	D			4.00	1.00	mg/L
RL-2D-100611	A11J097-04	Calcium	10/19/2011	66.7		Yes	Y	D			2.00	1.00	mg/L
RL-2D-100611	A11J097-04	Iron	10/19/2011	56.8		Yes	Y	D			2.00	1.00	mg/L
RL-2S-100611	A11J097-03	Sodium	10/19/2011	1040		Yes	Y	D			10.0	2.50	mg/L
RL-2S-100611	A11J097-03	Chromium	10/19/2011	0.0358		Yes	Y	D			0.0100	0.00250	mg/L
RL-2S-100611	A11J097-03	Copper	10/19/2011	0.02		Yes	N	D U			0.0200	0.0100	mg/L
RL-2S-100611	A11J097-03	Aluminum	10/19/2011	0.25		Yes	N	D U			0.250	0.125	mg/L
RL-2S-100611	A11J097-03	Iron	10/19/2011	3.15		Yes	Y	D			0.500	0.250	mg/L
RL-2S-100611	A11J097-03	Magnesium	10/19/2011	0.882		Yes	Y	D			0.250	0.125	mg/L
RL-2S-100611	A11J097-03	Manganese	10/19/2011	0.0251		Yes	Y	D			0.00500	0.00250	mg/L
RL-2S-100611	A11J097-03	Nickel	10/19/2011	0.0261		Yes	Y	D			0.0100	0.00250	mg/L
RL-2S-100611	A11J097-03	Potassium	10/19/2011	1.77		Yes	Y	D			1.00	0.250	mg/L
RL-2S-100611	A11J097-03	Arsenic	10/19/2011	0.0195		Yes	Y	D			0.0100	0.00250	mg/L
RL-2S-100611	A11J097-03	Calcium	10/19/2011	4.51		Yes	Y	D			0.500	0.250	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-3D-100611	A11J097-05	Aluminum	10/19/2011	0.05		Yes	N	U			0.0500	0.0250	mg/L
RL-3D-100611	A11J097-05	Chromium	10/19/2011	0.00189		Yes	N	J	U	7	0.00200	0.000500	mg/L
RL-3D-100611	A11J097-05	Iron	10/19/2011	40.3		Yes	Y				0.100	0.0500	mg/L
RL-3D-100611	A11J097-05	Manganese	10/19/2011	1.83		Yes	Y				0.00100	0.000500	mg/L
RL-3D-100611	A11J097-05	Copper	10/19/2011	0.004		Yes	N	U			0.00400	0.00200	mg/L
RL-3D-100611	A11J097-05	Nickel	10/19/2011	0.0014		Yes	Y	J			0.00200	0.000500	mg/L
RL-3D-100611	A11J097-05	Potassium	10/19/2011	2.95		Yes	Y				0.200	0.0500	mg/L
RL-3D-100611	A11J097-05	Sodium	10/19/2011	29		Yes	Y				0.200	0.0500	mg/L
RL-3D-100611	A11J097-05	Arsenic	10/19/2011	0.00148		Yes	Y	J			0.00200	0.000500	mg/L
RL-3D-100611	A11J097-05	Magnesium	10/19/2011	54.9		Yes	Y	D			0.250	0.125	mg/L
RL-3D-100611	A11J097-05	Calcium	10/19/2011	118		Yes	Y	D			0.500	0.250	mg/L
RL-3S-100611	A11J097-08	Aluminum	10/19/2011	0.05		Yes	N	U			0.0500	0.0250	mg/L
RL-3S-100611	A11J097-08	Potassium	10/19/2011	1.55		Yes	Y				0.200	0.0500	mg/L
RL-3S-100611	A11J097-08	Arsenic	10/19/2011	0.0176		Yes	Y				0.00200	0.000500	mg/L
RL-3S-100611	A11J097-08	Chromium	10/19/2011	0.00198		Yes	N	J	U	7	0.00200	0.000500	mg/L
RL-3S-100611	A11J097-08	Copper	10/19/2011	0.004		Yes	N	U			0.00400	0.00200	mg/L
RL-3S-100611	A11J097-08	Nickel	10/19/2011	0.00184		Yes	Y	J			0.00200	0.000500	mg/L
RL-3S-100611	A11J097-08	Magnesium	10/19/2011	27.7		Yes	Y				0.0500	0.0250	mg/L
RL-3S-100611	A11J097-08	Sodium	10/19/2011	164		Yes	Y	D			2.00	0.500	mg/L
RL-3S-100611	A11J097-08	Manganese	10/19/2011	6.46		Yes	Y	D			0.0100	0.00500	mg/L
RL-3S-100611	A11J097-08	Iron	10/19/2011	73		Yes	Y	D			1.00	0.500	mg/L
RL-3S-100611	A11J097-08	Calcium	10/19/2011	65.7		Yes	Y	D			1.00	0.500	mg/L
RL-4D-100611	A11J097-07	Sodium	10/19/2011	24.4		Yes	Y				0.200	0.0500	mg/L
RL-4D-100611	A11J097-07	Potassium	10/19/2011	1.81		Yes	Y				0.200	0.0500	mg/L
RL-4D-100611	A11J097-07	Nickel	10/19/2011	#######		Yes	Y	J			0.00200	0.000500	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-4D-100611	A11J097-07	Copper	10/19/2011	0.004		Yes	N	U			0.00400	0.00200	mg/L
RL-4D-100611	A11J097-07	Calcium	10/19/2011	44.7		Yes	Y				0.100	0.0500	mg/L
RL-4D-100611	A11J097-07	Magnesium	10/19/2011	22		Yes	Y				0.0500	0.0250	mg/L
RL-4D-100611	A11J097-07	Aluminum	10/19/2011	0.05		Yes	N	U			0.0500	0.0250	mg/L
RL-4D-100611	A11J097-07	Chromium	10/19/2011	0.00149		Yes	N	J	U	7	0.00200	0.000500	mg/L
RL-4D-100611	A11J097-07	Arsenic	10/19/2011	0.00139		Yes	Y	J			0.00200	0.000500	mg/L
RL-4D-100611	A11J097-07	Manganese	10/19/2011	2.82		Yes	Y	D			0.00500	0.00250	mg/L
RL-4D-100611	A11J097-07	Iron	10/19/2011	50.6		Yes	Y	D			0.500	0.250	mg/L
RL-4S-100611	A11J097-06	Iron	10/19/2011	43		Yes	Y				0.100	0.0500	mg/L
RL-4S-100611	A11J097-06	Sodium	10/19/2011	34.6		Yes	Y				0.200	0.0500	mg/L
RL-4S-100611	A11J097-06	Aluminum	10/19/2011	0.05		Yes	N	U			0.0500	0.0250	mg/L
RL-4S-100611	A11J097-06	Magnesium	10/19/2011	18		Yes	Y				0.0500	0.0250	mg/L
RL-4S-100611	A11J097-06	Potassium	10/19/2011	1.01		Yes	Y				0.200	0.0500	mg/L
RL-4S-100611	A11J097-06	Arsenic	10/19/2011	0.00314		Yes	Y				0.00200	0.000500	mg/L
RL-4S-100611	A11J097-06	Chromium	10/19/2011	0.00169		Yes	N	J	U	7	0.00200	0.000500	mg/L
RL-4S-100611	A11J097-06	Copper	10/19/2011	0.004		Yes	N	U			0.00400	0.00200	mg/L
RL-4S-100611	A11J097-06	Calcium	10/19/2011	32.7		Yes	Y				0.100	0.0500	mg/L
RL-4S-100611	A11J097-06	Nickel	10/19/2011	0.00146		Yes	Y	J			0.00200	0.000500	mg/L
RL-4S-100611	A11J097-06	Manganese	10/19/2011	3.05		Yes	Y	D			0.00500	0.00250	mg/L
RL-ID-100611	A11J097-02	Nickel	10/19/2011	0.00109		Yes	Y	J			0.00200	0.000500	mg/L
RL-ID-100611	A11J097-02	Potassium	10/19/2011	2.1		Yes	Y				0.200	0.0500	mg/L
RL-ID-100611	A11J097-02	Copper	10/19/2011	0.004		Yes	N	U			0.00400	0.00200	mg/L
RL-ID-100611	A11J097-02	Sodium	10/19/2011	24		Yes	Y				0.200	0.0500	mg/L
RL-ID-100611	A11J097-02	Arsenic	10/19/2011	0.0012		Yes	Y	J			0.00200	0.000500	mg/L
RL-ID-100611	A11J097-02	Chromium	10/19/2011	0.00162		Yes	N	J	U	7	0.00200	0.000500	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-ID-100611	A11J097-02	Aluminum	10/19/2011	0.05		Yes	N	U			0.0500	0.0250	mg/L
RL-ID-100611	A11J097-02	Manganese	10/19/2011	3.41		Yes	Y	D			0.00500	0.00250	mg/L
RL-ID-100611	A11J097-02	Magnesium	10/19/2011	58.9		Yes	Y	D			0.250	0.125	mg/L
RL-ID-100611	A11J097-02	Iron	10/19/2011	57.9		Yes	Y	D			0.500	0.250	mg/L
RL-ID-100611	A11J097-02	Calcium	10/19/2011	122		Yes	Y	D			0.500	0.250	mg/L
RL-IS-100611	A11J097-01	Manganese	10/19/2011	0.425		Yes	Y				0.00100	0.000500	mg/L
RL-IS-100611	A11J097-01	Nickel	10/19/2011	0.00271		Yes	Y				0.00200	0.000500	mg/L
RL-IS-100611	A11J097-01	Aluminum	10/19/2011	0.214		Yes	Y				0.0500	0.0250	mg/L
RL-IS-100611	A11J097-01	Magnesium	10/19/2011	6.39		Yes	Y				0.0500	0.0250	mg/L
RL-IS-100611	A11J097-01	Iron	10/19/2011	7.78		Yes	Y				0.100	0.0500	mg/L
RL-IS-100611	A11J097-01	Potassium	10/19/2011	0.756		Yes	Y				0.200	0.0500	mg/L
RL-IS-100611	A11J097-01	Chromium	10/19/2011	0.00232		Yes	N		U	7	0.00200	0.000500	mg/L
RL-IS-100611	A11J097-01	Copper	10/19/2011	0.004		Yes	N	U			0.00400	0.00200	mg/L
RL-IS-100611	A11J097-01	Calcium	10/19/2011	13.6		Yes	Y				0.100	0.0500	mg/L
RL-IS-100611	A11J097-01	Arsenic	10/19/2011	#######		Yes	Y	J			0.00200	0.000500	mg/L
RL-IS-100611	A11J097-01	Sodium	10/19/2011	100		Yes	Y	D			1.00	0.250	mg/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-2D-100611	A11J097-04	Fluoride	10/11/2011	10.4		Yes	Y				5.00	5.00	mg/L
RL-2D-100611	A11J097-04	Chloride (total)	10/11/2011	35.2		Yes	Y				5.00	5.00	mg/L
RL-2D-100611	A11J097-04	Sulfate	10/11/2011	15.7		Yes	Y				5.00	5.00	mg/L
RL-2D-100611	A11J097-04	Fluoride	10/14/2011	11.8		Yes	Y				3.33	3.33	mg/L
RL-2S-100611	A11J097-03	Chloride (total)	10/11/2011	39.4		Yes	Y				20.0	20.0	mg/L
RL-2S-100611	A11J097-03	Fluoride	10/11/2011	72.3		Yes	Y				20.0	20.0	mg/L
RL-2S-100611	A11J097-03	Sulfate	10/11/2011	164		Yes	Y				20.0	20.0	mg/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-2S-100611	A11J097-03	Fluoride	10/14/2011	29		Yes	Y				10.0	10.0	mg/L
RL-3D-100611	A11J097-05	Chloride (total)	10/11/2011	3.63		Yes	Y				1.00	1.00	mg/L
RL-3D-100611	A11J097-05	Sulfate	10/11/2011	1		Yes	N	U			1.00	1.00	mg/L
RL-3S-100611	A11J097-08	Fluoride	10/11/2011	4.12		Yes	Y				1.00	1.00	mg/L
RL-3S-100611	A11J097-08	Chloride (total)	10/11/2011	10.5		Yes	Y				1.00	1.00	mg/L
RL-3S-100611	A11J097-08	Sulfate	10/11/2011	1.46		Yes	Y				1.00	1.00	mg/L
RL-3S-100611	A11J097-08	Fluoride	10/14/2011	4.56		Yes	Y				1.00	1.00	mg/L
RL-4D-100611	A11J097-07	Sulfate	10/11/2011	7.05		Yes	Y				1.00	1.00	mg/L
RL-4D-100611	A11J097-07	Chloride (total)	10/11/2011	10.2		Yes	Y				1.00	1.00	mg/L
RL-4S-100611	A11J097-06	Sulfate	10/11/2011	1		Yes	N	U			1.00	1.00	mg/L
RL-4S-100611	A11J097-06	Chloride (total)	10/11/2011	12		Yes	Y				1.00	1.00	mg/L
RL-ID-100611	A11J097-02	Chloride (total)	10/11/2011	2.85		Yes	Y				1.00	1.00	mg/L
RL-ID-100611	A11J097-02	Sulfate	10/11/2011	1		Yes	N	U			1.00	1.00	mg/L
RL-IS-100611	A11J097-01	Chloride (total)	10/11/2011	3.75		Yes	Y				1.00	1.00	mg/L
RL-IS-100611	A11J097-01	Fluoride	10/11/2011	9.79		Yes	Y				1.00	1.00	mg/L
RL-IS-100611	A11J097-01	Sulfate	10/11/2011	1.88		Yes	Y				1.00	1.00	mg/L
RL-IS-100611	A11J097-01	Fluoride	10/14/2011	9.85		Yes	Y				1.00	1.00	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-2D-100611	A11J097-04RE1	Cyanide, total	10/10/2011	0.562		Yes	Y	D			0.0100	0.0100	mg/L
RL-2S-100611	A11J097-03RE1	Cyanide, total	10/10/2011	21.3		Yes	Y	D			0.300	0.300	mg/L
RL-3D-100611	A11J097-05	Cyanide, total	10/10/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
RL-3S-100611	A11J097-08	Cyanide, total	10/10/2011	0.0271		Yes	Y				0.00500	0.00500	mg/L
RL-4D-100611	A11J097-07	Cyanide, total	10/10/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
RL-4S-100611	A11J097-06	Cyanide, total	10/10/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-ID-100611	A11J097-02	Cyanide, total	10/10/2011	0.005	Yes	N	U			0.00500	0.00500	mg/L
RL-IS-100611	A11J097-01	Cyanide, total	10/10/2011	0.0154	Yes	Y				0.00500	0.00500	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-2D-100611	A11J097-04	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/11/2011	20	Yes	N	U			20.0	20.0	mg/L
RL-2D-100611	A11J097-04	Alkalinity, total as calcium carbonate (CaCO3)	10/11/2011	1410	Yes	Y				20.0	20.0	mg/L
RL-2D-100611	A11J097-04	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/11/2011	1410	Yes	Y				20.0	20.0	mg/L
RL-2D-100611	A11J097-04	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/11/2011	20	Yes	N	U			20.0	20.0	mg/L
RL-2S-100611	A11J097-03	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/11/2011	2360	Yes	Y				20.0	20.0	mg/L
RL-2S-100611	A11J097-03	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/11/2011	20	Yes	N	U			20.0	20.0	mg/L
RL-2S-100611	A11J097-03	Alkalinity, total as calcium carbonate (CaCO3)	10/11/2011	4200	Yes	Y				20.0	20.0	mg/L
RL-2S-100611	A11J097-03	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/11/2011	1840	Yes	Y				20.0	20.0	mg/L
RL-3D-100611	A11J097-05	Alkalinity, total as calcium carbonate (CaCO3)	10/13/2011	693	Yes	Y				20.0	20.0	mg/L
RL-3D-100611	A11J097-05	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/13/2011	20	Yes	N	U			20.0	20.0	mg/L
RL-3D-100611	A11J097-05	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/13/2011	693	Yes	Y				20.0	20.0	mg/L
RL-3D-100611	A11J097-05	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/13/2011	20	Yes	N	U			20.0	20.0	mg/L
RL-3S-100611	A11J097-08	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/13/2011	738	Yes	Y				20.0	20.0	mg/L
RL-3S-100611	A11J097-08	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/13/2011	20	Yes	N	U			20.0	20.0	mg/L
RL-3S-100611	A11J097-08	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/13/2011	20	Yes	N	U			20.0	20.0	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-3S-100611	A11J097-08	Alkalinity, total as calcium carbonate (CaCO3)	10/13/2011	738	Yes	Y				20.0	20.0	mg/L
RL-4D-100611	A11J097-07	Alkalinity, total as calcium carbonate (CaCO3)	10/13/2011	283	Yes	Y				20.0	20.0	mg/L
RL-4D-100611	A11J097-07	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/13/2011	20	Yes	N	U			20.0	20.0	mg/L
RL-4D-100611	A11J097-07	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/13/2011	20	Yes	N	U			20.0	20.0	mg/L
RL-4D-100611	A11J097-07	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/13/2011	283	Yes	Y				20.0	20.0	mg/L
RL-4S-100611	A11J097-06	Alkalinity, total as calcium carbonate (CaCO3)	10/13/2011	258	Yes	Y				20.0	20.0	mg/L
RL-4S-100611	A11J097-06	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/13/2011	258	Yes	Y				20.0	20.0	mg/L
RL-4S-100611	A11J097-06	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/13/2011	20	Yes	N	U			20.0	20.0	mg/L
RL-4S-100611	A11J097-06	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/13/2011	20	Yes	N	U			20.0	20.0	mg/L
RL-ID-100611	A11J097-02	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/11/2011	20	Yes	N	U			20.0	20.0	mg/L
RL-ID-100611	A11J097-02	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/11/2011	20	Yes	N	U			20.0	20.0	mg/L
RL-ID-100611	A11J097-02	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/11/2011	698	Yes	Y				20.0	20.0	mg/L
RL-ID-100611	A11J097-02	Alkalinity, total as calcium carbonate (CaCO3)	10/11/2011	698	Yes	Y				20.0	20.0	mg/L
RL-IS-100611	A11J097-01	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/11/2011	20	Yes	N	U			20.0	20.0	mg/L
RL-IS-100611	A11J097-01	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/11/2011	358	Yes	Y				20.0	20.0	mg/L
RL-IS-100611	A11J097-01	Alkalinity, total as calcium carbonate (CaCO3)	10/11/2011	358	Yes	Y				20.0	20.0	mg/L
RL-IS-100611	A11J097-01	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/11/2011	20	Yes	N	U			20.0	20.0	mg/L

Analytical Method SM2540C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-2D-100611	A11J097-04	Total dissolved solids	10/12/2011	1680		Yes	Y				10.0	10.0	mg/L
RL-2S-100611	A11J097-03	Total dissolved solids	10/12/2011	5570		Yes	Y				10.0	10.0	mg/L
RL-3D-100611	A11J097-05	Total dissolved solids	10/12/2011	652		Yes	Y				10.0	10.0	mg/L
RL-3S-100611	A11J097-08	Total dissolved solids	10/12/2011	892		Yes	Y				10.0	10.0	mg/L
RL-4D-100611	A11J097-07	Total dissolved solids	10/12/2011	414		Yes	Y				20.0	20.0	mg/L
RL-4S-100611	A11J097-06	Total dissolved solids	10/12/2011	406		Yes	Y				10.0	10.0	mg/L
RL-ID-100611	A11J097-02	Total dissolved solids	10/12/2011	667		Yes	Y				10.0	10.0	mg/L
RL-IS-100611	A11J097-01	Total dissolved solids	10/12/2011	490		Yes	Y				10.0	10.0	mg/L

Analytical Method SM2540D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-2D-100611	A11J097-04	Total suspended solids	10/11/2011	81		Yes	Y				5.00	5.00	mg/L
RL-2S-100611	A11J097-03	Total suspended solids	10/11/2011	12		Yes	Y				5.00	5.00	mg/L
RL-3D-100611	A11J097-05	Total suspended solids	10/11/2011	119		Yes	Y				5.00	5.00	mg/L
RL-3S-100611	A11J097-08	Total suspended solids	10/11/2011	118		Yes	Y				5.00	5.00	mg/L
RL-4D-100611	A11J097-07	Total suspended solids	10/11/2011	3760		Yes	Y				10.0	10.0	mg/L
RL-4S-100611	A11J097-06	Total suspended solids	10/11/2011	41		Yes	Y				5.00	5.00	mg/L
RL-ID-100611	A11J097-02	Total suspended solids	10/11/2011	193		Yes	Y				5.00	5.00	mg/L
RL-IS-100611	A11J097-01	Total suspended solids	10/11/2011	8		Yes	Y				5.00	5.00	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-2D-100611	A11J097-04	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.0205		Yes	Y				0.00500	0.00500	mg/L
RL-2D-100611	A11J097-04	Cyanide, Weak acid dissociable (WAD)	10/18/2011	0.0136		Yes	Y				0.00500	0.00500	mg/L
RL-2S-100611	A11J097-03	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.106		Yes	Y				0.0300	0.0300	mg/L
RL-2S-100611	A11J097-03	Cyanide, Weak acid dissociable (WAD)	10/18/2011	0.0492		Yes	Y				0.0100	0.0100	mg/L
RL-3D-100611	A11J097-05	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-3D-100611	A11J097-05	Cyanide, Weak acid dissociable (WAD)	10/18/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
RL-3S-100611	A11J097-08	Cyanide, Weak acid dissociable (WAD)	10/11/2011	0.0074		Yes	Y				0.00500	0.00500	mg/L
RL-3S-100611	A11J097-08	Cyanide, Weak acid dissociable (WAD)	10/18/2011	0.0084		Yes	Y				0.00500	0.00500	mg/L
RL-4D-100611	A11J097-07	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
RL-4D-100611	A11J097-07	Cyanide, Weak acid dissociable (WAD)	10/18/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
RL-4S-100611	A11J097-06	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
RL-4S-100611	A11J097-06	Cyanide, Weak acid dissociable (WAD)	10/18/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
RL-ID-100611	A11J097-02	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
RL-ID-100611	A11J097-02	Cyanide, Weak acid dissociable (WAD)	10/18/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
RL-IS-100611	A11J097-01	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
RL-IS-100611	A11J097-01	Cyanide, Weak acid dissociable (WAD)	10/18/2011	0.0075		Yes	Y				0.00500	0.00500	mg/L

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-3D-100611	A11J097-05	Fluoride	10/18/2011	0.267		Yes	Y				0.100	0.100	mg/L
RL-3D-100611	A11J097-05	Fluoride	10/18/2011	0.264		Yes	Y				0.100	0.0200	mg/L
RL-4D-100611	A11J097-07	Fluoride	10/18/2011	0.3		Yes	Y				0.100	0.100	mg/L
RL-4D-100611	A11J097-07	Fluoride	10/18/2011	0.363		Yes	Y				0.100	0.0200	mg/L
RL-4S-100611	A11J097-06	Fluoride	10/18/2011	0.94		Yes	Y				0.100	0.100	mg/L
RL-4S-100611	A11J097-06	Fluoride	10/18/2011	0.916		Yes	Y				0.100	0.0200	mg/L
RL-ID-100611	A11J097-02	Fluoride	10/18/2011	0.333		Yes	Y				0.100	0.100	mg/L
RL-ID-100611	A11J097-02	Fluoride	10/18/2011	0.329		Yes	Y				0.100	0.0200	mg/L

Analytical Method SM4500P

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-2D-100611	A11J097-04	Phosphorus	10/13/2011	2.13		Yes	Y	D			0.500	0.0500	mg/L
RL-2S-100611	A11J097-03	Phosphorus	10/13/2011	11.6		Yes	Y	D			1.25	0.125	mg/L

Analytical Method SM4500P

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-3D-100611	A11J097-05	Phosphorus	10/13/2011	1.67		Yes	Y	D			0.500	0.0500	mg/L
RL-3S-100611	A11J097-08	Phosphorus	10/13/2011	1.46		Yes	Y	D			0.500	0.0500	mg/L
RL-4D-100611	A11J097-07	Phosphorus	10/13/2011	7.45		Yes	Y	D			2.50	0.250	mg/L
RL-4S-100611	A11J097-06	Phosphorus	10/13/2011	1.98		Yes	Y	D			0.500	0.0500	mg/L
RL-ID-100611	A11J097-02	Phosphorus	10/13/2011	1.3		Yes	Y	D			0.500	0.0500	mg/L
RL-IS-100611	A11J097-01RE1	Phosphorus	10/13/2011	0.468		Yes	Y				0.100	0.0100	mg/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-4S-100611	A11J097-06	1-Methylnaphthalene	10/13/2011	0.0377		Yes	N	U			0.0377	0.0189	ug/L
RL-4S-100611	A11J097-06	Acenaphthene	10/13/2011	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RL-4S-100611	A11J097-06	Benzo(a)anthracene	10/13/2011	0.0108		Yes	N	J	U	7	0.0189	0.00943	ug/L
RL-4S-100611	A11J097-06	Dibenzo(a,h)anthracene	10/13/2011	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RL-4S-100611	A11J097-06	Benzo(a)pyrene	10/13/2011	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RL-4S-100611	A11J097-06	Phenanthrene	10/13/2011	0.0108		Yes	Y	J			0.0189	0.00943	ug/L
RL-4S-100611	A11J097-06	Pyrene	10/13/2011	0.0133		Yes	Y	J			0.0189	0.00943	ug/L
RL-4S-100611	A11J097-06	Benzo(k)fluoranthene	10/13/2011	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RL-4S-100611	A11J097-06	Fluoranthene	10/13/2011	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RL-4S-100611	A11J097-06	Benzo(b)fluoranthene	10/13/2011	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RL-4S-100611	A11J097-06	Indeno(1,2,3-c,d)pyrene	10/13/2011	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RL-4S-100611	A11J097-06	Fluorene	10/13/2011	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RL-4S-100611	A11J097-06	Dibenzofuran	10/13/2011	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RL-4S-100611	A11J097-06	Acenaphthylene	10/13/2011	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RL-4S-100611	A11J097-06	Anthracene	10/13/2011	0.0127		Yes	Y	J			0.0189	0.00943	ug/L
RL-4S-100611	A11J097-06	Chrysene	10/13/2011	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RL-4S-100611	A11J097-06	2-Methylnaphthalene	10/13/2011	0.0377		Yes	N	U			0.0377	0.0189	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-4S-100611	A11J097-06	Naphthalene	10/13/2011	0.0214		Yes	Y	J			0.0377	0.0189	ug/L
RL-4S-100611	A11J097-06	Benzo(g,h,i)perylene	10/13/2011	0.0189		Yes	N	U			0.0189	0.00943	ug/L

Analytical Method SW9014

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-2D-100611	A11J097-04RE1	Cyanide, total	10/13/2011	0.098		Yes	Y				0.00500	0.00500	mg/L
RL-2S-100611	A11J097-03RE1	Cyanide, total	10/13/2011	6.52		Yes	Y	D			2.00	2.00	mg/L
RL-3D-100611	A11J097-05	Cyanide, total	10/13/2011	0.005		Yes	Y				0.00500	0.00500	mg/L
RL-3S-100611	A11J097-08	Cyanide, total	10/13/2011	0.0244		Yes	Y				0.00500	0.00500	mg/L
RL-4D-100611	A11J097-07	Cyanide, total	10/13/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
RL-4S-100611	A11J097-06	Cyanide, total	10/13/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
RL-ID-100611	A11J097-02	Cyanide, total	10/13/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
RL-IS-100611	A11J097-01	Cyanide, total	10/13/2011	0.013		Yes	Y				0.00500	0.00500	mg/L

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBT-100611-01	A11J099-01	Cyanide, free	10/7/2011	0.005		Yes	N	U	UJ	5	0.00500	0.00200	mg/L
MBT-100611-02	A11J099-02	Cyanide, free	10/7/2011	0.005		Yes	N	U	UJ	5	0.00500	0.00200	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBT-100611-01	A11J099-01	Copper	10/18/2011	0.004		Yes	N	U			0.00400	0.00200	mg/L
MBT-100611-01	A11J099-01	Nickel	10/18/2011	0.00186		Yes	Y	J			0.00200	0.000500	mg/L
MBT-100611-01	A11J099-01	Arsenic	10/18/2011	0.00219		Yes	Y				0.00200	0.000500	mg/L
MBT-100611-01	A11J099-01	Chromium	10/18/2011	0.00118		Yes	N	J	U	7	0.00200	0.000500	mg/L
MBT-100611-01	A11J099-01	Magnesium	10/18/2011	10.3		Yes	Y				0.0500	0.0250	mg/L
MBT-100611-01	A11J099-01	Calcium	10/18/2011	24.5		Yes	Y				0.100	0.0500	mg/L
MBT-100611-01	A11J099-01	Sodium	10/18/2011	53.3		Yes	Y	D			0.500	0.250	mg/L
MBT-100611-02	A11J099-02	Calcium	10/18/2011	22.9		Yes	Y				0.100	0.0500	mg/L
MBT-100611-02	A11J099-02	Arsenic	10/18/2011	0.00169		Yes	Y	J			0.00200	0.000500	mg/L
MBT-100611-02	A11J099-02	Nickel	10/18/2011	0.00104		Yes	Y	J			0.00200	0.000500	mg/L
MBT-100611-02	A11J099-02	Magnesium	10/18/2011	9.33		Yes	Y				0.0500	0.0250	mg/L
MBT-100611-02	A11J099-02	Chromium	10/18/2011	#######		Yes	N	J	U	7	0.00200	0.000500	mg/L
MBT-100611-02	A11J099-02	Copper	10/18/2011	0.004		Yes	N	U			0.00400	0.00200	mg/L
MBT-100611-02	A11J099-02	Sodium	10/18/2011	20.8		Yes	Y				0.100	0.0500	mg/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBT-100611-01	A11J099-01	Fluoride	10/11/2011	2.25		Yes	Y				1.00	1.00	mg/L
MBT-100611-01	A11J099-01	Chloride (total)	10/11/2011	10.1		Yes	Y				1.00	1.00	mg/L
MBT-100611-01	A11J099-01	Sulfate	10/11/2011	3.66		Yes	Y				1.00	1.00	mg/L
MBT-100611-02	A11J099-02	Sulfate	10/11/2011	2.58		Yes	Y				1.00	1.00	mg/L
MBT-100611-02	A11J099-02	Chloride (total)	10/11/2011	9.83		Yes	Y				1.00	1.00	mg/L

SDG: A11J099

Analytical Method	E335.4												
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBT-100611-01	A11J099-01	Cyanide, total	10/10/2011	0.0199		Yes	Y				0.00500	0.00500	mg/L
MBT-100611-02	A11J099-02	Cyanide, total	10/10/2011	0.0053		Yes	Y				0.00500	0.00500	mg/L

Analytical Method	SM4500CNI												
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBT-100611-01	A11J099-01	Cyanide, Weak acid dissociable (WAD)	10/11/2011	0.0084		Yes	Y				0.00500	0.00500	mg/L
MBT-100611-02	A11J099-02	Cyanide, Weak acid dissociable (WAD)	10/11/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L

Analytical Method	SM4500FC												
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBT-100611-02	A11J099-02	Fluoride	11/1/2011	0.619		Yes	Y				0.100	0.100	mg/L

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G5-D-100711	A11J117-04	Cyanide, free	10/8/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
G5-D-100711	A11J117-04	Cyanide, free	10/8/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
G5-S-100711	A11J117-05	Cyanide, free	10/8/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
G5-S-100711	A11J117-05	Cyanide, free	10/8/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
G7-D-100711	A11J117-01	Cyanide, free	10/8/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
G7-D-100711	A11J117-01	Cyanide, free	10/8/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
PZ-1-100711	A11J117-07	Cyanide, free	10/8/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
PZ-1-100711	A11J117-07	Cyanide, free	10/8/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
PZ-2-100711	A11J117-06	Cyanide, free	10/8/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
PZ-2-100711	A11J117-06	Cyanide, free	10/8/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
PZ-3-100711	A11J117-08	Cyanide, free	10/8/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
PZ-3-100711	A11J117-08	Cyanide, free	10/8/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
PZ-6-100711	A11J117-03	Cyanide, free	10/8/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
PZ-6-100711	A11J117-03	Cyanide, free	10/8/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
PZ-7-100711	A11J117-02	Cyanide, free	10/8/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L
PZ-7-100711	A11J117-02	Cyanide, free	10/8/2011	0.005	Yes	N	U			0.00500	0.00200	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G5-D-100711	A11J117-04	Silicon	10/17/2011	33.2	Yes	Y				1.00	0.100	mg/L
G5-S-100711	A11J117-05	Silicon	10/17/2011	30.6	Yes	Y				1.00	0.100	mg/L
G7-D-100711	A11J117-01	Silicon	10/17/2011	24.7	Yes	Y				1.00	0.100	mg/L
PZ-1-100711	A11J117-07	Silicon	10/17/2011	11.8	Yes	Y				1.00	0.100	mg/L
PZ-2-100711	A11J117-06	Silicon	10/17/2011	12	Yes	Y				1.00	0.100	mg/L
PZ-3-100711	A11J117-08	Silicon	10/17/2011	12.1	Yes	Y				1.00	0.100	mg/L
PZ-6-100711	A11J117-03	Silicon	10/17/2011	25.1	Yes	Y				1.00	0.100	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-7-100711	A11J117-02	Silicon	10/17/2011	31.9		Yes	Y				1.00	0.100	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G5-D-100711	A11J117-04	Calcium	10/19/2011	38.2		Yes	Y				0.100	0.0500	mg/L
G5-D-100711	A11J117-04	Aluminum	10/19/2011	0.05		Yes	N	U			0.0500	0.0250	mg/L
G5-D-100711	A11J117-04	Iron	10/19/2011	47.4		Yes	Y				0.100	0.0500	mg/L
G5-D-100711	A11J117-04	Magnesium	10/19/2011	13.9		Yes	Y				0.0500	0.0250	mg/L
G5-D-100711	A11J117-04	Manganese	10/19/2011	2.13		Yes	Y				0.00100	0.000500	mg/L
G5-D-100711	A11J117-04	Potassium	10/19/2011	2.29		Yes	Y				0.200	0.0500	mg/L
G5-D-100711	A11J117-04	Sodium	10/19/2011	8.09		Yes	Y				0.200	0.0500	mg/L
G5-S-100711	A11J117-05	Calcium	10/19/2011	49.4		Yes	Y				0.100	0.0500	mg/L
G5-S-100711	A11J117-05	Magnesium	10/19/2011	18.2		Yes	Y				0.0500	0.0250	mg/L
G5-S-100711	A11J117-05	Potassium	10/19/2011	2.64		Yes	Y				0.200	0.0500	mg/L
G5-S-100711	A11J117-05	Sodium	10/19/2011	11.3		Yes	Y				0.200	0.0500	mg/L
G5-S-100711	A11J117-05	Aluminum	10/19/2011	0.05		Yes	N	U			0.0500	0.0250	mg/L
G5-S-100711	A11J117-05	Manganese	10/19/2011	3.68		Yes	Y	D			0.0100	0.00500	mg/L
G5-S-100711	A11J117-05	Iron	10/19/2011	52.9		Yes	Y	D			1.00	0.500	mg/L
G7-D-100711	A11J117-01	Aluminum	10/19/2011	0.05		Yes	N	U			0.0500	0.0250	mg/L
G7-D-100711	A11J117-01	Magnesium	10/19/2011	37.9		Yes	Y				0.0500	0.0250	mg/L
G7-D-100711	A11J117-01	Iron	10/19/2011	17.8		Yes	Y				0.100	0.0500	mg/L
G7-D-100711	A11J117-01	Potassium	10/19/2011	3.03		Yes	Y				0.200	0.0500	mg/L
G7-D-100711	A11J117-01	Calcium	10/19/2011	85.7		Yes	Y	D			0.500	0.250	mg/L
G7-D-100711	A11J117-01	Manganese	10/19/2011	2.74		Yes	Y	D			0.00500	0.00250	mg/L
G7-D-100711	A11J117-01	Sodium	10/19/2011	96.8		Yes	Y	D			1.00	0.250	mg/L
PZ-1-100711	A11J117-07	Iron	10/19/2011	1.92		Yes	Y				0.100	0.0500	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-1-100711	A11J117-07	Manganese	10/19/2011	0.29		Yes	Y				0.00100	0.000500	mg/L
PZ-1-100711	A11J117-07	Sodium	10/19/2011	803		Yes	Y	D			10.0	2.50	mg/L
PZ-1-100711	A11J117-07	Potassium	10/19/2011	1.7		Yes	Y	D			1.00	0.250	mg/L
PZ-1-100711	A11J117-07	Calcium	10/19/2011	4.17		Yes	Y	D			0.500	0.250	mg/L
PZ-1-100711	A11J117-07	Magnesium	10/19/2011	0.395		Yes	Y	D			0.250	0.125	mg/L
PZ-1-100711	A11J117-07	Aluminum	10/19/2011	0.782		Yes	Y	D			0.250	0.125	mg/L
PZ-2-100711	A11J117-06	Sodium	10/19/2011	2180		Yes	Y	D			10.0	2.50	mg/L
PZ-2-100711	A11J117-06	Manganese	10/19/2011	0.0919		Yes	Y	D			0.00500	0.00250	mg/L
PZ-2-100711	A11J117-06	Aluminum	10/19/2011	0.176		Yes	Y	D J			0.250	0.125	mg/L
PZ-2-100711	A11J117-06	Magnesium	10/19/2011	1.06		Yes	Y	D			0.250	0.125	mg/L
PZ-2-100711	A11J117-06	Potassium	10/19/2011	5.01		Yes	Y	D			1.00	0.250	mg/L
PZ-2-100711	A11J117-06	Calcium	10/19/2011	2.21		Yes	Y	D			0.500	0.250	mg/L
PZ-2-100711	A11J117-06	Iron	10/19/2011	8.47		Yes	Y	D			0.500	0.250	mg/L
PZ-3-100711	A11J117-08	Manganese	10/19/2011	0.343		Yes	Y				0.00100	0.000500	mg/L
PZ-3-100711	A11J117-08	Iron	10/19/2011	0.812		Yes	Y				0.100	0.0500	mg/L
PZ-3-100711	A11J117-08	Sodium	10/20/2011	1310		Yes	Y	D			10.0	2.50	mg/L
PZ-3-100711	A11J117-08	Aluminum	10/20/2011	0.193		Yes	Y	D J			0.250	0.125	mg/L
PZ-3-100711	A11J117-08	Calcium	10/20/2011	7		Yes	Y	D			0.500	0.250	mg/L
PZ-3-100711	A11J117-08	Magnesium	10/20/2011	3.24		Yes	Y	D			0.250	0.125	mg/L
PZ-3-100711	A11J117-08	Potassium	10/20/2011	4.02		Yes	Y	D			1.00	0.250	mg/L
PZ-6-100711	A11J117-03	Calcium	10/19/2011	6.31		Yes	Y				0.100	0.0500	mg/L
PZ-6-100711	A11J117-03	Iron	10/19/2011	1.73		Yes	Y				0.100	0.0500	mg/L
PZ-6-100711	A11J117-03	Aluminum	10/19/2011	0.357		Yes	Y				0.0500	0.0250	mg/L
PZ-6-100711	A11J117-03	Potassium	10/19/2011	1.36		Yes	Y				0.200	0.0500	mg/L
PZ-6-100711	A11J117-03	Magnesium	10/19/2011	0.924		Yes	Y				0.0500	0.0250	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-6-100711	A11J117-03	Manganese	10/19/2011	0.132		Yes	Y				0.00100	0.000500	mg/L
PZ-6-100711	A11J117-03	Sodium	10/19/2011	1080		Yes	Y	D			10.0	2.50	mg/L
PZ-7-100711	A11J117-02	Calcium	10/19/2011	27.7		Yes	Y				0.100	0.0500	mg/L
PZ-7-100711	A11J117-02	Potassium	10/19/2011	2.57		Yes	Y				0.200	0.0500	mg/L
PZ-7-100711	A11J117-02	Manganese	10/19/2011	0.636		Yes	Y				0.00100	0.000500	mg/L
PZ-7-100711	A11J117-02	Aluminum	10/19/2011	0.183		Yes	Y				0.0500	0.0250	mg/L
PZ-7-100711	A11J117-02	Iron	10/19/2011	13.8		Yes	Y				0.100	0.0500	mg/L
PZ-7-100711	A11J117-02	Magnesium	10/19/2011	11.2		Yes	Y				0.0500	0.0250	mg/L
PZ-7-100711	A11J117-02	Sodium	10/19/2011	596		Yes	Y	D			4.00	1.00	mg/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G5-D-100711	A11J117-04	Chloride (total)	10/12/2011	14.7		Yes	Y				1.00	1.00	mg/L
G5-D-100711	A11J117-04	Sulfate	10/12/2011	1		Yes	N	U			1.00	1.00	mg/L
G5-S-100711	A11J117-05	Sulfate	10/12/2011	1		Yes	N	U			1.00	1.00	mg/L
G5-S-100711	A11J117-05	Chloride (total)	10/12/2011	3.8		Yes	Y				1.00	1.00	mg/L
G7-D-100711	A11J117-01	Sulfate	10/11/2011	1.02		Yes	Y				1.00	1.00	mg/L
G7-D-100711	A11J117-01	Chloride (total)	10/11/2011	12.8		Yes	Y				1.00	1.00	mg/L
PZ-1-100711	A11J117-07	Sulfate	10/12/2011	101		Yes	Y				20.0	20.0	mg/L
PZ-1-100711	A11J117-07	Fluoride	10/12/2011	218		Yes	Y				20.0	20.0	mg/L
PZ-1-100711	A11J117-07	Fluoride	10/14/2011	224		Yes	Y				20.0	20.0	mg/L
PZ-1-100711	A11J117-07RE1	Chloride (total)	10/18/2011	12.8		Yes	Y				5.00	5.00	mg/L
PZ-2-100711	A11J117-06	Sulfate	10/12/2011	77.4		Yes	Y				20.0	20.0	mg/L
PZ-2-100711	A11J117-06	Chloride (total)	10/12/2011	34.1		Yes	Y				20.0	20.0	mg/L
PZ-2-100711	A11J117-06	Fluoride	10/12/2011	484		Yes	Y				20.0	20.0	mg/L
PZ-2-100711	A11J117-06	Fluoride	10/14/2011	497		Yes	Y				20.0	20.0	mg/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-3-100711	A11J117-08	Chloride (total)	10/12/2011	35.1		Yes	Y				3.33	3.33	mg/L
PZ-3-100711	A11J117-08	Sulfate	10/12/2011	3.33		No	N	U			3.33	3.33	mg/L
PZ-3-100711	A11J117-08	Fluoride	10/14/2011	165		Yes	Y				10.0	10.0	mg/L
PZ-3-100711	A11J117-08RE1	Fluoride	10/14/2011	166		Yes	Y				10.0	10.0	mg/L
PZ-3-100711	A11J117-08RE2	Sulfate	10/25/2011	1.37		Yes	Y				1.00	1.00	mg/L
PZ-6-100711	A11J117-03	Fluoride	10/12/2011	79.8		Yes	Y				20.0	20.0	mg/L
PZ-6-100711	A11J117-03	Sulfate	10/12/2011	51.3		Yes	Y				20.0	20.0	mg/L
PZ-6-100711	A11J117-03	Chloride (total)	10/12/2011	29.1		Yes	Y				20.0	20.0	mg/L
PZ-6-100711	A11J117-03	Fluoride	10/14/2011	84.5		Yes	Y				10.0	10.0	mg/L
PZ-7-100711	A11J117-02	Fluoride	10/11/2011	21.3		Yes	Y				4.00	4.00	mg/L
PZ-7-100711	A11J117-02	Sulfate	10/11/2011	4		No	N	U			4.00	4.00	mg/L
PZ-7-100711	A11J117-02	Chloride (total)	10/11/2011	13.8		Yes	Y				4.00	4.00	mg/L
PZ-7-100711	A11J117-02	Fluoride	10/14/2011	21.5		Yes	Y				8.00	8.00	mg/L
PZ-7-100711	A11J117-02RE1	Sulfate	10/25/2011	1		Yes	N	U			1.00	1.00	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G5-D-100711	A11J117-04RE1	Cyanide, total	10/10/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
G5-S-100711	A11J117-05	Cyanide, total	10/12/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
G7-D-100711	A11J117-01	Cyanide, total	10/10/2011	0.0079		Yes	Y				0.00500	0.00500	mg/L
PZ-1-100711	A11J117-07	Cyanide, total	10/12/2011	7.54		Yes	Y	D			0.200	0.200	mg/L
PZ-2-100711	A11J117-06	Cyanide, total	10/12/2011	26.7		Yes	Y	D			0.500	0.500	mg/L
PZ-3-100711	A11J117-08	Cyanide, total	10/12/2011	0.383		Yes	Y				0.00500	0.00500	mg/L
PZ-6-100711	A11J117-03RE1	Cyanide, total	10/10/2011	4.04		Yes	Y	D			0.0500	0.0500	mg/L
PZ-7-100711	A11J117-02	Cyanide, total	10/10/2011	0.0542		Yes	Y				0.00500	0.00500	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G5-D-100711	A11J117-04	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2011	192		Yes	Y				20.0	20.0	mg/L
G5-D-100711	A11J117-04	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
G5-D-100711	A11J117-04	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/17/2011	192		Yes	Y				20.0	20.0	mg/L
G5-D-100711	A11J117-04	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
G5-S-100711	A11J117-05	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2011	250		Yes	Y				20.0	20.0	mg/L
G5-S-100711	A11J117-05	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
G5-S-100711	A11J117-05	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/17/2011	250		Yes	Y				20.0	20.0	mg/L
G5-S-100711	A11J117-05	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
G7-D-100711	A11J117-01	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
G7-D-100711	A11J117-01	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/17/2011	653		Yes	Y				20.0	20.0	mg/L
G7-D-100711	A11J117-01	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
G7-D-100711	A11J117-01	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2011	653		Yes	Y				20.0	20.0	mg/L
PZ-1-100711	A11J117-07	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/17/2011	293		Yes	Y				20.0	20.0	mg/L
PZ-1-100711	A11J117-07	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2011	1050		Yes	Y				20.0	20.0	mg/L
PZ-1-100711	A11J117-07	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L
PZ-1-100711	A11J117-07	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/17/2011	761		Yes	Y				20.0	20.0	mg/L
PZ-2-100711	A11J117-06	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/17/2011	2420		Yes	Y				20.0	20.0	mg/L
PZ-2-100711	A11J117-06	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/17/2011	20		Yes	N	U			20.0	20.0	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-2-100711	A11J117-06	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2011	3450	Yes	Y				20.0	20.0	mg/L
PZ-2-100711	A11J117-06	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/17/2011	1020	Yes	Y				20.0	20.0	mg/L
PZ-3-100711	A11J117-08	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2011	2320	Yes	Y				20.0	20.0	mg/L
PZ-3-100711	A11J117-08	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/17/2011	2280	Yes	Y				20.0	20.0	mg/L
PZ-3-100711	A11J117-08	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/17/2011	20	Yes	N	U			20.0	20.0	mg/L
PZ-3-100711	A11J117-08	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/17/2011	40	Yes	Y				20.0	20.0	mg/L
PZ-6-100711	A11J117-03	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/17/2011	1340	Yes	Y				20.0	20.0	mg/L
PZ-6-100711	A11J117-03	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/17/2011	20	Yes	N	U			20.0	20.0	mg/L
PZ-6-100711	A11J117-03	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2011	2010	Yes	Y				20.0	20.0	mg/L
PZ-6-100711	A11J117-03	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/17/2011	670	Yes	Y				20.0	20.0	mg/L
PZ-7-100711	A11J117-02	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/17/2011	1340	Yes	Y				20.0	20.0	mg/L
PZ-7-100711	A11J117-02	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/17/2011	20	Yes	N	U			20.0	20.0	mg/L
PZ-7-100711	A11J117-02	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/17/2011	20	Yes	N	U			20.0	20.0	mg/L
PZ-7-100711	A11J117-02	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2011	1340	Yes	Y				20.0	20.0	mg/L

Analytical Method SM2540C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G5-D-100711	A11J117-04	Total dissolved solids	10/12/2011	305	Yes	Y				10.0	10.0	mg/L
G5-S-100711	A11J117-05	Total dissolved solids	10/12/2011	335	Yes	Y				10.0	10.0	mg/L
G7-D-100711	A11J117-01	Total dissolved solids	10/12/2011	686	Yes	Y				10.0	10.0	mg/L
PZ-1-100711	A11J117-07	Total dissolved solids	10/12/2011	2100	Yes	Y				10.0	10.0	mg/L

Analytical Method SM2540C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-2-100711	A11J117-06	Total dissolved solids	10/12/2011	5410		Yes	Y				10.0	10.0	mg/L
PZ-3-100711	A11J117-08	Total dissolved solids	10/12/2011	3180		Yes	Y				10.0	10.0	mg/L
PZ-6-100711	A11J117-03	Total dissolved solids	10/12/2011	2950		Yes	Y				10.0	10.0	mg/L
PZ-7-100711	A11J117-02	Total dissolved solids	10/12/2011	1840		Yes	Y				10.0	10.0	mg/L

Analytical Method SM2540D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G5-D-100711	A11J117-04	Total suspended solids	10/11/2011	41		Yes	Y				5.00	5.00	mg/L
G5-S-100711	A11J117-05	Total suspended solids	10/11/2011	70		Yes	Y				5.00	5.00	mg/L
G7-D-100711	A11J117-01	Total suspended solids	10/11/2011	34		Yes	Y				5.00	5.00	mg/L
PZ-1-100711	A11J117-07	Total suspended solids	10/11/2011	5		Yes	N	U			5.00	5.00	mg/L
PZ-2-100711	A11J117-06	Total suspended solids	10/11/2011	8		Yes	Y				5.00	5.00	mg/L
PZ-3-100711	A11J117-08	Total suspended solids	10/11/2011	5		Yes	Y				5.00	5.00	mg/L
PZ-6-100711	A11J117-03	Total suspended solids	10/11/2011	68		Yes	Y				5.00	5.00	mg/L
PZ-7-100711	A11J117-02	Total suspended solids	10/11/2011	8		Yes	Y				5.00	5.00	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G5-D-100711	A11J117-04	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
G5-D-100711	A11J117-04	Cyanide, Weak acid dissociable (WAD)	10/11/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
G5-S-100711	A11J117-05	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
G5-S-100711	A11J117-05	Cyanide, Weak acid dissociable (WAD)	10/11/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
G7-D-100711	A11J117-01	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
G7-D-100711	A11J117-01	Cyanide, Weak acid dissociable (WAD)	10/11/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
PZ-1-100711	A11J117-07	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.0573		Yes	Y				0.00500	0.00500	mg/L
PZ-1-100711	A11J117-07	Cyanide, Weak acid dissociable (WAD)	10/11/2011	0.152		Yes	Y				0.0100	0.0100	mg/L
PZ-2-100711	A11J117-06	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.0954		Yes	Y				0.00500	0.00500	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-2-100711	A11J117-06	Cyanide, Weak acid dissociable (WAD)	10/11/2011	0.144		Yes	Y				0.0100	0.0100	mg/L
PZ-3-100711	A11J117-08	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.0179		Yes	Y				0.00500	0.00500	mg/L
PZ-3-100711	A11J117-08	Cyanide, Weak acid dissociable (WAD)	10/11/2011	0.0227		Yes	Y				0.00500	0.00500	mg/L
PZ-6-100711	A11J117-03	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.028		Yes	Y				0.00500	0.00500	mg/L
PZ-6-100711	A11J117-03	Cyanide, Weak acid dissociable (WAD)	10/11/2011	0.0223		Yes	Y				0.00500	0.00500	mg/L
PZ-7-100711	A11J117-02	Cyanide, Weak acid dissociable (WAD)	10/10/2011	0.0102		Yes	Y				0.00500	0.00500	mg/L
PZ-7-100711	A11J117-02	Cyanide, Weak acid dissociable (WAD)	10/11/2011	0.0092		Yes	Y				0.00500	0.00500	mg/L

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G5-D-100711	A11J117-04	Fluoride	10/18/2011	0.193		Yes	Y				0.100	0.100	mg/L
G5-D-100711	A11J117-04	Fluoride	10/18/2011	0.206		Yes	Y				0.100	0.0200	mg/L
G5-S-100711	A11J117-05	Fluoride	10/18/2011	0.159		Yes	Y				0.100	0.100	mg/L
G5-S-100711	A11J117-05	Fluoride	10/18/2011	0.166		Yes	Y				0.100	0.0200	mg/L
G7-D-100711	A11J117-01	Fluoride	10/18/2011	0.797		Yes	Y				0.100	0.100	mg/L
G7-D-100711	A11J117-01	Fluoride	10/18/2011	0.773		Yes	Y				0.100	0.0200	mg/L

Analytical Method SM4500P

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G5-D-100711	A11J117-04	Phosphorus	10/14/2011	1.26		Yes	Y	D			0.500	0.0500	mg/L
G5-S-100711	A11J117-05	Phosphorus	10/14/2011	0.24		Yes	Y	D J			0.500	0.0500	mg/L
G7-D-100711	A11J117-01RE1	Phosphorus	10/14/2011	0.18		Yes	Y				0.100	0.0100	mg/L
PZ-1-100711	A11J117-07	Phosphorus	10/14/2011	8.22		Yes	Y	D			1.25	0.125	mg/L
PZ-2-100711	A11J117-06	Phosphorus	10/14/2011	7.48		Yes	Y	D			1.25	0.125	mg/L
PZ-3-100711	A11J117-08	Phosphorus	10/14/2011	3.36		Yes	Y	D			0.500	0.0500	mg/L
PZ-6-100711	A11J117-03	Phosphorus	10/14/2011	12.3		Yes	Y	D			1.25	0.125	mg/L
PZ-7-100711	A11J117-02	Phosphorus	10/14/2011	5.32		Yes	Y	D			1.25	0.125	mg/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-1-100711	A11J117-07	Chrysene	10/13/2011	0.267		Yes	Y				0.0187	0.00935	ug/L
PZ-1-100711	A11J117-07	Acenaphthylene	10/13/2011	0.0396		Yes	Y				0.0187	0.00935	ug/L
PZ-1-100711	A11J117-07	Fluoranthene	10/13/2011	2.03		Yes	Y				0.0187	0.00935	ug/L
PZ-1-100711	A11J117-07	Indeno(1,2,3-c,d)pyrene	10/13/2011	0.00978		Yes	Y	J			0.0187	0.00935	ug/L
PZ-1-100711	A11J117-07	Benzo(g,h,i)perylene	10/13/2011	0.0165		Yes	Y	J			0.0187	0.00935	ug/L
PZ-1-100711	A11J117-07	Dibenzofuran	10/13/2011	0.939		Yes	Y				0.0187	0.00935	ug/L
PZ-1-100711	A11J117-07	Benzo(a)pyrene	10/13/2011	0.0222		Yes	Y				0.0187	0.00935	ug/L
PZ-1-100711	A11J117-07	Anthracene	10/13/2011	1.9		Yes	Y				0.0187	0.00935	ug/L
PZ-1-100711	A11J117-07	Pyrene	10/13/2011	1.51		Yes	Y				0.0187	0.00935	ug/L
PZ-1-100711	A11J117-07	Benzo(b,k)fluoranthene	10/13/2011	0.159		Yes	Y		J	15	0.0374	0.0187	ug/L
PZ-1-100711	A11J117-07	Benzo(a)anthracene	10/13/2011	0.155		Yes	Y				0.0187	0.00935	ug/L
PZ-1-100711	A11J117-07	Acenaphthene	10/13/2011	2.53		Yes	Y				0.0187	0.00935	ug/L
PZ-1-100711	A11J117-07	Fluorene	10/13/2011	5.25		Yes	Y				0.0187	0.00935	ug/L
PZ-1-100711	A11J117-07	1-Methylnaphthalene	10/13/2011	0.498		Yes	Y				0.0374	0.0187	ug/L
PZ-1-100711	A11J117-07	Naphthalene	10/13/2011	2.45		Yes	Y				0.0374	0.0187	ug/L
PZ-1-100711	A11J117-07	2-Methylnaphthalene	10/13/2011	0.29		Yes	Y				0.0374	0.0187	ug/L
PZ-1-100711	A11J117-07	Dibenzo(a,h)anthracene	10/13/2011	0.0187		Yes	N	U			0.0187	0.00935	ug/L
PZ-1-100711	A11J117-07RE1	Phenanthrene	10/13/2011	13.1		Yes	Y	D			0.374	0.187	ug/L
PZ-2-100711	A11J117-06	Naphthalene	10/13/2011	1.19		Yes	Y				0.0381	0.0190	ug/L
PZ-2-100711	A11J117-06	Dibenzofuran	10/13/2011	0.124		Yes	Y				0.0190	0.00952	ug/L
PZ-2-100711	A11J117-06	Benzo(g,h,i)perylene	10/13/2011	0.0199		Yes	Y				0.0190	0.00952	ug/L
PZ-2-100711	A11J117-06	Indeno(1,2,3-c,d)pyrene	10/13/2011	0.018		Yes	Y	J			0.0190	0.00952	ug/L
PZ-2-100711	A11J117-06	Benzo(b,k)fluoranthene	10/13/2011	0.259		Yes	Y		J	15	0.0381	0.0190	ug/L
PZ-2-100711	A11J117-06	2-Methylnaphthalene	10/13/2011	0.119		Yes	Y				0.0381	0.0190	ug/L
PZ-2-100711	A11J117-06	Dibenzo(a,h)anthracene	10/13/2011	0.019		Yes	N	U			0.0190	0.00952	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-2-100711	A11J117-06	Pyrene	10/13/2011	1.86		Yes	Y				0.0190	0.00952	ug/L
PZ-2-100711	A11J117-06	1-Methylnaphthalene	10/13/2011	0.184		Yes	Y				0.0381	0.0190	ug/L
PZ-2-100711	A11J117-06	Fluorene	10/13/2011	0.484		Yes	Y				0.0190	0.00952	ug/L
PZ-2-100711	A11J117-06	Anthracene	10/13/2011	1.69		Yes	Y				0.0190	0.00952	ug/L
PZ-2-100711	A11J117-06	Benzo(a)anthracene	10/13/2011	0.232		Yes	Y				0.0190	0.00952	ug/L
PZ-2-100711	A11J117-06	Phenanthrene	10/13/2011	3.75		Yes	Y				0.0190	0.00952	ug/L
PZ-2-100711	A11J117-06	Benzo(a)pyrene	10/13/2011	0.0314		Yes	Y				0.0190	0.00952	ug/L
PZ-2-100711	A11J117-06	Chrysene	10/13/2011	0.38		Yes	Y				0.0190	0.00952	ug/L
PZ-2-100711	A11J117-06	Acenaphthylene	10/13/2011	0.0332		Yes	Y				0.0190	0.00952	ug/L
PZ-2-100711	A11J117-06	Acenaphthene	10/13/2011	0.904		Yes	Y				0.0190	0.00952	ug/L
PZ-2-100711	A11J117-06	Fluoranthene	10/13/2011	2.94		Yes	Y				0.0190	0.00952	ug/L
PZ-3-100711	A11J117-08	Chrysene	10/13/2011	0.22		Yes	Y				0.0198	0.00990	ug/L
PZ-3-100711	A11J117-08	Anthracene	10/13/2011	2.05		Yes	Y				0.0198	0.00990	ug/L
PZ-3-100711	A11J117-08	Pyrene	10/13/2011	3.51		Yes	Y				0.0198	0.00990	ug/L
PZ-3-100711	A11J117-08	Dibenzofuran	10/13/2011	1.17		Yes	Y				0.0198	0.00990	ug/L
PZ-3-100711	A11J117-08	Benzo(b,k)fluoranthene	10/13/2011	0.0779		Yes	Y		J	15	0.0396	0.0198	ug/L
PZ-3-100711	A11J117-08	Benzo(g,h,i)perylene	10/13/2011	0.0198		Yes	N	U			0.0198	0.00990	ug/L
PZ-3-100711	A11J117-08	Indeno(1,2,3-c,d)pyrene	10/13/2011	0.0198		Yes	N	U			0.0198	0.00990	ug/L
PZ-3-100711	A11J117-08	2-Methylnaphthalene	10/13/2011	0.138		Yes	Y				0.0396	0.0198	ug/L
PZ-3-100711	A11J117-08	Acenaphthylene	10/13/2011	0.0277		Yes	Y				0.0198	0.00990	ug/L
PZ-3-100711	A11J117-08	Benzo(a)pyrene	10/13/2011	0.0258		Yes	Y				0.0198	0.00990	ug/L
PZ-3-100711	A11J117-08	Dibenzo(a,h)anthracene	10/13/2011	0.0198		Yes	N	U			0.0198	0.00990	ug/L
PZ-3-100711	A11J117-08	Naphthalene	10/13/2011	0.418		Yes	Y				0.0396	0.0198	ug/L
PZ-3-100711	A11J117-08	Benzo(a)anthracene	10/13/2011	0.138		Yes	Y				0.0198	0.00990	ug/L
PZ-3-100711	A11J117-08	Acenaphthene	10/13/2011	3.14		Yes	Y				0.0198	0.00990	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-3-100711	A11J117-08	1-Methylnaphthalene	10/13/2011	0.294		Yes	Y				0.0396	0.0198	ug/L
PZ-3-100711	A11J117-08	Fluorene	10/13/2011	3.64		Yes	Y				0.0198	0.00990	ug/L
PZ-3-100711	A11J117-08	Fluoranthene	10/13/2011	4.8		Yes	Y				0.0198	0.00990	ug/L
PZ-3-100711	A11J117-08RE1	Phenanthrene	10/13/2011	22.1		Yes	Y	D			0.396	0.198	ug/L

Analytical Method SW9014

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G5-D-100711	A11J117-04RE2	Cyanide, total	10/11/2011	0.01		Yes	N	D U			0.0100	0.0100	mg/L
G5-S-100711	A11J117-05	Cyanide, total	10/11/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
G7-D-100711	A11J117-01	Cyanide, total	10/11/2011	0.0052		Yes	Y				0.00500	0.00500	mg/L
PZ-1-100711	A11J117-07	Cyanide, total	10/18/2011	7.16		Yes	Y	D			0.100	0.100	mg/L
PZ-2-100711	A11J117-06	Cyanide, total	10/11/2011	29		Yes	Y	D			0.500	0.500	mg/L
PZ-3-100711	A11J117-08	Cyanide, total	10/11/2011	0.146		Yes	Y				0.00500	0.00500	mg/L
PZ-6-100711	A11J117-03	Cyanide, total	10/11/2011	7.02		Yes	Y	D			0.100	0.100	mg/L
PZ-7-100711	A11J117-02	Cyanide, total	10/11/2011	0.0479		Yes	Y				0.00500	0.00500	mg/L

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-5-100711	A11J118-01	Cyanide, free	10/8/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
RL-5-100711	A11J118-01	Cyanide, free	10/8/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-5-100711	A11J118-01	Silicon	10/17/2011	11.9		Yes	Y				1.00	0.100	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-5-100711	A11J118-01	Iron	10/19/2011	0.332		Yes	Y				0.100	0.0500	mg/L
RL-5-100711	A11J118-01	Manganese	10/19/2011	0.0794		Yes	Y				0.00100	0.000500	mg/L
RL-5-100711	A11J118-01	Nickel	10/19/2011	0.00823		Yes	Y				0.00200	0.000500	mg/L
RL-5-100711	A11J118-01	Arsenic	10/19/2011	0.00132		Yes	Y	J			0.00200	0.000500	mg/L
RL-5-100711	A11J118-01	Chromium	10/19/2011	0.002		Yes	N		U	7	0.00200	0.000500	mg/L
RL-5-100711	A11J118-01	Copper	10/19/2011	0.0227		Yes	Y				0.00400	0.00200	mg/L
RL-5-100711	A11J118-01	Sodium	10/20/2011	148		Yes	Y	D			1.00	0.250	mg/L
RL-5-100711	A11J118-01	Aluminum	10/20/2011	0.224		Yes	Y				0.0500	0.0250	mg/L
RL-5-100711	A11J118-01	Magnesium	10/20/2011	4.33		Yes	Y				0.0500	0.0250	mg/L
RL-5-100711	A11J118-01	Potassium	10/20/2011	0.675		Yes	Y				0.200	0.0500	mg/L
RL-5-100711	A11J118-01	Calcium	10/20/2011	8.98		Yes	Y				0.100	0.0500	mg/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-5-100711	A11J118-01	Chloride (total)	10/11/2011	8.55		Yes	Y				1.00	1.00	mg/L
RL-5-100711	A11J118-01	Fluoride	10/11/2011	2.26		Yes	Y				1.00	1.00	mg/L
RL-5-100711	A11J118-01	Fluoride	10/14/2011	2.3		Yes	Y				1.00	1.00	mg/L
RL-5-100711	A11J118-01RE1	Sulfate	10/11/2011	78.2		Yes	Y				10.0	10.0	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-5-100711	A11J118-01	Cyanide, total	10/10/2011	0.0332		Yes	Y				0.00500	0.00500	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-5-100711	A11J118-01	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/13/2011	20		Yes	N	U			20.0	20.0	mg/L
RL-5-100711	A11J118-01	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/13/2011	265		Yes	Y				20.0	20.0	mg/L
RL-5-100711	A11J118-01	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/13/2011	20		Yes	N	U			20.0	20.0	mg/L
RL-5-100711	A11J118-01	Alkalinity, total as calcium carbonate (CaCO3)	10/13/2011	265		Yes	Y				20.0	20.0	mg/L

Analytical Method SM2540C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-5-100711	A11J118-01	Total dissolved solids	10/12/2011	482		Yes	Y				10.0	10.0	mg/L

Analytical Method SM2540D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-5-100711	A11J118-01	Total suspended solids	10/11/2011	61		Yes	Y				5.00	5.00	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-5-100711	A11J118-01	Cyanide, Weak acid dissociable (WAD)	10/11/2011	0.0064		Yes	Y				0.00500	0.00500	mg/L
RL-5-100711	A11J118-01	Cyanide, Weak acid dissociable (WAD)	10/18/2011	0.0061		Yes	Y				0.00500	0.00500	mg/L

Analytical Method SM4500P

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-5-100711	A11J118-01RE1	Phosphorus	10/14/2011	0.09		Yes	Y	J			0.100	0.0100	mg/L

Analytical Method SW9014

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-5-100711	A11J118-01	Cyanide, total	10/18/2011	0.0297		Yes	Y				0.00500	0.00500	mg/L

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Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G-4-S-101011	A11J137-05	Cyanide, free	10/11/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
G-4-S-101011	A11J137-05	Cyanide, free	10/11/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
G-6-D-101011	A11J137-02	Cyanide, free	10/11/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
G-6-D-101011	A11J137-02	Cyanide, free	10/11/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
G-6-S-101011	A11J137-01	Cyanide, free	10/11/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
G-6-S-101011	A11J137-01	Cyanide, free	10/11/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
PZ-4-101011	A11J137-04	Cyanide, free	10/11/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
PZ-4-101011	A11J137-04	Cyanide, free	10/11/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
PZ-5-101011	A11J137-03	Cyanide, free	10/11/2011	0.0085		Yes	Y		J	8	0.00500	0.00200	mg/L
PZ-5-101011	A11J137-03	Cyanide, free	10/11/2011	0.0124		Yes	Y		J	8	0.00500	0.00200	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G-4-S-101011	A11J137-05	Silicon	10/20/2011	32.6		Yes	Y				0.500	0.100	mg/L
G-6-D-101011	A11J137-02	Silicon	10/20/2011	30.2		Yes	Y				0.500	0.100	mg/L
G-6-S-101011	A11J137-01	Silicon	10/20/2011	17.7		Yes	Y				0.500	0.100	mg/L
PZ-4-101011	A11J137-04	Silicon	10/20/2011	13.9		Yes	Y	D			5.00	1.00	mg/L
PZ-5-101011	A11J137-03	Silicon	10/20/2011	18.8		Yes	Y	D			5.00	1.00	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G-4-S-101011	A11J137-05	Aluminum	10/22/2011	0.25		Yes	N	D U			0.250	0.125	mg/L
G-4-S-101011	A11J137-05	Calcium	10/22/2011	84.1		Yes	Y	D			0.500	0.250	mg/L
G-4-S-101011	A11J137-05	Iron	10/22/2011	69.5		Yes	Y	D			0.250	0.125	mg/L
G-4-S-101011	A11J137-05	Sodium	10/22/2011	23		Yes	Y	D			0.500	0.250	mg/L
G-4-S-101011	A11J137-05	Potassium	10/22/2011	2.19		Yes	Y	D			0.500	0.250	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G-4-S-101011	A11J137-05	Manganese	10/22/2011	2.3		Yes	Y	D			0.00500	0.00250	mg/L
G-4-S-101011	A11J137-05	Magnesium	10/22/2011	41.3		Yes	Y	D			0.250	0.125	mg/L
G-6-D-101011	A11J137-02	Iron	10/21/2011	45.4		Yes	Y				0.100	0.0250	mg/L
G-6-D-101011	A11J137-02	Aluminum	10/21/2011	0.25		Yes	N	D U			0.250	0.125	mg/L
G-6-D-101011	A11J137-02	Magnesium	10/21/2011	97.3		Yes	Y	D			0.250	0.125	mg/L
G-6-D-101011	A11J137-02	Manganese	10/21/2011	3.66		Yes	Y	D			0.00500	0.00250	mg/L
G-6-D-101011	A11J137-02	Calcium	10/21/2011	137		Yes	Y	D			0.500	0.250	mg/L
G-6-D-101011	A11J137-02	Potassium	10/21/2011	4.59		Yes	Y	D			0.500	0.250	mg/L
G-6-D-101011	A11J137-02	Sodium	10/22/2011	523		Yes	Y	D			2.50	1.25	mg/L
G-6-S-101011	A11J137-01	Iron	10/21/2011	1.32		Yes	Y				0.100	0.0250	mg/L
G-6-S-101011	A11J137-01	Manganese	10/21/2011	0.967		Yes	Y				0.00100	0.000500	mg/L
G-6-S-101011	A11J137-01	Calcium	10/21/2011	18		Yes	Y	D			0.500	0.250	mg/L
G-6-S-101011	A11J137-01	Potassium	10/21/2011	6.91		Yes	Y	D			0.500	0.250	mg/L
G-6-S-101011	A11J137-01	Magnesium	10/21/2011	6.67		Yes	Y	D			0.250	0.125	mg/L
G-6-S-101011	A11J137-01	Aluminum	10/21/2011	0.343		Yes	Y	D			0.250	0.125	mg/L
G-6-S-101011	A11J137-01	Sodium	10/22/2011	738		Yes	Y	D			2.50	1.25	mg/L
PZ-4-101011	A11J137-04	Sodium	10/21/2011	4420		Yes	Y	D			20.0	10.0	mg/L
PZ-4-101011	A11J137-04	Manganese	10/21/2011	0.107		Yes	Y	D			0.0200	0.0100	mg/L
PZ-4-101011	A11J137-04	Calcium	10/21/2011	4		Yes	Y	D			2.00	1.00	mg/L
PZ-4-101011	A11J137-04	Aluminum	10/21/2011	0.535		Yes	Y	D J			1.00	0.500	mg/L
PZ-4-101011	A11J137-04	Iron	10/21/2011	35.1		Yes	Y	D			1.00	0.500	mg/L
PZ-4-101011	A11J137-04	Magnesium	10/21/2011	2.12		Yes	Y	D			1.00	0.500	mg/L
PZ-4-101011	A11J137-04	Potassium	10/21/2011	6.38		Yes	Y	D			2.00	1.00	mg/L
PZ-5-101011	A11J137-03	Iron	10/21/2011	92.3		Yes	Y	D			1.00	0.250	mg/L
PZ-5-101011	A11J137-03	Manganese	10/21/2011	0.029		Yes	Y	D			0.0100	0.00500	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-5-101011	A11J137-03	Sodium	10/21/2011	6720		Yes	Y	D			20.0	10.0	mg/L
PZ-5-101011	A11J137-03	Calcium	10/21/2011	2		Yes	N	D U			2.00	1.00	mg/L
PZ-5-101011	A11J137-03	Potassium	10/21/2011	11.9		Yes	Y	D			2.00	1.00	mg/L
PZ-5-101011	A11J137-03	Magnesium	10/21/2011	1		Yes	N	D U			1.00	0.500	mg/L
PZ-5-101011	A11J137-03	Aluminum	10/21/2011	1		Yes	N	D U			1.00	0.500	mg/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G-4-S-101011	A11J137-05	Chloride (total)	10/12/2011	1.34		Yes	Y				1.00	1.00	mg/L
G-4-S-101011	A11J137-05	Sulfate	10/12/2011	1		Yes	N	U			1.00	1.00	mg/L
G-6-D-101011	A11J137-02	Fluoride	10/12/2011	1.07		Yes	Y				1.00	1.00	mg/L
G-6-D-101011	A11J137-02	Fluoride	10/14/2011	1.11		Yes	Y				1.00	1.00	mg/L
G-6-D-101011	A11J137-02RE1	Chloride (total)	10/14/2011	62.5		Yes	Y				10.0	10.0	mg/L
G-6-D-101011	A11J137-02RE1	Sulfate	10/14/2011	53.3		Yes	Y				10.0	10.0	mg/L
G-6-S-101011	A11J137-01	Chloride (total)	10/12/2011	6.52		Yes	Y				2.00	2.00	mg/L
G-6-S-101011	A11J137-01	Sulfate	10/12/2011	57.2		Yes	Y				2.00	2.00	mg/L
G-6-S-101011	A11J137-01	Fluoride	10/14/2011	78.7		Yes	Y				10.0	10.0	mg/L
G-6-S-101011	A11J137-01RE1	Fluoride	10/14/2011	77.8		Yes	Y				10.0	10.0	mg/L
PZ-4-101011	A11J137-04	Fluoride	10/14/2011	1140		Yes	Y				100	100	mg/L
PZ-4-101011	A11J137-04RE2	Fluoride	10/18/2011	1170		Yes	Y				50.0	50.0	mg/L
PZ-4-101011	A11J137-04RE2	Chloride (total)	10/18/2011	123		Yes	Y				50.0	50.0	mg/L
PZ-4-101011	A11J137-04RE2	Sulfate	10/18/2011	121		Yes	Y				50.0	50.0	mg/L
PZ-5-101011	A11J137-03	Fluoride	10/14/2011	2280		Yes	Y				200	200	mg/L
PZ-5-101011	A11J137-03RE2	Sulfate	10/18/2011	453		Yes	Y				66.7	66.7	mg/L
PZ-5-101011	A11J137-03RE2	Chloride (total)	10/18/2011	73.1		Yes	Y				66.7	66.7	mg/L
PZ-5-101011	A11J137-03RE2	Fluoride	10/18/2011	2360		Yes	Y				66.7	66.7	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G-4-S-101011	A11J137-05RE1	Cyanide, total	10/12/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
G-6-D-101011	A11J137-02	Cyanide, total	10/12/2011	0.0652		Yes	Y				0.00500	0.00500	mg/L
G-6-S-101011	A11J137-01	Cyanide, total	10/12/2011	0.0928		Yes	Y				0.00500	0.00500	mg/L
PZ-4-101011	A11J137-04	Cyanide, total	10/12/2011	98.8		Yes	Y	D			1.00	1.00	mg/L
PZ-5-101011	A11J137-03	Cyanide, total	10/12/2011	147		Yes	Y	D			5.00	5.00	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G-4-S-101011	A11J137-05	Alkalinity, total as calcium carbonate (CaCO3)	10/18/2011	520		Yes	Y				20.0	20.0	mg/L
G-4-S-101011	A11J137-05	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/18/2011	20		Yes	N	U			20.0	20.0	mg/L
G-4-S-101011	A11J137-05	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/18/2011	520		Yes	Y				20.0	20.0	mg/L
G-4-S-101011	A11J137-05	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/18/2011	20		Yes	N	U			20.0	20.0	mg/L
G-6-D-101011	A11J137-02	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/13/2011	1690		Yes	Y				20.0	20.0	mg/L
G-6-D-101011	A11J137-02	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/13/2011	20		Yes	N	U			20.0	20.0	mg/L
G-6-D-101011	A11J137-02	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/13/2011	20		Yes	N	U			20.0	20.0	mg/L
G-6-D-101011	A11J137-02	Alkalinity, total as calcium carbonate (CaCO3)	10/13/2011	1690		Yes	Y				20.0	20.0	mg/L
G-6-S-101011	A11J137-01	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/13/2011	1360		Yes	Y				20.0	20.0	mg/L
G-6-S-101011	A11J137-01	Alkalinity, total as calcium carbonate (CaCO3)	10/13/2011	1360		Yes	Y				20.0	20.0	mg/L
G-6-S-101011	A11J137-01	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/13/2011	20		Yes	N	U			20.0	20.0	mg/L
G-6-S-101011	A11J137-01	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/13/2011	20		Yes	N	U			20.0	20.0	mg/L
PZ-4-101011	A11J137-04	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/18/2011	2750		Yes	Y				20.0	20.0	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-4-101011	A11J137-04	Alkalinity, total as calcium carbonate (CaCO3)	10/18/2011	5890		Yes	Y				20.0	20.0	mg/L
PZ-4-101011	A11J137-04	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/18/2011	20		Yes	N	U			20.0	20.0	mg/L
PZ-4-101011	A11J137-04	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/18/2011	3140		Yes	Y				20.0	20.0	mg/L
PZ-5-101011	A11J137-03	Alkalinity, total as calcium carbonate (CaCO3)	10/18/2011	8800		Yes	Y				20.0	20.0	mg/L
PZ-5-101011	A11J137-03	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/18/2011	7430		Yes	Y				20.0	20.0	mg/L
PZ-5-101011	A11J137-03	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/18/2011	1370		Yes	Y				20.0	20.0	mg/L
PZ-5-101011	A11J137-03	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/18/2011	20		Yes	N	U			20.0	20.0	mg/L

Analytical Method SM2540C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G-4-S-101011	A11J137-05	Total dissolved solids	10/13/2011	620		Yes	Y				10.0	10.0	mg/L
G-6-D-101011	A11J137-02	Total dissolved solids	10/13/2011	2000		Yes	Y				10.0	10.0	mg/L
G-6-S-101011	A11J137-01	Total dissolved solids	10/13/2011	1810		Yes	Y				10.0	10.0	mg/L
PZ-4-101011	A11J137-04	Total dissolved solids	10/13/2011	10800		Yes	Y				10.0	10.0	mg/L
PZ-5-101011	A11J137-03	Total dissolved solids	10/13/2011	16000		Yes	Y				10.0	10.0	mg/L

Analytical Method SM2540D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G-4-S-101011	A11J137-05	Total suspended solids	10/12/2011	341		Yes	Y				5.00	5.00	mg/L
G-6-D-101011	A11J137-02	Total suspended solids	10/12/2011	41		Yes	Y				5.00	5.00	mg/L
G-6-S-101011	A11J137-01	Total suspended solids	10/12/2011	5		Yes	N	U			5.00	5.00	mg/L
PZ-4-101011	A11J137-04	Total suspended solids	10/12/2011	6		Yes	Y				5.00	5.00	mg/L
PZ-5-101011	A11J137-03	Total suspended solids	10/12/2011	10		Yes	Y				5.00	5.00	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G-4-S-101011	A11J137-05	Cyanide, Weak acid dissociable (WAD)	10/18/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
G-4-S-101011	A11J137-05	Cyanide, Weak acid dissociable (WAD)	10/20/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
G-6-D-101011	A11J137-02	Cyanide, Weak acid dissociable (WAD)	10/11/2011	0.0136		Yes	Y				0.00500	0.00500	mg/L
G-6-D-101011	A11J137-02	Cyanide, Weak acid dissociable (WAD)	10/18/2011	0.0144		Yes	Y				0.00500	0.00500	mg/L
G-6-S-101011	A11J137-01	Cyanide, Weak acid dissociable (WAD)	10/11/2011	0.016		Yes	Y				0.00500	0.00500	mg/L
G-6-S-101011	A11J137-01	Cyanide, Weak acid dissociable (WAD)	10/18/2011	0.0134		Yes	Y				0.00500	0.00500	mg/L
PZ-4-101011	A11J137-04	Cyanide, Weak acid dissociable (WAD)	10/18/2011	0.743		Yes	Y				0.0100	0.0100	mg/L
PZ-4-101011	A11J137-04	Cyanide, Weak acid dissociable (WAD)	10/20/2011	0.116		Yes	Y				0.00500	0.00500	mg/L
PZ-5-101011	A11J137-03	Cyanide, Weak acid dissociable (WAD)	10/11/2011	0.227		Yes	Y				0.0100	0.0100	mg/L
PZ-5-101011	A11J137-03	Cyanide, Weak acid dissociable (WAD)	10/18/2011	0.239		Yes	Y				0.0100	0.0100	mg/L

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G-4-S-101011	A11J137-05	Fluoride	10/18/2011	0.256		Yes	Y				0.100	0.100	mg/L
G-4-S-101011	A11J137-05	Fluoride	10/18/2011	0.262		Yes	Y				0.100	0.0200	mg/L

Analytical Method SM4500P

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G-4-S-101011	A11J137-05	Phosphorus	10/14/2011	2.37		Yes	Y	D			0.500	0.0500	mg/L
G-6-D-101011	A11J137-02	Phosphorus	10/14/2011	0.95		Yes	Y	D			0.500	0.0500	mg/L
G-6-S-101011	A11J137-01	Phosphorus	10/14/2011	7.5		Yes	Y	D			0.500	0.0500	mg/L
PZ-4-101011	A11J137-04	Phosphorus	10/14/2011	37.2		Yes	Y	D			2.50	0.250	mg/L
PZ-5-101011	A11J137-03	Phosphorus	10/14/2011	20		Yes	Y	D			2.50	0.250	mg/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G-6-D-101011	A11J137-02	Anthracene	10/13/2011	0.0884		Yes	Y				0.0187	0.00935	ug/L
G-6-D-101011	A11J137-02	Acenaphthylene	10/13/2011	0.0187		Yes	N	U			0.0187	0.00935	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G-6-D-101011	A11J137-02	Benzo(a)anthracene	10/13/2011	0.0187		Yes	N	U			0.0187	0.0187	ug/L
G-6-D-101011	A11J137-02	Pyrene	10/13/2011	0.0187		Yes	N	U			0.0187	0.00935	ug/L
G-6-D-101011	A11J137-02	Phenanthrene	10/13/2011	0.0187		Yes	N	U			0.0187	0.00935	ug/L
G-6-D-101011	A11J137-02	Dibenzofuran	10/13/2011	0.0187		Yes	N	U			0.0187	0.00935	ug/L
G-6-D-101011	A11J137-02	Fluorene	10/13/2011	0.0272		Yes	Y				0.0187	0.00935	ug/L
G-6-D-101011	A11J137-02	1-Methylnaphthalene	10/13/2011	0.0374		Yes	N	U			0.0374	0.0187	ug/L
G-6-D-101011	A11J137-02	Naphthalene	10/13/2011	0.0215		Yes	Y	J			0.0374	0.0187	ug/L
G-6-D-101011	A11J137-02	2-Methylnaphthalene	10/13/2011	0.0374		Yes	N	U			0.0374	0.0187	ug/L
G-6-D-101011	A11J137-02	Chrysene	10/13/2011	0.0187		Yes	N	U			0.0187	0.00935	ug/L
G-6-D-101011	A11J137-02	Benzo(a)pyrene	10/13/2011	0.0187		Yes	N	U			0.0187	0.00935	ug/L
G-6-D-101011	A11J137-02	Acenaphthene	10/13/2011	0.0187		Yes	N	U			0.0187	0.00935	ug/L
G-6-D-101011	A11J137-02	Indeno(1,2,3-c,d)pyrene	10/13/2011	0.0187		Yes	N	U			0.0187	0.00935	ug/L
G-6-D-101011	A11J137-02	Benzo(g,h,i)perylene	10/13/2011	0.0187		Yes	N	U			0.0187	0.00935	ug/L
G-6-D-101011	A11J137-02	Dibenzo(a,h)anthracene	10/13/2011	0.0187		Yes	N	U			0.0187	0.00935	ug/L
G-6-D-101011	A11J137-02	Benzo(b)fluoranthene	10/13/2011	0.0187		Yes	N	U			0.0187	0.00935	ug/L
G-6-D-101011	A11J137-02	Fluoranthene	10/13/2011	0.0187		Yes	N	U			0.0187	0.00935	ug/L
G-6-D-101011	A11J137-02	Benzo(k)fluoranthene	10/13/2011	0.0187		Yes	N	U			0.0187	0.00935	ug/L
G-6-S-101011	A11J137-01	Benzo(b)fluoranthene	10/13/2011	0.019		Yes	N	U			0.0190	0.00952	ug/L
G-6-S-101011	A11J137-01	Anthracene	10/13/2011	0.0571		Yes	Y				0.0190	0.00952	ug/L
G-6-S-101011	A11J137-01	Pyrene	10/13/2011	0.207		Yes	Y				0.0190	0.00952	ug/L
G-6-S-101011	A11J137-01	Dibenzofuran	10/13/2011	0.019		Yes	N	U			0.0190	0.00952	ug/L
G-6-S-101011	A11J137-01	Indeno(1,2,3-c,d)pyrene	10/13/2011	0.019		Yes	N	U			0.0190	0.00952	ug/L
G-6-S-101011	A11J137-01	Acenaphthene	10/13/2011	0.019		Yes	N	U			0.0190	0.00952	ug/L
G-6-S-101011	A11J137-01	Fluoranthene	10/13/2011	0.12		Yes	Y				0.0190	0.00952	ug/L
G-6-S-101011	A11J137-01	Benzo(k)fluoranthene	10/13/2011	0.019		Yes	N	U			0.0190	0.00952	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G-6-S-101011	A11J137-01	2-Methylnaphthalene	10/13/2011	0.0381		Yes	N	U			0.0381	0.0190	ug/L
G-6-S-101011	A11J137-01	Phenanthrene	10/13/2011	0.01		Yes	Y	J			0.0190	0.00952	ug/L
G-6-S-101011	A11J137-01	Fluorene	10/13/2011	0.0161		Yes	Y	J			0.0190	0.00952	ug/L
G-6-S-101011	A11J137-01	1-Methylnaphthalene	10/13/2011	0.0381		Yes	N	U			0.0381	0.0190	ug/L
G-6-S-101011	A11J137-01	Benzo(g,h,i)perylene	10/13/2011	0.019		Yes	N	U			0.0190	0.00952	ug/L
G-6-S-101011	A11J137-01	Naphthalene	10/13/2011	0.0349		Yes	Y	J			0.0381	0.0190	ug/L
G-6-S-101011	A11J137-01	Benzo(a)anthracene	10/13/2011	0.0124		Yes	N	J	U	7	0.0190	0.00952	ug/L
G-6-S-101011	A11J137-01	Dibenzo(a,h)anthracene	10/13/2011	0.019		Yes	N	U			0.0190	0.00952	ug/L
G-6-S-101011	A11J137-01	Benzo(a)pyrene	10/13/2011	0.019		Yes	N	U			0.0190	0.00952	ug/L
G-6-S-101011	A11J137-01	Chrysene	10/13/2011	0.019		Yes	N	U			0.0190	0.00952	ug/L
G-6-S-101011	A11J137-01	Acenaphthylene	10/13/2011	0.019		Yes	N	U			0.0190	0.00952	ug/L
PZ-4-101011	A11J137-04	Phenanthrene	10/13/2011	3.12		Yes	Y	D	J	13	0.194	0.0971	ug/L
PZ-4-101011	A11J137-04	1-Methylnaphthalene	10/13/2011	0.388		Yes	N	D U	UJ	13	0.388	0.194	ug/L
PZ-4-101011	A11J137-04	2-Methylnaphthalene	10/13/2011	0.388		Yes	N	D U	UJ	13	0.388	0.194	ug/L
PZ-4-101011	A11J137-04	Naphthalene	10/13/2011	0.823		Yes	Y	D	J	13	0.388	0.194	ug/L
PZ-4-101011	A11J137-04	Benzo(b,k)fluoranthene	10/13/2011	0.388		Yes	N	D U	UJ	13	0.388	0.194	ug/L
PZ-4-101011	A11J137-04	Fluorene	10/13/2011	0.283		Yes	Y	D	J	13	0.194	0.0971	ug/L
PZ-4-101011	A11J137-04	Acenaphthene	10/13/2011	0.385		Yes	Y	D	J	13	0.194	0.0971	ug/L
PZ-4-101011	A11J137-04	Benzo(a)anthracene	10/13/2011	0.223		Yes	Y	D	J	13	0.194	0.0971	ug/L
PZ-4-101011	A11J137-04	Dibenzo(a,h)anthracene	10/13/2011	0.194		Yes	N	D U	UJ	13	0.194	0.0971	ug/L
PZ-4-101011	A11J137-04	Benzo(a)pyrene	10/13/2011	0.194		Yes	N	D U	UJ	13	0.194	0.0971	ug/L
PZ-4-101011	A11J137-04	Chrysene	10/13/2011	0.319		Yes	Y	D	J	13	0.194	0.0971	ug/L
PZ-4-101011	A11J137-04	Benzo(g,h,i)perylene	10/13/2011	0.194		Yes	N	D U	UJ	13	0.194	0.0971	ug/L
PZ-4-101011	A11J137-04	Acenaphthylene	10/13/2011	0.194		Yes	N	D U	UJ	13	0.194	0.0971	ug/L
PZ-4-101011	A11J137-04	Indeno(1,2,3-c,d)pyrene	10/13/2011	0.194		Yes	N	D U	UJ	13	0.194	0.0971	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-4-101011	A11J137-04	Fluoranthene	10/13/2011	2.2		Yes	Y	D	J	13	0.194	0.0971	ug/L
PZ-4-101011	A11J137-04	Dibenzofuran	10/13/2011	0.194		Yes	N	D U	UJ	13	0.194	0.0971	ug/L
PZ-4-101011	A11J137-04	Pyrene	10/13/2011	1.69		Yes	Y	D	J	13	0.194	0.0971	ug/L
PZ-4-101011	A11J137-04	Anthracene	10/13/2011	1.21		Yes	Y	D	J	13	0.194	0.0971	ug/L
PZ-5-101011	A11J137-03RE1	Benzo(a)pyrene	10/14/2011	0.0196		Yes	N	U	UJ	13	0.0196	0.00980	ug/L
PZ-5-101011	A11J137-03RE1	Dibenzo(a,h)anthracene	10/14/2011	0.0196		Yes	N	U	UJ	13	0.0196	0.00980	ug/L
PZ-5-101011	A11J137-03RE1	Benzo(a)anthracene	10/14/2011	0.107		Yes	Y		J	13	0.0196	0.00980	ug/L
PZ-5-101011	A11J137-03RE1	Acenaphthene	10/14/2011	0.0196		Yes	N	U	UJ	13	0.0196	0.00980	ug/L
PZ-5-101011	A11J137-03RE1	Phenanthrene	10/14/2011	0.0395		Yes	Y		J	13	0.0196	0.00980	ug/L
PZ-5-101011	A11J137-03RE1	Fluorene	10/14/2011	0.0566		Yes	Y		J	13	0.0196	0.00980	ug/L
PZ-5-101011	A11J137-03RE1	Chrysene	10/14/2011	0.0196		Yes	N	U	UJ	13	0.0196	0.00980	ug/L
PZ-5-101011	A11J137-03RE1	Naphthalene	10/14/2011	0.531		Yes	Y		J	13	0.0392	0.0196	ug/L
PZ-5-101011	A11J137-03RE1	2-Methylnaphthalene	10/14/2011	0.0455		Yes	Y		J	13	0.0392	0.0196	ug/L
PZ-5-101011	A11J137-03RE1	Benzo(b,k)fluoranthene	10/14/2011	0.0392		Yes	N	U	UJ	13	0.0392	0.0196	ug/L
PZ-5-101011	A11J137-03RE1	1-Methylnaphthalene	10/14/2011	0.0203		Yes	Y	J	J	13	0.0392	0.0196	ug/L
PZ-5-101011	A11J137-03RE1	Fluoranthene	10/14/2011	0.0196		Yes	N	U	UJ	13	0.0196	0.00980	ug/L
PZ-5-101011	A11J137-03RE1	Indeno(1,2,3-c,d)pyrene	10/14/2011	0.0196		Yes	N	U	UJ	13	0.0196	0.00980	ug/L
PZ-5-101011	A11J137-03RE1	Benzo(g,h,i)perylene	10/14/2011	0.0196		Yes	N	U	UJ	13	0.0196	0.00980	ug/L
PZ-5-101011	A11J137-03RE1	Dibenzofuran	10/14/2011	0.0196		Yes	N	U	UJ	13	0.0196	0.0196	ug/L
PZ-5-101011	A11J137-03RE1	Pyrene	10/14/2011	0.0196		Yes	N	U	UJ	13	0.0196	0.0196	ug/L
PZ-5-101011	A11J137-03RE1	Anthracene	10/14/2011	0.345		Yes	Y		J	13	0.0196	0.00980	ug/L
PZ-5-101011	A11J137-03RE1	Acenaphthylene	10/14/2011	0.0196		Yes	N	U	UJ	13	0.0196	0.00980	ug/L

Analytical Method SW9014

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G-4-S-101011	A11J137-05	Cyanide, total	10/18/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L

SDG: A11J137

Analytical Method SW9014

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G-6-D-101011	A11J137-02	Cyanide, total	10/18/2011	0.136		Yes	Y				0.00500	0.00500	mg/L
G-6-S-101011	A11J137-01	Cyanide, total	10/18/2011	0.0958		Yes	Y				0.00500	0.00500	mg/L
PZ-4-101011	A11J137-04	Cyanide, total	10/18/2011	105		Yes	Y	D			2.00	2.00	mg/L
PZ-5-101011	A11J137-03RE1	Cyanide, total	10/18/2011	282		Yes	Y	D			6.00	6.00	mg/L

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-1-101011	A11J138-02	Cyanide, free	10/11/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
RLSW-1-101011	A11J138-02	Cyanide, free	10/11/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
RLSW-4-101011	A11J138-01	Cyanide, free	10/11/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
RLSW-4-101011	A11J138-01	Cyanide, free	10/11/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-1-101011	A11J138-02	Silicon	10/20/2011	25.6		Yes	Y				0.500	0.100	mg/L
RLSW-4-101011	A11J138-01	Silicon	10/20/2011	20.2		Yes	Y				0.500	0.100	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-1-101011	A11J138-02	Iron	10/21/2011	8.65		Yes	Y				0.0500	0.0250	mg/L
RLSW-1-101011	A11J138-02	Manganese	10/21/2011	0.468		Yes	Y				0.00100	0.000500	mg/L
RLSW-1-101011	A11J138-02	Sodium	10/22/2011	632		Yes	Y	D			2.50	1.25	mg/L
RLSW-1-101011	A11J138-02	Aluminum	10/22/2011	0.25		Yes	N	D U			0.250	0.125	mg/L
RLSW-1-101011	A11J138-02	Calcium	10/22/2011	22		Yes	Y	D	J	8	0.500	0.250	mg/L
RLSW-1-101011	A11J138-02	Magnesium	10/22/2011	12.9		Yes	Y	D	J	8	0.250	0.125	mg/L
RLSW-1-101011	A11J138-02	Potassium	10/22/2011	1.9		Yes	Y	D			0.500	0.250	mg/L
RLSW-4-101011	A11J138-01	Aluminum	10/21/2011	0.399		Yes	Y	D			0.250	0.125	mg/L
RLSW-4-101011	A11J138-01	Calcium	10/21/2011	22.7		Yes	Y	D	J	8	0.500	0.250	mg/L
RLSW-4-101011	A11J138-01	Potassium	10/21/2011	7.51		Yes	Y	D			0.500	0.250	mg/L
RLSW-4-101011	A11J138-01	Manganese	10/21/2011	1.19		Yes	Y	D			0.00500	0.00250	mg/L
RLSW-4-101011	A11J138-01	Iron	10/21/2011	3.19		Yes	Y	D			0.250	0.125	mg/L
RLSW-4-101011	A11J138-01	Magnesium	10/21/2011	10.1		Yes	Y	D	J	8	0.250	0.125	mg/L
RLSW-4-101011	A11J138-01	Sodium	10/22/2011	835		Yes	Y	D			2.50	1.25	mg/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-1-101011	A11J138-02	Sulfate	10/12/2011	10		Yes	Y				1.00	1.00	mg/L
RLSW-1-101011	A11J138-02	Chloride (total)	10/12/2011	12.7		Yes	Y				1.00	1.00	mg/L
RLSW-1-101011	A11J138-02	Fluoride	10/19/2011	42.8		Yes	Y				10.0	10.0	mg/L
RLSW-1-101011	A11J138-02RE1	Fluoride	10/14/2011	43.1		Yes	Y				10.0	10.0	mg/L
RLSW-4-101011	A11J138-01	Fluoride	10/12/2011	102		Yes	Y				3.33	3.33	mg/L
RLSW-4-101011	A11J138-01	Chloride (total)	10/12/2011	7.66		Yes	Y				3.33	3.33	mg/L
RLSW-4-101011	A11J138-01	Sulfate	10/12/2011	27.1		Yes	Y				3.33	3.33	mg/L
RLSW-4-101011	A11J138-01	Fluoride	10/14/2011	96.8		Yes	Y				10.0	10.0	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-1-101011	A11J138-02	Cyanide, total	10/12/2011	0.782		Yes	Y	D	J	8	0.0250	0.0250	mg/L
RLSW-4-101011	A11J138-01	Cyanide, total	10/12/2011	0.122		Yes	Y		J	8	0.00500	0.00500	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-1-101011	A11J138-02	Alkalinity, total as calcium carbonate (CaCO3)	10/18/2011	1310		Yes	Y				20.0	20.0	mg/L
RLSW-1-101011	A11J138-02	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/18/2011	1290		Yes	Y				20.0	20.0	mg/L
RLSW-1-101011	A11J138-02	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/18/2011	20		Yes	N	U			20.0	20.0	mg/L
RLSW-1-101011	A11J138-02	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/18/2011	20		Yes	N	U			20.0	20.0	mg/L
RLSW-4-101011	A11J138-01	Alkalinity, total as calcium carbonate (CaCO3)	10/18/2011	1510		Yes	Y				20.0	20.0	mg/L
RLSW-4-101011	A11J138-01	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/18/2011	20		Yes	N	U			20.0	20.0	mg/L
RLSW-4-101011	A11J138-01	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/18/2011	20		Yes	N	U			20.0	20.0	mg/L
RLSW-4-101011	A11J138-01	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/18/2011	1510		Yes	Y				20.0	20.0	mg/L

Analytical Method SM2540C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-1-101011	A11J138-02	Total dissolved solids	10/13/2011	1610		Yes	Y				10.0	10.0	mg/L
RLSW-4-101011	A11J138-01	Total dissolved solids	10/13/2011	2060		Yes	Y				10.0	10.0	mg/L

Analytical Method SM2540D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-1-101011	A11J138-02	Total suspended solids	10/12/2011	48		Yes	Y				5.00	5.00	mg/L
RLSW-4-101011	A11J138-01	Total suspended solids	10/12/2011	32		Yes	Y				5.00	5.00	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-1-101011	A11J138-02	Cyanide, Weak acid dissociable (WAD)	10/18/2011	0.0097		Yes	Y				0.00500	0.00500	mg/L
RLSW-1-101011	A11J138-02	Cyanide, Weak acid dissociable (WAD)	10/20/2011	0.0188		Yes	Y				0.00500	0.00500	mg/L
RLSW-4-101011	A11J138-01	Cyanide, Weak acid dissociable (WAD)	10/18/2011	0.0158		Yes	Y				0.00500	0.00500	mg/L
RLSW-4-101011	A11J138-01	Cyanide, Weak acid dissociable (WAD)	10/20/2011	0.0198		Yes	Y				0.00500	0.00500	mg/L

Analytical Method SM4500P

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-1-101011	A11J138-02	Phosphorus	10/14/2011	6.2		Yes	Y	D			0.500	0.0500	mg/L
RLSW-4-101011	A11J138-01	Phosphorus	10/14/2011	10.5		Yes	Y	D			1.25	0.125	mg/L

Analytical Method SW9014

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-1-101011	A11J138-02	Cyanide, total	10/18/2011	0.155		Yes	Y	D			0.0200	0.0200	mg/L
RLSW-4-101011	A11J138-01	Cyanide, total	10/18/2011	0.123		Yes	Y				0.00500	0.00500	mg/L

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-2-101111	A11J154-02	Cyanide, free	10/12/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
RLSW-2-101111	A11J154-02	Cyanide, free	10/12/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
RLSW-3-101111	A11J154-01	Cyanide, free	10/12/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
RLSW-3-101111	A11J154-01	Cyanide, free	10/12/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-2-101111	A11J154-02	Silicon	10/20/2011	17.4		Yes	Y				0.500	0.100	mg/L
RLSW-3-101111	A11J154-01	Silicon	10/20/2011	26.1		Yes	Y				0.500	0.100	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-2-101111	A11J154-02	Calcium	10/26/2011	13.5		Yes	Y	D			0.500	0.250	mg/L
RLSW-2-101111	A11J154-02	Manganese	10/26/2011	0.347		Yes	Y	D			0.00500	0.00250	mg/L
RLSW-2-101111	A11J154-02	Iron	10/26/2011	0.236		Yes	Y	D J			0.500	0.125	mg/L
RLSW-2-101111	A11J154-02	Aluminum	10/26/2011	1.18		Yes	Y	D			0.250	0.125	mg/L
RLSW-2-101111	A11J154-02	Sodium	10/26/2011	452		Yes	Y	D			1.00	0.500	mg/L
RLSW-2-101111	A11J154-02	Magnesium	10/27/2011	6.97		Yes	Y	D			0.250	0.125	mg/L
RLSW-2-101111	A11J154-02	Potassium	10/27/2011	1.75		Yes	Y	D			0.500	0.250	mg/L
RLSW-3-101111	A11J154-01	Sodium	10/24/2011	315		Yes	Y	D			1.00	0.500	mg/L
RLSW-3-101111	A11J154-01	Calcium	10/25/2011	59.5		Yes	Y	D			0.200	0.100	mg/L
RLSW-3-101111	A11J154-01	Potassium	10/25/2011	3.42		Yes	Y	D			0.400	0.100	mg/L
RLSW-3-101111	A11J154-01	Manganese	10/25/2011	1.36		Yes	Y	D			0.00200	0.00100	mg/L
RLSW-3-101111	A11J154-01	Magnesium	10/25/2011	29.2		Yes	Y	D			0.100	0.0500	mg/L
RLSW-3-101111	A11J154-01	Aluminum	10/25/2011	0.176		Yes	Y	D			0.100	0.0500	mg/L
RLSW-3-101111	A11J154-01	Iron	10/25/2011	26.1		Yes	Y	D			0.250	0.250	mg/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-2-101111	A11J154-02	Chloride (total)	10/12/2011	6.44	Yes	Y				1.00	1.00	mg/L
RLSW-2-101111	A11J154-02RE1	Sulfate	10/14/2011	70.5	Yes	Y				10.0	10.0	mg/L
RLSW-2-101111	A11J154-02RE1	Fluoride	10/14/2011	81.3	Yes	Y				10.0	10.0	mg/L
RLSW-2-101111	A11J154-02RE1	Fluoride	10/19/2011	77	Yes	Y	D			10.0	10.0	mg/L
RLSW-3-101111	A11J154-01	Chloride (total)	10/12/2011	23.1	Yes	Y				1.00	1.00	mg/L
RLSW-3-101111	A11J154-01	Fluoride	10/12/2011	5.62	Yes	Y				1.00	1.00	mg/L
RLSW-3-101111	A11J154-01	Sulfate	10/12/2011	1	Yes	N	U			1.00	1.00	mg/L
RLSW-3-101111	A11J154-01RE1	Fluoride	10/19/2011	7.17	Yes	Y				1.00	1.00	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-2-101111	A11J154-02	Cyanide, total	10/20/2011	0.041	Yes	Y				0.00500	0.00500	mg/L
RLSW-3-101111	A11J154-01	Cyanide, total	10/20/2011	0.41	Yes	Y				0.00500	0.00500	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-2-101111	A11J154-02	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/18/2011	20	Yes	N	U			20.0	20.0	mg/L
RLSW-2-101111	A11J154-02	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/18/2011	910	Yes	Y				20.0	20.0	mg/L
RLSW-2-101111	A11J154-02	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/18/2011	20	Yes	N	U			20.0	20.0	mg/L
RLSW-2-101111	A11J154-02	Alkalinity, total as calcium carbonate (CaCO3)	10/18/2011	910	Yes	Y				20.0	20.0	mg/L
RLSW-3-101111	A11J154-01	Alkalinity, total as calcium carbonate (CaCO3)	10/18/2011	1160	Yes	Y				20.0	20.0	mg/L
RLSW-3-101111	A11J154-01	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/18/2011	1160	Yes	Y				20.0	20.0	mg/L
RLSW-3-101111	A11J154-01	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/18/2011	20	Yes	N	U			20.0	20.0	mg/L
RLSW-3-101111	A11J154-01	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/18/2011	20	Yes	N	U			20.0	20.0	mg/L

Analytical Method	SM2540C											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res**	**Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
RLSW-2-101111	A11J154-02	Total dissolved solids	10/13/2011	1300		Yes	Y				10.0	10.0	mg/L
RLSW-3-101111	A11J154-01	Total dissolved solids	10/13/2011	1260		Yes	Y				10.0	10.0	mg/L

Analytical Method	SM2540D											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res**	**Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
RLSW-2-101111	A11J154-02	Total suspended solids	10/12/2011	5		Yes	N	U			5.00	5.00	mg/L
RLSW-3-101111	A11J154-01	Total suspended solids	10/12/2011	46		Yes	Y				5.00	5.00	mg/L

Analytical Method	SM4500CNI											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res**	**Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
RLSW-2-101111	A11J154-02	Cyanide, Weak acid dissociable (WAD)	10/18/2011	0.0069		Yes	Y				0.00500	0.00500	mg/L
RLSW-2-101111	A11J154-02	Cyanide, Weak acid dissociable (WAD)	10/20/2011	0.0079		Yes	Y				0.00500	0.00500	mg/L
RLSW-3-101111	A11J154-01	Cyanide, Weak acid dissociable (WAD)	10/18/2011	0.0235		Yes	Y				0.00500	0.00500	mg/L
RLSW-3-101111	A11J154-01	Cyanide, Weak acid dissociable (WAD)	10/20/2011	0.0345		Yes	Y				0.00500	0.00500	mg/L

Analytical Method	SM4500P											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res**	**Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
RLSW-2-101111	A11J154-02	Phosphorus	10/14/2011	1.06		Yes	Y	D			0.500	0.0500	mg/L
RLSW-3-101111	A11J154-01	Phosphorus	10/14/2011	0.84		Yes	Y	D			0.500	0.0500	mg/L

Analytical Method	SW9014											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res**	**Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
RLSW-2-101111	A11J154-02	Cyanide, total	10/18/2011	0.0419		Yes	Y				0.00500	0.00500	mg/L
RLSW-3-101111	A11J154-01	Cyanide, total	10/18/2011	0.35		Yes	Y				0.00500	0.00500	mg/L

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-101111	A11J155-06	Cyanide, free	10/12/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
G1-D-101111	A11J155-06	Cyanide, free	10/12/2011	0.0025		Yes	Y	J	J	8	0.00500	0.00200	mg/L
G1-S-101111	A11J155-04	Cyanide, free	10/12/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
G1-S-101111	A11J155-04	Cyanide, free	10/12/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
G2-D-101111	A11J155-07	Cyanide, free	10/12/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
G2-D-101111	A11J155-07	Cyanide, free	10/12/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
G2-S-101111	A11J155-08	Cyanide, free	10/12/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
G2-S-101111	A11J155-08	Cyanide, free	10/12/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
G3-D-101111	A11J155-03	Cyanide, free	10/12/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
G3-D-101111	A11J155-03	Cyanide, free	10/12/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
G3-S-101111	A11J155-02	Cyanide, free	10/12/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
G3-S-101111	A11J155-02	Cyanide, free	10/12/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
G4-D-101111	A11J155-01	Cyanide, free	10/12/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
G4-D-101111	A11J155-01	Cyanide, free	10/12/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
G51-S-101111	A11J155-05	Cyanide, free	10/12/2011	0.005		Yes	N	U			0.00500	0.00200	mg/L
G51-S-101111	A11J155-05	Cyanide, free	10/12/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-101111	A11J155-06	Silicon	10/20/2011	34.2		Yes	Y				0.500	0.100	mg/L
G1-S-101111	A11J155-04	Silicon	10/20/2011	12.7		Yes	Y				0.500	0.100	mg/L
G2-D-101111	A11J155-07	Silicon	10/20/2011	28.2		Yes	Y				0.500	0.100	mg/L
G2-S-101111	A11J155-08	Silicon	10/20/2011	24.3		Yes	Y				0.500	0.100	mg/L
G3-D-101111	A11J155-03	Silicon	10/20/2011	23.8		Yes	Y				0.500	0.100	mg/L
G3-S-101111	A11J155-02	Silicon	10/20/2011	24.7		Yes	Y				0.500	0.100	mg/L
G4-D-101111	A11J155-01	Silicon	10/20/2011	29.5		Yes	Y				0.500	0.100	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G51-S-101111	A11J155-05	Silicon	10/20/2011	12.5		Yes	Y				0.500	0.100	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-101111	A11J155-06	Magnesium	10/24/2011	85.8		Yes	Y	D			0.250	0.125	mg/L
G1-D-101111	A11J155-06	Manganese	10/24/2011	5.24		Yes	Y	D			0.00500	0.00250	mg/L
G1-D-101111	A11J155-06	Potassium	10/24/2011	3.5		Yes	Y	D			1.00	0.250	mg/L
G1-D-101111	A11J155-06	Calcium	10/24/2011	170		Yes	Y	D			0.500	0.250	mg/L
G1-D-101111	A11J155-06	Iron	10/24/2011	221		Yes	Y	D			0.250	0.125	mg/L
G1-D-101111	A11J155-06	Sodium	10/24/2011	419		Yes	Y	D			2.00	1.00	mg/L
G1-D-101111	A11J155-06	Aluminum	10/25/2011	0.1		Yes	N	D U			0.100	0.0500	mg/L
G1-S-101111	A11J155-04	Iron	10/24/2011	2.69		Yes	Y	D			0.250	0.125	mg/L
G1-S-101111	A11J155-04	Manganese	10/24/2011	0.256		Yes	Y	D			0.00500	0.00250	mg/L
G1-S-101111	A11J155-04	Potassium	10/26/2011	20.2		Yes	Y	D			2.00	0.250	mg/L
G1-S-101111	A11J155-04	Sodium	10/26/2011	87.7		Yes	Y	D			0.500	0.250	mg/L
G1-S-101111	A11J155-04	Aluminum	10/26/2011	0.587		Yes	Y	D			0.250	0.125	mg/L
G1-S-101111	A11J155-04	Calcium	10/26/2011	46.5		Yes	Y	D			0.500	0.250	mg/L
G1-S-101111	A11J155-04	Magnesium	10/27/2011	23.5		Yes	Y	D			0.250	0.125	mg/L
G2-D-101111	A11J155-07	Magnesium	10/24/2011	35.6		Yes	Y	D			0.250	0.125	mg/L
G2-D-101111	A11J155-07	Potassium	10/24/2011	4.71		Yes	Y	D			1.00	0.250	mg/L
G2-D-101111	A11J155-07	Aluminum	10/24/2011	0.25		Yes	N	D U			0.250	0.125	mg/L
G2-D-101111	A11J155-07	Iron	10/24/2011	8.84		Yes	Y	D			0.250	0.125	mg/L
G2-D-101111	A11J155-07	Manganese	10/24/2011	1.1		Yes	Y	D			0.00500	0.00250	mg/L
G2-D-101111	A11J155-07	Calcium	10/24/2011	67.7		Yes	Y	D			0.500	0.250	mg/L
G2-D-101111	A11J155-07	Sodium	10/24/2011	867		Yes	Y	D			2.00	1.00	mg/L
G2-S-101111	A11J155-08	Manganese	10/24/2011	2.79		Yes	Y	D			0.00500	0.00250	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-S-101111	A11J155-08	Iron	10/24/2011	23.9		Yes	Y	D			0.250	0.125	mg/L
G2-S-101111	A11J155-08	Sodium	10/26/2011	830		Yes	Y	D			2.00	1.00	mg/L
G2-S-101111	A11J155-08	Aluminum	10/26/2011	0.25		Yes	N	D U			0.250	0.125	mg/L
G2-S-101111	A11J155-08	Potassium	10/26/2011	10		Yes	Y	D			2.00	0.250	mg/L
G2-S-101111	A11J155-08	Calcium	10/26/2011	78.2		Yes	Y	D			0.500	0.250	mg/L
G2-S-101111	A11J155-08	Magnesium	10/27/2011	56.7		Yes	Y	D			0.250	0.125	mg/L
G3-D-101111	A11J155-03	Calcium	10/24/2011	68.2		Yes	Y	D			0.500	0.250	mg/L
G3-D-101111	A11J155-03	Iron	10/24/2011	27		Yes	Y	D			0.250	0.125	mg/L
G3-D-101111	A11J155-03	Magnesium	10/24/2011	37.7		Yes	Y	D			0.250	0.125	mg/L
G3-D-101111	A11J155-03	Manganese	10/24/2011	2.12		Yes	Y	D			0.00500	0.00250	mg/L
G3-D-101111	A11J155-03	Potassium	10/24/2011	6.18		Yes	Y	D			1.00	0.250	mg/L
G3-D-101111	A11J155-03	Sodium	10/24/2011	135		Yes	Y	D			0.500	0.250	mg/L
G3-D-101111	A11J155-03	Aluminum	10/25/2011	0.05		Yes	N	U			0.0500	0.0250	mg/L
G3-S-101111	A11J155-02	Iron	10/24/2011	30.3		Yes	Y	D			0.250	0.125	mg/L
G3-S-101111	A11J155-02	Magnesium	10/24/2011	26.6		Yes	Y	D			0.250	0.125	mg/L
G3-S-101111	A11J155-02	Calcium	10/24/2011	42.3		Yes	Y	D			0.500	0.250	mg/L
G3-S-101111	A11J155-02	Potassium	10/24/2011	2.35		Yes	Y	D			1.00	0.250	mg/L
G3-S-101111	A11J155-02	Manganese	10/24/2011	2.7		Yes	Y	D			0.00500	0.00250	mg/L
G3-S-101111	A11J155-02	Sodium	10/24/2011	489		Yes	Y	D			2.00	1.00	mg/L
G3-S-101111	A11J155-02	Aluminum	10/25/2011	0.17		Yes	Y	D			0.100	0.0500	mg/L
G4-D-101111	A11J155-01	Calcium	10/24/2011	128		Yes	Y	D			0.500	0.250	mg/L
G4-D-101111	A11J155-01	Iron	10/24/2011	41.1		Yes	Y	D			0.250	0.125	mg/L
G4-D-101111	A11J155-01	Sodium	10/24/2011	50.1		Yes	Y	D			0.500	0.250	mg/L
G4-D-101111	A11J155-01	Manganese	10/24/2011	3.05		Yes	Y	D			0.00500	0.00250	mg/L
G4-D-101111	A11J155-01	Magnesium	10/24/2011	63.7		Yes	Y	D			0.250	0.125	mg/L

SDG: A11J155

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G4-D-101111	A11J155-01	Potassium	10/24/2011	4.68		Yes	Y	D			1.00	0.250	mg/L
G4-D-101111	A11J155-01	Aluminum	10/25/2011	0.05		Yes	N	U			0.0500	0.0250	mg/L
G51-S-101111	A11J155-05	Iron	10/24/2011	2.67		Yes	Y	D			0.250	0.125	mg/L
G51-S-101111	A11J155-05	Manganese	10/24/2011	0.257		Yes	Y	D			0.00500	0.00250	mg/L
G51-S-101111	A11J155-05	Aluminum	10/26/2011	0.601		Yes	Y	D			0.250	0.125	mg/L
G51-S-101111	A11J155-05	Potassium	10/26/2011	20.5		Yes	Y	D			2.00	0.250	mg/L
G51-S-101111	A11J155-05	Sodium	10/26/2011	89.3		Yes	Y	D			0.500	0.250	mg/L
G51-S-101111	A11J155-05	Calcium	10/26/2011	47.4		Yes	Y	D			0.500	0.250	mg/L
G51-S-101111	A11J155-05	Magnesium	10/27/2011	24.8		Yes	Y	D			0.250	0.125	mg/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-101111	A11J155-06	Chloride (total)	10/13/2011	525		Yes	Y				20.0	20.0	mg/L
G1-D-101111	A11J155-06	Sulfate	10/13/2011	20		Yes	N	U			20.0	20.0	mg/L
G1-S-101111	A11J155-04	Fluoride	10/12/2011	9.76		Yes	Y				1.00	1.00	mg/L
G1-S-101111	A11J155-04	Chloride (total)	10/12/2011	7.28		Yes	Y				1.00	1.00	mg/L
G1-S-101111	A11J155-04	Fluoride	10/19/2011	10.2		Yes	Y				1.00	1.00	mg/L
G1-S-101111	A11J155-04RE1	Sulfate	10/14/2011	151		Yes	Y				10.0	10.0	mg/L
G2-D-101111	A11J155-07	Sulfate	10/13/2011	110		Yes	Y				5.00	5.00	mg/L
G2-D-101111	A11J155-07	Chloride (total)	10/13/2011	147		Yes	Y				5.00	5.00	mg/L
G2-S-101111	A11J155-08	Fluoride	10/13/2011	22.6		Yes	Y				5.00	5.00	mg/L
G2-S-101111	A11J155-08	Chloride (total)	10/13/2011	91		Yes	Y				5.00	5.00	mg/L
G2-S-101111	A11J155-08	Sulfate	10/13/2011	5		No	N	U			5.00	5.00	mg/L
G2-S-101111	A11J155-08	Fluoride	10/19/2011	18.7		Yes	Y				10.0	10.0	mg/L
G2-S-101111	A11J155-08RE1	Sulfate	10/25/2011	1		Yes	N	U			1.00	1.00	mg/L
G3-D-101111	A11J155-03	Sulfate	10/12/2011	13.7		Yes	Y				1.00	1.00	mg/L

Analytical Method E300

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G3-D-101111	A11J155-03	Fluoride	10/12/2011	5.92		Yes	Y				1.00	1.00	mg/L
G3-D-101111	A11J155-03	Fluoride	10/19/2011	6.08		Yes	Y				1.00	1.00	mg/L
G3-D-101111	A11J155-03RE1	Chloride (total)	10/14/2011	49.2		Yes	Y				10.0	10.0	mg/L
G3-S-101111	A11J155-02	Sulfate	10/12/2011	1		Yes	N	U			1.00	1.00	mg/L
G3-S-101111	A11J155-02	Fluoride	10/19/2011	32.8		Yes	Y				10.0	10.0	mg/L
G3-S-101111	A11J155-02RE1	Chloride (total)	10/14/2011	70.5		Yes	Y				10.0	10.0	mg/L
G3-S-101111	A11J155-02RE1	Fluoride	10/14/2011	47.4		Yes	Y				10.0	10.0	mg/L
G4-D-101111	A11J155-01	Chloride (total)	10/12/2011	2.05		Yes	Y				1.00	1.00	mg/L
G4-D-101111	A11J155-01	Sulfate	10/12/2011	1		Yes	N	U			1.00	1.00	mg/L
G51-S-101111	A11J155-05	Sulfate	10/13/2011	157		Yes	Y				5.00	5.00	mg/L
G51-S-101111	A11J155-05	Fluoride	10/13/2011	9.7		Yes	Y				5.00	5.00	mg/L
G51-S-101111	A11J155-05	Chloride (total)	10/13/2011	8.34		Yes	Y				5.00	5.00	mg/L
G51-S-101111	A11J155-05	Fluoride	10/19/2011	10.3		Yes	Y				1.00	1.00	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-101111	A11J155-06	Cyanide, total	10/20/2011	0.0707		Yes	Y		J	8	0.00500	0.00500	mg/L
G1-S-101111	A11J155-04RE1	Cyanide, total	10/20/2011	0.01		Yes	N	D U	UJ	8	0.0100	0.0100	mg/L
G2-D-101111	A11J155-07	Cyanide, total	10/20/2011	0.325		Yes	Y		J	8	0.00500	0.00500	mg/L
G2-S-101111	A11J155-08	Cyanide, total	10/20/2011	0.276		Yes	Y		J	8	0.00500	0.00500	mg/L
G3-D-101111	A11J155-03	Cyanide, total	10/20/2011	0.0899		Yes	Y		J	8	0.00500	0.00500	mg/L
G3-S-101111	A11J155-02	Cyanide, total	10/20/2011	0.0758		Yes	Y		J	8	0.00500	0.00500	mg/L
G4-D-101111	A11J155-01	Cyanide, total	10/20/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00500	mg/L
G51-S-101111	A11J155-05	Cyanide, total	10/20/2011	0.005		Yes	N	U	UJ	8	0.00500	0.00500	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-101111	A11J155-06	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/18/2011	20		Yes	N	U			20.0	20.0	mg/L
G1-D-101111	A11J155-06	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/18/2011	1240		Yes	Y				20.0	20.0	mg/L
G1-D-101111	A11J155-06	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/18/2011	20		Yes	N	U			20.0	20.0	mg/L
G1-D-101111	A11J155-06	Alkalinity, total as calcium carbonate (CaCO3)	10/18/2011	1240		Yes	Y				20.0	20.0	mg/L
G1-S-101111	A11J155-04	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/18/2011	281		Yes	Y				20.0	20.0	mg/L
G1-S-101111	A11J155-04	Alkalinity, total as calcium carbonate (CaCO3)	10/18/2011	281		Yes	Y				20.0	20.0	mg/L
G1-S-101111	A11J155-04	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/18/2011	20		Yes	N	U			20.0	20.0	mg/L
G1-S-101111	A11J155-04	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/18/2011	20		Yes	N	U			20.0	20.0	mg/L
G2-D-101111	A11J155-07	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/18/2011	20		Yes	N	U			20.0	20.0	mg/L
G2-D-101111	A11J155-07	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/18/2011	1820		Yes	Y				20.0	20.0	mg/L
G2-D-101111	A11J155-07	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/18/2011	20		Yes	N	U			20.0	20.0	mg/L
G2-D-101111	A11J155-07	Alkalinity, total as calcium carbonate (CaCO3)	10/18/2011	1820		Yes	Y				20.0	20.0	mg/L
G2-S-101111	A11J155-08	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/18/2011	20		Yes	N	U			20.0	20.0	mg/L
G2-S-101111	A11J155-08	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/18/2011	1980		Yes	Y				20.0	20.0	mg/L
G2-S-101111	A11J155-08	Alkalinity, total as calcium carbonate (CaCO3)	10/18/2011	1980		Yes	Y				20.0	20.0	mg/L
G2-S-101111	A11J155-08	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/18/2011	20		Yes	N	U			20.0	20.0	mg/L
G3-D-101111	A11J155-03	Alkalinity, total as calcium carbonate (CaCO3)	10/18/2011	528		Yes	Y				20.0	20.0	mg/L
G3-D-101111	A11J155-03	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/18/2011	20		Yes	N	U			20.0	20.0	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G3-D-101111	A11J155-03	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/18/2011	528		Yes	Y				20.0	20.0	mg/L
G3-D-101111	A11J155-03	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/18/2011	20		Yes	N	U			20.0	20.0	mg/L
G3-S-101111	A11J155-02	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/18/2011	20		Yes	N	U			20.0	20.0	mg/L
G3-S-101111	A11J155-02	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/18/2011	1010		Yes	Y				20.0	20.0	mg/L
G3-S-101111	A11J155-02	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/18/2011	20		Yes	N	U			20.0	20.0	mg/L
G3-S-101111	A11J155-02	Alkalinity, total as calcium carbonate (CaCO3)	10/18/2011	1010		Yes	Y				20.0	20.0	mg/L
G4-D-101111	A11J155-01	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/18/2011	743		Yes	Y				20.0	20.0	mg/L
G4-D-101111	A11J155-01	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/18/2011	20		Yes	N	U			20.0	20.0	mg/L
G4-D-101111	A11J155-01	Alkalinity, total as calcium carbonate (CaCO3)	10/18/2011	743		Yes	Y				20.0	20.0	mg/L
G4-D-101111	A11J155-01	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/18/2011	20		Yes	N	U			20.0	20.0	mg/L
G51-S-101111	A11J155-05	Alkalinity, Carbonate as calcium cabonate (CaCO3)	10/18/2011	20		Yes	N	U			20.0	20.0	mg/L
G51-S-101111	A11J155-05	Alkalinity, Bicarbonate as calcium cabonate (CaCO3)	10/18/2011	240		Yes	Y				20.0	20.0	mg/L
G51-S-101111	A11J155-05	Alkalinity, Hydroxide as calcium cabonate (CaCO3)	10/18/2011	20		Yes	N	U			20.0	20.0	mg/L
G51-S-101111	A11J155-05	Alkalinity, total as calcium carbonate (CaCO3)	10/18/2011	240		Yes	Y				20.0	20.0	mg/L

Analytical Method SM2540C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-101111	A11J155-06	Total dissolved solids	10/14/2011	2310		Yes	Y				10.0	10.0	mg/L
G1-S-101111	A11J155-04	Total dissolved solids	10/14/2011	569		Yes	Y				10.0	10.0	mg/L
G2-D-101111	A11J155-07	Total dissolved solids	10/14/2011	2680		Yes	Y				20.0	20.0	mg/L
G2-S-101111	A11J155-08	Total dissolved solids	10/14/2011	2540		Yes	Y				10.0	10.0	mg/L

Analytical Method SM2540C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G3-D-101111	A11J155-03	Total dissolved solids	10/14/2011	698		Yes	Y				10.0	10.0	mg/L
G3-S-101111	A11J155-02	Total dissolved solids	10/14/2011	1490		Yes	Y				10.0	10.0	mg/L
G4-D-101111	A11J155-01	Total dissolved solids	10/14/2011	768		Yes	Y				10.0	10.0	mg/L
G51-S-101111	A11J155-05	Total dissolved solids	10/14/2011	559		Yes	Y				10.0	10.0	mg/L

Analytical Method SM2540D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-101111	A11J155-06	Total suspended solids	10/13/2011	149		Yes	Y				5.00	5.00	mg/L
G1-S-101111	A11J155-04	Total suspended solids	10/13/2011	5		Yes	N	U			5.00	5.00	mg/L
G2-D-101111	A11J155-07	Total suspended solids	10/13/2011	3830		Yes	Y				10.0	10.0	mg/L
G2-S-101111	A11J155-08	Total suspended solids	10/13/2011	13		Yes	Y				5.00	5.00	mg/L
G3-D-101111	A11J155-03	Total suspended solids	10/13/2011	73		Yes	Y				5.00	5.00	mg/L
G3-S-101111	A11J155-02	Total suspended solids	10/13/2011	5		Yes	N	U			5.00	5.00	mg/L
G4-D-101111	A11J155-01	Total suspended solids	10/13/2011	76		Yes	Y				5.00	5.00	mg/L
G51-S-101111	A11J155-05	Total suspended solids	10/13/2011	7		Yes	Y				5.00	5.00	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-101111	A11J155-06	Cyanide, Weak acid dissociable (WAD)	10/20/2011	0.0108		Yes	Y				0.00500	0.00500	mg/L
G1-D-101111	A11J155-06	Cyanide, Weak acid dissociable (WAD)	10/20/2011	0.0111		Yes	Y				0.00500	0.00500	mg/L
G1-S-101111	A11J155-04	Cyanide, Weak acid dissociable (WAD)	10/20/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
G1-S-101111	A11J155-04	Cyanide, Weak acid dissociable (WAD)	10/20/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
G2-D-101111	A11J155-07	Cyanide, Weak acid dissociable (WAD)	10/20/2011	0.0382		Yes	Y				0.00500	0.00500	mg/L
G2-D-101111	A11J155-07	Cyanide, Weak acid dissociable (WAD)	10/20/2011	0.0267		Yes	Y				0.00500	0.00500	mg/L
G2-S-101111	A11J155-08	Cyanide, Weak acid dissociable (WAD)	10/20/2011	0.037		Yes	Y				0.00500	0.00500	mg/L
G2-S-101111	A11J155-08	Cyanide, Weak acid dissociable (WAD)	10/20/2011	0.0274		Yes	Y				0.00500	0.00500	mg/L
G3-D-101111	A11J155-03	Cyanide, Weak acid dissociable (WAD)	10/20/2011	0.0141		Yes	Y				0.00500	0.00500	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G3-D-101111	A11J155-03	Cyanide, Weak acid dissociable (WAD)	10/20/2011	0.0114	Yes	Y				0.00500	0.00500	mg/L
G3-S-101111	A11J155-02	Cyanide, Weak acid dissociable (WAD)	10/18/2011	0.007	Yes	Y				0.00500	0.00500	mg/L
G3-S-101111	A11J155-02	Cyanide, Weak acid dissociable (WAD)	10/20/2011	0.0123	Yes	Y				0.00500	0.00500	mg/L
G4-D-101111	A11J155-01	Cyanide, Weak acid dissociable (WAD)	10/18/2011	0.005	Yes	N	U			0.00500	0.00500	mg/L
G4-D-101111	A11J155-01	Cyanide, Weak acid dissociable (WAD)	10/20/2011	0.005	Yes	N	U			0.00500	0.00500	mg/L
G51-S-101111	A11J155-05	Cyanide, Weak acid dissociable (WAD)	10/20/2011	0.005	Yes	N	U			0.00500	0.00500	mg/L
G51-S-101111	A11J155-05	Cyanide, Weak acid dissociable (WAD)	10/20/2011	0.005	Yes	N	U			0.00500	0.00500	mg/L

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-101111	A11J155-06	Fluoride	10/18/2011	0.67	Yes	Y				0.100	0.100	mg/L
G1-D-101111	A11J155-06	Fluoride	10/18/2011	0.66	Yes	Y				0.100	0.0200	mg/L
G2-D-101111	A11J155-07	Fluoride	10/18/2011	0.594	Yes	Y				0.100	0.100	mg/L
G2-D-101111	A11J155-07	Fluoride	10/18/2011	0.603	Yes	Y				0.100	0.0200	mg/L
G4-D-101111	A11J155-01	Fluoride	10/18/2011	0.287	Yes	Y				0.100	0.100	mg/L
G4-D-101111	A11J155-01	Fluoride	10/18/2011	0.291	Yes	Y				0.100	0.0200	mg/L

Analytical Method SM4500P

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-101111	A11J155-06	Phosphorus	10/14/2011	1.33	Yes	Y	D			0.500	0.0500	mg/L
G1-S-101111	A11J155-04	Phosphorus	10/14/2011	0.43	Yes	Y	D J			0.500	0.0500	mg/L
G2-D-101111	A11J155-07	Phosphorus	10/14/2011	4.82	Yes	Y	D			1.25	0.125	mg/L
G2-S-101111	A11J155-08	Phosphorus	10/17/2011	3.46	Yes	Y	D			0.500	0.0500	mg/L
G3-D-101111	A11J155-03	Phosphorus	10/14/2011	0.47	Yes	Y	D J			0.500	0.0500	mg/L
G3-S-101111	A11J155-02	Phosphorus	10/14/2011	3	Yes	Y	D			0.500	0.0500	mg/L
G4-D-101111	A11J155-01	Phosphorus	10/14/2011	0.31	Yes	Y	D J			0.500	0.0500	mg/L
G51-S-101111	A11J155-05	Phosphorus	10/14/2011	0.42	Yes	Y	D J			0.500	0.0500	mg/L

SDG: A11J155

Analytical Method SW9014

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-101111	A11J155-06RE1	Cyanide, total	10/18/2011	0.0704		Yes	Y				0.0100	0.0100	mg/L
G1-S-101111	A11J155-04	Cyanide, total	10/18/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
G2-D-101111	A11J155-07	Cyanide, total	10/18/2011	0.308		Yes	Y				0.00500	0.00500	mg/L
G2-S-101111	A11J155-08	Cyanide, total	10/18/2011	0.28		Yes	Y				0.00500	0.00500	mg/L
G3-D-101111	A11J155-03	Cyanide, total	10/18/2011	0.0838		Yes	Y				0.00500	0.00500	mg/L
G3-S-101111	A11J155-02	Cyanide, total	10/18/2011	0.0607		Yes	Y				0.00500	0.00500	mg/L
G4-D-101111	A11J155-01	Cyanide, total	10/18/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L
G51-S-101111	A11J155-05	Cyanide, total	10/18/2011	0.005		Yes	N	U			0.00500	0.00500	mg/L

Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

Anchor Environmental, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101
ATTN: Ms. Cindy Fields

February 15, 2012

SUBJECT: Millennium Bulk Terminals, Data Validation

Dear Ms. Fields,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on January 31, 2012. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 27058:

SDG #	Fraction
A11L010, A11L011	Polynuclear Aromatic Hydrocarbons, Polychlorinated Biphenyls, Fluoride & Total Cyanide, Diesel Range Organics & Residual Range Organics,

The data validation was performed under EPA Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Ming-Hwa Hwang
Project Manager/Senior Chemist

L:\Anchor\Millennium\27058COV.wpd

Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

Anchor Environmental, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101
ATTN: Ms. Cindy Fields

February 24, 2012

SUBJECT: Revised Millennium Bulk Terminals, Data Validation

Dear Ms. Fields,

Enclosed is the revised data validation report for the fraction listed below. Please replace the previously submitted report with the enclosed revised report.

LDC Project # 27058:

SDG #	**Fraction**
A11L010	Fluoride & Total Cyanide

Please feel free to contact us if you have any questions.

Sincerely,

Ming-Hwa Hwang
Project Manager/Senior Chemist

942 Pages-EX

Attachment 1

Level III EDD

LDC #27058 (Anchor Environmental-Seattle WA /Millennium Bulk Terminals)

LDC	SDG#	DATE REC'D	(3) DATE DUE	PAHs (8270D -SIM)		PCB (8082)		DRO (NWTPH -Dx)		F (4500-F)		CN (9013M /9014)																									
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	A11L010	01/31/12	02/22/12	0	1	0	1	0	2	0	1	0	1																								
B	A11L011	01/31/12	02/22/12	0	1	-	-	-	-	-	-	-	-																								
Total	A/MH			0	2	0	1	0	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS, MSD, or DUP's.

27058ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 27, 2011
LDC Report Date:	February 8, 2012
Matrix:	Sediment
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11L010

Sample Identification

AQ-SSA7-03-11-12
AQ-SSA7-03-11-12MS
AQ-SSA7-03-11-12DUP

Introduction

This data review covers 3 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A11L010

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A11L010

No Sample Data Qualified in this SDG

LDC #: 27058A2b

SDG #: A11L010

Laboratory: APEX laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 2/8/12

Page: 6 of 1

Reviewer:

2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/27/11
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates /DUP	A/A	MS only
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	AQ-SSA7-03-11-12	11	11/22/13	21		31	
2	AQ-SSA7-03-11-12MS	12		22		32	
3	~~AQ-SSA7-03-11-12MSD~~	13		23		33	
4	AQ-SSA7-03-11-12DUP	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 29058 Arb

VALIDATION FINDINGS WORKSHEET

Surrogate Recovery

Page: 1 of 1
Reviewer: FT
2nd Reviewer: ✓

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were percent recoveries (%R) for surrogates within QC limits?

Y N N/A If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?

Y N N/A If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

#	Date	Sample ID	Surrogate	%R (Limits)	Qualifications
		1	FBP	41 (45-120)	no qual
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

* QC limits are advisory	QC Limits (Soil)	QC Limits (Water)		QC Limits (Soil)	QC Limits (Water)
S1 (NBZ) = Nitrobenzene-d5	23-120	35-114	S5 (2FP)= 2-Fluorophenol	25-121	21-100
S2 (FBP) = 2-Fluorobiphenyl	30-115	43-116	S6 (TBP) = 2,4,6-Tribromophenol	19-122	10-123
S3 (TPH) = Terphenyl-d14	18-137	33-141	S7 (2CP) = 2-Chlorophenol-d4	20-130*	33-110*
S4 (PHL) = Phenol-d5	24-113	10-94	S8 (DCB) = 1,2-Dichlorobenzene-d4	20-130*	16-110*

SUR.2S

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 27, 2011
LDC Report Date:	February 8, 2012
Matrix:	Sediment
Parameters:	Polychlorinated Biphenyls
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11L010

Sample Identification

AQ-SSA7-03-11-12
AQ-SSA7-03-11-12MS
AQ-SSA7-03-11-12DUP

Introduction

This data review covers 3 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Column	Surrogate	%R (Limits)	Compound	Flag	A or P
AQ-SSA7-03-11-12	Not specified	Tetrachloro-m-xylene Decachlorobiphenyl	35 (50-125) 35 (55-130)	All TCL compounds	J (all detects) UJ (all non-detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

Raw data were not reviewed for this SDG.

XIII. Compound Quantitation and Reported CRQLs

Raw data were not reviewed for this SDG.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to surrogate %R problems, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Level III data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XV. Field Duplicates

No field duplicates were identified in this SDG.

XVI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polychlorinated Biphenyls - Data Qualification Summary - SDG A11L010

SDG	Sample	Compound	Flag	A or P	Reason
A11L010	AQ-SSA7-03-11-12	All TCL compounds	J (all detects) UJ (all non-detects)	P	Surrogate spikes (%R)

Millennium Bulk Terminals
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG A11L010

No Sample Data Qualified in this SDG

LDC #: 27058A3b

SDG #: A11L010

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 2/8/12

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/27/11
II.	GC/ECD Instrument Performance Check	NA	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates / DUP	A/A	MS only
VIII.	Laboratory control samples	A	LCS
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	N	
XIII.	Compound quantitation/RL/LOQ/LODs	N	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: sediments

1	AQ-SSA7-03-11-12	11	11/22/11	21		31	
2	AQ-SSA7-03-11-12MS	12		22		32	
3	~~AQ-SSA7-03-11-12MSD~~	13		23		33	
4	#1 DUP	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 27058A3h

VALIDATION FINDINDS WORKSHEET
Surrogate Recovery

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: ✓ GC ___ HPLC

Are surrogates required by the method? Yes___ or No___.

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were surrogates spiked into all samples and blanks?

Y N N/A Did all surrogate recoveries (%R) meet the QC limits?

#	Sample ID	Detector/ Column	Surrogate Compound	%R (Limits)	Qualifications
	1	NS	Y	35 (50-125)	J/UJ/P
			θ	35 (55-130)	↓
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound		
A	Chlorobenzene (CBZ)	G	Octacosane	M	Benzo(e)Pyrene	S	1-Chloro-3-Nitrobenzene	Y	Tetrachloro-m- xylene
B	4-Bromofluorobenzene (BFB)	H	Ortho-Terphenyl	N	Terphenyl-D14	T	3,4-Dinitrotoluene		
C	a,a,a-Trifluorotoluene	I	Fluorobenzene (FBZ)	O	Decachlorobiphenyl (DCB)	U	Tripentyltin		
D	Bromochlorobenene	J	n-Triacontane	P	1-methylnaphthalene	V	Tri-n-propyltin		
E	1,4-Dichlorobutane	K	Hexacosane	Q	Dichlorophenyl Acetic Acid (DCAA)	W	Tributyl Phosphate		
F	1,4-Difluorobenzene (DFB)	L	Bromobenzene	R	4-Nitrophenol	X	Triphenyl Phosphate		

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 27, 2011
LDC Report Date:	February 24, 2012
Matrix:	Sediment
Parameters:	Fluoride & Total Cyanide
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11L010

Sample Identification

AQ-SSA7-03-11-12
AQ-SSA7-03-11-12MS
AQ-SSA7-03-11-12MSD
AQ-SSA7-03-11-12DUP

Introduction

This data review covers 4 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 4500-F-C for Fluoride and EPA SW 846 Methods 9013M and 9014 for Total Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

*I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
AQ-SSA7-03-11-12 AQ-SSA7-03-11-12DUP	Fluoride	49 days	28 days	J (all detects) UJ (all non-detects)	P
AQ-SSA7-03-11-12 AQ-SSA7-03-11-12MS AQ-SSA7-03-11-12MSD AQ-SSA7-03-11-12DUP	Cyanide	48 days	14 days	J (all detects) R (all non-detects)	P

*Added holding time exceedance table.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

Due to severe problems with holding time, cyanide non-detected result was rejected in one sample.

Due to holding time problems, fluoride detected result was qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be rejected (R) are unusable for all purposes. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Level III data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

***Millennium Bulk Terminals**
Fluoride & Total Cyanide - Data Qualification Summary - SDG A11L010

SDG	Sample	Analyte	Flag	A or P	Reason
A11L010	AQ-SSA7-03-11-12	Fluoride	J (all detects) UJ (all non-detects)	P	Technical holding time
A11L010	AQ-SSA7-03-11-12	Cyanide	J (all detects) R (all non-detects)	P	Technical holding time

Millennium Bulk Terminals
Fluoride & Total Cyanide - Laboratory Blank Data Qualification Summary - SDG A11L010

No Sample Data Qualified in this SDG

*Indicates change as the result of report review. SDG A11L010
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LDC #: 27058A6
SDG #: A11L010
Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 1/7/12
Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: Fluoride (SM4500-F-C),Total Cyanide (EPA SW846 Method 9013M/9014)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW A	Sampling dates: 10/27/11
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	A	3 MS/MSD/Dup
VI.	Duplicates	A	
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Sediment

1	AQ-SSA7-03-11-12	11	MB	21		31	
2	AQ-SSA7-03-11-12MS	12		22		32	
3	AQ-SSA7-03-11-12MSD	13		23		33	
4	AQ-SSA7-03-11-12DUP	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: Y1058A6
SDG #: —

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Reviewer: [illegible]
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter
1	Soil	pH TDS Cl (F) NO_3 NO_2 SO_4 O-PO_4 ALK (CN-) NH_3 TOC CR^{6+} ClO_4 TSS T Settleable solids
		pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 ALK CN- NH_3 TOC CR^{6+} ClO_4 TSS T Settleable solids
4	Soil	pH TDS Cl (F) NO_3 NO_2 SO_4 O-PO_4 ALK CN- NH_3 TOC CR^{6+} ClO_4 TSS T Settleable solids
5-4	↓	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 ALK (CN-) NH_3 TOC CR^{6+} ClO_4 TSS T Settleable solids
		pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 ALK CN- NH_3 TOC CR^{6+} ClO_4 TSS T Settleable solids
		pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 ALK CN- NH_3 TOC CR^{6+} ClO_4 TSS T Settleable solids
		pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 ALK CN- NH_3 TOC CR^{6+} ClO_4 TSS T Settleable solids
		pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 ALK CN- NH_3 TOC CR^{6+} ClO_4 TSS T Settleable solids
		Asbestos Bioassay BOD Rsdidual Chlorine 4-CBSA O+G Phenols S Surfactants TRPH
		Asbestos Bioassay BOD Rsdidual Chlorine 4-CBSA O+G Phenols S Surfactants TRPH
		Asbestos Bioassay BOD Rsdidual Chlorine 4-CBSA O+G Phenols S Surfactants TRPH
		Asbestos Bioassay BOD Rsdidual Chlorine 4-CBSA O+G Phenols S Surfactants TRPH
		Asbestos Bioassay BOD Rsdidual Chlorine 4-CBSA O+G Phenols S Surfactants TRPH
		Asbestos Bioassay BOD Rsdidual Chlorine 4-CBSA O+G Phenols S Surfactants TRPH
		Asbestos Bioassay BOD Rsdidual Chlorine 4-CBSA O+G Phenols S Surfactants TRPH
		Asbestos Bioassay BOD Rsdidual Chlorine 4-CBSA O+G Phenols S Surfactants TRPH
		Conductivity P T Nitrogen Turb TKN H2S
		Conductivity P T Nitrogen Turb TKN H2S
		Conductivity P T Nitrogen Turb TKN H2S
		Conductivity P T Nitrogen Turb TKN H2S
		Conductivity P T Nitrogen Turb TKN H2S
		Conductivity P T Nitrogen Turb TKN H2S
		Conductivity P T Nitrogen Turb TKN H2S
		Conductivity P T Nitrogen Turb TKN H2S

Comments:

LDC #: M058A6

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Reviewer: [illegible]
2nd reviewer: [illegible]

All circled dates have exceeded the technical holding time.
Y N N/A Were all samples preserved as applicable to each method ?
Y N N/A Were all cooler temperatures within validation criteria?

Method:	SM4500-F-C		9013/9014			
Parameters:	F		CN			
Technical holding time:	28 days		14 days			

Sample ID	Sampling date	Analysis date	Analysis date	Analysis date	Analysis date	Analysis date	Qualifier
1, 4	10/19/11	12/15/11	(49 days)				U/UJ/P
4, All	10/19/11			12/14/11	(48 days)		U/P/P

Millennium Bulk Terminals - LDC 27058

SDG: A11L010

Analytical Method	APEXsolids												
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA7-03-11-12	A11L010-01	Total solids	12/13/2011	81.3		Yes	Y				1.00	1.00	pct
AQ-SSA7-05-2-3	A11L010-02	Total solids	12/13/2011	76		Yes	Y				1.00	1.00	pct
AQ-SSA7-05-6-7	A11L010-03	Total solids	12/13/2011	87.3		Yes	Y				1.00	1.00	pct

Analytical Method	E335.4												
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA7-03-11-12	A11L010-01	Cyanide, total	12/14/2011	306		Yes	N	U	R	1	306	153	ug/kg

Analytical Method	NWTPHDx												
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA7-05-2-3	A11L010-02	Diesel Range Hydrocarbons	12/13/2011	111		Yes	Y				25.0	12.1	mg/kg
AQ-SSA7-05-2-3	A11L010-02	Residual Range Hydrocarbons	12/13/2011	270		Yes	Y				50.0	24.1	mg/kg
AQ-SSA7-05-6-7	A11L010-03	Diesel Range Hydrocarbons	12/13/2011	1180		Yes	Y				25.0	10.1	mg/kg
AQ-SSA7-05-6-7	A11L010-03	Residual Range Hydrocarbons	12/13/2011	276		Yes	Y				50.0	20.2	mg/kg

Analytical Method	SM4500FC												
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA7-03-11-12	A11L010-01	Fluoride	12/15/2011	170		Yes	Y		J	1	24.3	24.3	mg/kg

Analytical Method	SW8082A												
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA7-03-11-12	A11L010-01	Aroclor 1254	12/12/2011	11.4		Yes	N	U	UJ	13	11.4	5.72	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Aroclor 1221	12/12/2011	11.4		Yes	N	U	UJ	13	11.4	5.72	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Aroclor 1232	12/12/2011	11.4		Yes	N	U	UJ	13	11.4	5.72	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Aroclor 1248	12/12/2011	11.4		Yes	N	U	UJ	13	11.4	5.72	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Aroclor 1016	12/12/2011	11.4		Yes	N	U	UJ	13	11.4	5.72	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Aroclor 1242	12/12/2011	11.4		Yes	N	U	UJ	13	11.4	5.72	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Aroclor 1260	12/12/2011	11.4		Yes	N	U	UJ	13	11.4	5.72	ug/kg

SDG: A11L010

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA7-03-11-12	A11L010-01	Pyrene	12/13/2011	6.42	Yes	Y				3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Benzo(a)pyrene	12/13/2011	3.46	Yes	N	U			3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	2-Methylnaphthalene	12/13/2011	6.92	Yes	N	U			6.92	3.46	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Naphthalene	12/13/2011	6.92	Yes	N	U			6.92	3.46	ug/kg
AQ-SSA7-03-11-12	A11L010-01	1-Methylnaphthalene	12/13/2011	6.92	Yes	N	U			6.92	3.46	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Fluorene	12/13/2011	3.46	Yes	N	U			3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Phenanthrene	12/13/2011	3.17	Yes	Y	J			3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Acenaphthene	12/13/2011	3.46	Yes	N	U			3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Anthracene	12/13/2011	3.46	Yes	N	U			3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Dibenzo(a,h)anthracene	12/13/2011	3.46	Yes	N	U			3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Benzo(b,k)fluoranthene	12/13/2011	4.7	Yes	Y	J			6.92	3.46	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Chrysene	12/13/2011	3.37	Yes	Y	J			3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Acenaphthylene	12/13/2011	3.46	Yes	N	U			3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Fluoranthene	12/13/2011	7.3	Yes	Y				3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Indeno(1,2,3-c,d)pyrene	12/13/2011	2.3	Yes	Y	J			3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Benzo(g,h,i)perylene	12/13/2011	2.12	Yes	Y	J			3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Dibenzofuran	12/13/2011	3.46	Yes	N	U			3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Benzo(a)anthracene	12/13/2011	2.9	Yes	Y	J			3.46	1.73	ug/kg

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 27, 2011
LDC Report Date:	February 8, 2012
Matrix:	Sediment
Parameters:	Diesel Range Organics & Residual Range Organics
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11L010

Sample Identification

AQ-SSA7-05-2-3
AQ-SSA7-05-6-7

Introduction

This data review covers 2 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method NWTPH-DX for Diesel Range Organics and Residual Range Organics.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

XII. Field Duplicates

No field duplicates were identified in this SDG.

XIII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Diesel Range Organics & Residual Range Organics - Data Qualification Summary - SDG A11L010

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Diesel Range Organics & Residual Range Organics - Laboratory Blank Data Qualification Summary - SDG A11L010

No Sample Data Qualified in this SDG

LDC #: 27058A8

SDG #: A11L010

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 2/8/12

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: GC Diesel Range Organics & Residual Range Organics (NWTPH-Dx)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/27/11
II	Initial calibration	A	% RSD ≤20
III.	Calibration verification/ICV	A	ICV/CCV ≤20
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	client specified
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: sediments

1†	AQ-SSA7-05-2-3	11	1112230	21		31	
2†	AQ-SSA7-05-6-7	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

Millennium Bulk Terminals - LDC 27058

SDG: A11L010

Analytical Method	APEXsolids											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
AQ-SSA7-03-11-12	A11L010-01	Total solids	12/13/2011	81.3	Yes	Y				1.00	1.00	pct
AQ-SSA7-05-2-3	A11L010-02	Total solids	12/13/2011	76	Yes	Y				1.00	1.00	pct
AQ-SSA7-05-6-7	A11L010-03	Total solids	12/13/2011	87.3	Yes	Y				1.00	1.00	pct

Analytical Method	E335.4											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
AQ-SSA7-03-11-12	A11L010-01	Cyanide, total	12/14/2011	306	Yes	N	U			306	153	ug/kg

Analytical Method	NWTPHDx											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
AQ-SSA7-05-2-3	A11L010-02	Diesel Range Hydrocarbons	12/13/2011	111	Yes	Y				25.0	12.1	mg/kg
AQ-SSA7-05-2-3	A11L010-02	Residual Range Hydrocarbons	12/13/2011	270	Yes	Y				50.0	24.1	mg/kg
AQ-SSA7-05-6-7	A11L010-03	Diesel Range Hydrocarbons	12/13/2011	1180	Yes	Y				25.0	10.1	mg/kg
AQ-SSA7-05-6-7	A11L010-03	Residual Range Hydrocarbons	12/13/2011	276	Yes	Y				50.0	20.2	mg/kg

Analytical Method	SM4500FC											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
AQ-SSA7-03-11-12	A11L010-01	Fluoride	12/15/2011	170	Yes	Y				24.3	24.3	mg/kg

Analytical Method	SW8082A											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
AQ-SSA7-03-11-12	A11L010-01	Aroclor 1232	12/12/2011	11.4	Yes	N	U	UJ	13	11.4	5.72	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Aroclor 1242	12/12/2011	11.4	Yes	N	U	UJ	13	11.4	5.72	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Aroclor 1248	12/12/2011	11.4	Yes	N	U	UJ	13	11.4	5.72	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Aroclor 1221	12/12/2011	11.4	Yes	N	U	UJ	13	11.4	5.72	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Aroclor 1254	12/12/2011	11.4	Yes	N	U	UJ	13	11.4	5.72	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Aroclor 1260	12/12/2011	11.4	Yes	N	U	UJ	13	11.4	5.72	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Aroclor 1016	12/12/2011	11.4	Yes	N	U	UJ	13	11.4	5.72	ug/kg

SDG: A11L010

Analytical Method	SW8270DSIM											
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA7-03-11-12	A11L010-01	Acenaphthene	12/13/2011	3.46	Yes	N	U			3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Benzo(a)anthracene	12/13/2011	2.9	Yes	Y	J			3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Anthracene	12/13/2011	3.46	Yes	N	U			3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Pyrene	12/13/2011	6.42	Yes	Y				3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Dibenzofuran	12/13/2011	3.46	Yes	N	U			3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Benzo(g,h,i)perylene	12/13/2011	2.12	Yes	Y	J			3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Indeno(1,2,3-c,d)pyrene	12/13/2011	2.3	Yes	Y	J			3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Fluoranthene	12/13/2011	7.3	Yes	Y				3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Acenaphthylene	12/13/2011	3.46	Yes	N	U			3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Chrysene	12/13/2011	3.37	Yes	Y	J			3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Benzo(a)pyrene	12/13/2011	3.46	Yes	N	U			3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Phenanthrene	12/13/2011	3.17	Yes	Y	J			3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Fluorene	12/13/2011	3.46	Yes	N	U			3.46	1.73	ug/kg
AQ-SSA7-03-11-12	A11L010-01	1-Methylnaphthalene	12/13/2011	6.92	Yes	N	U			6.92	3.46	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Naphthalene	12/13/2011	6.92	Yes	N	U			6.92	3.46	ug/kg
AQ-SSA7-03-11-12	A11L010-01	2-Methylnaphthalene	12/13/2011	6.92	Yes	N	U			6.92	3.46	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Benzo(b,k)fluoranthene	12/13/2011	4.7	Yes	Y	J			6.92	3.46	ug/kg
AQ-SSA7-03-11-12	A11L010-01	Dibenzo(a,h)anthracene	12/13/2011	3.46	Yes	N	U			3.46	1.73	ug/kg

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	September 1, 2011
LDC Report Date:	February 8, 2012
Matrix:	Sediment
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	EPA Level III
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A11L011

Sample Identification

AQ-SSA4-05-3-4
AQ-SSA4-05-3-4MS
AQ-SSA4-05-3-4DUP

Introduction

This data review covers 3 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Level III data validation all results are considered valid and usable for all purposes.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A11L011

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A11L011

No Sample Data Qualified in this SDG

LDC #: 27058B2b
SDG #: A11L011
Laboratory: APEX laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 2/8/12
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/01/11
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates /DUP	A / A	MS only
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: ~~soil~~ Sediments

1	AQ-SSA4-05-3-4	11	11/2295	21		31	
2	AQ-SSA4-05-3-4MS	12		22		32	
3	~~AQ-SSA4-05-3-4MSD~~	13		23		33	
4	AQ-SSA4-05-3-4DUP	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

SDG: A11L011

Analytical Method	APEXsolids											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
AQ-SSA4-05-3-4	A11L011-01	Total solids	12/13/2011	68	Yes	Y				1.00	1.00	pct

Analytical Method	SW8270DSIM											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
AQ-SSA4-05-3-4	A11L011-01RE1	Dibenzo(a,h)anthracene	12/16/2011	4.52	Yes	N	U			4.52	2.26	ug/kg
AQ-SSA4-05-3-4	A11L011-01RE1	Benzo(a)anthracene	12/16/2011	2.98	Yes	Y	J			4.52	2.26	ug/kg
AQ-SSA4-05-3-4	A11L011-01RE1	Acenaphthene	12/16/2011	4.52	Yes	N	U			4.52	2.26	ug/kg
AQ-SSA4-05-3-4	A11L011-01RE1	Phenanthrene	12/16/2011	8.09	Yes	Y				4.52	2.26	ug/kg
AQ-SSA4-05-3-4	A11L011-01RE1	Fluorene	12/16/2011	4.52	Yes	N	U			4.52	2.26	ug/kg
AQ-SSA4-05-3-4	A11L011-01RE1	Benzo(a)pyrene	12/16/2011	2.84	Yes	Y	J			4.52	2.26	ug/kg
AQ-SSA4-05-3-4	A11L011-01RE1	Naphthalene	12/16/2011	17.4	Yes	Y				9.05	4.52	ug/kg
AQ-SSA4-05-3-4	A11L011-01RE1	Indeno(1,2,3-c,d)pyrene	12/16/2011	2.99	Yes	Y	J			4.52	2.26	ug/kg
AQ-SSA4-05-3-4	A11L011-01RE1	1-Methylnaphthalene	12/16/2011	9.05	Yes	N	U			9.05	4.52	ug/kg
AQ-SSA4-05-3-4	A11L011-01RE1	Chrysene	12/16/2011	6.14	Yes	Y				4.52	2.26	ug/kg
AQ-SSA4-05-3-4	A11L011-01RE1	Acenaphthylene	12/16/2011	4.52	Yes	N	U			4.52	2.26	ug/kg
AQ-SSA4-05-3-4	A11L011-01RE1	Benzo(k)fluoranthene	12/16/2011	4.52	Yes	N	U			4.52	2.26	ug/kg
AQ-SSA4-05-3-4	A11L011-01RE1	Benzo(b)fluoranthene	12/16/2011	5.41	Yes	Y				4.52	2.26	ug/kg
AQ-SSA4-05-3-4	A11L011-01RE1	2-Methylnaphthalene	12/16/2011	9.05	Yes	N	U			9.05	4.52	ug/kg
AQ-SSA4-05-3-4	A11L011-01RE1	Benzo(g,h,i)perylene	12/16/2011	3.05	Yes	Y	J			4.52	2.26	ug/kg
AQ-SSA4-05-3-4	A11L011-01RE1	Dibenzofuran	12/16/2011	4.52	Yes	N	U			4.52	2.26	ug/kg
AQ-SSA4-05-3-4	A11L011-01RE1	Pyrene	12/16/2011	6.08	Yes	Y				4.52	2.26	ug/kg
AQ-SSA4-05-3-4	A11L011-01RE1	Anthracene	12/16/2011	4.52	Yes	N	U			4.52	2.26	ug/kg
AQ-SSA4-05-3-4	A11L011-01RE1	Fluoranthene	12/16/2011	8.63	Yes	Y				4.52	2.26	ug/kg

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DATA VALIDATION REVIEW REPORT – USEPA LEVEL 3

Project:	Millennium Bulk Terminals – Longview, LLC
Project Number:	110730-02.01
Date:	December 19, 2011

This report summarizes the review of analytical results for 88 soil, 1 rinsate blank, and 7 water samples collected August 30 and 31; September 1 and 2; and October 12, 13, 27, and 28, 2011. The samples were collected by Anchor QEA, LLC, and submitted to Apex Labs (Apex) in Tigard, Oregon. The samples were analyzed for the following:

- Polycyclic aromatic hydrocarbons (PAHs) by U.S. Environmental Protection Agency (USEPA) method 8270D-SIM
- Diesel range organics (DRO) and residual range organics (RRO) by Northwest Total Petroleum Hydrocarbons – Diesel Range Extended (NWTPHDX)
- Total solids (TS) by American Standard Test Method (ASTM) D2216
- Free cyanide (CN) by ASTM D4282-02
- Weak acid dissociable (WAD) Cyanide by SM 4500-CN- E
- Total cyanide by SW9014
- Metals by USEPA methods 200.7 and 200.8
- Fluoride (F-) by Standard Method (SM) 4500-F-C
- Chloride, sulfide, and fluoride (Cl, SO_4, and F^-) by USEPA method 300
- Phosphorous (P) by SM4500P
- Alkalinity by SM 2320B
- Total dissolved solids (TDS) by SM 2540C
- Total suspended solids (TSS) by SM 2540D

Apex sample data group (SDG) numbers A11I008, A11I009, A11I050, A11I054, A11J175, A11J200, A11J405, and A11K011 were reviewed in this report. Samples reviewed in this report are presented in Table 1.

Table 1
Samples Reviewed

Sample ID	Lab ID	Matrix	Analyses Requested
AQ-SSA4-01-0-1	A11I050-46	Soil	PAHs, TS
AQ-SSA4-01-1-2	A11I050-47	Soil	PAHs, TS
AQ-SSA4-02-0-1	A11I050-41	Soil	PAHs, TS
AQ-SSA4-02-1-2	A11I050-42	Soil	PAHs, TS
AQ-SSA4-03-0-1	A11I050-36	Soil	PAHs, TS
AQ-SSA4-03-1-2	A11I050-37	Soil	PAHs, TS
AQ-SSA4-04-0-1	A11I050-26	Soil	PAHs, TS
AQ-SSA4-04-1-2	A11I050-27	Soil	PAHs, TS
AQ-SSA4-05-0-1	A11I050-01	Soil	PAHs, TS
AQ-SSA4-05-1-2	A11I050-02	Soil	PAHs, TS
AQ-SSA4-05-2-3	A11I050-03	Soil	PAHs, TS
AQ-SSA4-06-0-1	A11I050-31	Soil	PAHs, TS
AQ-SSA4-06-1-2	A11I050-32	Soil	PAHs, TS
AQ-SSA4-07-0-1	A11I050-21	Soil	PAHs, TS
AQ-SSA4-07-1-2	A11I050-22	Soil	PAHs, TS
AQ-SSA4-08-0-1	A11I050-06	Soil	PAHs, TS
AQ-SSA4-08-1-2	A11I050-07	Soil	PAHs, TS
AQ-SSA4-09-0-1	A11I050-51	Soil	PAHs, TS
AQ-SSA4-09-1-2	A11I050-52	Soil	PAHs, TS
AQ-SSA4-10-0-1	A11I050-16	Soil	PAHs, TS
AQ-SSA4-10-1-2	A11I050-17	Soil	PAHs, TS
AQ-SSA4-11-0-1	A11I050-11	Soil	PAHs, TS
AQ-SSA4-11-1-2	A11I050-12	Soil	PAHs, TS
AQ-SSA5-01-14-16	A11I008-14	Soil	PAHs, F^-, TS
AQ-SSA5-01-8-10	A11I008-13	Soil	PAHs, F^-, TS
AQ-SSA5-02-14-16	A11I008-17	Soil	PAHs, F^-, TS
AQ-SSA5-02-8-10	A11I008-16	Soil	PAHs, F^-, TS
AQ-SSA5-03-14-16	A11I008-11	Soil	PAHs, F^-, TS
AQ-SSA5-03-8-10	A11I008-10	Soil	PAHs, F^-, TS
AQ-SSA5-04-14-16	A11I008-05	Soil	PAHs, F^-, TS
AQ-SSA5-04-8-10	A11I008-04	Soil	PAHs, F^-, TS
AQ-SSA5-05-14-16	A11I008-08	Soil	PAHs, F^-, TS
AQ-SSA5-05-5-7	A11I008-07	Soil	PAHs, F^-, TS
AQ-SSA5-06-14-16	A11I008-02	Soil	PAHs, F^-, TS
AQ-SSA5-06-8-10	A11I008-01	Soil	PAHs, F^-, TS
AQ-SSA5-RB01-083111	A11I008-19	Water	PAHs
AQ-SSA5-RB01-083111	A11I008-19	Water	F^-

Sample ID	Lab ID	Matrix	Analyses Requested
AQ-SSA6-01-3-4	A11I009-20	Soil	DRO, RRO, TS
AQ-SSA6-01-7-8	A11I009-24	Soil	DRO, RRO, TS
AQ-SSA6-02-3-4	A11I009-08	Soil	DRO, RRO, TS
AQ-SSA6-02-4-5	A11I009-09	Soil	DRO, RRO, TS
AQ-SSA6-02-5-6	A11I009-10	Soil	DRO, RRO, TS
AQ-SSA6-03-3-4	A11I009-12	Soil	DRO, RRO, TS
AQ-SSA6-03-6-7	A11I009-15	Soil	DRO, RRO, TS
AQ-SSA6-04-1-2	A11I009-03	Soil	DRO, RRO, TS
AQ-SSA6-04-3-4	A11I009-04	Soil	DRO, RRO, TS
AQ-SSA6-05-1-2	A11I009-05	Soil	DRO, RRO, TS
AQ-SSA6-05-3-4	A11I009-06	Soil	DRO, RRO, TS
AQ-SSA6-05-7-8	A11I009-07	Soil	DRO, RRO, TS
AQ-SSA6-06-1-2	A11I009-01	Soil	DRO, RRO, TS
AQ-SSA6-06-3-4	A11I009-02	Soil	DRO, RRO, TS
AQ-SSA6-07-1-2	A11I009-26	Soil	DRO, RRO, TS
AQ-SSA6-07-5-6	A11I009-27	Soil	DRO, RRO, TS
AQ-SSA6-08-4-5	A11I009-29	Soil	DRO, RRO, TS
AQ-SSA6-08-7-8	A11I009-30	Soil	DRO, RRO, TS
AQ-SSA6-09-11-12	A11I054-03	Soil	DRO, RRO, TS
AQ-SSA6-09-13-14	A11I054-04	Soil	DRO, RRO, TS
AQ-SSA6-09-2-3	A11I054-01	Soil	DRO, RRO, TS
AQ-SSA6-09-4-5	A11I054-02	Soil	DRO, RRO, TS
AQ-SSA6-10-0-1	A11I054-05	Soil	DRO, RRO, TS
AQ-SSA6-10-1-2	A11I054-06	Soil	DRO, RRO, TS
AQ-SSA6-10-2-3	A11I054-07	Soil	DRO, RRO, TS
AQ-SSA6-11-2-3	A11I054-08	Soil	DRO, RRO, TS
AQ-SSA6-11-5-6	A11I054-09	Soil	DRO, RRO, TS
W1-101211	A11J175-06	Water	Alkalinity, Metals, Cl, CN (Free, Total, WAD), F^-, P, SO_4, TDS, TSS
W2-101211	A11J175-03	Water	Alkalinity, Metals, Cl, CN (Free, Total, WAD), F^-, P, SO_4, TDS, TSS
W3-101211	A11J175-02	Water	Alkalinity, Metals, Cl, CN (Free, Total, WAD), F^-, P, SO_4, TDS, TSS
W4-101211	A11J175-01	Water	Alkalinity, Metals, Cl, CN (Free, Total, WAD), F^-, P, SO_4, TDS, TSS
W5-101211	A11J175-07	Water	Alkalinity, Metals, Cl, CN (Free, Total, WAD), F^-, P, SO_4, TDS, TSS
W6-101211	A11J175-04	Water	Alkalinity, Metals, Cl, CN (Free, Total, WAD), F^-, P, SO_4, TDS, TSS

Sample ID	Lab ID	Matrix	Analyses Requested
W7-101211	A11J175-05	Water	Alkalinity, Metals, Cl, CN (Free, Total, WAD), F^-, P, SO_4, TDS, TSS
AQ-SSA3-01-2-3	A11J200-03	Soil	CN (Free and Total), F^-, TS
AQ-SSA3-02-2-3	A11J200-07	Soil	CN (Free and Total), F^-, TS
AQ-SSA3-03-2-3	A11J200-11	Soil	CN (Free and Total), F^-, TS
AQ-SSA3-04-2-3	A11J200-15	Soil	CN (Free and Total), F^-, TS
AQ-SSA3-05-2-3	A11J200-19	Soil	CN (Free and Total), F^-, TS
AQ-SSA3-06-2-3	A11J200-23	Soil	CN (Free and Total), F^-, TS
AQ-SSA3-07-2-3	A11J200-27	Soil	CN (Free and Total), F^-, TS
AQ-SSA3-08-2-3	A11J200-31	Soil	CN (Free and Total), F^-, TS
AQ-SSA7-01-3-4	A11J405-04	Soil	TS, SO_4, CN (Total), F^-, PCB Aroclors, PAHs
AQ-SSA7-02-3-4	A11J405-16	Soil	TS, SO_4, CN (Total), F^-, PCB Aroclors, PAHs
AQ-SSA7-03-4-5	A11J405-27	Soil	TS, SO_4, CN (Total), F^-, PCB Aroclors, PAHs
AQ-SSA7-04-1.5-2	A11J405-48	Soil	TS, SO_4, CN (Total), F^-, PCB Aroclors, PAHs
AQ-SSA7-04-8-9	A11J405-43	Soil	TS, SO_4, CN (Total), F^-, PCB Aroclors, PAHs
AQ-SSA7-05-0-1	A11J405-49	Soil	TS, SO_4, CN (Total), F^-, PCB Aroclors, PAHs
AQ-SSA7-05-12-13	A11J405-61	Soil	TS, SO_4, CN (Total), F^-, PCB Aroclors, PAHs
AQ-SSA7-05-2-3	A11J405-51	Soil	TS, SO_4, CN (Total), F^-, PCB Aroclors, PAHs
AQ-SSA7-05-6-7	A11J405-55	Soil	TS, SO_4, CN (Total), F^-, PCB Aroclors, PAHs
AQ-SSA7-06-0-1	A11J405-62	Soil	TS, SO_4, CN (Total), F^-, PCB Aroclors, PAHs
AQ-SSA7-06-4-5	A11J405-66	Soil	TS, SO_4, CN (Total), F^-, PCB Aroclors, PAHs
AQ-SSA7-06-8-9	A11J405-70	Soil	TS, SO_4, CN (Total), F^-, PCB Aroclors, PAHs
AQ-SSA7-07-0-1	A11K011-17	Soil	TS, SO_4, CN (Total), F^-, PCB Aroclors, PAHs
AQ-SSA7-07-3-4	A11K011-20	Soil	TS, SO_4, CN (Total), F^-, PCB Aroclors, PAHs
AQ-SSA7-07-6-7	A11K011-23	Soil	TS, SO_4, CN (Total), F^-, PCB Aroclors, PAHs
AQ-SSA7-08-3-4	A11K011-27	Soil	TS, SO_4, CN (Total), F^-, PCB Aroclors, PAHs
AQ-SSA7-09-3-4	A11K011-12	Soil	TS, SO_4, CN (Total), F^-, PCB Aroclors, PAHs
AQ-SSA7-10-3-4	A11K011-04	Soil	TS, SO_4, CN (Total), F^-, PCB Aroclors, PAHs

DATA VALIDATION AND QUALIFICATIONS

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QA/QC) guidelines outlined in the analytical procedures and data quality objective sections of the Sampling and Analysis Plan (SAP) and Quality Assurance Project Plan (QAPP). Laboratory results were reviewed using the following guidelines:

- *USEPA Contract Laboratory Program National Functional Guidelines for Inorganics Data Review* (USEPA 2004)

- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (USEPA 1999)
- *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (USEPA 2008)

The results were also reviewed by using laboratory and method QC criteria as stated in USEPA (1986; SW 846, Third Edition), *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998. Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

FIELD DOCUMENTATION

Field documentation was checked for completeness and accuracy. The chain-of-custody forms were signed by Apex at the time of sample receipt; the samples were received cold and in good condition.

HOLDING TIMES AND SAMPLE PRESERVATION AND ANALYTICAL METHODS

Samples were appropriately preserved and analyzed within holding times with the following exceptions:

- SDG A11I008 fluoride – Three samples were extracted out of the recommended hold time, and have been qualified "J" to indicate a potential low bias.
- SDG A11I050 PAHs – Sample AQ-SSA4-05-2-3 was extracted past the 14-day recommended hold time. The sample was stored frozen, however; therefore, the hold time was extended to one year, and the data were not qualified.
- SDG A11K011 PCBs – Two samples were extracted three days past the USEPA recommended hold time of 14 days. The latest update to SW-846 indicates that PCBs should not have any hold time, so the data were not qualified.

LABORATORY METHOD BLANKS AND CALIBRATION BLANKS

Laboratory method blanks were analyzed at the required frequencies with the exception of the fluoride analysis associated with the rinsate blank. No method blank was reported in association with this sample result. The result was below detection, however, so the result is

not expected to be impacted. All method blanks and calibration blanks were free of target analytes, with the following exceptions:

- SDG A11I008 fluoride – Fluoride was detected in the method blank associated with sample AQ-SSA5-RB01-083111. Fluoride was not detected in the sample, so no data were qualified.
- SDG A11J175 metals – Manganese was detected in a continuing calibration blank (CCB). One associated sample, W5-101211, had a concentration that was not significantly greater than (greater than 5 times) the level in the blank. This result has been qualified as a non-detect.
- SDG A11J175 fluoride – Fluoride was detected in the method blank and two CCBs at levels between the method detection limit (MDL) and the reporting limit (RL). All sample concentrations were significantly greater than (>5x) the level in the blank, so no data were qualified.

FIELD QUALITY CONTROL

Rinse Blanks

One rinse blank (AQ-SSA5-RB01-083111) was collected and analyzed for PAHs and fluoride. The results were below detection.

Field Duplicates

No field duplicates were collected in association with these sample sets.

INSTRUMENT PERFORMANCE CHECKS

Ion abundance criteria were met for gas chromatograph/mass spectrometer (GC/MS) methods. For inductively coupled plasma mass spectrometer (ICP-MS) analyses, the mass calibrations were within 0.1 atomic mass unit (AMU) and the percent relative standard deviation (%RSD) was less than or equal to 5%.

INITIAL CALIBRATIONS AND CALIBRATION VERIFICATIONS

All initial calibrations (ICAL), calibration verifications (CV), and response factors met method and validation criteria.

COMPOUND CONFIRMATION

Column confirmation of detected PCB results met method criteria.

INTERNAL STANDARD/SURROGATE RECOVERIES

All internal standard recoveries were within method control limits. All surrogate recoveries were within laboratory control limits, with the following exceptions:

- SDG A11I009 DRO/RRO – Surrogate percent recoveries (%Rs) were not reported for samples AQ-SSA6-01-3-4 and AQ-SSA6-01-7-8, due to sample dilution; no data were qualified.
- SDG A11I050 PAH –
  - The %R of p-terphenyl-d14 in sample AQ-SSA4-05-1-2 was above the control limit. Associated detected data were qualified with a "J" to indicate a potentially high bias.
  - The %R values for both surrogates in sample AQ-SSA4-05-0-1 were above the control limit due to sample dilution; no data were qualified.
- SDG A111054 DRO – The %R value for the surrogate in sample AQ-SSA6-10-2-3 was not reported due to sample dilution; no data were qualified.
- SDG A11J405 PCBs – The %R values for one of the surrogates in samples AQ-SSA7-04-1.5-2 and AQ-SSA7-05-0-1 were below the laboratory control limit. Since the other surrogate %Rs are within the control limits, no data was qualified.

See Table 2 for qualified results.

LABORATORY CONTROL SAMPLE AND LABORATORY CONTROL SAMPLE DUPLICATE

Laboratory control samples (LCSs) and laboratory control sample duplicates (LCSDs) were analyzed at the required frequencies with the exception of the fluoride analysis associated with the rinsate blank. No LCS was reported in association with this sample. All LCS/LCSD analyses yielded %Rs or relative percent difference (RPD) values within laboratory control limits.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE

Matrix spike (MS) and matrix spike duplicate (MSD) samples were analyzed at the required frequencies. All MS/MSD %R or RPD values were within laboratory control limits, with the following exceptions:

- SDG A11J175 phosphorous – The %R value for the MS performed on a project sample from a groundwater SDG was below the control limit. All samples in SDG A11J175 are surface waters, so no data were qualified.
- A11J175 total cyanide – One of the reported MS results recovered was below the control limit; however, the sample concentration was significantly greater than (greater than 4 times) the spike concentration, so no data were qualified.
- A11J175 metals – One of the reported MS results recovered below the control limit for sodium, however, the sample concentration was significantly greater than (greater than 4 times) the spike concentration, so no data were qualified.
- SDG A11J200 fluoride – The %R value for the MS performed on sample AQ-SSA3-02-2-3 was below the control limit, and less than 10%. All associated samples were qualified "J" to indicate a potential low bias.
- SDG A11K011 PCBs – The %R value for Aroclor 1016 in the MS performed on sample AQ-SSA7-08-3-4 was below the project control limit for organic compounds. Associated compounds in the parent sample have been qualified "UJ" to indicate a potential low bias. The %R value for Aroclor 1260 was below the laboratory control limit, but within the project control limit, so no associated compound data were qualified.

See Table 2 for qualified results.

STANDARD REFERENCE MATERIAL

Standard reference materials (SRMs) were analyzed in lieu of LCSs for some analyses and resulted in recoveries within specified limits.

LABORATORY DUPLICATES

Laboratory duplicates were analyzed at the required frequencies. All duplicate RPD values were within laboratory control limits, with the following exceptions:

- SDG A11I009 DRO – The duplicate RPD value for DRO in sample AQ-SSA6-02-5-6 was above the control limit. The sample result has been qualified with a "J" to indicate the result is estimated.
- SDG A11I1050 PAHs – The duplicate RPD value for phenanthrene in sample AQ-SSA4-06-0-1 was above the control limit. However, both the sample and the duplicate result were less than 5 times the method reporting limit (MRL) and the difference between them was less than 2 times the MRL, so the result was not qualified. The duplicate RPD values for several compounds in sample AQ-SSA4-05-2-3 were above the control limit. The parent sample results have been qualified "J" to indicate that they are estimated.
- SDG A11J405 PAHs – The duplicate RPD values for several compounds in sample AQ-SSA7-05-2-3 were above the control limit. The parent sample results have been qualified "J" to indicate that they are estimated.
- SDG A11J405 CN – The duplicate RPD value for total cyanide in sample AQ-SSA7-01-3-4 was above the control limit. The sample and duplicate values were within 5 times the RL, but the difference between the two values was greater than 2 times the RL. Another duplicate performed on a different sample, with a higher concentration, had an RPD value in control. All sample results with concentrations less than 5 times the RL have been flagged with "J" or "UJ" to indicate that they are estimated.

See Table 2 for qualified results.

METHOD REPORTING LIMITS

Reporting limits were deemed acceptable as reported. All values were reported using the laboratory reporting limits. Values were reported as undiluted, or when reported as diluted, the reporting limit accurately reflects the dilution factor.

SAMPLE RESULTS

Due to poor peak separation for benzo(b) and benzo(k)fluoranthenes, results for some samples include the combined area of the two isomers and are reported as the total of benzo(b+k)fluoranthenes. Several PCB Aroclors were flagged by the laboratory as estimated. These have been qualified "J" to indicate that they are estimated. Because there were no LCS

or MS reported for fluoride in association with the rinsate blank analysis, the result cannot be evaluated for accuracy and so has been qualified "UJ" to indicate that it is estimated.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical methods and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the surrogate, SRM, LCS/LCSD, and MS/MSD %R values, with the exceptions noted above. Precision was also acceptable as demonstrated by the field and laboratory duplicates, MS/MSD, and LCS/LCSD RPD values. Most data were deemed acceptable as reported; all other data are acceptable as qualified. Table 2 summarizes the qualifiers applied to samples reviewed in this report.

DATA QUALIFIER DEFINITIONS

U Indicates that the compound or analyte was analyzed for, but not detected at or above the specified limit

J Indicates an estimated value

R Indicates data is rejected and unusable

UJ Indicates that the compound or analyte was analyzed for, but not detected, and the specified limit reported is estimated

Table 2
Data Qualification Summary

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
AQ-SSA3-01-2-3	Conventionals	Fluoride	396 mg/kg	396J mg/kg	Low MS %R
AQ-SSA3-02-2-3	Conventionals	Fluoride	302 mg/kg	302J mg/kg	
AQ-SSA3-03-2-3	Conventionals	Fluoride	388 mg/kg	388J mg/kg	
AQ-SSA3-04-2-3	Conventionals	Fluoride	864 mg/kg	864J mg/kg	
AQ-SSA3-05-2-3	Conventionals	Fluoride	442 mg/kg	442J mg/kg	
AQ-SSA3-06-2-3	Conventionals	Fluoride	301 mg/kg	301J mg/kg	

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
AQ-SSA3-07-2-3	Conventionals	Fluoride	690 mg/kg	690J mg/kg	
AQ-SSA3-08-2-3	Conventionals	Fluoride	497 mg/kg	497J mg/kg	
AQ-SSA4-05-2-3	PAHs	Acenaphthene	0.0713 mg/kg	0.0713J mg/kg	High duplicate RPD
		Anthracene	0.142 mg/kg	0.142J mg/kg	
		Benzo(a)anthracene	0.173 mg/kg	0.173J mg/kg	
		Benzo(a)pyrene	0.143 mg/kg	0.143J mg/kg	
		Benzo(b+k)fluoranthene	0.265 mg/kg	0.265J mg/kg	
		Benzo(g,h,i)perylene	0.113 mg/kg	0.113J mg/kg	
		Chrysene	0.173 mg/kg	0.173J mg/kg	
		Dibenzo(a,h)anthracene	0.0252 mg/kg	0.0252J mg/kg	
		Dibenzofuran	0.046 mg/kg	0.046J mg/kg	
		Fluoranthene	0.476 mg/kg	0.476J mg/kg	
		Indeno(1,2,3-c,d)pyrene	0.105 mg/kg	0.105J mg/kg	
		Naphthalene	0.087 mg/kg	0.087J mg/kg	
		Phenanthrene	0.495 mg/kg	0.495J mg/kg	
		Pyrene	0.365 mg/kg	0.365J mg/kg	
AQ-SSA5-01-14-16	Conventionals	Fluoride	298 mg/kg	298J mg/kg	Extracted past hold time
AQ-SSA5-02-14-16	Conventionals	Fluoride	176 mg/kg	176J mg/kg	
AQ-SSA5-02-8-10	Conventionals	Fluoride	190 mg/kg	190J mg/kg	
AQ-SSA5-RB01-083111	Conventionals	Fluoride	0.100U mg/L	0.100UJ mg/L	No accuracy QC reported
AQ-SSA6-02-5-6	TPH	DRO	64.4 mg/kg	64.4J mg/kg	High duplicate RPD
AQ-SSA7-01-3-4	Conventionals	Total cyanide	0.994 mg/kg	0.994J mg/kg	High duplicate RPD
AQ-SSA7-02-3-4	Conventionals	Total cyanide	0.287 mg/kg	0.287J mg/kg	High duplicate RPD
AQ-SSA7-04-8-9	Conventionals	Total cyanide	0.307 mg/kg	0.307UJ mg/kg	High duplicate RPD
AQ-SSA4-05-1-2	PAHs	1-Methylnaphthalene	0.0638D U mg/kg	0.0638UJ mg/kg	High surrogate %R
		2-Methylnaphthalene	0.0638D U mg/kg	0.0638UJ mg/kg	
		Acenaphthene	0.0319D U mg/kg	0.0319UJ mg/kg	

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
AQ-SSA7-04-1.5-2	PCBs	Acenaphthylene	0.0319D U mg/kg	0.0319UJ mg/kg	
		Anthracene	0.0284D J mg/kg	0.0284J mg/kg	
		Benzo(a)anthracene	1.45D mg/kg	1.45J mg/kg	
AQ-SSA7-05-0-1	PCBs	Benzo(a)pyrene	2D mg/kg	2J mg/kg	
		Benzo(b,k)fluoranthene	7.39D mg/kg	7.39J mg/kg	
		Benzo(g,h,i)perylene	4.27D mg/kg	4.27J mg/kg	
AQ-SSA7-05-2-3 AQ-SSA7-03-4-5	PCBs	Chrysene	7.23D mg/kg	7.23J mg/kg	
		Dibenzo(a,h)anthracene	0.738D mg/kg	0.738J mg/kg	
		Dibenzofuran	0.0319D U mg/kg	0.0319UJ mg/kg	
	PAHs PCBs	Fluoranthene	0.688D mg/kg	0.688J mg/kg	High duplicate RPD Estimated due to presence of multiple Aroclors
		Fluorene	0.0319D U mg/kg	0.0319UJ mg/kg	
		Indeno(1,2,3-c,d)pyrene	3.09D mg/kg	3.09J mg/kg	
		Naphthalene	0.0638D U mg/kg	0.0638UJ mg/kg	
		Phenanthrene	0.0518D	0.0518J	
			mg/kg	mg/kg	
		Pyrene	0.796D mg/kg	0.796J mg/kg	
		Aroclor 1248	1.61D mg/kg	1.61J mg/kg	
		Aroclor 1254	0.359D mg/kg	0.359J mg/kg	
		Aroclor 1268	0.106D mg/kg	0.106J mg/kg	
AQ-SSA7-04-1.5-2 AQ-SSA7-05-0-1	PCBs	Aroclor 1248	0.0198 mg/kg	0.0198J mg/kg	
		Aroclor 1260	0.0394 mg/kg	0.0394J mg/kg	
		Aroclor 1268	0.0307 mg/kg	0.0307J mg/kg	
	PCBs	Aroclor 1248	0.0227 mg/kg	0.0227J mg/kg	Estimated due to matrix interference
AQ-SSA7-05-2-3	PCBs	Aroclor 1260	0.0576 mg/kg	0.0576J mg/kg	High duplicate RPD
		Aroclor 1268	0.0335 mg/kg	0.0335J mg/kg	
		Aroclor 1248	0.492 mg/kg	0.492J mg/kg	
AQ-SSA7-06-4-5	PCBs PAHs	Aroclor 1260	0.128 mg/kg	0.128J mg/kg	
		Aroclor 1268	0.201 mg/kg	0.201J mg/kg	
		Anthracene	596D ug/kg	596J ug/kg	
AQ-SSA7-06-8-9	PCBs	Benzo(a)pyrene	8640D ug/kg	8640J ug/kg	
		Benzo(b,k)fluoranthene	19000D ug/kg	19000J ug/kg	
		Benzo(g,h,i)perylene	16300D ug/kg	16300J ug/kg	

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
AQ-SSA7-05-6-7	PCBs	Dibenzo(a,h)anthracene	2490D ug/kg	2490J ug/kg	
		Dibenzofuran	143D ug/kg	143J ug/kg	
		Fluoranthene	6890D ug/kg	6890J ug/kg	
		Fluorene	96.7D ug/kg	96.7J ug/kg	Low MS %R Estimated due to presence of multiple Aroclors
		Indeno(1,2,3-c,d)pyrene	9790D ug/kg	9790J ug/kg	
		Phenanthrene	2250D ug/kg	2250J ug/kg	
		Aroclor 1248	0.168 mg/kg	0.168J mg/kg	
AQ-SSA7-06-0-1	PAHs PCBs	Aroclor 1260	0.066 mg/kg	0.066J mg/kg	
		Aroclor 1268	0.0624 mg/kg	0.0624J mg/kg	
		Naphthalene	376D ug/kg	376J ug/kg	Estimated due to matrix interference Estimated due to presence of multiple Aroclors
		Aroclor 1254	0.0517 mg/kg	0.0517J mg/kg	
		Aroclor 1260	0.0706 mg/kg	0.0706J mg/kg	
		Aroclor 1268	0.0721 mg/kg	0.0721J mg/kg	
AQ-SSA7-06-4-5 AQ-SSA7-06-8-9	PCBs PCBs	Aroclor 1248	0.0549 mg/kg	0.0549J mg/kg	
		Aroclor 1260	0.0409 mg/kg	0.0409J mg/kg	
		Aroclor 1268	0.0427 mg/kg	0.0427J mg/kg	
		Aroclor 1254	0.0645 mg/kg	0.0645J mg/kg	
AQ-SSA7-07-0-1	PCBs	Aroclor 1260	0.0655 mg/kg	0.0655J mg/kg	Estimated due to presence of multiple Aroclors
		Aroclor 1268	0.0867 mg/kg	0.0867J mg/kg	
		Aroclor 1248	0.152 mg/kg	0.152J mg/kg	
		Aroclor 1260	0.0588 mg/kg	0.0588J mg/kg	
AQ-SSA7-07-3-4 AQ-SSA7-08-3-4	PCBs PCBs	Aroclor 1268	0.0688 mg/kg	0.0688J mg/kg	Estimated due to presence of multiple Aroclors Low MS %R
		Aroclor 1254	0.0137 mg/kg	0.0137J mg/kg	
		Aroclor 1268	0.0696 mg/kg	0.0696J mg/kg	
		Aroclor 1016	0.00831U mg/kg	0.00831UJ mg/kg	
W5-101211	Metals	Aroclor 1221	0.00831U mg/kg	0.00831UJ mg/kg	Blank contamination
		Aroclor 1232	0.00831U mg/kg	0.00831UJ mg/kg	
		Aroclor 1242	0.00831U mg/kg	0.00831UJ mg/kg	
		Manganese	2 ug/L	2U ug/L	

REFERENCES

USEPA, 1986. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA 530/SW-846.

USEPA, 2004. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation (OSRTI). EPA 540-R-04-004. October 2004.

USEPA, 1999. *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response. USEPA 540/R-99/008. October 1999.

USEPA, 2008. *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. USEPA 540-R-08-01. June 2008.

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DATA VALIDATION REVIEW REPORT – USEPA LEVEL 3 (STAGE 2B)

Project:	Millennium Bulk Terminals – Longview, LLC
Project Number:	110730-02.01
Date:	March 28, 2012

This report summarizes the review of analytical results for 31 soil samples collected December 20 and 21, 2011; 16 pore water samples collected January 4 and 25, 2012; and two groundwater samples collected January 12, 2012. The samples were collected by Anchor QEA, LLC, and submitted to Apex Laboratories, LLC (Apex) in Tigard, Oregon. Apex subcontracted one sample to Analytical Resources, Inc. (ARI), in Tukwila, Washington, for extractable petroleum hydrocarbon (EPH) analyses. The samples were analyzed for the following:

- Alkylated polycyclic aromatic hydrocarbons (PAHs) by U.S. Environmental Protection Agency (USEPA) Method 8270 modified
- Diesel range organics (DRO) and residual range organics (RRO) by Northwest Total Petroleum Hydrocarbons – Diesel Range Extended (NWTPHDx)
- EPH by the Washington State Department of Ecology Method WAEPH
- Total solids (TS) by Apex standard operating procedures (SOP)
- Metals by USEPA Methods 6010B and 6020
- Fluoride (F^-) by Standard Method (SM) 4500-F-C
- Chloride, sulfide, and fluoride (Cl, SO_4, and F^-) by USEPA Method 300.0
- Orthophosphate (PO_4) by SM 4500P
- Alkalinity by SM 2320B
- pH by USEPA 150.1 and SW9045
- Conductivity by SM 2510B
- Total organic carbon (TOC) by SM 5310B

Apex sample data group (SDG) numbers A11L274, A12A135, A12A029, A12A071, A12A304, and ARI SDG number UE59 were reviewed in this report. Samples reviewed in this report are presented in Table 1.

Table 1
Samples Reviewed

Sample ID	Lab ID	Matrix	Analyses Requested
GC-LY-01-2.5-3	A11L274-01	Soil	F^-, TS
GC-LY-02-2.5-3	A11L274-02	Soil	F^-, TS
GC-LY-03-4-4.6	A11L274-03	Soil	F^-, TS
GC-LY-04-3.6-4.3	A11L274-04	Soil	F^-, TS
GC-LY-05-1.4-2	A11L274-05	Soil	F^-, TS
GC-LY-06-2.7-3.3	A11L274-06	Soil	F^-, TS
GC-LY-07-3-3.5	A11L274-07	Soil	F^-, TS
GC-LY-08-2-2.5	A11L274-08	Soil	F^-, TS
SSA4-MW-01-011212	A12A135-01	Groundwater	PAH
SSA6-MW-01-011212	A12A135-02	Groundwater	DRO, RRO
SSA6-MW-01-011212	12-687-UE59A	Groundwater	EPH
010412_1001	A12A029-01	Porewater	Dissolved metals, F^-, Cl, PO_4, SO_4, pH, Alkalinity
010412_1002	A12A029-02	Porewater	Dissolved metals, F^-, Cl, PO_4, SO_4, pH, Alkalinity
010412_1003	A12A029-03	Porewater	Dissolved metals, F^-, Cl, PO_4, SO_4, pH, Alkalinity
010412_1004	A12A029-04	Porewater	Dissolved metals, F^-, Cl, PO_4, SO_4, pH, Alkalinity
010412_1005	A12A029-05	Porewater	Dissolved metals, F^-, Cl, PO_4, SO_4, pH, Alkalinity
010412_1006	A12A029-06	Porewater	Dissolved metals, F^-, Cl, PO_4, SO_4, pH, Alkalinity
010412_1007	A12A029-07	Porewater	Dissolved metals, F^-, Cl, PO_4, SO_4, pH, Alkalinity
010412_1008	A12A029-08	Porewater	Dissolved metals, F^-, Cl, PO_4, SO_4, pH, Alkalinity
010312_001	A12A071-04	Soil	F^-, TS, TOC
010312_002	A12A071-05	Soil	F^-, TS, TOC
010312_003	A12A071-06	Soil	F^-, TS, TOC
010312_006	A12A071-07	Soil	F^-, TS, TOC
010312_007	A12A071-08	Soil	F^-, TS, TOC
010312_008	A12A071-09	Soil	F^-, TS, TOC
010312_009	A12A071-10	Soil	F^-, TS, TOC
010312_010	A12A071-11	Soil	F^-, TS, TOC, pH
010312_011	A12A071-12	Soil	F^-, TS, TOC, pH
010412_001	A12A071-13	Soil	F^-, TS, TOC

Sample ID	Lab ID	Matrix	Analyses Requested
010412_002	A12A071-14	Soil	F^-, TS, TOC
010412_003	A12A071-15	Soil	F^-, TS, TOC
010412_004	A12A071-16	Soil	F^-, TS, TOC
010512_001	A12A071-17	Soil	F^-, TS, TOC, pH
010512_003	A12A071-18	Soil	F^-, TS, TOC
010512_004	A12A071-19	Soil	F^-, TS, TOC
010512_005	A12A071-20	Soil	F^-, TS, TOC
010512_006	A12A071-21	Soil	F^-, TS, TOC
010612_001	A12A071-22	Soil	F^-, TS, TOC
010912_001	A12A071-23	Soil	F^-, TS, TOC
123011_002	A12A071-01	Soil	F^-, TS, TOC, pH
123011_003	A12A071-02	Soil	F^-, TS, TOC
123011_004	A12A071-03	Soil	F^-, TS, TOC
012512_1001	A12A304-01	Porewater	Total and dissolved F^-
012512_1002	A12A304-02	Porewater	Total and dissolved F^-
012512_1003	A12A304-03	Porewater	Total and dissolved F^-
012512_1004	A12A304-04	Porewater	Total and dissolved F^-
012512_1005	A12A304-05	Porewater	Total and dissolved F^-
012512_1006	A12A304-06	Porewater	Total and dissolved F^-
012512_1007	A12A304-07	Porewater	Total and dissolved F^-
012512_1008	A12A304-08	Porewater	Total and dissolved F^-, pH, conductivity

Notes:
Cl = chloride
DRO = diesel range organic
EPH = extractable petroleum hydrocarbon
F^- = fluoride
PAH = polycyclic aromatic hydrocarbon
PO_4 = orthophosphate
RRO = residual range organic
SO_4 = sulfide
TOC = total organic carbon
TS = total solid

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QA/QC) guidelines outlined in the analytical procedures and data quality objective sections of the Sampling and Analysis Plan (SAP) and Quality Assurance Project Plan (QAPP). Laboratory results were reviewed using the following guidelines:

- *USEPA Contract Laboratory Program National Functional Guidelines for Inorganics Data Review* (USEPA 2004)
- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (USEPA 1999)

- *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (USEPA 2008)

Laboratory results were also reviewed by using laboratory and method QC criteria, as stated in USEPA (1986; SW 846, Third Edition), *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; and update IIIA, April 1998. Unless noted in this report, laboratory results for the samples listed previously were within QC criteria.

Field Documentation

Field documentation was checked for completeness and accuracy. The chain-of-custody forms were signed by Apex at the time of sample receipt; the samples were received cold and in good condition, with the exception of the sample received at ARI for EPH analysis. The cooler temperature was above the recommended 4.0±2.0 degree Celsius (°C) but below 10.0 °C, so no data were qualified.

Holding Times and Sample Preservation and Analytical Methods

Samples were appropriately preserved and analyzed within holding times with the following exceptions:

- SDG A12A071, A12A304 pH – One water and four soil samples were extracted or analyzed out of the recommended hold time. The soil samples were extracted more than 20 days after the hold time expired but were analyzed within 2 hours of the extraction. Results could have changed prior to the extraction, so data were qualified with a "J" and should be considered estimated. The water sample was analyzed within a few hours of the expiration of the hold time and has also been qualified "J" to indicate that it is estimated.
- SDG A12A071 TOC – Seventeen samples were analyzed for TOC outside of the established hold time. Results have been qualified "J" to indicate that they are estimated.

See Table 2 for qualified data.

Laboratory Method Blanks and Calibration Blanks

Laboratory method blanks and calibration blanks were analyzed at the required frequencies. All method blanks and calibration blanks were free of target analytes, with the exception of fluoranthene in the method blank associated with the analysis of sample SSA4-MW-01-011212. The compound was not detected in the sample, so no data were qualified.

Field Quality Control

Rinse Blanks

No rinse blanks were required in association with these sample sets.

Field Duplicates

No field duplicates were required in association with these sample sets.

Instrument Performance Checks

Ion abundance criteria were met for gas chromatography/mass spectrometry (GC/MS) methods. For inductively coupled plasma mass spectrometry (ICP-MS) analyses, the mass calibrations were within 0.1 atomic mass unit (AMU) and the percent relative standard deviation (%RSD) were less than or equal to 5 percent.

Initial Calibrations and Calibration Verifications

All initial calibrations (ICAL), calibration verifications (CV), and response factors met method and validation criteria.

Internal Standard/Surrogate Recoveries

All internal standard and surrogate recoveries were within method or laboratory control limits with a few exceptions. Lithium recovered above control limits in the iron and manganese analyses of some samples in SDG A12A029. This is likely due to matrix interference. The other two internal standards were in control, so no data were qualified.

Laboratory Control Sample and Laboratory Control Sample Duplicate

Laboratory control samples (LCSs) and laboratory control sample duplicates (LCSDs) were analyzed at the required frequencies. All LCS/LCSD analyses yielded percent recovery (%R) or relative percent difference (RPD) values within laboratory control limits, with the exception of the C8 to C10 aliphatic LCS/LCSD. The %R value was below the control limit, and the associated result has been qualified "UJ" to indicate a potential low bias.

See Table 2 for qualified data.

Matrix Spike and Matrix Spike Duplicate

Matrix spike (MS) and matrix spike duplicate (MSD) samples were analyzed at the required frequencies. All MS/MSD %R or RPD values were within laboratory control limits, with the following exceptions:

- SDG A12A029 Metals – The MS %R value for silicon was above the control limit; however, the source sample was a non-project sample, and the sample concentration was significantly greater than (greater than four times) the spike concentration so no data were qualified.
- SDG A11L274 Fluoride – The %R value for the MS performed on sample GC-LY-06-2.7-3.3 was above the control limit. All associated samples were qualified "J" to indicate a potential high bias.

See Table 2 for qualified results.

Standard Reference Materials

Standard reference materials (SRMs) were analyzed in association with some analyses and resulted in recoveries within specified limits.

Laboratory Duplicates

Laboratory duplicates were analyzed at the required frequencies. All duplicate RPD values were within laboratory control limits, with the following exceptions:

- SDG A12A029 Conventionals – The duplicate RPD value for orthophosphate in sample 010412_1001 was above the control limit. However, the sample and the

duplicate results were less than five times the method reporting limit (MRL), and the difference between them was less than the MRL so no data were qualified.

- SDG A12A029 Metals – The RPD value for aluminum in one of the duplicates was above control limits; however, the results were less than five times the MRL. The difference between the parent and duplicate result was less than the MRL, and the duplicate was performed on a non-project sample so no data were qualified.

Sample Analyses

Two TOC results were flagged as estimated by the laboratory. The mass of samples 010312_011 and 010512_001 weighed for analysis was below the precision limit of the balance, due to elevated TOC concentration.

Method Reporting Limits

Reporting limits (RLs) were deemed acceptable as reported. All values were reported using the laboratory RLs. Values were reported as undiluted, or when reported as diluted, the RL accurately reflects the dilution factor. Carbonate and hydroxide alkalinity RLs were above the requested RLs.

Overall Assessment

As was determined by this evaluation, the laboratory followed the specified analytical methods, and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the surrogate, SRM, LCS/LCSD, and MS/MSD %R values, with the exceptions noted previously. Precision was also acceptable, as demonstrated by the laboratory duplicates, MS/MSD, and LCS/LCSD RPD values, with the exceptions noted previously. Most data were deemed acceptable as reported; all other data are acceptable as qualified. Table 2 summarizes the qualifiers applied to samples reviewed in this report.

Data Qualifier Definitions

U Indicates the compound or analyte was analyzed for but not detected at or above the specified limit.

J Indicates an estimated value.

R Indicates data is rejected and unusable.

UJ Indicates the compound or analyte was analyzed for but not detected, and the specified limit reported is estimated.

Table 2
Data Qualification Summary

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
010312_001	Conventionals	Total organic carbon	3,300 mg/kg	3,300J mg/kg	Hold time exceeded
010312_002	Conventionals	pH	8.57 SU	8.57J SU	Hold time exceeded
010312_002	Conventionals	Total organic carbon	57,000 mg/kg	57,000J mg/kg	Hold time exceeded
010312_003	Conventionals	Total organic carbon	38,000 mg/kg	38,000J mg/kg	Hold time exceeded
010312_006	Conventionals	Total organic carbon	310 mg/kg	310J mg/kg	Hold time exceeded
010312_007	Conventionals	Total organic carbon	720 mg/kg	720J mg/kg	Hold time exceeded
010312_008	Conventionals	Total organic carbon	890 mg/kg	890J mg/kg	Hold time exceeded
010312_009	Conventionals	Total organic carbon	2,400 mg/kg	2,400J mg/kg	Hold time exceeded
010312_010	Conventionals	pH	8.88 SU	8.88J SU	Hold time exceeded
010312_010	Conventionals	Total organic carbon	47,000 mg/kg	47,000J mg/kg	Hold time exceeded
010312_011	Conventionals	pH	8.6 SU	8.6J SU	Hold time exceeded
010312_011	Conventionals	Total organic carbon	320,000 mg/kg	320,000J mg/kg	Hold time exceeded; Flagged as estimated by lab
010412_001	Conventionals	Total organic carbon	9,000 mg/kg	9,000J mg/kg	Hold time exceeded

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
010412_002	Conventionals	Total organic carbon	7,700 mg/kg	7,700J mg/kg	Hold time exceeded
010412_003	Conventionals	Total organic carbon	28,000 mg/kg	28,000J mg/kg	Hold time exceeded
010412_004	Conventionals	Total organic carbon	220,000 mg/kg	220,000J mg/kg	Hold time exceeded
010512_001	Conventionals	pH	9.18 SU	9.18J SU	Hold time exceeded
		Total organic carbon	360,000 mg/kg	360,000J mg/kg	Flagged as estimated by lab
010512_006	Conventionals	Total organic carbon	36,000 mg/kg	36,000J mg/kg	Hold time exceeded
012512_1008	Conventionals	pH	7.68 SU	7.68J SU	Hold time exceeded
123011_002	Conventionals	Total organic carbon	310 mg/kg	310J mg/kg	Hold time exceeded
123011_003	Conventionals	Total organic carbon	700 mg/kg	700J mg/kg	Hold time exceeded
123011_004	Conventionals	Total organic carbon	1,300 mg/kg	1,300J mg/kg	Hold time exceeded
GC-LY-01-2.5-3	Conventionals	Fluoride	65,900 mg/kg	65,900J mg/kg	High MS %R
GC-LY-02-2.5-3	Conventionals	Fluoride	59,500 mg/kg	59,500J mg/kg	High MS %R
GC-LY-03-4-4.6	Conventionals	Fluoride	40,900 mg/kg	40,900J mg/kg	High MS %R
GC-LY-04-3.6-4.3	Conventionals	Fluoride	61,800 mg/kg	61,800J mg/kg	High MS %R
GC-LY-05-1.4-2	Conventionals	Fluoride	6,430 mg/kg	6,430J mg/kg	High MS %R
GC-LY-06-2.7-3.3	Conventionals	Fluoride	2,740 mg/kg	2,740J mg/kg	High MS %R
GC-LY-07-3-3.5	Conventionals	Fluoride	34,200 mg/kg	34,200J mg/kg	High MS %R
GC-LY-08-2-2.5	Conventionals	Fluoride	16,000 mg/kg	16,000J mg/kg	High MS %R
SSA6-MW-01-011212	EPH	C8-C10 Aliphatics	40U µg/L	40UJ µg/L	Low LCS/LCSD %R

Notes:
µg/L = microgram per liter
%R = percent recovery
EPH = extractable petroleum hydrocarbon
LCS = laboratory control sample
LCSD = laboratory control sample duplicate
mg/kg = milligram per kilogram
MS = matrix spike
SU = standard unit

REFERENCES

USEPA (U.S. Environmental Protection Agency), 1986. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA 530/SW-846.

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USEPA, 2008. *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. USEPA 540-R-08-01. June 2008.

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DATA VALIDATION REVIEW REPORT – USEPA LEVEL 3 (STAGE 2B)

Project:	Millennium Bulk Terminals – Longview, LLC
Project Number:	110730-02
Date:	March 30, 2012

This report summarizes the review of analytical results for one soil collected on January 3, 2012; one groundwater collected on February 23, 2012; and 12 soils collected on March 15 and 16, 2012. The samples were collected by Anchor QEA, LLC, and submitted to Apex Laboratories, LLC (Apex), in Tigard, Oregon. Some samples were subcontracted to Analytical Resources, Inc. (ARI), in Tukwila, Washington. The samples were analyzed for the following parameters:

- Alkylated polycyclic aromatic hydrocarbons (PAHs) by U.S. Environmental Protection Agency (USEPA) Method 8270 modified
- Polychlorinated biphenyls (PCBs) by USEPA Method 8082A
- Diesel range organics (DRO) and residual range organics (RRO) by Northwest Total Petroleum Hydrocarbons – Diesel Range Extended (NWTPHDX)
- Total solids (TS) by Apex standard operating procedures (SOP)
- Total and dissolved cyanide (CN) by USEPA Method 335.4
- Total and dissolved free CN by ASTM International Method D4282
- Total and dissolved weak acid dissociable (WAD) CN by Standard Method (SM) 4500-CN
- Total CN in soil by USEPA Method 9013M
- Dissolved metals by USEPA Methods 200.7 and 200.8
- Potassium (K) by USEPA Method 6010C
- Total and dissolved fluoride (F-) by SM 4500-F
- Chloride, sulfate, fluoride, nitrate, and nitrite (Cl, SO_4^{2-}, F^-, NO_3^-, NO_2^-) by USEPA Method 300.0
- Phosphorous (P) and orthophosphate (PO_4) by SM 4500P
- Alkalinity by SM 2320B
- Total dissolved solids (TDS) by SM 2540C
- Total suspended solids (TSS) by SM 2540D

- Total organic carbon (TOC) by SM 5310B
- Ammonia by SM 4500-NH_3
- Total kjeldahl nitrogen (TKN) by USEPA Method 351.2

Apex sample data group (SDG) numbers A12B337, A12C160, and A12C235 and ARI SDG number UN09 were reviewed in this report. Samples reviewed in this report are presented in Table 1.

Table 1
Samples Reviewed

Sample ID	Lab ID	Matrix	Analyses Requested
SSA7-MW-01-GW-022312	A12B337-01	Water	PCB, Cl, SO_4^{2-}, F^-, T&D CN, WAD CN, Free CN, PAH, metals, TDS, TSS, P, Alkalinity
AQ-SSA1-03-3-4	A12C235-01	Soil	DRO, RRO, F^-, CN, PAH
AQ-SSA1-06-3-3.5	A12C235-02	Soil	DRO, RRO, F^-, CN, PAH
AQ-SSA2-01-0-0.5	A12C235-03	Soil	NO_3^-, NO_2^-, K, TOC, NH_3^-, P, PO_4, TS, TKN
	UN09A		TKN
AQ-SSA2-03-0-0.5	A12C235-04	Soil	NO_3^-, NO_2^-, K, TOC, NH_3^-, P, PO_4, TS, TKN
	UN09B		TKN
AQ-SSA2-05-0-0.5	A12C235-05	Soil	NO_3^-, NO_2^-, K, TOC, NH_3^-, P, PO_4, TS, TKN
	UN09C		TKN
AQ-SSA2-07-0-0.5	A12C235-06	Soil	NO_3^-, NO_2^-, K, TOC, NH_3^-, P, PO_4, TS, TKN
	UN09D		TKN
AQ-SSA2-08-0-0.5	A12C235-07	Soil	NO_3^-, NO_2^-, K, TOC, NH_3^-, P, PO_4, TS, TKN
	UN09E		TKN
AQ-SSA2-06-0-0.5	A12C235-08	Soil	NO_3^-, NO_2^-, K, TOC, NH_3^-, P, PO_4, TS, TKN
	UN09F		TKN
AQ-SSA2-04-0-0.5	A12C235-09	Soil	NO_3^-, NO_2^-, K, TOC, NH_3^-, P, PO_4, TS, TKN
	UN09G		TKN
AQ-SSA2-02-0-0.5	A12C235-10	Soil	NO_3^-, NO_2^-, K, TOC, NH_3^-, P, PO_4, TS, TKN
	UN09H		TKN
AQ-SSA2-REF-01-0-0.5	A12C235-11	Soil	NO_3^-, NO_2^-, K, TOC, NH_3^-, P, PO_4, TS, TKN
	UN09I		TKN

Sample ID	Lab ID	Matrix	Analyses Requested
AQ-SSA2-REF-02-0-0.5	A12C235-12	Soil	NO_3^-, NO_2^-, K, TOC, NH_3^-, P, PO_4, TS, TKN
	UN09J		TKN
010312_011	A12C160-01, A12C160-02	Soil	F^-

Notes:
Cl = chloride
CN = cyanide
DRO = diesel range organic
F^- = fluoride
NO_2^- = nitrite
NO_3^- = nitrate
P = total phosphorous
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PO_4 = orthophosphate
RRO = residual range organic
SO_4^{2-} = sulfate
T&D = total and dissolved
TDS = total dissolved solid
TKN = total kjeldahl nitrogen
TOC = total organic carbon
TS = total solid
TSS = total suspended solid
WAD = weak acid dissociable

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QA/QC) guidelines outlined in the analytical procedures and data quality objective sections of the Sampling and Analysis Plan (SAP) and Quality Assurance Project Plan (QAPP). Laboratory results were reviewed using the following guidelines:

- *USEPA Contract Laboratory Program National Functional Guidelines for Inorganics Data Review* (USEPA 2004)
- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (USEPA 1999)
- *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (USEPA 2008)

Laboratory results were also reviewed by using laboratory and method QC criteria, as stated in USEPA (1986; SW 846, Third Edition), *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; and update IIIA, April 1998. Unless noted in this report, laboratory results for the samples listed previously were within QC criteria.

Field Documentation

Field documentation was checked for completeness and accuracy. The chain-of-custody forms were signed by Apex at the time of sample receipt; the samples were received cold and in good condition.

Holding Times and Sample Preservation and Analytical Methods

Samples were appropriately preserved and analyzed within holding times with the exception of fluoride analysis of sample 010312_011, which was analyzed significantly past (more than 2 times) the hold time, and is qualified "J" to indicate a potential low bias.

Laboratory Method Blanks and Calibration Blanks

Laboratory method blanks and calibration blanks were analyzed at the required frequencies. All method blanks and calibration blanks were free of target analytes, with the following exceptions:

- SDG A12B337 metals – Several continuing calibration blanks (CCBs) for manganese had detections above the reporting limit. The associated sample concentration was significantly greater than (greater than five times) the level of the blanks, so no data were qualified.
- SDG UN09 TKN – TKN was detected in the method blank at a level above the reporting limit. However, all sample results were significantly greater than (greater than five times) the level of the blank, so no data were qualified.

Field Quality Control

Rinse Blanks

No rinse blanks were collected in association with these sample sets.

Field Duplicates

No field duplicates were collected in association with these sample sets.

Instrument Performance Checks

Ion abundance criteria were met for gas chromatography/mass spectrometry (GC/MS) methods. For inductively coupled plasma mass spectrometry (ICP-MS) analyses, the mass calibrations were within 0.1 atomic mass units (AMUs) and the percent relative standard deviations (%RSD) were less than or equal to 5 percent.

Initial Calibrations and Calibration Verifications

All initial calibrations (ICAL), calibration verifications (CV), and response factors met method and validation criteria.

Compound Confirmation

Column confirmation of detected PCB results met method criteria.

Internal Standard/Surrogate Recoveries

All internal standard recoveries were within method control limits. All surrogate recoveries were within laboratory control limits, with the exception of one PCB surrogate compound in SDG A12B337. The percent recovery (%R) values for 2,4,5,6-tetrachlorometaxylene (-TCMX) were below the control limit in the preparation blank and the laboratory control sample duplicate. Associated sample results are qualified "UJ" to indicate a potential low bias.

See Table 2 for qualified results.

Contract Required Detection Limit Standard

The contract required detection limit (CRDL) standards were analyzed at the required frequencies. All CRDL analyses yielded %Rs within control limits, with the exception of manganese in SDG A12B337. The CRDL standard %R value was greater than 200 percent; however, the result for sample SSA7-MW-01-GW-022312 was significantly greater than the reporting limit, so no data were qualified.

Laboratory Control Sample and Laboratory Control Sample Duplicate

Laboratory control samples (LCSs) and laboratory control sample duplicates (LCSDs) were analyzed at the required frequencies. All LCS/LCSD analyses yielded %Rs, and the relative percent difference (RPD) values were within project-required control limits, with the exception of the PCB LCSD %R value, which was below the data quality objective for Aroclor 1016. No data were qualified, however, since the LCS %R and the LCS/LCSD RPD were within data quality objectives.

Matrix Spike and Matrix Spike Duplicate

Matrix spike (MS) and matrix spike duplicate (MSD) samples were analyzed at the required frequencies, with the exception of the PCB analysis in SDG A12B337. A lab control sample and lab control sample duplicate were analyzed in lieu of the MS/MSD due to limited sample volume. All MS/MSD %R and RPD values were within laboratory control limits, with the following exceptions:

- SDG A12B337 metals – The %R value for manganese of the MS performed on sample SSA7-MW-01-GW-022312 was above the control limit. The associated result has been qualified "J" to indicate a potentially high bias.
- SDG A12C235 orthophosphate and ammonia – The %R values of the MS samples performed on sample AQ-SSA2-01-0-0.5 were below the control limits. All sample results were qualified with a "J" to indicate a potentially low bias.

See Table 2 for qualified results.

Standard Reference Material

Standard reference materials (SRMs) were analyzed in lieu of, or in addition to, LCSs for some analyses and resulted in recoveries within specified limits.

Laboratory Duplicates

Laboratory duplicates were analyzed at the required frequencies. All duplicate RPD values were within laboratory control limits with the following exceptions:

- SDG A12C235
  - Fluoride – The RPD value of the duplicate performed on sample AQ-SSA1-03-3-4 for fluoride was above the control limit. Associated sample results are qualified with a "J" to indicate that they are estimates.
  - Total phosphate and orthophosphate – The RPD values of the duplicate analyses performed on sample AQ-SSA2-01-0-0.5 for total phosphorous and orthophosphate were above the project data quality objectives. Both the initial and duplicate results were less than five times the method reporting limit (MRL), and the difference between the values was less than two times the MRL so the results were not qualified.

Method Reporting Limits

Reporting limits were deemed acceptable as reported. All values were reported using the laboratory RLs. Values were reported as undiluted, or when reported as diluted, the RL accurately reflects the dilution factor.

Sample Results

Due to poor peak separation for benzo(b) and benzo(k)fluoranthenes, results for some samples include the combined area of the two isomers and are reported as the total of benzo(b+k)fluoranthenes.

Sample 010312_011 was analyzed in duplicate for confirmation of a previously reported result. The original result of 491,000 milligrams per kilogram (mg/kg) was not confirmed; however, the RPD of the two results included in this validation report are within project data quality objectives.

Overall Assessment

As was determined by this evaluation, the laboratory followed the specified analytical methods, and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the surrogate, SRM, LCS/LCSD, and MS/MSD %R values, with the exceptions noted previously. Precision was also acceptable, as demonstrated by the laboratory duplicate, MS/MSD, and LCS/LCSD RPD values. Most data were deemed acceptable as reported; all other data are acceptable as qualified. Table 2 summarizes the qualifiers applied to samples reviewed in this report.

Data Qualifier Definitions

U Indicates the compound or analyte was analyzed for but not detected at or above the specified limit.

J Indicates an estimated value.

UJ Indicates the compound or analyte was analyzed for but not detected, and the specified limit reported is estimated

Table 2
Data Qualification Summary

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
010312_011	Conventionals	Fluoride	11,500 mg/kg	11,500J mg/kg	Analyzed past hold time
			11,600 mg/kg	11,600J mg/kg	
AQ-SSA1-03-3-4	Conventionals	Fluoride	415 mg/kg	415J mg/kg	High duplicate RPD
AQ-SSA1-06-3-3.5	Conventionals	Fluoride	267 mg/kg	267J mg/kg	High duplicate RPD
AQ-SSA2-01-0-0.5	Conventionals	Orthophosphate	2.21D J mg/kg	2.21J mg/kg	Low MS %R
		Ammonia	3.21 D mg/kg	3.21J mg/kg	
AQ-SSA2-02-0-0.5	Conventionals	Orthophosphate	1.65D J mg/kg	1.65J mg/kg	Low MS %R
		Ammonia	6.41D mg/kg	6.41J mg/kg	
AQ-SSA2-03-0-0.5	Conventionals	Orthophosphate	1.71D J mg/kg	1.71J mg/kg	Low MS %R
		Ammonia	4.84D mg/kg	4.84J mg/kg	
AQ-SSA2-04-0-0.5	Conventionals	Orthophosphate	4.3D J mg/kg	4.3J mg/kg	Low MS %R
		Ammonia	4.44D mg/kg	4.44J mg/kg	
AQ-SSA2-05-0-0.5	Conventionals	Orthophosphate	3.17D J mg/kg	3.17J mg/kg	Low MS %R
		Ammonia	5.08D mg/kg	5.08J mg/kg	
AQ-SSA2-06-0-0.5	Conventionals	Orthophosphate	6.82D J mg/kg	6.82J mg/kg	Low MS %R
		Ammonia	7.17D mg/kg	7.17J mg/kg	
AQ-SSA2-07-0-0.5	Conventionals	Orthophosphate	5.77D J mg/kg	5.77J mg/kg	Low MS %R
		Ammonia	5.2D mg/kg	5.2J mg/kg	
AQ-SSA2-08-0-0.5	Conventionals	Orthophosphate	4.08D J mg/kg	4.08J mg/kg	Low MS %RD
		Ammonia	3.22D mg/kg	3.22J mg/kg	

Sample ID	Parameter	Analyte	Reported Result	Qualified Result	Reason
AQ-SSA2-REF-01-0-0.5	Conventionals	Orthophosphate	2.4D J mg/kg	2.4J mg/kg	Low MS %R
		Ammonia	3.83D mg/kg	3.83J mg/kg	
AQ-SSA2-REF-02-0-0.5	Conventionals	Orthophosphate	0.824D J mg/kg	0.824J mg/kg	Low MS %R
		Ammonia	2.66D mg/kg	2.66J mg/kg	
SSA7-MW-01-GW-022312	Metals	Manganese	1,920 µg/L	1,920J µg/L	High MS %R
	PCBs	Aroclor 1016	0.0374U µg/L	0.0374UJ µg/L	Low surrogate %R in method blank and LCSD
		Aroclor 1221	0.0374U µg/L	0.0374UJ µg/L	
		Aroclor 1232	0.0374U µg/L	0.0374UJ µg/L	
		Aroclor 1242	0.0374U µg/L	0.0374UJ µg/L	
		Aroclor 1248	0.0374U µg/L	0.0374UJ µg/L	
		Aroclor 1254	0.0374U µg/L	0.0374UJ µg/L	
		Aroclor 1260	0.0374U µg/L	0.0374UJ µg/L	
		Aroclor 1262	0.0374U µg/L	0.0374UJ µg/L	
		Aroclor 1268	0.0374U µg/L	0.0374UJ µg/L	

Notes:
µg/L = microgram per liter
%R = percent recovery
LCS = laboratory control sample
LCSD = laboratory control sample duplicate
mg/kg = milligram per kilogram
MS = matrix spike
PCB = polychlorinated biphenyl
RPD = relative percent difference

REFERENCES

USEPA (U.S. Environmental Protection Agency), 1986. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods.* U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. USEPA 530/SW-846.

USEPA, 1999. *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review.* U.S. Environmental Protection Agency, Office of Emergency and Remedial Response. USEPA 540/R-99/008. October 1999.

USEPA, 2004. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review.* U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation (OSRTI). USEPA 540-R-04-004. October 2004.

USEPA, 2008. *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review.* U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation (OSRTI). USEPA 540-R-08-01. June 2008.

CF:rrw

Laboratory Data Consultants, Inc.

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Phone 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

Anchor Environmental, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101
ATTN: Ms. Cindy Fields

January 30, 2013

SUBJECT: Millennium Bulk Terminals, Data Validation

Dear Ms. Fields,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on December 17th & 18th, 2013. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 28944:

SDG #	Fraction
VM65	Volatiles, Semivolatiles, Polynuclear Aromatic Hydrocarbons, Polychlorinated Biphenyls, Metals, Wet Chemistry, Extractable Petroleum Hydrocarbons, Total Petroleum Hydrocarbons as Extractables
A12J509 A12J515	
A12J537 A12J621	
A12I470 A12J102	

The data validation was performed under Stage 2B guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Ming-Hwa Hwang
Project Manager/Senior Chemist

L:\Anchor\Millennium-Reynolds\28944COV.wpd

Level III EDD

LDC #28944 (Anchor Environmental-Seattle WA /Millennium Bulk Terminals)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		SVOA (8270D)		PAHs (8270D -SIM)		PCBs (8082A)		Metals (SW846)		TCLP Metals (SW846)		Diss. Metals (200.7/8)		TPH-E (NWTPH -Dx)		EPH (NWEPH)																	
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	VM65	12/17/12	01/10/13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0																
B	A12J509	12/17/12	01/10/13	0	4	0	4	-	-	0	4	0	4	0	4	-	-	0	3	-	-																
C	A12J515	12/17/12	01/10/13	0	4	0	4	-	-	0	4	0	4	0	4	-	-	0	7	-	-																
D	A12J537	12/17/12	01/10/13	0	2	1	1	0	3	1	1	1	4	0	1	-	-	1	3	-	-																
E	A12J621	12/17/12	01/10/13	1	1	0	1	0	3	0	1	0	4	0	1	-	-	0	1	-	-																
F	A12I470	12/18/12	01/10/13	-	-	-	-	-	-	-	-	-	-	-	-	7	0	-	-	-	-																
G	A12J102	12/18/12	01/10/13	3	0	3	0	-	-	3	0	5	0	-	-	5	0	-	-	-	-																
Total	T/MH			4	11	4	10	0	6	4	10	6	16	0	10	12	0	1	14	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	110

Level III EDD

LDC #28944 (Anchor Environmental-Seattle WA /Millennium Bulk Terminals)

LDC	SDG#	DATE REC'D	(3) DATE DUE	Alk. (2320B)		Cl,SO_4 (300.0)		T.CN (335.4)		Diss. CN (335.4)		WAD CN (4500)		D.WAD CN (4500)		Free CN (D4282)		D.Free CN (D4582)		F (4500 -F-C)		Diss.F (4500 -F-C)		Phos-phorus (4500)		pH (150.1)		TOC (PSEP /5310B)		TDS (2540C)		TSS (2540D)					
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
B	A12J509	12/17/12	01/10/13	-	-	-	-	0	4	-	-	0	4	-	-	-	-	-	-	0	4	-	-	-	-	-	-	0	4	-	-	-	-				
C	A12J515	12/17/12	01/10/13	-	-	-	-	0	4	-	-	0	4	-	-	-	-	-	-	0	4	-	-	-	-	-	-	0	4	-	-	-	-				
D	A12J537	12/17/12	01/10/13	-	-	-	-	1	4	-	-	1	4	-	-	-	-	-	-	0	4	-	-	-	-	-	-	0	4	-	-	-	-				
E	A12J621	12/17/12	01/10/13	-	-	-	-	0	4	-	-	0	4	-	-	-	-	-	-	0	4	-	-	-	-	-	-	0	4	-	-	-	-				
F	A12I470	12/18/12	01/10/13	7	0	7	0	-	-	-	-	-	-	-	-	-	-	-	-	5	0	7	0	7	0	7	0	-	-	-	-	-	-				
G	A12J102	12/18/12	01/10/13	5	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0	-	-	-	-	5	0	5	0				
Total	T/MH			12	0	12	0	6	16	5	0	6	16	5	0	5	0	5	0	10	16	12	0	12	0	7	0	0	16	5	0	5	0	0	0	0	171

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS, MSD, or DUP's.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 05, 2012
LDC Report Date:	January 7, 2013
Matrix:	Water
Parameters:	Extractable Petroleum Hydrocarbons
Validation Level:	Stage 2B
Laboratory:	Apex Laboratories, LLC/Analytical Resources, Inc.
Sample Delivery Group (SDG):	A12J175/VM65

Sample Identification

SSA6-MW-01-100512
RB-01-100512

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method NWTPH-EPH for Extractable Petroleum Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No extractable petroleum hydrocarbon contaminants were found in the method blanks.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
LCS/D-101112 (All samples in SDG A12J175/VM65)	C8-C10 Aliphatics C10-C12 Aliphatics C10-C12 Aromatics	- 49.3 (60-140) 38.7 (60-140)	57.3 (60-140) 46.7 (60-140) 45.3 (60-140)	- - -	J (all detects) UJ (all non-detects)	P

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to LCS %R problems, data were qualified as estimated in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

XIII. Field Blanks

Sample RB-01-100512 was identified as a rinsate blank. No extractable petroleum hydrocarbon contaminants were found with the following exceptions:

Blank ID	Compound	Concentration
RB-01-100512	C8-C10 Aliphatics	40 ug/L

Millennium Bulk Terminals
Extractable Petroleum Hydrocarbons- Data Qualification Summary - SDG A12J175/VM65

SDG	Sample	Compound	Flag	A or P	Reason
A12J175/VM65	SSA6-MW-01-100512 RB-01-100512	C8-C10 Aliphatics C10-C12 Aliphatics C10-C12 Aromatics	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)

Millennium Bulk Terminals
Extractable Petroleum Hydrocarbons- Laboratory Blank Data Qualification Summary - SDG A12J175/VM65

No Sample Data Qualified in this SDG

LDC #: 28944A8

VALIDATION COMPLETENESS WORKSHEET

Date: 1/2/13

SDG #: ~~VM65~~ A12J175 / VM65

Stage 2B

Page: 1 of 1

Laboratory: ~~Analytical Resources, Inc.~~ APEX Labs / ARI

Reviewer: FT

2nd Reviewer: N

METHOD: GC ~~TPH as Extractables~~ (~~NWTPH-Dx~~) Extractable Petroleum Hydrocarbons EW NWTPH-EPH

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/05/12
II.	Initial calibration	A	% RSD ≤ ~~15~~ 20
III.	Calibration verification/ICV	A	ICV/CCV ≤ ~~15~~ 20
IV.	Blanks	A	
V.	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	client specified
VII.	Laboratory control samples	SW	LCS/D
VIII.	Target compound identification	N	
IX.	Compound Quantitation and CRQLs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	SW	RB = 2

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	SSA6-MW-01-100512	11	MB-101112	21		31	
2	RB-01-100512	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 28944 A8

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FT
2nd Reviewer: Or

METHOD: ✓ GC __ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) analyzed for each matrix in this SDG?

Y N N/A Were the LCS percent recoveries (%R) and relative percent differences (RPD) within the QC limits?

Level IV/D Only

Y N N/A Was an LCS analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	LCSD-101112	C8-C10 Aliphatics	~~60.0~~ ( )	57.3 (60-140)	( )	All	J/UJ/~~A~~P
		C10-C12 ↓	49.3 (60-140)	46.7 (↓)	( )	↓	↓
		C10-C12 Aromatics	38.7 (↓)	45.3 (↓)	( )	↓	↓
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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			( )	( )	( )		
			( )	( )	( )		

LDC #: 28944A8
~~SDG #:~~

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 6 of 1
Reviewer: B
2nd reviewer: G

METHOD: ✓ GC ___ HPLC

~~Y~~ N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?

(Circle One) Field Blank / Trip Blank / Atmospheric Blank / Ambient Blank Sample: 2 Rinsate / Equipment Rinsate / Equipment Blank / Source Blank / Other RB		(Circle One) Field Blank / Trip Blank / Atmospheric Blank / Ambient Blank Sample: ____ Rinsate / Equipment Rinsate / Equipment Blank / Source Blank / Other ____	
Compound	Concentration (ug/l)	Compound	Concentration ( )
C_8 - C_{10} Aliphatics	40		

(Circle One) Field Blank / Trip Blank / Atmospheric Blank / Ambient Blank Sample: ____ Rinsate / Equipment Rinsate / Equipment Blank / Source Blank / Other ____		(Circle One) Field Blank / Trip Blank / Atmospheric Blank / Ambient Blank Sample: ____ Rinsate / Equipment Rinsate / Equipment Blank / Source Blank / Other ____	
Compound	Concentration ( )	Compound	Concentration ( )

SDG: VM65

Analytical Method WAEPH

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RB-01-100512	12-19622-VM65B	C16-C21 Aromatics	10/20/2012	40	Yes	N	U			40	40	ug/L
RB-01-100512	12-19622-VM65B	C21-C34 Aromatics	10/20/2012	40	Yes	N	U			40	40	ug/L
RB-01-100512	12-19622-VM65B	C12-C16 Aromatics	10/20/2012	40	Yes	N	U			40	40	ug/L
RB-01-100512	12-19622-VM65B	C10-C12 Aromatics	10/20/2012	40	Yes	N	U	UJ	10	40	40	ug/L
RB-01-100512	12-19622-VM65B	C8-C10 Aromatics	10/20/2012	40	Yes	N	U			40	40	ug/L
RB-01-100512	12-19622-VM65B	C16-C21 Aliphatics	10/21/2012	40	Yes	N	U			40	40	ug/L
RB-01-100512	12-19622-VM65B	C12-C16 Aliphatics	10/21/2012	40	Yes	N	U			40	40	ug/L
RB-01-100512	12-19622-VM65B	C10-C12 Aliphatics	10/21/2012	40	Yes	N	U	UJ	10	40	40	ug/L
RB-01-100512	12-19622-VM65B	C21-C34 Aliphatics	10/21/2012	40	Yes	N	U			40	40	ug/L
RB-01-100512	12-19622-VM65B	C8-C10 Aliphatics	10/21/2012	40	Yes	Y		J	10	40	40	ug/L
SSA6-MW-01-100512	12-19621-VM65A	C10-C12 Aromatics	10/20/2012	40	Yes	N	U	UJ	10	40	40	ug/L
SSA6-MW-01-100512	12-19621-VM65A	C8-C10 Aromatics	10/20/2012	40	Yes	N	U			40	40	ug/L
SSA6-MW-01-100512	12-19621-VM65A	C21-C34 Aromatics	10/20/2012	40	Yes	N	U			40	40	ug/L
SSA6-MW-01-100512	12-19621-VM65A	C12-C16 Aromatics	10/20/2012	40	Yes	N	U			40	40	ug/L
SSA6-MW-01-100512	12-19621-VM65A	C16-C21 Aromatics	10/20/2012	40	Yes	N	U			40	40	ug/L
SSA6-MW-01-100512	12-19621-VM65A	C8-C10 Aliphatics	10/21/2012	44	Yes	Y		J	10	40	40	ug/L
SSA6-MW-01-100512	12-19621-VM65A	C10-C12 Aliphatics	10/21/2012	40	Yes	N	U	UJ	10	40	40	ug/L
SSA6-MW-01-100512	12-19621-VM65A	C12-C16 Aliphatics	10/21/2012	40	Yes	N	U			40	40	ug/L
SSA6-MW-01-100512	12-19621-VM65A	C16-C21 Aliphatics	10/21/2012	40	Yes	N	U			40	40	ug/L
SSA6-MW-01-100512	12-19621-VM65A	C21-C34 Aliphatics	10/21/2012	40	Yes	N	U			40	40	ug/L

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 17, 2012
LDC Report Date:	January 4, 2013
Matrix:	Soil
Parameters:	Volatiles
Validation Level:	Stage 2B
Laboratory:	Apex Laboratories, LLC
Sample Delivery Group (SDG):	A12J509

Sample Identification

AQ-ILF-02-6-8
AQ-ILF-53-8-10
AQ-ILF-03-8-10
AQ-ILF-04-12-14

Introduction

This data review covers 4 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Analysis	Required Holding Time (in Days) From Sample Collection Until Analysis	Flag	A or P
AQ-ILF-53-8-10	All TCL compounds	16	14	J (all detects) UJ (all non-detects)	A

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
10/19/12	Acetone Bromochloromethane 2-Butanone tert-Butylbenzene Chloromethane 1,2-Dibromo-3-chloropropane Dibromomethane cis-1,2-Dichloroethene trans-1,2-Dichloroethene 1,3-Dichloropropane 2-Hexanone 4-Methyl-2-pentanone 1,1,1,2-Tetrachloroethane Trichlorofluoromethane 1,2,3-Trichloropropane	21.0 20.8 32.1 20.6 23.1 25.5 20.4 20.1 24.5 20.8 21.9 24.3 21.4 20.8 24.1	AQ-ILF-02-6-8 AQ-ILF-03-8-10 AQ-ILF-04-12-14 1210599-MB	J (all detects) UJ (all non-detects)	A
11/2/12	Acetone Bromoform 2-Butanone 1,2-Dibromo-3-chloropropane Dichlorodifluoromethane 2-Hexanone 4-Methyl-2-pentanone 1,1,1,2-Tetrachloroethane 1,2,3-Trichloropropane	23.7 28.3 31.5 32.8 28.1 28.2 31.7 22.1 23.7	AQ-ILF-53-8-10 1211028-MB	J (all detects) UJ (all non-detects)	A
11/2/12	Carbon disulfide	32.8	AQ-ILF-53-8-10 1211028-MB	J (all detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
10/4/12	2,2-Dichloropropane	38.4	All samples in SDG A12J509	J (all detects) UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

All tentatively identified compounds were within validation criteria.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to technical holding time and calibration %D problems, data were qualified as estimated in four samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples AQ-ILF-53-8-10 and AQ-ILF-03-8-10 were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD
	AQ-ILF-53-8-10	AQ-ILF-03-8-10	
Ethylbenzene	27.6	388	173
Naphthalene	72.7	13200	198
m,p-Xylenes	101	2260	183
o-Xylene	84.4	1640	180
4-Methyl-2-pentanone	586U	1790	200
1,2,4-Trimethylbenzene	58.6U	151	200

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Volatiles - Data Qualification Summary - SDG A12J509

SDG	Sample	Compound	Flag	A or P	Reason
A12J509	AQ-ILF-53-8-10	All TCL compounds	J (all detects) UJ (all non-detects)	A	Technical holding times
A12J509	AQ-ILF-02-6-8 AQ-ILF-03-8-10 AQ-ILF-04-12-14	Acetone Bromochloromethane 2-Butanone tert-Butylbenzene Chloromethane 1,2-Dibromo-3-chloropropane Dibromomethane cis-1,2-Dichloroethene trans-1,2-Dichloroethene 1,3-Dichloropropane 2-Hexanone 4-Methyl-2-pentanone 1,1,1,2-Tetrachloroethane Trichlorofluoromethane 1,2,3-Trichloropropane	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
A12J509	AQ-ILF-53-8-10	Acetone Bromoform 2-Butanone 1,2-Dibromo-3-chloropropane Dichlorodifluoromethane 2-Hexanone 4-Methyl-2-pentanone 1,1,1,2-Tetrachloroethane 1,2,3-Trichloropropane	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
A12J509	AQ-ILF-53-8-10	Carbon disulfide	J (all detects)	A	Continuing calibration (%D)
A12J509	AQ-ILF-02-6-8 AQ-ILF-53-8-10 AQ-ILF-03-8-10 AQ-ILF-04-12-14	2,2-Dichloropropane	J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D)

Millennium Bulk Terminals
Volatiles - Laboratory Blank Data Qualification Summary - SDG A12J509

No Sample Data Qualified in this SDG

LDC #: 28944B1

SDG #: A12J509

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/2/12

Page: 1 of 1

Reviewer: PT

2nd Reviewer: CV

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 10/17/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ ~~20~~ 15/30
IV.	Continuing calibration/ICV	SW	~~RRF~~/CCV ≤ 20 ICV ≤ 30
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples A	~~SW~~	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 2, 3
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

SOIL

1 1	AQ-ILF-02-6-8	11 1	1210599	21		31	
2 2	AQ-ILF-~~03~~ 53 8-10 ~~@ 15:25~~	12 2	1211028	22		32	
3 1	AQ-ILF-03-8-10 ~~@ 15:53~~	13		23		33	
4 1	AQ-ILF-04-12-14	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC #: 28944B1

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Reviewer: FT
2nd Reviewer: CV

All circled dates have exceeded the technical holding times.
(Y) N N/A Were all cooler temperatures within validation criteria?

METHOD : GC/MS VOA (EPA SW 846 Method 8260)

Sample ID	Matrix	Preserved	Sampling Date	Extraction date	Analysis date	Total # of Days	Qualifier
2	SOIL		10/17/12		11/2/12	16	J/UJ/A

TECHNICAL HOLDING TIME CRITERIA

Water unpreserved: Aromatic within 7 days, non-aromatic within 14 days of sample collection.
Water preserved: Analyze within 14 days of sample collection.
Soils: Analyze within 14 days of sample collection.

LDC #: 28944B1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: FT
2nd Reviewer: CR

METHOD: GC/MS VOA (EPA SW 846 Method 8260)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ≤~~25~~ 20 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤~~25.0~~ 20%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
-	10/4/12	2J03013-ICV1	~~E~~	~~22.8~~		All	J/UJ/A
-			~~OO~~	38.4			
-			~~BB~~	29.4			
-	10/19/12	2J19009-CCV3	F	21.0		1210599-MB,	J/UJ/A
-			PP	20.8		1, 3, 4	
-			M	32.1			
-			CCC	20.6			
-			A	23.1			
-			MM	25.5			
-			RR	20.4			
-			QQQ	20.1			
-			PPP	24.5			
-			SS	20.8			
-			Z	21.9			
-			Y	24.3			
-			UU	21.4			
-			KK	20.8			
-			XX	24.1			

LDC #: 28944B 7

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: FT
2nd Reviewer: CR

METHOD: GC/MS VOA (EPA SW 846 Method 8260)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ~~≤25~~ 20 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ~~≤25.0~~ 20%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
-	11/2/12	2K02002-CCV1	F	23.7		1211028-MB, 2	J/UJ/A
-			X	28.3			
-			M	31.5			
+			G	32.8			J/A det
-			MM	32.8			J/UJ/A
-			JJ	28.1			
-			Z	28.2			
-			Y	31.7			
-			UU	22.1			
-			XX	23.7			

CONCAL_8260B.1S

LDC#: 28944B1

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Page: 1 of 1
Reviewer: FT
2nd Reviewer: CV

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/Kg)		RPD
	2	3	
EE	27.6	388	173
MMM	72.7	13200	198
RRR	101	2260	183
SSS	84.4	1640	180
Y	586U	1790	200
DDD	58.6U	151	200

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 17, 2012
LDC Report Date:	January 4, 2013
Matrix:	Soil
Parameters:	Semivolatiles
Validation Level:	Stage 2B
Laboratory:	Apex Laboratories, LLC
Sample Delivery Group (SDG):	A12J509

Sample Identification

AQ-ILF-01-0-11
AQ-ILF-02-0-12
AQ-ILF-03-0-12
AQ-ILF-04-0-14

Introduction

This data review covers 4 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270D for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
10/24/12	Benzoic acid	20.7	AQ-ILF-04-0-14	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID	Compound	%R (Limits)	Associated Samples	Flag	A or P
1210677-LCS	4-Chloroaniline	43 (50-150)	All samples in SDG A12J509	J (all detects) UJ (all non-detects)	P
1210677-LCS	3,3'-Dichlorobenzidine	152 (50-150)	All samples in SDG A12J509	J (all detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to calibration %D and LCS %R problems, data were qualified as estimated in four samples.

The quality control criteria reviewed were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Semivolatiles - Data Qualification Summary - SDG A12J509

SDG	Sample	Compound	Flag	A or P	Reason
A12J509	AQ-ILF-04-0-14	Benzoic acid	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
A12J509	AQ-ILF-01-0-11 AQ-ILF-02-0-12 AQ-ILF-03-0-12 AQ-ILF-04-0-14	4-Chloroaniline	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)
A12J509	AQ-ILF-01-0-11 AQ-ILF-02-0-12 AQ-ILF-03-0-12 AQ-ILF-04-0-14	3,3'-Dichlorobenzidine	J (all detects)	P	Laboratory control samples (%R)

Millennium Bulk Terminals
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG A12J509

No Sample Data Qualified in this SDG

LDC #: 28944B2a **VALIDATION COMPLETENESS WORKSHEET** Date: 1/2/13
SDG #: A12J509 Stage 2B Page: 1 of 1
Laboratory: APEX Laboratories, LLC Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/17/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20, r²
IV.	Continuing calibration/ICV	SW	ICV/CCV ≤ 20/30
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	~~SW~~	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: soil

1	AQ-ILF-01-0-11	11	1210677-MB	21		31	
2	AQ-ILF-02-0-12	12		22		32	
3	AQ-ILF-03-0-12	13		23		33	
4	AQ-ILF-04-0-14	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1- Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 28944B2a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: FT
2nd Reviewer: ac

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ≤20 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: <20.0%)	Finding RRF (Limit: >0.05)	Associated Samples	Qualifications
-	10/24/12	2J24003-cc1	PPP	20.7		4	J/UJ/A

CONCAL.2S

LDC #: 28944B2a

VALIDATION FINDINGS WORKSHEET
Surrogate Recovery

Page: 1 of 1
Reviewer: FT
2nd Reviewer: OR

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were percent recoveries (%R) for surrogates within QC limits?
Y N N/A If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?
Y N N/A If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

#	Date	Sample ID	Surrogate	%R (Limits)	Qualifications
		1	TPH	134 (30-125)	no qual
				( )	
				( )	
		2	TPH	138 (30-125)	no qual
			TBP	317 (35-125)	
				( )	
		3		142 ( )	
				319 ( )	
				( )	
				( )	
		4	TBP	527 (35-125)	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

* QC limits are advisory	QC Limits (Soil)	QC Limits (Water)		QC Limits (Soil)	QC Limits (Water)
S1 (NBZ) = Nitrobenzene-d5	23-120	35-114	S5 (2FP)= 2-Fluorophenol	25-121	21-100
S2 (FBP) = 2-Fluorobiphenyl	30-115	43-116	S6 (TBP) = 2,4,6-Tribromophenol	19-122	10-123
S3 (TPH) = Terphenyl-d14	18-137	33-141	S7 (2CP) = 2-Chlorophenol-d4	20-130*	33-110*
S4 (PHL) = Phenol-d5	24-113	10-94	S8 (DCB) = 1,2-Dichlorobenzene-d4	20-130*	16-110*

LDC #: 28944B2a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FT
2nd Reviewer: OR

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?
Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		121067-LCS	T	43 (50-150)	( )	( )	All	J/UJ/P
			BBB	152 (50-150)	( )	( )	J	J/P det
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Millennium Bulk Terminals

Collection Date: October 17, 2012

LDC Report Date: December 26, 2012

Matrix: Soil

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2B

Laboratory: APEX Laboratories, LLC

Sample Delivery Group (SDG): A12J509

Sample Identification

AQ-ILF-01-0-11
AQ-ILF-02-0-12
AQ-ILF-03-0-12
AQ-ILF-04-0-14
AQ-ILF-01-0-11DUP

Introduction

This data review covers 5 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082A for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. Surrogate recoveries (%R) were not within QC limits for sample AQ-ILF-02-0-12. Since the sample was diluted out, no data were qualified.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

Raw data were not reviewed for this SDG.

XIII. Compound Quantitation and Reported RLs

Raw data were not reviewed for this SDG.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XV. Field Duplicates

No field duplicates were identified in this SDG.

XVI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polychlorinated Biphenyls - Data Qualification Summary - SDG A12J509

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG A12J509

No Sample Data Qualified in this SDG

LDC #: 28944B3b

SDG #: A12J509

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 12/20/12

Page: 1 of 1

Reviewer: SW

2nd Reviewer: [signature]

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/17/2012
II.	GC/ECD Instrument Performance Check	N	
III.	Initial calibration	A	RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV / CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	N/SW	CS 1268 < 5X RL. Difference < 2XRL.
VIII.	Laboratory control samples	A	LCS
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	N	
XIII.	Compound quantitation/RL/LOQ/LODs	N	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

Soil

+ 1	AQ-ILF-01-0-11	11		21		31	1210801 - BLK1
+ 2	AQ-ILF-02-0-12	12		22		32	
+ 3	AQ-ILF-03-0-12	13		23		33	
+ 4	AQ-ILF-04-0-14	14		24		34	
5	AQ-ILF-01-0-11DUP	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 28944B36

VALIDATION FINDINDS WORKSHEET
Surrogate Recovery

Reviewer: AA SW
2nd Reviewer: [illegible]

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

Are surrogates required by the method? Yes X or No____.

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were surrogates spiked into all samples and blanks?

Y (N) N/A Did all surrogate recoveries (%R) meet the QC limits?

#	Sample ID	Detector/ Column	Surrogate Compound	%R (Limits)	Qualifications
	2		O	144 (55 - 130)	NQ (10X)
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound		
A	Chlorobenzene (CBZ)	G	Octacosane	M	Benzo(e)Pyrene	S	1-Chloro-3-Nitrobenzene	Y	Tetrachloro-m- xylene
B	4-Bromofluorobenzene (BFB)	H	Ortho-Terphenyl	N	Terphenyl-D14	T	3,4-Dinitrotoluene		
C	a,a,a-Trifluorotoluene	I	Fluorobenzene (FBZ)	O	Decachlorobiphenyl (DCB)	U	Tripentyltin		
D	Bromochlorobenene	J	n-Triacontane	P	1-methylnaphthalene	V	Tri-n-propyltin		
E	1,4-Dichlorobutane	K	Hexacosane	Q	Dichlorophenyl Acetic Acid (DCAA)	W	Tributyl Phosphate		
F	1,4-Difluorobenzene (DFB)	L	Bromobenzene	R	4-Nitrophenol	X	Triphenyl Phosphate		

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Millennium Bulk Terminals

Collection Date: October 17, 2012

LDC Report Date: December 20, 2012

Matrix: Soil

Parameters: Metals

Validation Level: Stage 2B

Laboratory: APEX Laboratories, LLC

Sample Delivery Group (SDG): A12J509

Sample Identification

AQ-ILF-01-0-11
AQ-ILF-02-0-12
AQ-ILF-03-0-12
AQ-ILF-04-0-14
AQ-ILF-01-0-11(TCLP)
AQ-ILF-02-0-12(TCLP)
AQ-ILF-03-0-12(TCLP)
AQ-ILF-04-0-14(TCLP)
AQ-ILF-01-0-11(TCLP)MS
AQ-ILF-04-0-14(TCLP)MS

Introduction

This data review covers 10 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010C and 6020A for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, and Zinc.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Metals - Data Qualification Summary - SDG A12J509

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Metals - Laboratory Blank Data Qualification Summary - SDG A12J509

No Sample Data Qualified in this SDG

LDC #: 28944B4

SDG #: A12J509

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 12-19-12

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: Metals (EPA SW 846 Method 6010C/6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/17/12
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis		
VI.	Matrix Spike Analysis	A	MS
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	Not performed
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil

1	AQ-ILF-01-0-11	11		21		31	
2	AQ-ILF-02-0-12	12		22		32	
3	AQ-ILF-03-0-12	13		23		33	
4	AQ-ILF-04-0-14	14		24		34	
5	AQ-ILF-01-0-11(TCLP)	15		25		35	
6	AQ-ILF-02-0-12(TCLP)	16		26		36	
7	AQ-ILF-03-0-12(TCLP)	17		27		37	
8	AQ-ILF-04-0-14(TCLP)	18		28		38	
9	AQ-ILF-01-0-11MS (TCLP)	19		29		39	
10	AQ-ILF-04-0-14(TCLP)MS	20		30		40	

Notes:

LDC #: 01894434

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: CR
2nd reviewer: ✓

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-8		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
QC: 9, 10		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
9		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____

Comments: Mercury by CVAA if performed

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 17, 2012
LDC Report Date:	December 20, 2012
Matrix:	Soil
Parameters:	Wet Chemistry
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J509

Sample Identification

AQ-ILF-01-0-11
AQ-ILF-02-0-12
AQ-ILF-03-0-12
AQ-ILF-04-0-14
AQ-ILF-01-0-11MS
AQ-ILF-01-0-11DUP
AQ-ILF-02-0-12MS
AQ-ILF-02-0-12DUP

Introduction

This data review covers 8 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 9014 for Total Cyanide, Standard Method 4500-CN (I/E) for Weak Acid Dissociable Cyanide, Standard Method 4500-F-C for Fluoride, and PSEP and Standard Method 5310B modified for Total Organic Carbon.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
AQ-ILF-01-0-11 AQ-ILF-02-0-12 AQ-ILF-03-0-12 AQ-ILF-04-0-14 AQ-ILF-01-0-11DUP	Total organic carbon	17 days	14 days	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
AQ-ILF-02-0-12MS (AQ-ILF-02-0-12)	Weak acid dissociable cyanide	30 (75-125)	J (all detects) UJ (all non-detects)	A

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

All sample result verification met validation criteria with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
AQ-ILF-01-0-11	Total organic carbon	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	P

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to holding time, MS %R, and calibration range problems, data were qualified as estimated in four samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A12J509

SDG	Sample	Analyte	Flag	A or P	Reason
A12J509	AQ-ILF-01-0-11 AQ-ILF-02-0-12 AQ-ILF-03-0-12 AQ-ILF-04-0-14	Total organic carbon	J (all detects) UJ (all non-detects)	P	Technical holding time
A12J509	AQ-ILF-02-0-12	Weak acid dissociable cyanide	J (all detects) UJ (all non-detects)	A	Matrix spike (%R)
A12J509	AQ-ILF-01-0-11	Total organic carbon	J (all detects)	P	Sample result verification (exceeded range)

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A12J509

No Sample Data Qualified in this SDG

LDC #: 28944B6

SDG #: A12J509

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 12-9-12

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: (Analyte) Total Cyanide (EPA SW846 Method ~~9013M~~/9014), WAD Cyanide (EPA SW846 Method ~~9013M~~/SM4500–CN-I/E), Fluoride (SM4500-F-C), TOC (PSEP/SM5310B Modified)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	~~A~~ SW	Sampling dates: 10/17/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	SW	MS ~~CN~~
VI.	Duplicates	SW	Dup ~~CN WAD CN~~
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	SW	
IX.	Overall assessment of data	SW	
X.	Field duplicates	N	
XI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil

1	AQ-ILF-01-0-11	11		21		31	
2	AQ-ILF-02-0-12	12		22		32	
3	AQ-ILF-03-0-12	13		23		33	
4	AQ-ILF-04-0-14	14		24		34	
5	AQ-ILF-01-0-11MS	15		25		35	
6	AQ-ILF-01-0-11DUP	16		26		36	
7	AQ-ILF-02-0-12MS	17		27		37	
8	AQ-ILF-02-0-12DUP	18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 28944B6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Parameter
1-4	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 WAD CN
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
QC S	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
6	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
7	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 WAD CN
8	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 WAD CN
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

LDC #: 21894436

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Reviewer: CR
2nd reviewer: W

All circled dates have exceeded the technical holding time.
Y N N/A Were all samples preserved as applicable to each method ?
Y N N/A Were all cooler temperatures within validation criteria?

Method:		DSEP					
Parameters:		TOC					
Technical holding time:		14 days					
Sample ID	**Sampling date**	**Analysis date**	**Analysis date**	**Analysis date**	**Analysis date**	**Analysis date**	**Qualifier**
1-4, 6	10/17/12	11/3/12	(17 days)				J/UJ/P

LDC #: 21894436

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125 (85-115% for Method 300.0)? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
		7	S	WAD CN	30	~~All~~ 2*	J/UJ/A
						*2nd client MS in	
						batch within limits	

Comments: CN 74X

MS.6

LDC #: 28944B6

VALIDATION FINDINGS WORKSHEET
Duplicate Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a duplicate sample analyzed for each matrix in this SDG?

Y N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for water and ≤ 35% for soil samples (≤ 10% for Method 300.0)? If no, see qualification below. A control limit of ±CRDL (±2X CRDL for soil) was used for samples that were ≤5X the CRDL, including when only one of the duplicate sample values were ≤5X the CRDL. If field blanks were used for laboratory duplicates, see overall assessment.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Duplicate ID	Matrix	Analyte	RPD (Limits)	Associated Samples	Qualifications
		AQ-BMD-08-2-4-B (A12J621)		WADCN	86 (≤20)	None*	No Qual
		AQ-ECA-02-1-B (A12J537)		TOC	63 (≤20)	None*	No Qual
						* 2nd Client Dup in Batch within limits	

Comments: WAD CN OK by difference

LDC #: 28944B6

VALIDATION FINDINGS WORKSHEET
Sample Result Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method see cover

#	Sample ID	Analyte	Lab Reporting Limit (units)	RDL (units)	Finding	Qualifications
	1	TOC			>Calibration Range	J/P

Comments:

ABVCRDL.6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 17, 2012
LDC Report Date:	December 26, 2012
Matrix:	Soil
Parameters:	Total Petroleum Hydrocarbons as Extractables
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J509

Sample Identification

AQ-ILF-02-6-8
AQ-ILF-03-8-10
AQ-ILF-04-12-14

Introduction

This data review covers 3 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method NWTPH-DX for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 15.0% .

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 15.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. Surrogate recoveries (%R) were not within QC limits for all samples. Since the samples were diluted out, no data were qualified.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XII. Field Duplicates

No field duplicates were identified in this SDG.

XIII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG A12J509

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG A12J509

No Sample Data Qualified in this SDG

LDC #: 28944B8

SDG #: A12J509

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 12/20/12

Page: 1 of 1

Reviewer: SW

2nd Reviewer: [illegible]

METHOD: GC TPH as Extractables (NWTPH-Dx)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/17/2012
II	Initial calibration	A	RSD ≤ 15
III.	Calibration verification/ICV	A	icv / ccv ≤ 15
IV.	Blanks	A	
V	Surrogate recovery	SW	
VI.	Matrix spike/Matrix spike duplicates	N	CS
VII.	Laboratory control samples	A	LCS ~~[illegible]~~ SW
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	~~SW~~ ~~A~~ N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

Soil

1	AQ-ILF-02-6-8	11		21		31	1210721 - BLK1
2	AQ-ILF-03-8-10	12		22		32	
3	AQ-ILF-04-12-14	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 2894480

VALIDATION FINDINDS WORKSHEET
Surrogate Recovery

Reviewer: SW
2nd Reviewer: q

METHOD: X GC __ HPLC
Are surrogates required by the method? Yes X or No____.
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
(Y) N N/A Were surrogates spiked into all samples and blanks?
Y (N) N/A Did all surrogate recoveries (%R) meet the QC limits?

#	Sample ID	Detector/ Column	Surrogate Compound	%R (Limits)	Qualifications
	1		H	0.0 (50 - 150)	NQ (40x)
			↓	( )	
	2		↓	0.0 (↓)	NQ (40x)
			↓	( )	
	3		↓	0.0 (↓)	NQ (10x)
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound		
A	Chlorobenzene (CBZ)	G	Octacosane	M	Benzo(e)Pyrene	S	1-Chloro-3-Nitrobenzene	Y	Tetrachloro-m- xylene
B	4-Bromofluorobenzene (BFB)	H	Ortho-Terphenyl	N	Terphenyl-D14	T	3,4-Dinitrotoluene		
C	a,a,a-Trifluorotoluene	I	Fluorobenzene (FBZ)	O	Decachlorobiphenyl (DCB)	U	Tripentyltin		
D	Bromochlorobenene	J	n-Triacontane	P	1-methylnaphthalene	V	Tri-n-propyltin		
E	1,4-Dichlorobutane	K	Hexacosane	Q	Dichlorophenyl Acetic Acid (DCAA)	W	Tributyl Phosphate		
F	1,4-Difluorobenzene (DFB)	L	Bromobenzene	R	4-Nitrophenol	X	Triphenyl Phosphate		

Analytical Method APEXsolids

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-01-0-11	A12J509-07	Total solids	10/23/2012	79.7		Yes	Y				1.00	1.00	pct
AQ-ILF-02-0-12	A12J509-14	Total solids	10/23/2012	80.3		Yes	Y				1.00	1.00	pct
AQ-ILF-02-6-8	A12J509-16	Total solids	10/23/2012	80.7		Yes	Y				1.00	1.00	pct
AQ-ILF-03-0-12	A12J509-24	Total solids	10/23/2012	85.2		Yes	Y				1.00	1.00	pct
AQ-ILF-03-8-10	A12J509-23	Total solids	10/23/2012	81.9		Yes	Y				1.00	1.00	pct
AQ-ILF-04-0-14	A12J509-31	Total solids	10/23/2012	78.7		Yes	Y				1.00	1.00	pct
AQ-ILF-04-12-14	A12J509-30	Total solids	10/23/2012	71.3		Yes	Y				1.00	1.00	pct
AQ-ILF-53-8-10	A12J509-21	Total solids	11/1/2012	82.5		Yes	Y				1.00	1.00	pct

Analytical Method NWTPHDx

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-02-6-8	A12J509-16	Diesel Range Hydrocarbons	10/25/2012	614		Yes	Y	D J			981	490	mg/kg
AQ-ILF-02-6-8	A12J509-16	Oil	10/25/2012	6530		Yes	Y	D			1960	981	mg/kg
AQ-ILF-03-8-10	A12J509-23	Diesel Range Hydrocarbons	10/25/2012	2220		Yes	Y	D			916	458	mg/kg
AQ-ILF-03-8-10	A12J509-23	Oil	10/25/2012	9300		Yes	Y	D			1830	916	mg/kg
AQ-ILF-04-12-14	A12J509-30	Diesel Range Hydrocarbons	10/25/2012	1550		Yes	Y	D			266	133	mg/kg
AQ-ILF-04-12-14	A12J509-30	Oil	10/25/2012	5290		Yes	Y	D			532	266	mg/kg

Analytical Method SM4500CNE

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-01-0-11	A12J509-07	Cyanide, total	10/26/2012	53.7		Yes	Y	D			2.43	2.43	mg/kg
AQ-ILF-02-0-12	A12J509-14	Cyanide, total	10/26/2012	10.4		Yes	Y	D			0.600	0.600	mg/kg
AQ-ILF-03-0-12	A12J509-24	Cyanide, total	10/26/2012	13.4		Yes	Y	D			0.577	0.577	mg/kg
AQ-ILF-04-0-14	A12J509-31	Cyanide, total	10/26/2012	13.8		Yes	Y	D			0.574	0.574	mg/kg

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-01-0-11	A12J509-07	Cyanide, Weak acid dissociable (WAD)	10/26/2012	2.7		Yes	Y				0.304	0.304	mg/kg

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-02-0-12	A12J509-14	Cyanide, Weak acid dissociable (WAD)	10/26/2012	0.444		Yes	Y		J	8	0.300	0.300	mg/kg
AQ-ILF-03-0-12	A12J509-24	Cyanide, Weak acid dissociable (WAD)	10/26/2012	0.289		Yes	N	U			0.289	0.289	mg/kg
AQ-ILF-04-0-14	A12J509-31	Cyanide, Weak acid dissociable (WAD)	10/26/2012	0.813		Yes	Y				0.287	0.287	mg/kg

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-01-0-11	A12J509-07	Fluoride	10/24/2012	48300		Yes	Y	D			610	610	mg/kg
AQ-ILF-02-0-12	A12J509-14	Fluoride	10/24/2012	62000		Yes	Y	D			609	609	mg/kg
AQ-ILF-03-0-12	A12J509-24	Fluoride	10/24/2012	48700		Yes	Y	D			562	562	mg/kg
AQ-ILF-04-0-14	A12J509-31	Fluoride	10/24/2012	87100		Yes	Y	D			632	632	mg/kg

Analytical Method SM5310B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-01-0-11	A12J509-07	Total organic carbon	11/3/2012	210000		Yes	Y		J	1,20	200	100	mg/kg
AQ-ILF-02-0-12	A12J509-14	Total organic carbon	11/3/2012	170000		Yes	Y		J	1	200	100	mg/kg
AQ-ILF-03-0-12	A12J509-24	Total organic carbon	11/3/2012	83000		Yes	Y		J	1	200	100	mg/kg
AQ-ILF-04-0-14	A12J509-31	Total organic carbon	11/3/2012	80000		Yes	Y		J	1	200	100	mg/kg

Analytical Method SW6010C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-01-0-11	A12J509-07	Beryllium	10/29/2012	12.7		Yes	Y	D			4.83	2.41	mg/kg
AQ-ILF-01-0-11	A12J509-07	Beryllium	10/29/2012	0.1		Yes	N	U			0.100	0.0500	mg/L
AQ-ILF-02-0-12	A12J509-14	Beryllium	10/29/2012	20.1		Yes	Y	D			4.92	2.46	mg/kg
AQ-ILF-02-0-12	A12J509-14	Beryllium	10/29/2012	0.063		Yes	Y	J			0.100	0.0500	mg/L
AQ-ILF-03-0-12	A12J509-24	Beryllium	10/29/2012	12.6		Yes	Y	D			4.82	2.41	mg/kg
AQ-ILF-03-0-12	A12J509-24	Beryllium	10/29/2012	0.054		Yes	Y	J			0.100	0.0500	mg/L
AQ-ILF-04-0-14	A12J509-31	Beryllium	10/29/2012	21.8		Yes	Y	D			5.11	2.56	mg/kg
AQ-ILF-04-0-14	A12J509-31	Beryllium	10/29/2012	0.154		Yes	Y				0.100	0.0500	mg/L

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-01-0-11	A12J509-07	Mercury	10/26/2012	0.0965		Yes	N	D U			0.0965	0.0483	mg/kg
AQ-ILF-01-0-11	A12J509-07	Nickel	10/26/2012	222		Yes	Y	D			2.41	1.21	mg/kg
AQ-ILF-01-0-11	A12J509-07	Silver	10/26/2012	1.21		Yes	N	D U			1.21	0.603	mg/kg
AQ-ILF-01-0-11	A12J509-07	Thallium	10/26/2012	1.21		Yes	N	D U			1.21	0.603	mg/kg
AQ-ILF-01-0-11	A12J509-07	Antimony	10/26/2012	2.27		Yes	Y	D			1.21	0.603	mg/kg
AQ-ILF-01-0-11	A12J509-07	Arsenic	10/26/2012	9.58		Yes	Y	D			2.41	0.603	mg/kg
AQ-ILF-01-0-11	A12J509-07	Lead	10/26/2012	59.4		Yes	Y	D			1.21	0.603	mg/kg
AQ-ILF-01-0-11	A12J509-07	Chromium	10/26/2012	35.6		Yes	Y	D			2.41	1.21	mg/kg
AQ-ILF-01-0-11	A12J509-07	Cadmium	10/26/2012	1.76		Yes	Y	D			1.21	0.603	mg/kg
AQ-ILF-01-0-11	A12J509-07	Barium	10/26/2012	47.7		Yes	Y	D			1.21	0.603	mg/kg
AQ-ILF-01-0-11	A12J509-07	Zinc	10/26/2012	1490		Yes	Y	D			4.83	2.41	mg/kg
AQ-ILF-01-0-11	A12J509-07	Selenium	10/26/2012	2.41		Yes	N	D U			2.41	1.21	mg/kg
AQ-ILF-01-0-11	A12J509-07	Copper	10/26/2012	1020		Yes	Y	D			2.41	1.21	mg/kg
AQ-ILF-01-0-11	A12J509-07	Chromium	10/30/2012	0.1		Yes	N	D U			0.100	0.0500	mg/L
AQ-ILF-01-0-11	A12J509-07	Barium	10/30/2012	0.5		Yes	N	D U			0.500	0.250	mg/L
AQ-ILF-01-0-11	A12J509-07	Mercury	10/30/2012	0.004		Yes	N	D U			0.00400	0.00250	mg/L
AQ-ILF-01-0-11	A12J509-07	Lead	10/30/2012	0.05		Yes	N	D U			0.0500	0.0250	mg/L
AQ-ILF-01-0-11	A12J509-07	Arsenic	10/30/2012	0.1		Yes	N	D U			0.100	0.0500	mg/L
AQ-ILF-01-0-11	A12J509-07	Cadmium	10/30/2012	0.05		Yes	N	D U			0.0500	0.0250	mg/L
AQ-ILF-01-0-11	A12J509-07	Selenium	10/30/2012	0.1		Yes	N	D U			0.100	0.0500	mg/L
AQ-ILF-01-0-11	A12J509-07	Nickel	10/30/2012	0.447		Yes	Y	D			0.100	0.0500	mg/L
AQ-ILF-01-0-11	A12J509-07	Zinc	10/30/2012	17.2		Yes	Y	D			0.250	0.125	mg/L
AQ-ILF-01-0-11	A12J509-07	Copper	10/30/2012	5.04		Yes	Y	D			0.250	0.125	mg/L
AQ-ILF-01-0-11	A12J509-07	Silver	10/30/2012	0.05		Yes	N	D U			0.0500	0.0250	mg/L
AQ-ILF-01-0-11	A12J509-07	Antimony	10/30/2012	0.05		Yes	N	D U			0.0500	0.0250	mg/L

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-01-0-11	A12J509-07	Thallium	10/30/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-ILF-02-0-12	A12J509-14	Antimony	10/26/2012	2.02	Yes	Y	D			1.23	0.615	mg/kg
AQ-ILF-02-0-12	A12J509-14	Selenium	10/26/2012	2.46	Yes	N	D U			2.46	1.23	mg/kg
AQ-ILF-02-0-12	A12J509-14	Barium	10/26/2012	57.9	Yes	Y	D			1.23	0.615	mg/kg
AQ-ILF-02-0-12	A12J509-14	Cadmium	10/26/2012	2.22	Yes	Y	D			1.23	0.615	mg/kg
AQ-ILF-02-0-12	A12J509-14	Arsenic	10/26/2012	10	Yes	Y	D			2.46	0.615	mg/kg
AQ-ILF-02-0-12	A12J509-14	Thallium	10/26/2012	1.23	Yes	N	D U			1.23	0.615	mg/kg
AQ-ILF-02-0-12	A12J509-14	Silver	10/26/2012	1.23	Yes	N	D U			1.23	0.615	mg/kg
AQ-ILF-02-0-12	A12J509-14	Nickel	10/26/2012	201	Yes	Y	D			2.46	1.23	mg/kg
AQ-ILF-02-0-12	A12J509-14	Mercury	10/26/2012	0.0984	Yes	N	D U			0.0984	0.0492	mg/kg
AQ-ILF-02-0-12	A12J509-14	Lead	10/26/2012	60.5	Yes	Y	D			1.23	0.615	mg/kg
AQ-ILF-02-0-12	A12J509-14	Copper	10/26/2012	296	Yes	Y	D			2.46	1.23	mg/kg
AQ-ILF-02-0-12	A12J509-14	Zinc	10/26/2012	133	Yes	Y	D			4.92	2.46	mg/kg
AQ-ILF-02-0-12	A12J509-14	Chromium	10/26/2012	75.9	Yes	Y	D			2.46	1.23	mg/kg
AQ-ILF-02-0-12	A12J509-14	Arsenic	10/30/2012	0.1	Yes	N	D U			0.100	0.0500	mg/L
AQ-ILF-02-0-12	A12J509-14	Zinc	10/30/2012	0.704	Yes	Y	D			0.250	0.125	mg/L
AQ-ILF-02-0-12	A12J509-14	Lead	10/30/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-ILF-02-0-12	A12J509-14	Mercury	10/30/2012	0.004	Yes	N	D U			0.00400	0.00250	mg/L
AQ-ILF-02-0-12	A12J509-14	Nickel	10/30/2012	0.562	Yes	Y	D			0.100	0.0500	mg/L
AQ-ILF-02-0-12	A12J509-14	Silver	10/30/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-ILF-02-0-12	A12J509-14	Antimony	10/30/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-ILF-02-0-12	A12J509-14	Barium	10/30/2012	0.5	Yes	N	D U			0.500	0.250	mg/L
AQ-ILF-02-0-12	A12J509-14	Cadmium	10/30/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-ILF-02-0-12	A12J509-14	Chromium	10/30/2012	0.1	Yes	N	D U			0.100	0.0500	mg/L
AQ-ILF-02-0-12	A12J509-14	Selenium	10/30/2012	0.1	Yes	N	D U			0.100	0.0500	mg/L

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-02-0-12	A12J509-14	Copper	10/30/2012	0.206	Yes	Y	D J			0.250	0.125	mg/L
AQ-ILF-02-0-12	A12J509-14	Thallium	10/30/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-ILF-03-0-12	A12J509-24	Nickel	10/26/2012	213	Yes	Y	D			2.41	1.21	mg/kg
AQ-ILF-03-0-12	A12J509-24	Mercury	10/26/2012	0.132	Yes	Y	D			0.0964	0.0482	mg/kg
AQ-ILF-03-0-12	A12J509-24	Silver	10/26/2012	1.21	Yes	N	D U			1.21	0.603	mg/kg
AQ-ILF-03-0-12	A12J509-24	Thallium	10/26/2012		Yes	N	D J U			1.21	0.603	mg/kg
AQ-ILF-03-0-12	A12J509-24	Antimony	10/26/2012	27.6	Yes	Y	D			1.21	0.603	mg/kg
AQ-ILF-03-0-12	A12J509-24	Arsenic	10/26/2012	59.7	Yes	Y	D			2.41	0.603	mg/kg
AQ-ILF-03-0-12	A12J509-24	Barium	10/26/2012	46.4	Yes	Y	D			1.21	0.603	mg/kg
AQ-ILF-03-0-12	A12J509-24	Cadmium	10/26/2012	1.82	Yes	Y	D			1.21	0.603	mg/kg
AQ-ILF-03-0-12	A12J509-24	Chromium	10/26/2012	217	Yes	Y	D			2.41	1.21	mg/kg
AQ-ILF-03-0-12	A12J509-24	Copper	10/26/2012	420	Yes	Y	D			2.41	1.21	mg/kg
AQ-ILF-03-0-12	A12J509-24	Zinc	10/26/2012	157	Yes	Y	D			4.82	2.41	mg/kg
AQ-ILF-03-0-12	A12J509-24	Selenium	10/26/2012	2.41	Yes	N	D U			2.41	1.21	mg/kg
AQ-ILF-03-0-12	A12J509-24	Lead	10/26/2012	71.1	Yes	Y	D			1.21	0.603	mg/kg
AQ-ILF-03-0-12	A12J509-24	Thallium	10/30/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-ILF-03-0-12	A12J509-24	Lead	10/30/2012	0.0365	Yes	Y	D J			0.0500	0.0250	mg/L
AQ-ILF-03-0-12	A12J509-24	Mercury	10/30/2012	0.004	Yes	N	D U			0.00400	0.00250	mg/L
AQ-ILF-03-0-12	A12J509-24	Silver	10/30/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-ILF-03-0-12	A12J509-24	Nickel	10/30/2012	0.847	Yes	Y	D			0.100	0.0500	mg/L
AQ-ILF-03-0-12	A12J509-24	Chromium	10/30/2012	0.1	Yes	N	D U			0.100	0.0500	mg/L
AQ-ILF-03-0-12	A12J509-24	Cadmium	10/30/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-ILF-03-0-12	A12J509-24	Barium	10/30/2012	0.5	Yes	N	D U			0.500	0.250	mg/L
AQ-ILF-03-0-12	A12J509-24	Arsenic	10/30/2012	0.1	Yes	N	D U			0.100	0.0500	mg/L
AQ-ILF-03-0-12	A12J509-24	Antimony	10/30/2012	0.0315	Yes	Y	D J			0.0500	0.0250	mg/L

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-03-0-12	A12J509-24	Zinc	10/30/2012	0.682	Yes	Y	D			0.250	0.125	mg/L
AQ-ILF-03-0-12	A12J509-24	Copper	10/30/2012	0.75	Yes	Y	D			0.250	0.125	mg/L
AQ-ILF-03-0-12	A12J509-24	Selenium	10/30/2012	0.1	Yes	N	D U			0.100	0.0500	mg/L
AQ-ILF-04-0-14	A12J509-31	Lead	10/26/2012	136	Yes	Y	D			1.28	0.639	mg/kg
AQ-ILF-04-0-14	A12J509-31	Mercury	10/26/2012	0.0786	Yes	Y	D J			0.102	0.0511	mg/kg
AQ-ILF-04-0-14	A12J509-31	Nickel	10/26/2012	302	Yes	Y	D			2.56	1.28	mg/kg
AQ-ILF-04-0-14	A12J509-31	Selenium	10/26/2012	1.41	Yes	Y	D J			2.56	1.28	mg/kg
AQ-ILF-04-0-14	A12J509-31	Silver	10/26/2012	1.28	Yes	N	D U			1.28	0.639	mg/kg
AQ-ILF-04-0-14	A12J509-31	Thallium	10/26/2012	1.28	Yes	N	D U			1.28	0.639	mg/kg
AQ-ILF-04-0-14	A12J509-31	Antimony	10/26/2012	4.03	Yes	Y	D			1.28	0.639	mg/kg
AQ-ILF-04-0-14	A12J509-31	Arsenic	10/26/2012	11.4	Yes	Y	D			2.56	0.639	mg/kg
AQ-ILF-04-0-14	A12J509-31	Barium	10/26/2012	73	Yes	Y	D			1.28	0.639	mg/kg
AQ-ILF-04-0-14	A12J509-31	Cadmium	10/26/2012	1.7	Yes	Y	D			1.28	0.639	mg/kg
AQ-ILF-04-0-14	A12J509-31	Copper	10/26/2012	391	Yes	Y	D			2.56	1.28	mg/kg
AQ-ILF-04-0-14	A12J509-31	Chromium	10/26/2012	58.8	Yes	Y	D			2.56	1.28	mg/kg
AQ-ILF-04-0-14	A12J509-31	Zinc	10/26/2012	164	Yes	Y	D			5.11	2.56	mg/kg
AQ-ILF-04-0-14	A12J509-31	Mercury	10/30/2012	0.004	Yes	N	D U			0.00400	0.00250	mg/L
AQ-ILF-04-0-14	A12J509-31	Selenium	10/30/2012	0.1	Yes	N	D U			0.100	0.0500	mg/L
AQ-ILF-04-0-14	A12J509-31	Barium	10/30/2012	0.5	Yes	N	D U			0.500	0.250	mg/L
AQ-ILF-04-0-14	A12J509-31	Arsenic	10/30/2012	0.1	Yes	N	D U			0.100	0.0500	mg/L
AQ-ILF-04-0-14	A12J509-31	Antimony	10/30/2012	0.0275	Yes	Y	D J			0.0500	0.0250	mg/L
AQ-ILF-04-0-14	A12J509-31	Thallium	10/30/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-ILF-04-0-14	A12J509-31	Nickel	10/30/2012	2.06	Yes	Y	D			0.100	0.0500	mg/L
AQ-ILF-04-0-14	A12J509-31	Lead	10/30/2012	0.112	Yes	Y	D			0.0500	0.0250	mg/L
AQ-ILF-04-0-14	A12J509-31	Zinc	10/30/2012	2.19	Yes	Y	D			0.250	0.125	mg/L

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-04-0-14	A12J509-31	Copper	10/30/2012	0.665		Yes	Y	D			0.250	0.125	mg/L
AQ-ILF-04-0-14	A12J509-31	Chromium	10/30/2012	0.138		Yes	Y	D			0.100	0.0500	mg/L
AQ-ILF-04-0-14	A12J509-31	Cadmium	10/30/2012	0.05		Yes	N	D U			0.0500	0.0250	mg/L
AQ-ILF-04-0-14	A12J509-31	Silver	10/30/2012	0.05		Yes	N	D U			0.0500	0.0250	mg/L

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-01-0-11	A12J509-07	Aroclor 1268	10/26/2012	325		Yes	Y	D			114	56.9	ug/kg
AQ-ILF-01-0-11	A12J509-07	Aroclor 1248	10/26/2012	114		Yes	N	D U			114	56.9	ug/kg
AQ-ILF-01-0-11	A12J509-07	Aroclor 1016	10/26/2012	114		Yes	N	D U			114	56.9	ug/kg
AQ-ILF-01-0-11	A12J509-07	Aroclor 1262	10/26/2012	114		Yes	N	D U			114	56.9	ug/kg
AQ-ILF-01-0-11	A12J509-07	Aroclor 1242	10/26/2012	114		Yes	N	D U			114	56.9	ug/kg
AQ-ILF-01-0-11	A12J509-07	Aroclor 1232	10/26/2012	114		Yes	N	D U			114	56.9	ug/kg
AQ-ILF-01-0-11	A12J509-07	Aroclor 1254	10/26/2012	211		Yes	Y	D			114	56.9	ug/kg
AQ-ILF-01-0-11	A12J509-07	Aroclor 1260	10/26/2012	162		Yes	Y	D			114	56.9	ug/kg
AQ-ILF-01-0-11	A12J509-07	Aroclor 1221	10/26/2012	114		Yes	N	D U			114	56.9	ug/kg
AQ-ILF-02-0-12	A12J509-14	Aroclor 1254	10/26/2012	460		Yes	Y	D			119	59.5	ug/kg
AQ-ILF-02-0-12	A12J509-14	Aroclor 1221	10/26/2012	119		Yes	N	D U			119	59.5	ug/kg
AQ-ILF-02-0-12	A12J509-14	Aroclor 1232	10/26/2012	119		Yes	N	D U			119	59.5	ug/kg
AQ-ILF-02-0-12	A12J509-14	Aroclor 1260	10/26/2012	394		Yes	Y	D			119	59.5	ug/kg
AQ-ILF-02-0-12	A12J509-14	Aroclor 1268	10/26/2012	916		Yes	Y	D			119	59.5	ug/kg
AQ-ILF-02-0-12	A12J509-14	Aroclor 1248	10/26/2012	119		Yes	N	D U			119	59.5	ug/kg
AQ-ILF-02-0-12	A12J509-14	Aroclor 1016	10/26/2012	119		Yes	N	D U			119	59.5	ug/kg
AQ-ILF-02-0-12	A12J509-14	Aroclor 1262	10/26/2012	119		Yes	N	D U			119	59.5	ug/kg
AQ-ILF-02-0-12	A12J509-14	Aroclor 1242	10/26/2012	119		Yes	N	D U			119	59.5	ug/kg
AQ-ILF-03-0-12	A12J509-24RE1	Aroclor 1016	10/26/2012	107		Yes	N	D U			107	53.5	ug/kg

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-03-0-12	A12J509-24RE1	Aroclor 1262	10/26/2012	107	Yes	N	D U			107	53.5	ug/kg
AQ-ILF-03-0-12	A12J509-24RE1	Aroclor 1248	10/26/2012	107	Yes	N	D U			107	53.5	ug/kg
AQ-ILF-03-0-12	A12J509-24RE1	Aroclor 1232	10/26/2012	107	Yes	N	D U			107	53.5	ug/kg
AQ-ILF-03-0-12	A12J509-24RE1	Aroclor 1268	10/26/2012	107	Yes	N	D U			107	53.5	ug/kg
AQ-ILF-03-0-12	A12J509-24RE1	Aroclor 1254	10/26/2012	3350	Yes	Y	D			107	53.5	ug/kg
AQ-ILF-03-0-12	A12J509-24RE1	Aroclor 1260	10/26/2012	443	Yes	Y	D			107	53.5	ug/kg
AQ-ILF-03-0-12	A12J509-24RE1	Aroclor 1242	10/26/2012	107	Yes	N	D U			107	53.5	ug/kg
AQ-ILF-03-0-12	A12J509-24RE1	Aroclor 1221	10/26/2012	107	Yes	N	D U			107	53.5	ug/kg
AQ-ILF-04-0-14	A12J509-31	Aroclor 1254	10/26/2012	816	Yes	Y	D			115	57.5	ug/kg
AQ-ILF-04-0-14	A12J509-31	Aroclor 1268	10/26/2012	115	Yes	N	D U			115	57.5	ug/kg
AQ-ILF-04-0-14	A12J509-31	Aroclor 1232	10/26/2012	115	Yes	N	D U			115	57.5	ug/kg
AQ-ILF-04-0-14	A12J509-31	Aroclor 1260	10/26/2012	287	Yes	Y	D			115	57.5	ug/kg
AQ-ILF-04-0-14	A12J509-31	Aroclor 1242	10/26/2012	87.3	Yes	Y	D J			115	57.5	ug/kg
AQ-ILF-04-0-14	A12J509-31	Aroclor 1262	10/26/2012	115	Yes	N	D U			115	57.5	ug/kg
AQ-ILF-04-0-14	A12J509-31	Aroclor 1016	10/26/2012	115	Yes	N	D U			115	57.5	ug/kg
AQ-ILF-04-0-14	A12J509-31	Aroclor 1248	10/26/2012	115	Yes	N	D U			115	57.5	ug/kg
AQ-ILF-04-0-14	A12J509-31	Aroclor 1221	10/26/2012	115	Yes	N	D U			115	57.5	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-02-6-8	A12J509-16	n-Butylbenzene	10/19/2012	88.1	Yes	N	D U			88.1	44.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	Ethylene dibromide (1,2-Dibromoethane)	10/19/2012	44	Yes	N	D U			44.0	26.7	ug/kg
AQ-ILF-02-6-8	A12J509-16	Ethylbenzene	10/19/2012	29.1	Yes	Y	D J			44.0	22.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	Styrene	10/19/2012	88.1	Yes	N	D U			88.1	44.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	Bromodichloromethane	10/19/2012	44	Yes	N	D U			44.0	22.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	1,3-Dichloropropene, cis-	10/19/2012	88.1	Yes	N	D U			88.1	44.0	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-02-6-8	A12J509-16	4-Chlorotoluene	10/19/2012	88.1	Yes	N	D U			88.1	44.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	1,2,3-Trichloropropane	10/19/2012	88.1	Yes	N	D U	UJ	5	88.1	44.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	o-Xylene	10/19/2012	23.8	Yes	Y	D J			44.0	22.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	2-Chlorotoluene	10/19/2012	88.1	Yes	N	D U			88.1	44.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	1,3-Dichloropropene, trans-	10/19/2012	88.1	Yes	N	D U			88.1	44.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	n-Propylbenzene	10/19/2012	44	Yes	N	D U			44.0	22.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	4-Isopropyltoluene (4-Cymene)	10/19/2012	88.1	Yes	N	D U			88.1	44.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	Isopropylbenzene (Cumene)	10/19/2012	88.1	Yes	N	D U			88.1	44.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	tert-Butylbenzene	10/19/2012	88.1	Yes	N	D U	UJ	5	88.1	44.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	1,2-Dichlorobenzene	10/19/2012	44	Yes	N	D U			44.0	22.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	1,2,4-Trimethylbenzene	10/19/2012	88.1	Yes	N	D U			88.1	44.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	1,2-Dibromo-3-chloropropane	10/19/2012	440	Yes	N	D U	UJ	5	440	220	ug/kg
AQ-ILF-02-6-8	A12J509-16	1,4-Dichlorobenzene	10/19/2012	44	Yes	N	D U			44.0	22.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	1,1-Dichloroethane	10/19/2012	44	Yes	N	D U			44.0	26.1	ug/kg
AQ-ILF-02-6-8	A12J509-16	Acetone	10/19/2012	1760	Yes	N	D U	UJ	5	1760	881	ug/kg
AQ-ILF-02-6-8	A12J509-16	Chloroform	10/19/2012	88.1	Yes	N	D U			88.1	44.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	Benzene	10/19/2012	13.2	Yes	Y	D J			22.0	12.3	ug/kg
AQ-ILF-02-6-8	A12J509-16	1,1,1-Trichloroethane	10/19/2012	44	Yes	N	D U			44.0	22.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	Bromomethane (Methyl Bromide)	10/19/2012	881	Yes	N	D U			881	881	ug/kg
AQ-ILF-02-6-8	A12J509-16	Chloromethane	10/19/2012	440	Yes	N	D U	UJ	5	440	220	ug/kg
AQ-ILF-02-6-8	A12J509-16	Dibromomethane	10/19/2012	88.1	Yes	N	D U	UJ	5	88.1	44.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	Bromochloromethane	10/19/2012	44	Yes	N	D U	UJ	5	44.0	22.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	Chloroethane	10/19/2012	881	Yes	N	D U			881	440	ug/kg
AQ-ILF-02-6-8	A12J509-16	Vinyl chloride	10/19/2012	44	Yes	N	D U			44.0	32.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	1,1,1,2-Tetrachloroethane	10/19/2012	88.1	Yes	N	D U	UJ	5	88.1	44.0	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-02-6-8	A12J509-16	Bromoform (Tribromomethane)	10/19/2012	88.1	Yes	N	D U			88.1	44.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	Trichlorofluoromethane (Fluorotrichloromethane)	10/19/2012	176	Yes	N	D U	UJ	5	176	88.1	ug/kg
AQ-ILF-02-6-8	A12J509-16	1,1-Dichloroethene	10/19/2012	44	Yes	N	D U			44.0	23.6	ug/kg
AQ-ILF-02-6-8	A12J509-16	1,2-Dichloroethane	10/19/2012	44	Yes	N	D U			44.0	22.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	Dichlorodifluoromethane	10/19/2012	176	Yes	N	D U			176	88.1	ug/kg
AQ-ILF-02-6-8	A12J509-16	Carbon disulfide	10/19/2012	881	Yes	N	D U			881	440	ug/kg
AQ-ILF-02-6-8	A12J509-16	2-Butanone (MEK)	10/19/2012	881	Yes	N	D U	UJ	5	881	440	ug/kg
AQ-ILF-02-6-8	A12J509-16	1,1,2-Trichloroethane	10/19/2012	88.1	Yes	N	D U			88.1	44.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	Trichloroethene (TCE)	10/19/2012	44	Yes	N	D U			44.0	31.9	ug/kg
AQ-ILF-02-6-8	A12J509-16	1,1,2,2-Tetrachloroethane	10/19/2012	44	Yes	N	D U			44.0	22.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	1,2,3-Trichlorobenzene	10/19/2012	440	Yes	N	D U			440	220	ug/kg
AQ-ILF-02-6-8	A12J509-16	Naphthalene	10/19/2012	1130	Yes	Y	D			176	88.1	ug/kg
AQ-ILF-02-6-8	A12J509-16	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/19/2012	176	Yes	N	D U			176	88.1	ug/kg
AQ-ILF-02-6-8	A12J509-16	Dichloromethane (Methylene chloride)	10/19/2012	440	Yes	N	D U			440	220	ug/kg
AQ-ILF-02-6-8	A12J509-16	1,2,4-Trichlorobenzene	10/19/2012	440	Yes	N	D U			440	220	ug/kg
AQ-ILF-02-6-8	A12J509-16	2,2-Dichloropropane	10/19/2012	88.1	Yes	N	D U	UJ	5	88.1	44.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	1,2-Dichloropropane	10/19/2012	44	Yes	N	D U			44.0	22.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	1,3,5-Trimethylbenzene (Mesitylene)	10/19/2012	88.1	Yes	N	D U			88.1	44.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	Bromobenzene	10/19/2012	44	Yes	N	D U			44.0	24.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/19/2012	881	Yes	N	D U	UJ	5	881	440	ug/kg
AQ-ILF-02-6-8	A12J509-16	Chlorobenzene	10/19/2012	44	Yes	N	D U			44.0	22.9	ug/kg
AQ-ILF-02-6-8	A12J509-16	Dibromochloromethane	10/19/2012	176	Yes	N	D U			176	88.1	ug/kg
AQ-ILF-02-6-8	A12J509-16	Tetrachloroethene (PCE)	10/19/2012	44	Yes	N	D U			44.0	22.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	sec-Butylbenzene	10/19/2012	88.1	Yes	N	D U			88.1	44.0	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-02-6-8	A12J509-16	1,2-Dichloroethene, cis-	10/19/2012	44	Yes	N	D U	UJ	5	44.0	22.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	1,2-Dichloroethene, trans-	10/19/2012	44	Yes	N	D U	UJ	5	44.0	22.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	2-Hexanone (Methyl butyl ketone)	10/19/2012	881	Yes	N	D U	UJ	5	881	440	ug/kg
AQ-ILF-02-6-8	A12J509-16	Methyl tert-butyl ether (MTBE)	10/19/2012	88.1	Yes	N	D U			88.1	52.6	ug/kg
AQ-ILF-02-6-8	A12J509-16	m,p-Xylene	10/19/2012	59.9	Yes	Y	D J			88.1	44.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	1,3-Dichlorobenzene	10/19/2012	44	Yes	N	D U			44.0	22.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	Carbon tetrachloride (Tetrachloromethane)	10/19/2012	44	Yes	N	D U			44.0	22.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	1,3-Dichloropropane	10/19/2012	44	Yes	N	D U	UJ	5	44.0	22.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	Toluene	10/19/2012	45.8	Yes	Y	D J			88.1	44.0	ug/kg
AQ-ILF-02-6-8	A12J509-16	1,1-Dichloropropene	10/19/2012	88.1	Yes	N	D U			88.1	44.0	ug/kg
AQ-ILF-03-8-10	A12J509-23	1,3-Dichloropropane	10/19/2012	143	Yes	N	D U	UJ	5	143	71.3	ug/kg
AQ-ILF-03-8-10	A12J509-23	Ethylbenzene	10/19/2012	388	Yes	Y	D			143	71.3	ug/kg
AQ-ILF-03-8-10	A12J509-23	Bromobenzene	10/19/2012	143	Yes	N	D U			143	77.9	ug/kg
AQ-ILF-03-8-10	A12J509-23	1,1,2-Trichloroethane	10/19/2012	285	Yes	N	D U			285	143	ug/kg
AQ-ILF-03-8-10	A12J509-23	Methyl tert-butyl ether (MTBE)	10/19/2012	285	Yes	N	D U			285	170	ug/kg
AQ-ILF-03-8-10	A12J509-23	1,2-Dichloroethene, cis-	10/19/2012	143	Yes	N	D U	UJ	5	143	71.3	ug/kg
AQ-ILF-03-8-10	A12J509-23	Trichloroethene (TCE)	10/19/2012	143	Yes	N	D U			143	103	ug/kg
AQ-ILF-03-8-10	A12J509-23	1,2-Dichloroethene, trans-	10/19/2012	143	Yes	N	D U	UJ	5	143	71.3	ug/kg
AQ-ILF-03-8-10	A12J509-23	1,2,4-Trimethylbenzene	10/19/2012	151	Yes	Y	D J			285	143	ug/kg
AQ-ILF-03-8-10	A12J509-23	1,2-Dichlorobenzene	10/19/2012	143	Yes	N	D U			143	71.3	ug/kg
AQ-ILF-03-8-10	A12J509-23	2-Chlorotoluene	10/19/2012	285	Yes	N	D U			285	143	ug/kg
AQ-ILF-03-8-10	A12J509-23	o-Xylene	10/19/2012	1640	Yes	Y	D			143	71.3	ug/kg
AQ-ILF-03-8-10	A12J509-23	Naphthalene	10/19/2012	13200	Yes	Y	D			570	285	ug/kg
AQ-ILF-03-8-10	A12J509-23	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/19/2012	570	Yes	N	D U			570	285	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-03-8-10	A12J509-23	sec-Butylbenzene	10/19/2012	285	Yes	N	D U			285	143	ug/kg
AQ-ILF-03-8-10	A12J509-23	1,1,2,2-Tetrachloroethane	10/19/2012	143	Yes	N	D U			143	71.3	ug/kg
AQ-ILF-03-8-10	A12J509-23	1,4-Dichlorobenzene	10/19/2012	143	Yes	N	D U			143	71.3	ug/kg
AQ-ILF-03-8-10	A12J509-23	1,2,3-Trichlorobenzene	10/19/2012	1430	Yes	N	D U			1430	713	ug/kg
AQ-ILF-03-8-10	A12J509-23	4-Chlorotoluene	10/19/2012	285	Yes	N	D U			285	143	ug/kg
AQ-ILF-03-8-10	A12J509-23	n-Butylbenzene	10/19/2012	285	Yes	N	D U			285	143	ug/kg
AQ-ILF-03-8-10	A12J509-23	n-Propylbenzene	10/19/2012	143	Yes	N	D U			143	71.3	ug/kg
AQ-ILF-03-8-10	A12J509-23	1,3-Dichloropropene, trans-	10/19/2012	285	Yes	N	D U			285	143	ug/kg
AQ-ILF-03-8-10	A12J509-23	4-Isopropyltoluene (4-Cymene)	10/19/2012	285	Yes	N	D U			285	143	ug/kg
AQ-ILF-03-8-10	A12J509-23	Isopropylbenzene (Cumene)	10/19/2012	285	Yes	N	D U			285	143	ug/kg
AQ-ILF-03-8-10	A12J509-23	tert-Butylbenzene	10/19/2012	285	Yes	N	D U	UJ	5	285	143	ug/kg
AQ-ILF-03-8-10	A12J509-23	1,2,3-Trichloropropane	10/19/2012	285	Yes	N	D U	UJ	5	285	143	ug/kg
AQ-ILF-03-8-10	A12J509-23	1,2-Dibromo-3-chloropropane	10/19/2012	1430	Yes	N	D U	UJ	5	1430	713	ug/kg
AQ-ILF-03-8-10	A12J509-23	Styrene	10/19/2012	285	Yes	N	D U			285	143	ug/kg
AQ-ILF-03-8-10	A12J509-23	Tetrachloroethene (PCE)	10/19/2012	143	Yes	N	D U			143	71.3	ug/kg
AQ-ILF-03-8-10	A12J509-23	Ethylene dibromide (1,2-Dibromoethane)	10/19/2012	143	Yes	N	D U			143	86.4	ug/kg
AQ-ILF-03-8-10	A12J509-23	1,2-Dichloroethane	10/19/2012	143	Yes	N	D U			143	71.3	ug/kg
AQ-ILF-03-8-10	A12J509-23	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/19/2012	1790	Yes	Y	D J	J	5	2850	1430	ug/kg
AQ-ILF-03-8-10	A12J509-23	1,3,5-Trimethylbenzene (Mesitylene)	10/19/2012	285	Yes	N	D U			285	143	ug/kg
AQ-ILF-03-8-10	A12J509-23	Toluene	10/19/2012	285	Yes	N	D U			285	143	ug/kg
AQ-ILF-03-8-10	A12J509-23	Chlorobenzene	10/19/2012	143	Yes	N	D U			143	74.2	ug/kg
AQ-ILF-03-8-10	A12J509-23	1,2,4-Trichlorobenzene	10/19/2012	1430	Yes	N	D U			1430	713	ug/kg
AQ-ILF-03-8-10	A12J509-23	Dibromochloromethane	10/19/2012	570	Yes	N	D U			570	285	ug/kg
AQ-ILF-03-8-10	A12J509-23	1,3-Dichloropropene, cis-	10/19/2012	285	Yes	N	D U			285	143	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-03-8-10	A12J509-23	Bromomethane (Methyl Bromide)	10/19/2012	2850	Yes	N	D U			2850	2850	ug/kg
AQ-ILF-03-8-10	A12J509-23	1,2-Dichloropropane	10/19/2012	143	Yes	N	D U			143	71.3	ug/kg
AQ-ILF-03-8-10	A12J509-23	Dichlorodifluoromethane	10/19/2012	570	Yes	N	D U			570	285	ug/kg
AQ-ILF-03-8-10	A12J509-23	Trichlorofluoromethane (Fluorotrichloromethane)	10/19/2012	570	Yes	N	D U	UJ	5	570	285	ug/kg
AQ-ILF-03-8-10	A12J509-23	1,1-Dichloroethene	10/19/2012	143	Yes	N	D U			143	76.4	ug/kg
AQ-ILF-03-8-10	A12J509-23	1,1-Dichloroethane	10/19/2012	143	Yes	N	D U			143	84.4	ug/kg
AQ-ILF-03-8-10	A12J509-23	Bromodichloromethane	10/19/2012	143	Yes	N	D U			143	71.3	ug/kg
AQ-ILF-03-8-10	A12J509-23	Carbon disulfide	10/19/2012	2850	Yes	N	D U			2850	1430	ug/kg
AQ-ILF-03-8-10	A12J509-23	Vinyl chloride	10/19/2012	143	Yes	N	D U			143	104	ug/kg
AQ-ILF-03-8-10	A12J509-23	Chloroethane	10/19/2012	2850	Yes	N	D U			2850	1430	ug/kg
AQ-ILF-03-8-10	A12J509-23	Bromochloromethane	10/19/2012	143	Yes	N	D U	UJ	5	143	71.3	ug/kg
AQ-ILF-03-8-10	A12J509-23	2-Butanone (MEK)	10/19/2012	2850	Yes	N	D U	UJ	5	2850	1430	ug/kg
AQ-ILF-03-8-10	A12J509-23	Chloromethane	10/19/2012	1430	Yes	N	D U	UJ	5	1430	713	ug/kg
AQ-ILF-03-8-10	A12J509-23	Bromoform (Tribromomethane)	10/19/2012	285	Yes	N	D U			285	143	ug/kg
AQ-ILF-03-8-10	A12J509-23	1,1,1-Trichloroethane	10/19/2012	143	Yes	N	D U			143	71.3	ug/kg
AQ-ILF-03-8-10	A12J509-23	Benzene	10/19/2012	71.3	Yes	N	D U			71.3	39.9	ug/kg
AQ-ILF-03-8-10	A12J509-23	Chloroform	10/19/2012	285	Yes	N	D U			285	143	ug/kg
AQ-ILF-03-8-10	A12J509-23	Acetone	10/19/2012	5700	Yes	N	D U	UJ	5	5700	2850	ug/kg
AQ-ILF-03-8-10	A12J509-23	1,1,1,2-Tetrachloroethane	10/19/2012	285	Yes	N	D U	UJ	5	285	143	ug/kg
AQ-ILF-03-8-10	A12J509-23	2,2-Dichloropropane	10/19/2012	285	Yes	N	D U	UJ	5	285	143	ug/kg
AQ-ILF-03-8-10	A12J509-23	2-Hexanone (Methyl butyl ketone)	10/19/2012	2850	Yes	N	D U	UJ	5	2850	1430	ug/kg
AQ-ILF-03-8-10	A12J509-23	1,1-Dichloropropene	10/19/2012	285	Yes	N	D U			285	143	ug/kg
AQ-ILF-03-8-10	A12J509-23	Carbon tetrachloride (Tetrachloromethane)	10/19/2012	143	Yes	N	D U			143	71.3	ug/kg
AQ-ILF-03-8-10	A12J509-23	1,3-Dichlorobenzene	10/19/2012	143	Yes	N	D U			143	71.3	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-03-8-10	A12J509-23	m,p-Xylene	10/19/2012	2260	Yes	Y	D			285	143	ug/kg
AQ-ILF-03-8-10	A12J509-23	Dibromomethane	10/19/2012	285	Yes	N	D U	UJ	5	285	143	ug/kg
AQ-ILF-03-8-10	A12J509-23	Dichloromethane (Methylene chloride)	10/19/2012	1430	Yes	N	D U			1430	713	ug/kg
AQ-ILF-04-12-14	A12J509-30	1,2,4-Trimethylbenzene	10/19/2012	135	Yes	N	D U			135	67.4	ug/kg
AQ-ILF-04-12-14	A12J509-30	1,3-Dichlorobenzene	10/19/2012	67.4	Yes	N	D U			67.4	33.7	ug/kg
AQ-ILF-04-12-14	A12J509-30	m,p-Xylene	10/19/2012	471	Yes	Y	D			135	67.4	ug/kg
AQ-ILF-04-12-14	A12J509-30	Methyl tert-butyl ether (MTBE)	10/19/2012	135	Yes	N	D U			135	80.4	ug/kg
AQ-ILF-04-12-14	A12J509-30	1,2-Dichloroethene, trans-	10/19/2012	67.4	Yes	N	D U	UJ	5	67.4	33.7	ug/kg
AQ-ILF-04-12-14	A12J509-30	1,2-Dichloroethene, cis-	10/19/2012	67.4	Yes	N	D U	UJ	5	67.4	33.7	ug/kg
AQ-ILF-04-12-14	A12J509-30	1,3-Dichloropropane	10/19/2012	67.4	Yes	N	D U	UJ	5	67.4	33.7	ug/kg
AQ-ILF-04-12-14	A12J509-30	sec-Butylbenzene	10/19/2012	135	Yes	N	D U			135	67.4	ug/kg
AQ-ILF-04-12-14	A12J509-30	1,3,5-Trimethylbenzene (Mesitylene)	10/19/2012	135	Yes	N	D U			135	67.4	ug/kg
AQ-ILF-04-12-14	A12J509-30	1,1,2,2-Tetrachloroethane	10/19/2012	67.4	Yes	N	D U			67.4	33.7	ug/kg
AQ-ILF-04-12-14	A12J509-30	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/19/2012	269	Yes	N	D U			269	135	ug/kg
AQ-ILF-04-12-14	A12J509-30	Naphthalene	10/19/2012	379	Yes	Y	D			269	135	ug/kg
AQ-ILF-04-12-14	A12J509-30	o-Xylene	10/19/2012	70	Yes	Y	D			67.4	33.7	ug/kg
AQ-ILF-04-12-14	A12J509-30	1,4-Dichlorobenzene	10/19/2012	67.4	Yes	N	D U			67.4	33.7	ug/kg
AQ-ILF-04-12-14	A12J509-30	1,2-Dichlorobenzene	10/19/2012	67.4	Yes	N	D U			67.4	33.7	ug/kg
AQ-ILF-04-12-14	A12J509-30	2-Hexanone (Methyl butyl ketone)	10/19/2012	1350	Yes	N	D U	UJ	5	1350	674	ug/kg
AQ-ILF-04-12-14	A12J509-30	1,2-Dibromo-3-chloropropane	10/19/2012	674	Yes	N	D U	UJ	5	674	337	ug/kg
AQ-ILF-04-12-14	A12J509-30	1,2,3-Trichloropropane	10/19/2012	135	Yes	N	D U	UJ	5	135	67.4	ug/kg
AQ-ILF-04-12-14	A12J509-30	tert-Butylbenzene	10/19/2012	135	Yes	N	D U	UJ	5	135	67.4	ug/kg
AQ-ILF-04-12-14	A12J509-30	Isopropylbenzene (Cumene)	10/19/2012	135	Yes	N	D U			135	67.4	ug/kg
AQ-ILF-04-12-14	A12J509-30	4-Isopropyltoluene (4-Cymene)	10/19/2012	135	Yes	N	D U			135	67.4	ug/kg
AQ-ILF-04-12-14	A12J509-30	Ethylbenzene	10/19/2012	220	Yes	Y	D			67.4	33.7	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-04-12-14	A12J509-30	Styrene	10/19/2012	135	Yes	N	D U			135	67.4	ug/kg
AQ-ILF-04-12-14	A12J509-30	1,3-Dichloropropene, cis-	10/19/2012	135	Yes	N	D U			135	67.4	ug/kg
AQ-ILF-04-12-14	A12J509-30	1,3-Dichloropropene, trans-	10/19/2012	135	Yes	N	D U			135	67.4	ug/kg
AQ-ILF-04-12-14	A12J509-30	n-Propylbenzene	10/19/2012	67.4	Yes	N	D U			67.4	33.7	ug/kg
AQ-ILF-04-12-14	A12J509-30	n-Butylbenzene	10/19/2012	135	Yes	N	D U			135	67.4	ug/kg
AQ-ILF-04-12-14	A12J509-30	4-Chlorotoluene	10/19/2012	135	Yes	N	D U			135	67.4	ug/kg
AQ-ILF-04-12-14	A12J509-30	2-Chlorotoluene	10/19/2012	135	Yes	N	D U			135	67.4	ug/kg
AQ-ILF-04-12-14	A12J509-30	Dichloromethane (Methylene chloride)	10/19/2012	674	Yes	N	D U			674	337	ug/kg
AQ-ILF-04-12-14	A12J509-30	1,1-Dichloroethene	10/19/2012	67.4	Yes	N	D U			67.4	36.1	ug/kg
AQ-ILF-04-12-14	A12J509-30	Trichlorofluoromethane (Fluorotrichloromethane)	10/19/2012	269	Yes	N	D U	UJ	5	269	135	ug/kg
AQ-ILF-04-12-14	A12J509-30	Dichlorodifluoromethane	10/19/2012	269	Yes	N	D U			269	135	ug/kg
AQ-ILF-04-12-14	A12J509-30	1,2-Dichloropropane	10/19/2012	67.4	Yes	N	D U			67.4	33.7	ug/kg
AQ-ILF-04-12-14	A12J509-30	2-Butanone (MEK)	10/19/2012	1350	Yes	N	D U	UJ	5	1350	674	ug/kg
AQ-ILF-04-12-14	A12J509-30	1,1,2-Trichloroethane	10/19/2012	135	Yes	N	D U			135	67.4	ug/kg
AQ-ILF-04-12-14	A12J509-30	Bromobenzene	10/19/2012	67.4	Yes	N	D U			67.4	36.8	ug/kg
AQ-ILF-04-12-14	A12J509-30	Ethylene dibromide (1,2-Dibromoethane)	10/19/2012	67.4	Yes	N	D U			67.4	40.8	ug/kg
AQ-ILF-04-12-14	A12J509-30	1,2-Dichloroethane	10/19/2012	67.4	Yes	N	D U			67.4	33.7	ug/kg
AQ-ILF-04-12-14	A12J509-30	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/19/2012	1350	Yes	N	D U	UJ	5	1350	674	ug/kg
AQ-ILF-04-12-14	A12J509-30	1,1-Dichloroethane	10/19/2012	67.4	Yes	N	D U			67.4	39.9	ug/kg
AQ-ILF-04-12-14	A12J509-30	Bromodichloromethane	10/19/2012	67.4	Yes	N	D U			67.4	33.7	ug/kg
AQ-ILF-04-12-14	A12J509-30	Carbon tetrachloride (Tetrachloromethane)	10/19/2012	67.4	Yes	N	D U			67.4	33.7	ug/kg
AQ-ILF-04-12-14	A12J509-30	Carbon disulfide	10/19/2012	1350	Yes	N	D U			1350	674	ug/kg
AQ-ILF-04-12-14	A12J509-30	1,1-Dichloropropene	10/19/2012	135	Yes	N	D U			135	67.4	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-04-12-14	A12J509-30	Vinyl chloride	10/19/2012	67.4	Yes	N	D U			67.4	48.9	ug/kg
AQ-ILF-04-12-14	A12J509-30	Chloroethane	10/19/2012	1350	Yes	N	D U			1350	674	ug/kg
AQ-ILF-04-12-14	A12J509-30	Bromochloromethane	10/19/2012	67.4	Yes	N	D U	UJ	5	67.4	33.7	ug/kg
AQ-ILF-04-12-14	A12J509-30	Dibromomethane	10/19/2012	135	Yes	N	D U	UJ	5	135	67.4	ug/kg
AQ-ILF-04-12-14	A12J509-30	Chloromethane	10/19/2012	674	Yes	N	D U	UJ	5	674	337	ug/kg
AQ-ILF-04-12-14	A12J509-30	Bromomethane (Methyl Bromide)	10/19/2012	1350	Yes	N	D U			1350	1350	ug/kg
AQ-ILF-04-12-14	A12J509-30	1,1,1-Trichloroethane	10/19/2012	67.4	Yes	N	D U			67.4	33.7	ug/kg
AQ-ILF-04-12-14	A12J509-30	Benzene	10/19/2012	33.7	Yes	N	D U			33.7	18.9	ug/kg
AQ-ILF-04-12-14	A12J509-30	Chloroform	10/19/2012	135	Yes	N	D U			135	67.4	ug/kg
AQ-ILF-04-12-14	A12J509-30	Acetone	10/19/2012	2690	Yes	N	D U	UJ	5	2690	1350	ug/kg
AQ-ILF-04-12-14	A12J509-30	1,1,1,2-Tetrachloroethane	10/19/2012	135	Yes	N	D U	UJ	5	135	67.4	ug/kg
AQ-ILF-04-12-14	A12J509-30	2,2-Dichloropropane	10/19/2012	135	Yes	N	D U	UJ	5	135	67.4	ug/kg
AQ-ILF-04-12-14	A12J509-30	1,2,3-Trichlorobenzene	10/19/2012	674	Yes	N	D U			674	337	ug/kg
AQ-ILF-04-12-14	A12J509-30	Bromoform (Tribromomethane)	10/19/2012	135	Yes	N	D U			135	67.4	ug/kg
AQ-ILF-04-12-14	A12J509-30	Tetrachloroethene (PCE)	10/19/2012	67.4	Yes	N	D U			67.4	33.7	ug/kg
AQ-ILF-04-12-14	A12J509-30	Trichloroethene (TCE)	10/19/2012	67.4	Yes	N	D U			67.4	48.8	ug/kg
AQ-ILF-04-12-14	A12J509-30	Toluene	10/19/2012	295	Yes	Y	D			135	67.4	ug/kg
AQ-ILF-04-12-14	A12J509-30	Chlorobenzene	10/19/2012	67.4	Yes	N	D U			67.4	35.0	ug/kg
AQ-ILF-04-12-14	A12J509-30	1,2,4-Trichlorobenzene	10/19/2012	674	Yes	N	D U			674	337	ug/kg
AQ-ILF-04-12-14	A12J509-30	Dibromochloromethane	10/19/2012	269	Yes	N	D U			269	135	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Bromoform (Tribromomethane)	11/2/2012	58.6	Yes	N	D U	UJ	1,5	58.6	29.3	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Carbon disulfide	11/2/2012	586	Yes	N	D U	UJ	1	586	293	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Dichloromethane (Methylene chloride)	11/2/2012	293	Yes	N	D U	UJ	1	293	147	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Vinyl chloride	11/2/2012	29.3	Yes	N	D U	UJ	1	29.3	21.3	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Chloroethane	11/2/2012	586	Yes	N	D U	UJ	1	586	293	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-53-8-10	A12J509-21RE1	Bromochloromethane	11/2/2012	29.3	Yes	N	D U	UJ	1	29.3	14.7	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Dibromomethane	11/2/2012	58.6	Yes	N	D U	UJ	1	58.6	29.3	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Chloromethane	11/2/2012	293	Yes	N	D U	UJ	1	293	147	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Bromomethane (Methyl Bromide)	11/2/2012	586	Yes	N	D U	UJ	1	586	586	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	1,1,1-Trichloroethane	11/2/2012	29.3	Yes	N	D U	UJ	1	29.3	14.7	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Bromodichloromethane	11/2/2012	29.3	Yes	N	D U	UJ	1	29.3	14.7	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Chloroform	11/2/2012	58.6	Yes	N	D U	UJ	1	58.6	29.3	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	1,2-Dichloropropane	11/2/2012	29.3	Yes	N	D U	UJ	1	29.3	14.7	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Acetone	11/2/2012	1170	Yes	N	D U	UJ	1,5	1170	586	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	1,1,1,2-Tetrachloroethane	11/2/2012	58.6	Yes	N	D U	UJ	1,5	58.6	29.3	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	2,2-Dichloropropane	11/2/2012	58.6	Yes	N	D U	UJ	1,5	58.6	29.3	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	2-Hexanone (Methyl butyl ketone)	11/2/2012	586	Yes	N	D U	UJ	1,5	586	293	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	1,1-Dichloropropene	11/2/2012	58.6	Yes	N	D U	UJ	1	58.6	29.3	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Benzene	11/2/2012	14.7	Yes	N	D U	UJ	1	14.7	8.21	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Naphthalene	11/2/2012	72.7	Yes	Y	D J	J	1	117	58.6	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	4-Isopropyltoluene (4-Cymene)	11/2/2012	58.6	Yes	N	D U	UJ	1	58.6	29.3	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Isopropylbenzene (Cumene)	11/2/2012	58.6	Yes	N	D U	UJ	1	58.6	29.3	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	tert-Butylbenzene	11/2/2012	58.6	Yes	N	D U	UJ	1	58.6	29.3	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	1,2,3-Trichloropropane	11/2/2012	58.6	Yes	N	D U	UJ	1,5	58.6	29.3	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	1,2-Dibromo-3-chloropropane	11/2/2012	293	Yes	N	D U	UJ	1,5	293	147	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	1,2,4-Trimethylbenzene	11/2/2012	58.6	Yes	N	D U	UJ	1	58.6	29.3	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	1,2-Dichlorobenzene	11/2/2012	29.3	Yes	N	D U	UJ	1	29.3	14.7	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Trichlorofluoromethane (Fluorotrichloromethane)	11/2/2012	117	Yes	N	D U	UJ	1	117	58.6	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	o-Xylene	11/2/2012	84.4	Yes	Y	D	J	1	29.3	14.7	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	1,1-Dichloroethane	11/2/2012	29.3	Yes	N	D U	UJ	1	29.3	17.4	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-53-8-10	A12J509-21RE1	1,2,3-Trichlorobenzene	11/2/2012	293	Yes	N	D U	UJ	1	293	147	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Trichloroethene (TCE)	11/2/2012	29.3	Yes	N	D U	UJ	1	29.3	21.2	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	1,1,2-Trichloroethane	11/2/2012	58.6	Yes	N	D U	UJ	1	58.6	29.3	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	2-Butanone (MEK)	11/2/2012	586	Yes	N	D U	UJ	1,5	586	293	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	1,1,2,2-Tetrachloroethane	11/2/2012	29.3	Yes	N	D U	UJ	1	29.3	14.7	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Dichlorodifluoromethane	11/2/2012	117	Yes	N	D U	UJ	1,5	117	58.6	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Carbon tetrachloride (Tetrachloromethane)	11/2/2012	29.3	Yes	N	D U	UJ	1	29.3	14.7	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	1,1-Dichloroethene	11/2/2012	29.3	Yes	N	D U	UJ	1	29.3	15.7	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	2-Chlorotoluene	11/2/2012	58.6	Yes	N	D U	UJ	1	58.6	29.3	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	n-Propylbenzene	11/2/2012	29.3	Yes	N	D U	UJ	1	29.3	14.7	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	1,3-Dichlorobenzene	11/2/2012	29.3	Yes	N	D U	UJ	1	29.3	14.7	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	11/2/2012	117	Yes	N	D U	UJ	1	117	58.6	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Ethylbenzene	11/2/2012	27.6	Yes	Y	D J	J	1	29.3	14.7	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Styrene	11/2/2012	58.6	Yes	N	D U	UJ	1	58.6	29.3	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	1,3-Dichloropropene, trans-	11/2/2012	58.6	Yes	N	D U	UJ	1	58.6	29.3	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	n-Butylbenzene	11/2/2012	58.6	Yes	N	D U	UJ	1	58.6	29.3	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	4-Chlorotoluene	11/2/2012	58.6	Yes	N	D U	UJ	1	58.6	29.3	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	1,4-Dichlorobenzene	11/2/2012	29.3	Yes	N	D U	UJ	1	29.3	14.7	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Ethylene dibromide (1,2-Dibromoethane)	11/2/2012	29.3	Yes	N	D U	UJ	1	29.3	17.8	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	1,2-Dichloroethane	11/2/2012	29.3	Yes	N	D U	UJ	1	29.3	14.7	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	11/2/2012	586	Yes	N	D U	UJ	1,5	586	293	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	1,3,5-Trimethylbenzene (Mesitylene)	11/2/2012	58.6	Yes	N	D U	UJ	1	58.6	29.3	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	1,3-Dichloropropane	11/2/2012	29.3	Yes	N	D U	UJ	1	29.3	14.7	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-53-8-10	A12J509-21RE1	m,p-Xylene	11/2/2012	101	Yes	Y	D	J	1	58.6	29.3	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	1,3-Dichloropropene, cis-	11/2/2012	58.6	Yes	N	D U	UJ	1	58.6	29.3	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Bromobenzene	11/2/2012	29.3	Yes	N	D U	UJ	1	29.3	16.0	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	1,2-Dichloroethene, trans-	11/2/2012	29.3	Yes	N	D U	UJ	1	29.3	14.7	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Methyl tert-butyl ether (MTBE)	11/2/2012	58.6	Yes	N	D U	UJ	1	58.6	35.0	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	1,2-Dichloroethene, cis-	11/2/2012	29.3	Yes	N	D U	UJ	1	29.3	14.7	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	sec-Butylbenzene	11/2/2012	58.6	Yes	N	D U	UJ	1	58.6	29.3	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Tetrachloroethene (PCE)	11/2/2012	29.3	Yes	N	D U	UJ	1	29.3	14.7	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Dibromochloromethane	11/2/2012	117	Yes	N	D U	UJ	1	117	58.6	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	1,2,4-Trichlorobenzene	11/2/2012	293	Yes	N	D U	UJ	1	293	147	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Chlorobenzene	11/2/2012	29.3	Yes	N	D U	UJ	1	29.3	15.2	ug/kg
AQ-ILF-53-8-10	A12J509-21RE1	Toluene	11/2/2012	58.6	Yes	N	D U	UJ	1	58.6	29.3	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-01-0-11	A12J509-07	1,2,4-Trichlorobenzene	10/23/2012	1930	Yes	N	D U			1930	964	ug/kg
AQ-ILF-01-0-11	A12J509-07	Hexachlorocyclopentadiene	10/23/2012	3850	Yes	N	D U			3850	1930	ug/kg
AQ-ILF-01-0-11	A12J509-07	2,4-Dinitrotoluene	10/23/2012	7710	Yes	N	D U			7710	3850	ug/kg
AQ-ILF-01-0-11	A12J509-07	Pyrene	10/23/2012	218000	Yes	Y	D			771	385	ug/kg
AQ-ILF-01-0-11	A12J509-07	Dimethyl phthalate	10/23/2012	3850	Yes	N	D U			3850	1930	ug/kg
AQ-ILF-01-0-11	A12J509-07	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	10/23/2012	1930	Yes	N	D U			1930	964	ug/kg
AQ-ILF-01-0-11	A12J509-07	2,4-Dinitrophenol	10/23/2012	19300	Yes	N	D U			19300	9640	ug/kg
AQ-ILF-01-0-11	A12J509-07	2,4-Dichlorophenol	10/23/2012	3850	Yes	N	D U			3850	1930	ug/kg
AQ-ILF-01-0-11	A12J509-07	Dibenzofuran	10/23/2012	10800	Yes	Y	D			771	385	ug/kg
AQ-ILF-01-0-11	A12J509-07	Butylbenzyl phthalate	10/23/2012	15400	Yes	N	D U			15400	7710	ug/kg
AQ-ILF-01-0-11	A12J509-07	Phenanthrene	10/23/2012	109000	Yes	Y	D			771	385	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-01-0-11	A12J509-07	Benzo(g,h,i)perylene	10/23/2012	141000	Yes	Y	D			771	385	ug/kg
AQ-ILF-01-0-11	A12J509-07	Isophorone	10/23/2012	1930	Yes	N	D U			1930	964	ug/kg
AQ-ILF-01-0-11	A12J509-07	3-Nitroaniline	10/23/2012	15400	Yes	N	D U			15400	7710	ug/kg
AQ-ILF-01-0-11	A12J509-07	N-Nitrosodiphenylamine	10/23/2012	1930	Yes	N	D U			1930	964	ug/kg
AQ-ILF-01-0-11	A12J509-07	Fluoranthene	10/23/2012	229000	Yes	Y	D			771	385	ug/kg
AQ-ILF-01-0-11	A12J509-07	Nitrobenzene	10/23/2012	7710	Yes	N	D U			7710	3850	ug/kg
AQ-ILF-01-0-11	A12J509-07	Indeno(1,2,3-c,d)pyrene	10/23/2012	178000	Yes	Y	D			771	385	ug/kg
AQ-ILF-01-0-11	A12J509-07	2,6-Dinitrotoluene	10/23/2012	7710	Yes	N	D U			7710	3850	ug/kg
AQ-ILF-01-0-11	A12J509-07	4-Nitrophenol	10/23/2012	7710	Yes	N	D U			7710	3850	ug/kg
AQ-ILF-01-0-11	A12J509-07	Benzyl alcohol	10/23/2012	3850	Yes	N	D U			3850	1930	ug/kg
AQ-ILF-01-0-11	A12J509-07	4-Bromophenyl-phenyl ether	10/23/2012	1930	Yes	N	D U			1930	964	ug/kg
AQ-ILF-01-0-11	A12J509-07	2,4-Dimethylphenol	10/23/2012	3850	Yes	N	D U			3850	1930	ug/kg
AQ-ILF-01-0-11	A12J509-07	Dibenzo(a,h)anthracene	10/23/2012	47900	Yes	Y	D			771	385	ug/kg
AQ-ILF-01-0-11	A12J509-07	1,4-Dichlorobenzene	10/23/2012	1930	Yes	N	D U			1930	964	ug/kg
AQ-ILF-01-0-11	A12J509-07	Acenaphthene	10/23/2012	42100	Yes	Y	D			771	385	ug/kg
AQ-ILF-01-0-11	A12J509-07	Aniline	10/23/2012	3850	Yes	N	D U			3850	1930	ug/kg
AQ-ILF-01-0-11	A12J509-07	2,4,5-Trichlorophenol	10/23/2012	3850	Yes	N	D U			3850	1930	ug/kg
AQ-ILF-01-0-11	A12J509-07	Fluorene	10/23/2012	12700	Yes	Y	D			771	385	ug/kg
AQ-ILF-01-0-11	A12J509-07	4-Chloro-3-methylphenol	10/23/2012	7710	Yes	N	D U			7710	3850	ug/kg
AQ-ILF-01-0-11	A12J509-07	2,3,4,6-Tetrachlorophenol	10/23/2012	3850	Yes	N	D U			3850	1930	ug/kg
AQ-ILF-01-0-11	A12J509-07	Anthracene	10/23/2012	30000	Yes	Y	D			771	385	ug/kg
AQ-ILF-01-0-11	A12J509-07	4-Chloroaniline	10/23/2012	1930	Yes	N	D U			1930	964	ug/kg
AQ-ILF-01-0-11	A12J509-07	2,4,6-Trichlorophenol	10/23/2012	3850	Yes	N	D U			3850	1930	ug/kg
AQ-ILF-01-0-11	A12J509-07	Pentachlorophenol	10/23/2012	15400	Yes	N	D U			15400	7710	ug/kg
AQ-ILF-01-0-11	A12J509-07	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/23/2012	1930	Yes	N	D U			1930	964	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-01-0-11	A12J509-07	Carbazole	10/23/2012	18500	Yes	Y	D			1160	578	ug/kg
AQ-ILF-01-0-11	A12J509-07	N-Nitrosodimethylamine	10/23/2012	1930	Yes	N	D U			1930	964	ug/kg
AQ-ILF-01-0-11	A12J509-07	Hexachloroethane	10/23/2012	1930	Yes	N	D U			1930	964	ug/kg
AQ-ILF-01-0-11	A12J509-07	Benzo(k)fluoranthene	10/23/2012	105000	Yes	Y	D			1160	578	ug/kg
AQ-ILF-01-0-11	A12J509-07	2-Chlorophenol	10/23/2012	3850	Yes	N	D U			3850	1930	ug/kg
AQ-ILF-01-0-11	A12J509-07	Chrysene	10/23/2012	225000	Yes	Y	D			771	385	ug/kg
AQ-ILF-01-0-11	A12J509-07	Di-n-butyl phthalate	10/23/2012	3850	Yes	N	D U			3850	1930	ug/kg
AQ-ILF-01-0-11	A12J509-07	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	10/23/2012	19300	Yes	N	D U			19300	9640	ug/kg
AQ-ILF-01-0-11	A12J509-07	Hexachlorobenzene	10/23/2012	771	Yes	N	D U			771	385	ug/kg
AQ-ILF-01-0-11	A12J509-07	4-Chlorophenyl phenyl ether	10/23/2012	1930	Yes	N	D U			1930	964	ug/kg
AQ-ILF-01-0-11	A12J509-07	Acenaphthylene	10/23/2012	638	Yes	Y	D J			771	385	ug/kg
AQ-ILF-01-0-11	A12J509-07	Benzoic acid	10/23/2012	96400	Yes	N	D U			96400	48200	ug/kg
AQ-ILF-01-0-11	A12J509-07	Benzo(a)pyrene	10/23/2012	212000	Yes	Y	D			1160	578	ug/kg
AQ-ILF-01-0-11	A12J509-07	bis(2-Chloroisopropyl)ether	10/23/2012	1930	Yes	N	D U			1930	964	ug/kg
AQ-ILF-01-0-11	A12J509-07	Benzo(a)anthracene	10/23/2012	149000	Yes	Y	D			771	385	ug/kg
AQ-ILF-01-0-11	A12J509-07	4-Nitroaniline	10/23/2012	15400	Yes	N	D U			15400	7710	ug/kg
AQ-ILF-01-0-11	A12J509-07	N-Nitrosodi-N-propylamine	10/23/2012	1930	Yes	N	D U			1930	964	ug/kg
AQ-ILF-01-0-11	A12J509-07	1,3-Dichlorobenzene	10/23/2012	1930	Yes	N	D U			1930	964	ug/kg
AQ-ILF-01-0-11	A12J509-07	2-Methylnaphthalene	10/23/2012	4210	Yes	Y	D			1540	771	ug/kg
AQ-ILF-01-0-11	A12J509-07	1,2-Dichlorobenzene	10/23/2012	1930	Yes	N	D U			1930	964	ug/kg
AQ-ILF-01-0-11	A12J509-07	2-Methylphenol (o-Cresol)	10/23/2012	1930	Yes	N	D U			1930	964	ug/kg
AQ-ILF-01-0-11	A12J509-07	3,3'-Dichlorobenzidine	10/23/2012	7710	Yes	N	D U			7710	3850	ug/kg
AQ-ILF-01-0-11	A12J509-07	2-Chloronaphthalene	10/23/2012	771	Yes	N	D U			771	385	ug/kg
AQ-ILF-01-0-11	A12J509-07	Di-n-octyl phthalate	10/23/2012	15400	Yes	N	D U			15400	7710	ug/kg
AQ-ILF-01-0-11	A12J509-07	Naphthalene	10/23/2012	9240	Yes	Y	D			1540	771	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-01-0-11	A12J509-07	1-Methylnaphthalene	10/23/2012	2850		Yes	Y	D			1540	771	ug/kg
AQ-ILF-01-0-11	A12J509-07	2-Nitrophenol	10/23/2012	7710		Yes	N	D U			7710	3850	ug/kg
AQ-ILF-01-0-11	A12J509-07	Diethyl phthalate	10/23/2012	3850		Yes	N	D U			3850	1930	ug/kg
AQ-ILF-01-0-11	A12J509-07	Phenol	10/23/2012	1540		Yes	N	D U			1540	771	ug/kg
AQ-ILF-01-0-11	A12J509-07	bis(2-Chloroethyl)ether	10/23/2012	1930		Yes	N	D U			1930	964	ug/kg
AQ-ILF-01-0-11	A12J509-07	Bis(2-ethylhexyl)phthalate	10/23/2012	15400		Yes	N	D U			15400	7710	ug/kg
AQ-ILF-01-0-11	A12J509-07	bis(2-Chloroethoxy)methane	10/23/2012	1930		Yes	N	D U			1930	964	ug/kg
AQ-ILF-01-0-11	A12J509-07	2-Nitroaniline	10/23/2012	15400		Yes	N	D U			15400	7710	ug/kg
AQ-ILF-01-0-11	A12J509-07RE1	Benzo(b)fluoranthene	10/24/2012	438000		Yes	Y	D			11600	5780	ug/kg
AQ-ILF-02-0-12	A12J509-14	2-Chlorophenol	10/23/2012	3810		Yes	N	D U			3810	1910	ug/kg
AQ-ILF-02-0-12	A12J509-14	Nitrobenzene	10/23/2012	7620		Yes	N	D U			7620	3810	ug/kg
AQ-ILF-02-0-12	A12J509-14	1-Methylnaphthalene	10/23/2012	3420		Yes	Y	D			1520	762	ug/kg
AQ-ILF-02-0-12	A12J509-14	2,4,5-Trichlorophenol	10/23/2012	3810		Yes	N	D U			3810	1910	ug/kg
AQ-ILF-02-0-12	A12J509-14	2-Methylphenol (o-Cresol)	10/23/2012	1910		Yes	N	D U			1910	953	ug/kg
AQ-ILF-02-0-12	A12J509-14	Naphthalene	10/23/2012	6600		Yes	Y	D			1520	762	ug/kg
AQ-ILF-02-0-12	A12J509-14	1,2-Dichlorobenzene	10/23/2012	1910		Yes	N	D U			1910	953	ug/kg
AQ-ILF-02-0-12	A12J509-14	3-Nitroaniline	10/23/2012	15200		Yes	N	D U			15200	7620	ug/kg
AQ-ILF-02-0-12	A12J509-14	3,3'-Dichlorobenzidine	10/23/2012	7620		Yes	N	D U			7620	3810	ug/kg
AQ-ILF-02-0-12	A12J509-14	2-Chloronaphthalene	10/23/2012	762		Yes	N	D U			762	381	ug/kg
AQ-ILF-02-0-12	A12J509-14	N-Nitrosodiphenylamine	10/23/2012	1910		Yes	N	D U			1910	953	ug/kg
AQ-ILF-02-0-12	A12J509-14	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	10/23/2012	19100		Yes	N	D U			19100	9530	ug/kg
AQ-ILF-02-0-12	A12J509-14	Dibenzo(a,h)anthracene	10/23/2012	54000		Yes	Y	D			762	381	ug/kg
AQ-ILF-02-0-12	A12J509-14	2,4-Dinitrophenol	10/23/2012	19100		Yes	N	D U			19100	9530	ug/kg
AQ-ILF-02-0-12	A12J509-14	bis(2-Chloroethoxy)methane	10/23/2012	1910		Yes	N	D U			1910	953	ug/kg
AQ-ILF-02-0-12	A12J509-14	bis(2-Chloroethyl)ether	10/23/2012	1910		Yes	N	D U			1910	953	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-02-0-12	A12J509-14	Phenol	10/23/2012	1520	Yes	N	D U			1520	762	ug/kg
AQ-ILF-02-0-12	A12J509-14	4-Chloroaniline	10/23/2012	1910	Yes	N	D U			1910	953	ug/kg
AQ-ILF-02-0-12	A12J509-14	1,4-Dichlorobenzene	10/23/2012	1910	Yes	N	D U			1910	953	ug/kg
AQ-ILF-02-0-12	A12J509-14	2,4-Dimethylphenol	10/23/2012	3810	Yes	N	D U			3810	1910	ug/kg
AQ-ILF-02-0-12	A12J509-14	4-Bromophenyl-phenyl ether	10/23/2012	1910	Yes	N	D U			1910	953	ug/kg
AQ-ILF-02-0-12	A12J509-14	Benzyl alcohol	10/23/2012	3810	Yes	N	D U			3810	1910	ug/kg
AQ-ILF-02-0-12	A12J509-14	4-Nitroaniline	10/23/2012	15200	Yes	N	D U			15200	7620	ug/kg
AQ-ILF-02-0-12	A12J509-14	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/23/2012	1910	Yes	N	D U			1910	953	ug/kg
AQ-ILF-02-0-12	A12J509-14	1,3-Dichlorobenzene	10/23/2012	1910	Yes	N	D U			1910	953	ug/kg
AQ-ILF-02-0-12	A12J509-14	Isophorone	10/23/2012	1910	Yes	N	D U			1910	953	ug/kg
AQ-ILF-02-0-12	A12J509-14	2-Methylnaphthalene	10/23/2012	4760	Yes	Y	D			1520	762	ug/kg
AQ-ILF-02-0-12	A12J509-14	bis(2-Chloroisopropyl)ether	10/23/2012	1910	Yes	N	D U			1910	953	ug/kg
AQ-ILF-02-0-12	A12J509-14	Benzo(a)pyrene	10/23/2012	227000	Yes	Y	D			1140	572	ug/kg
AQ-ILF-02-0-12	A12J509-14	Benzoic acid	10/23/2012	95300	Yes	N	D U			95300	47600	ug/kg
AQ-ILF-02-0-12	A12J509-14	Hexachloroethane	10/23/2012	1910	Yes	N	D U			1910	953	ug/kg
AQ-ILF-02-0-12	A12J509-14	Carbazole	10/23/2012	17800	Yes	Y	D			1140	572	ug/kg
AQ-ILF-02-0-12	A12J509-14	Hexachlorocyclopentadiene	10/23/2012	3810	Yes	N	D U			3810	1910	ug/kg
AQ-ILF-02-0-12	A12J509-14	Fluorene	10/23/2012	17100	Yes	Y	D			762	381	ug/kg
AQ-ILF-02-0-12	A12J509-14	Acenaphthene	10/23/2012	28200	Yes	Y	D			762	381	ug/kg
AQ-ILF-02-0-12	A12J509-14	Diethyl phthalate	10/23/2012	3810	Yes	N	D U			3810	1910	ug/kg
AQ-ILF-02-0-12	A12J509-14	Di-n-butyl phthalate	10/23/2012	3810	Yes	N	D U			3810	1910	ug/kg
AQ-ILF-02-0-12	A12J509-14	Phenanthrene	10/23/2012	106000	Yes	Y	D			762	381	ug/kg
AQ-ILF-02-0-12	A12J509-14	Butylbenzyl phthalate	10/23/2012	15200	Yes	N	D U			15200	7620	ug/kg
AQ-ILF-02-0-12	A12J509-14	4-Nitrophenol	10/23/2012	7620	Yes	N	D U			7620	3810	ug/kg
AQ-ILF-02-0-12	A12J509-14	4-Chlorophenyl phenyl ether	10/23/2012	1910	Yes	N	D U			1910	953	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-02-0-12	A12J509-14	2,4-Dinitrotoluene	10/23/2012	7620	Yes	N	D U			7620	3810	ug/kg
AQ-ILF-02-0-12	A12J509-14	Pentachlorophenol	10/23/2012	15200	Yes	N	D U			15200	7620	ug/kg
AQ-ILF-02-0-12	A12J509-14	Benzo(k)fluoranthene	10/23/2012	112000	Yes	Y	D			1140	572	ug/kg
AQ-ILF-02-0-12	A12J509-14	Benzo(a)anthracene	10/23/2012	167000	Yes	Y	D			762	381	ug/kg
AQ-ILF-02-0-12	A12J509-14	Benzo(g,h,i)perylene	10/23/2012	147000	Yes	Y	D			762	381	ug/kg
AQ-ILF-02-0-12	A12J509-14	Dibenzofuran	10/23/2012	15100	Yes	Y	D			762	381	ug/kg
AQ-ILF-02-0-12	A12J509-14	Acenaphthylene	10/23/2012	762	Yes	N	D U			762	381	ug/kg
AQ-ILF-02-0-12	A12J509-14	2-Nitroaniline	10/23/2012	15200	Yes	N	D U			15200	7620	ug/kg
AQ-ILF-02-0-12	A12J509-14	2-Nitrophenol	10/23/2012	7620	Yes	N	D U			7620	3810	ug/kg
AQ-ILF-02-0-12	A12J509-14	Chrysene	10/23/2012	288000	Yes	Y	D			762	381	ug/kg
AQ-ILF-02-0-12	A12J509-14	Indeno(1,2,3-c,d)pyrene	10/23/2012	186000	Yes	Y	D			762	381	ug/kg
AQ-ILF-02-0-12	A12J509-14	Dimethyl phthalate	10/23/2012	3810	Yes	N	D U			3810	1910	ug/kg
AQ-ILF-02-0-12	A12J509-14	Fluoranthene	10/23/2012	243000	Yes	Y	D			762	381	ug/kg
AQ-ILF-02-0-12	A12J509-14	Pyrene	10/23/2012	233000	Yes	Y	D			762	381	ug/kg
AQ-ILF-02-0-12	A12J509-14	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	10/23/2012	1910	Yes	N	D U			1910	953	ug/kg
AQ-ILF-02-0-12	A12J509-14	Bis(2-ethylhexyl)phthalate	10/23/2012	15200	Yes	N	D U			15200	7620	ug/kg
AQ-ILF-02-0-12	A12J509-14	2,3,4,6-Tetrachlorophenol	10/23/2012	3810	Yes	N	D U			3810	1910	ug/kg
AQ-ILF-02-0-12	A12J509-14	4-Chloro-3-methylphenol	10/23/2012	7620	Yes	N	D U			7620	3810	ug/kg
AQ-ILF-02-0-12	A12J509-14	2,6-Dinitrotoluene	10/23/2012	7620	Yes	N	D U			7620	3810	ug/kg
AQ-ILF-02-0-12	A12J509-14	Aniline	10/23/2012	3810	Yes	N	D U			3810	1910	ug/kg
AQ-ILF-02-0-12	A12J509-14	2,4,6-Trichlorophenol	10/23/2012	3810	Yes	N	D U			3810	1910	ug/kg
AQ-ILF-02-0-12	A12J509-14	N-Nitrosodimethylamine	10/23/2012	1910	Yes	N	D U			1910	953	ug/kg
AQ-ILF-02-0-12	A12J509-14	N-Nitrosodi-N-propylamine	10/23/2012	1910	Yes	N	D U			1910	953	ug/kg
AQ-ILF-02-0-12	A12J509-14	2,4-Dichlorophenol	10/23/2012	3810	Yes	N	D U			3810	1910	ug/kg
AQ-ILF-02-0-12	A12J509-14	Di-n-octyl phthalate	10/23/2012	15200	Yes	N	D U			15200	7620	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-02-0-12	A12J509-14	Hexachlorobenzene	10/23/2012	762	Yes	N	D U			762	381	ug/kg
AQ-ILF-02-0-12	A12J509-14	Anthracene	10/23/2012	31900	Yes	Y	D			762	381	ug/kg
AQ-ILF-02-0-12	A12J509-14	1,2,4-Trichlorobenzene	10/23/2012	1910	Yes	N	D U			1910	953	ug/kg
AQ-ILF-02-0-12	A12J509-14RE1	Benzo(b)fluoranthene	10/24/2012	520000	Yes	Y	D			11400	5720	ug/kg
AQ-ILF-03-0-12	A12J509-24	1,2-Dichlorobenzene	10/23/2012	1780	Yes	N	D U			1780	890	ug/kg
AQ-ILF-03-0-12	A12J509-24	2-Chlorophenol	10/23/2012	3560	Yes	N	D U			3560	1780	ug/kg
AQ-ILF-03-0-12	A12J509-24	2,3,4,6-Tetrachlorophenol	10/23/2012	3560	Yes	N	D U			3560	1780	ug/kg
AQ-ILF-03-0-12	A12J509-24	Hexachlorocyclopentadiene	10/23/2012	3560	Yes	N	D U			3560	1780	ug/kg
AQ-ILF-03-0-12	A12J509-24	4-Chlorophenyl phenyl ether	10/23/2012	1780	Yes	N	D U			1780	890	ug/kg
AQ-ILF-03-0-12	A12J509-24	Dibenzofuran	10/23/2012	1190	Yes	Y	D			712	356	ug/kg
AQ-ILF-03-0-12	A12J509-24	Hexachloroethane	10/23/2012	1780	Yes	N	D U			1780	890	ug/kg
AQ-ILF-03-0-12	A12J509-24	Benzo(g,h,i)perylene	10/23/2012	72600	Yes	Y	D			712	356	ug/kg
AQ-ILF-03-0-12	A12J509-24	Indeno(1,2,3-c,d)pyrene	10/23/2012	82100	Yes	Y	D			712	356	ug/kg
AQ-ILF-03-0-12	A12J509-24	Fluoranthene	10/23/2012	177000	Yes	Y	D			712	356	ug/kg
AQ-ILF-03-0-12	A12J509-24	Benzo(k)fluoranthene	10/23/2012	73100	Yes	Y	D			1070	534	ug/kg
AQ-ILF-03-0-12	A12J509-24	Acenaphthylene	10/23/2012	712	Yes	N	D U			712	356	ug/kg
AQ-ILF-03-0-12	A12J509-24	Chrysene	10/23/2012	249000	Yes	Y	D			712	356	ug/kg
AQ-ILF-03-0-12	A12J509-24	Benzo(b)fluoranthene	10/23/2012	252000	Yes	Y	D			1070	534	ug/kg
AQ-ILF-03-0-12	A12J509-24	2-Nitrophenol	10/23/2012	7120	Yes	N	D U			7120	3560	ug/kg
AQ-ILF-03-0-12	A12J509-24	Carbazole	10/23/2012	2870	Yes	Y	D			1070	534	ug/kg
AQ-ILF-03-0-12	A12J509-24	bis(2-Chloroisopropyl)ether	10/23/2012	1780	Yes	N	D U			1780	890	ug/kg
AQ-ILF-03-0-12	A12J509-24	2-Methylphenol (o-Cresol)	10/23/2012	1780	Yes	N	D U			1780	890	ug/kg
AQ-ILF-03-0-12	A12J509-24	3,3'-Dichlorobenzidine	10/23/2012	7120	Yes	N	D U			7120	3560	ug/kg
AQ-ILF-03-0-12	A12J509-24	2-Chloronaphthalene	10/23/2012	712	Yes	N	D U			712	356	ug/kg
AQ-ILF-03-0-12	A12J509-24	2-Methylnaphthalene	10/23/2012	1420	Yes	N	D U			1420	712	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-03-0-12	A12J509-24	2,4,6-Trichlorophenol	10/23/2012	3560		Yes	N	D U			3560	1780	ug/kg
AQ-ILF-03-0-12	A12J509-24	1-Methylnaphthalene	10/23/2012	1420		Yes	N	D U			1420	712	ug/kg
AQ-ILF-03-0-12	A12J509-24	4-Chloro-3-methylphenol	10/23/2012	7120		Yes	N	D U			7120	3560	ug/kg
AQ-ILF-03-0-12	A12J509-24	2-Nitroaniline	10/23/2012	14200		Yes	N	D U			14200	7120	ug/kg
AQ-ILF-03-0-12	A12J509-24	N-Nitrosodi-N-propylamine	10/23/2012	1780		Yes	N	D U			1780	890	ug/kg
AQ-ILF-03-0-12	A12J509-24	Isophorone	10/23/2012	1780		Yes	N	D U			1780	890	ug/kg
AQ-ILF-03-0-12	A12J509-24	N-Nitrosodimethylamine	10/23/2012	1780		Yes	N	D U			1780	890	ug/kg
AQ-ILF-03-0-12	A12J509-24	Aniline	10/23/2012	3560		Yes	N	D U			3560	1780	ug/kg
AQ-ILF-03-0-12	A12J509-24	2,6-Dinitrotoluene	10/23/2012	7120		Yes	N	D U			7120	3560	ug/kg
AQ-ILF-03-0-12	A12J509-24	Naphthalene	10/23/2012	1280		Yes	Y	D J			1420	712	ug/kg
AQ-ILF-03-0-12	A12J509-24	Benzo(a)pyrene	10/23/2012	114000		Yes	Y	D			1070	534	ug/kg
AQ-ILF-03-0-12	A12J509-24	Phenol	10/23/2012	1420		Yes	N	D U			1420	712	ug/kg
AQ-ILF-03-0-12	A12J509-24	Pyrene	10/23/2012	187000		Yes	Y	D			712	356	ug/kg
AQ-ILF-03-0-12	A12J509-24	2,4-Dinitrotoluene	10/23/2012	7120		Yes	N	D U			7120	3560	ug/kg
AQ-ILF-03-0-12	A12J509-24	2,4-Dichlorophenol	10/23/2012	3560		Yes	N	D U			3560	1780	ug/kg
AQ-ILF-03-0-12	A12J509-24	4-Nitrophenol	10/23/2012	7120		Yes	N	D U			7120	3560	ug/kg
AQ-ILF-03-0-12	A12J509-24	Benzyl alcohol	10/23/2012	3560		Yes	N	D U			3560	1780	ug/kg
AQ-ILF-03-0-12	A12J509-24	4-Bromophenyl-phenyl ether	10/23/2012	1780		Yes	N	D U			1780	890	ug/kg
AQ-ILF-03-0-12	A12J509-24	2,4-Dimethylphenol	10/23/2012	3560		Yes	N	D U			3560	1780	ug/kg
AQ-ILF-03-0-12	A12J509-24	Benzoic acid	10/23/2012	89000		Yes	N	D U			89000	44500	ug/kg
AQ-ILF-03-0-12	A12J509-24	4-Chloroaniline	10/23/2012	1780		Yes	N	D U			1780	890	ug/kg
AQ-ILF-03-0-12	A12J509-24	Dimethyl phthalate	10/23/2012	3560		Yes	N	D U			3560	1780	ug/kg
AQ-ILF-03-0-12	A12J509-24	1,2,4-Trichlorobenzene	10/23/2012	1780		Yes	N	D U			1780	890	ug/kg
AQ-ILF-03-0-12	A12J509-24	Pentachlorophenol	10/23/2012	14200		Yes	N	D U			14200	7120	ug/kg
AQ-ILF-03-0-12	A12J509-24	Anthracene	10/23/2012	6520		Yes	Y	D			712	356	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-03-0-12	A12J509-24	Hexachlorobenzene	10/23/2012	712	Yes	N	D U			712	356	ug/kg
AQ-ILF-03-0-12	A12J509-24	Di-n-octyl phthalate	10/23/2012	14200	Yes	N	D U			14200	7120	ug/kg
AQ-ILF-03-0-12	A12J509-24	Bis(2-ethylhexyl)phthalate	10/23/2012	14200	Yes	N	D U			14200	7120	ug/kg
AQ-ILF-03-0-12	A12J509-24	bis(2-Chloroethoxy)methane	10/23/2012	1780	Yes	N	D U			1780	890	ug/kg
AQ-ILF-03-0-12	A12J509-24	bis(2-Chloroethyl)ether	10/23/2012	1780	Yes	N	D U			1780	890	ug/kg
AQ-ILF-03-0-12	A12J509-24	1,4-Dichlorobenzene	10/23/2012	1780	Yes	N	D U			1780	890	ug/kg
AQ-ILF-03-0-12	A12J509-24	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/23/2012	1780	Yes	N	D U			1780	890	ug/kg
AQ-ILF-03-0-12	A12J509-24	2,4-Dinitrophenol	10/23/2012	17800	Yes	N	D U			17800	8900	ug/kg
AQ-ILF-03-0-12	A12J509-24	Dibenzo(a,h)anthracene	10/23/2012	29300	Yes	Y	D			712	356	ug/kg
AQ-ILF-03-0-12	A12J509-24	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	10/23/2012	17800	Yes	N	D U			17800	8900	ug/kg
AQ-ILF-03-0-12	A12J509-24	1,3-Dichlorobenzene	10/23/2012	1780	Yes	N	D U			1780	890	ug/kg
AQ-ILF-03-0-12	A12J509-24	Benzo(a)anthracene	10/23/2012	113000	Yes	Y	D			712	356	ug/kg
AQ-ILF-03-0-12	A12J509-24	2,4,5-Trichlorophenol	10/23/2012	3560	Yes	N	D U			3560	1780	ug/kg
AQ-ILF-03-0-12	A12J509-24	Nitrobenzene	10/23/2012	7120	Yes	N	D U			7120	3560	ug/kg
AQ-ILF-03-0-12	A12J509-24	Fluorene	10/23/2012	1720	Yes	Y	D			712	356	ug/kg
AQ-ILF-03-0-12	A12J509-24	N-Nitrosodiphenylamine	10/23/2012	1780	Yes	N	D U			1780	890	ug/kg
AQ-ILF-03-0-12	A12J509-24	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	10/23/2012	1780	Yes	N	D U			1780	890	ug/kg
AQ-ILF-03-0-12	A12J509-24	4-Nitroaniline	10/23/2012	14200	Yes	N	D U			14200	7120	ug/kg
AQ-ILF-03-0-12	A12J509-24	Butylbenzyl phthalate	10/23/2012	14200	Yes	N	D U			14200	7120	ug/kg
AQ-ILF-03-0-12	A12J509-24	3-Nitroaniline	10/23/2012	14200	Yes	N	D U			14200	7120	ug/kg
AQ-ILF-03-0-12	A12J509-24	Acenaphthene	10/23/2012	2000	Yes	Y	D			712	356	ug/kg
AQ-ILF-03-0-12	A12J509-24	Diethyl phthalate	10/23/2012	3560	Yes	N	D U			3560	1780	ug/kg
AQ-ILF-03-0-12	A12J509-24	Di-n-butyl phthalate	10/23/2012	3560	Yes	N	D U			3560	1780	ug/kg
AQ-ILF-03-0-12	A12J509-24	Phenanthrene	10/23/2012	15600	Yes	Y	D			712	356	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-04-0-14	A12J509-31	Naphthalene	10/24/2012	2090	Yes	Y	D J			3100	1550	ug/kg
AQ-ILF-04-0-14	A12J509-31	2,4,6-Trichlorophenol	10/24/2012	7760	Yes	N	D U			7760	3880	ug/kg
AQ-ILF-04-0-14	A12J509-31	2-Nitrophenol	10/24/2012	15500	Yes	N	D U			15500	7760	ug/kg
AQ-ILF-04-0-14	A12J509-31	Pentachlorophenol	10/24/2012	31000	Yes	N	D U			31000	15500	ug/kg
AQ-ILF-04-0-14	A12J509-31	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/24/2012	3880	Yes	N	D U			3880	1940	ug/kg
AQ-ILF-04-0-14	A12J509-31	Carbazole	10/24/2012	4720	Yes	Y	D			2330	1160	ug/kg
AQ-ILF-04-0-14	A12J509-31	2-Nitroaniline	10/24/2012	31000	Yes	N	D U			31000	15500	ug/kg
AQ-ILF-04-0-14	A12J509-31	Fluorene	10/24/2012	5940	Yes	Y	D			1550	776	ug/kg
AQ-ILF-04-0-14	A12J509-31	N-Nitrosodiphenylamine	10/24/2012	3880	Yes	N	D U			3880	1940	ug/kg
AQ-ILF-04-0-14	A12J509-31	Butylbenzyl phthalate	10/24/2012	31000	Yes	N	D U			31000	15500	ug/kg
AQ-ILF-04-0-14	A12J509-31	N-Nitrosodimethylamine	10/24/2012	3880	Yes	N	D U			3880	1940	ug/kg
AQ-ILF-04-0-14	A12J509-31	1-Methylnaphthalene	10/24/2012	3100	Yes	N	D U			3100	1550	ug/kg
AQ-ILF-04-0-14	A12J509-31	bis(2-Chloroethoxy)methane	10/24/2012	3880	Yes	N	D U			3880	1940	ug/kg
AQ-ILF-04-0-14	A12J509-31	2,4-Dinitrophenol	10/24/2012	38800	Yes	N	D U			38800	19400	ug/kg
AQ-ILF-04-0-14	A12J509-31	Dibenzo(a,h)anthracene	10/24/2012	25000	Yes	Y	D			1550	776	ug/kg
AQ-ILF-04-0-14	A12J509-31	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	10/24/2012	38800	Yes	N	D U			38800	19400	ug/kg
AQ-ILF-04-0-14	A12J509-31	1,3-Dichlorobenzene	10/24/2012	3880	Yes	N	D U			3880	1940	ug/kg
AQ-ILF-04-0-14	A12J509-31	Benzo(a)anthracene	10/24/2012	64400	Yes	Y	D			1550	776	ug/kg
AQ-ILF-04-0-14	A12J509-31	2,3,4,6-Tetrachlorophenol	10/24/2012	7760	Yes	N	D U			7760	3880	ug/kg
AQ-ILF-04-0-14	A12J509-31	Aniline	10/24/2012	7760	Yes	N	D U			7760	3880	ug/kg
AQ-ILF-04-0-14	A12J509-31	2,6-Dinitrotoluene	10/24/2012	15500	Yes	N	D U			15500	7760	ug/kg
AQ-ILF-04-0-14	A12J509-31	Phenanthrene	10/24/2012	59900	Yes	Y	D			1550	776	ug/kg
AQ-ILF-04-0-14	A12J509-31	N-Nitrosodi-N-propylamine	10/24/2012	3880	Yes	N	D U			3880	1940	ug/kg
AQ-ILF-04-0-14	A12J509-31	Benzoic acid	10/24/2012	194000	Yes	N	D U			194000	97000	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-04-0-14	A12J509-31	Hexachloroethane	10/24/2012	3880	Yes	N	D U			3880	1940	ug/kg
AQ-ILF-04-0-14	A12J509-31	4-Chlorophenyl phenyl ether	10/24/2012	3880	Yes	N	D U			3880	1940	ug/kg
AQ-ILF-04-0-14	A12J509-31	Hexachlorocyclopentadiene	10/24/2012	7760	Yes	N	D U			7760	3880	ug/kg
AQ-ILF-04-0-14	A12J509-31	Isophorone	10/24/2012	3880	Yes	N	D U			3880	1940	ug/kg
AQ-ILF-04-0-14	A12J509-31	Acenaphthene	10/24/2012	22600	Yes	Y	D			1550	776	ug/kg
AQ-ILF-04-0-14	A12J509-31	Diethyl phthalate	10/24/2012	7760	Yes	N	D U			7760	3880	ug/kg
AQ-ILF-04-0-14	A12J509-31	Di-n-butyl phthalate	10/24/2012	7760	Yes	N	D U			7760	3880	ug/kg
AQ-ILF-04-0-14	A12J509-31	4-Chloro-3-methylphenol	10/24/2012	15500	Yes	N	D U			15500	7760	ug/kg
AQ-ILF-04-0-14	A12J509-31	2-Chlorophenol	10/24/2012	7760	Yes	N	D U			7760	3880	ug/kg
AQ-ILF-04-0-14	A12J509-31	Bis(2-ethylhexyl)phthalate	10/24/2012	31000	Yes	N	D U			31000	15500	ug/kg
AQ-ILF-04-0-14	A12J509-31	bis(2-Chloroethyl)ether	10/24/2012	3880	Yes	N	D U			3880	1940	ug/kg
AQ-ILF-04-0-14	A12J509-31	Phenol	10/24/2012	3100	Yes	N	D U			3100	1550	ug/kg
AQ-ILF-04-0-14	A12J509-31	1,4-Dichlorobenzene	10/24/2012	3880	Yes	N	D U			3880	1940	ug/kg
AQ-ILF-04-0-14	A12J509-31	4-Bromophenyl-phenyl ether	10/24/2012	3880	Yes	N	D U			3880	1940	ug/kg
AQ-ILF-04-0-14	A12J509-31	Benzyl alcohol	10/24/2012	7760	Yes	N	D U			7760	3880	ug/kg
AQ-ILF-04-0-14	A12J509-31	4-Nitrophenol	10/24/2012	15500	Yes	N	D U			15500	7760	ug/kg
AQ-ILF-04-0-14	A12J509-31	Hexachlorobenzene	10/24/2012	1550	Yes	N	D U			1550	776	ug/kg
AQ-ILF-04-0-14	A12J509-31	3-Nitroaniline	10/24/2012	31000	Yes	N	D U			31000	15500	ug/kg
AQ-ILF-04-0-14	A12J509-31	4-Chloroaniline	10/24/2012	3880	Yes	N	D U			3880	1940	ug/kg
AQ-ILF-04-0-14	A12J509-31	2,4,5-Trichlorophenol	10/24/2012	7760	Yes	N	D U			7760	3880	ug/kg
AQ-ILF-04-0-14	A12J509-31	Di-n-octyl phthalate	10/24/2012	31000	Yes	N	D U			31000	15500	ug/kg
AQ-ILF-04-0-14	A12J509-31	Nitrobenzene	10/24/2012	15500	Yes	N	D U			15500	7760	ug/kg
AQ-ILF-04-0-14	A12J509-31	1,2-Dichlorobenzene	10/24/2012	3880	Yes	N	D U			3880	1940	ug/kg
AQ-ILF-04-0-14	A12J509-31	2-Methylphenol (o-Cresol)	10/24/2012	3880	Yes	N	D U			3880	1940	ug/kg
AQ-ILF-04-0-14	A12J509-31	3,3'-Dichlorobenzidine	10/24/2012	15500	Yes	N	D U			15500	7760	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-04-0-14	A12J509-31	2-Chloronaphthalene	10/24/2012	1550	Yes	N	D U			1550	776	ug/kg
AQ-ILF-04-0-14	A12J509-31	2-Methylnaphthalene	10/24/2012	3100	Yes	N	D U			3100	1550	ug/kg
AQ-ILF-04-0-14	A12J509-31	4-Nitroaniline	10/24/2012	31000	Yes	N	D U			31000	15500	ug/kg
AQ-ILF-04-0-14	A12J509-31	Benzo(g,h,i)perylene	10/24/2012	160000	Yes	Y	D			1550	776	ug/kg
AQ-ILF-04-0-14	A12J509-31	bis(2-Chloroisopropyl)ether	10/24/2012	3880	Yes	N	D U			3880	1940	ug/kg
AQ-ILF-04-0-14	A12J509-31	Chrysene	10/24/2012	143000	Yes	Y	D			1550	776	ug/kg
AQ-ILF-04-0-14	A12J509-31	Acenaphthylene	10/24/2012	1550	Yes	N	D U			1550	776	ug/kg
AQ-ILF-04-0-14	A12J509-31	Benzo(k)fluoranthene	10/24/2012	73700	Yes	Y	D			2330	1160	ug/kg
AQ-ILF-04-0-14	A12J509-31	Fluoranthene	10/24/2012	153000	Yes	Y	D			1550	776	ug/kg
AQ-ILF-04-0-14	A12J509-31	Benzo(b)fluoranthene	10/24/2012	282000	Yes	Y	D			2330	1160	ug/kg
AQ-ILF-04-0-14	A12J509-31	2,4-Dimethylphenol	10/24/2012	7760	Yes	N	D U			7760	3880	ug/kg
AQ-ILF-04-0-14	A12J509-31	Indeno(1,2,3-c,d)pyrene	10/24/2012	127000	Yes	Y	D			1550	776	ug/kg
AQ-ILF-04-0-14	A12J509-31	Anthracene	10/24/2012	17800	Yes	Y	D			1550	776	ug/kg
AQ-ILF-04-0-14	A12J509-31	Dibenzofuran	10/24/2012	5840	Yes	Y	D			1550	776	ug/kg
AQ-ILF-04-0-14	A12J509-31	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	10/24/2012	3880	Yes	N	D U			3880	1940	ug/kg
AQ-ILF-04-0-14	A12J509-31	Benzo(a)pyrene	10/24/2012	113000	Yes	Y	D			2330	1160	ug/kg
AQ-ILF-04-0-14	A12J509-31	Dimethyl phthalate	10/24/2012	7760	Yes	N	D U			7760	3880	ug/kg
AQ-ILF-04-0-14	A12J509-31	Pyrene	10/24/2012	141000	Yes	Y	D			1550	776	ug/kg
AQ-ILF-04-0-14	A12J509-31	2,4-Dinitrotoluene	10/24/2012	15500	Yes	N	D U			15500	7760	ug/kg
AQ-ILF-04-0-14	A12J509-31	2,4-Dichlorophenol	10/24/2012	7760	Yes	N	D U			7760	3880	ug/kg
AQ-ILF-04-0-14	A12J509-31	1,2,4-Trichlorobenzene	10/24/2012	3880	Yes	N	D U			3880	1940	ug/kg

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 18, 2012
LDC Report Date:	January 3, 2013
Matrix:	Soil
Parameters:	Volatiles
Validation Level:	Stage 2B
Laboratory:	Apex Laboratories, LLC
Sample Delivery Group (SDG):	A12J515

Sample Identification

AQ-ILF-05-10-12
AQ-FSL-02-14-16
AQ-FSL-01-4-6(b)
AQ-FSL-03-5-7

Introduction

This data review covers 4 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
10/21/12	Acetone	36.8	AQ-ILF-05-10-12	J (all detects)	A
	Bromochloromethane	25.1	AQ-FSL-02-14-16	UJ (all non-detects)	
	Bromoform	35.9	AQ-FSL-01-4-6(b)		
	2-Butanone	46.5	AQ-FSL-03-5-7		
	1,2-Dibromo-3-chloropropane	29.3	1210630-MB		
	1,2-Dibromoethane	22.0			
	Dibromomethane	25.8			
	1,2-Dichloroethane	22.8			
	1,3-Dichloropropane	24.7			
	Hexachlorobutadiene	28.7			
	2-Hexanone	43.7			
	4-Methyl-2-pentanone	41.9			
	1,1,1,2-Tetrachloroethane	21.6			
	1,1,2,2-Tetrachloroethane	24.4			
	1,1,2-Trichloroethane	24.8			
	1,2,3-Trichloropropane	25.5			

Date	Compound	%D	Associated Samples	Flag	A or P
10/21/12	Carbon disulfide	27.1	AQ-ILF-05-10-12 AQ-FSL-02-14-16 AQ-FSL-01-4-6(b) AQ-FSL-03-5-7 1210630-MB	J (all detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
10/4/12	2,2-Dichloropropane	38.4	All samples in SDG A12J515	J (all detects) UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

All tentatively identified compounds were within validation criteria.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to calibration %D problems, data were qualified as estimated in four samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Volatiles - Data Qualification Summary - SDG A12J515

SDG	Sample	Compound	Flag	A or P	Reason
A12J515	AQ-ILF-05-10-12 AQ-FSL-02-14-16 AQ-FSL-01-4-6(b) AQ-FSL-03-5-7	Acetone Bromochloromethane Bromoform 2-Butanone 1,2-Dibromo-3-chloropropane 1,2-Dibromoethane Dibromomethane 1,2-Dichloroethane 1,3-Dichloropropane Hexachlorobutadiene 2-Hexanone 4-Methyl-2-pentanone 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,2,3-Trichloropropane	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
A12J515	AQ-ILF-05-10-12 AQ-FSL-02-14-16 AQ-FSL-01-4-6(b) AQ-FSL-03-5-7	Carbon disulfide	J (all detects)	A	Continuing calibration (%D)
A12J515	AQ-ILF-05-10-12 AQ-FSL-02-14-16 AQ-FSL-01-4-6(b) AQ-FSL-03-5-7	2,2-Dichloropropane	J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D)

Millennium Bulk Terminals
Volatiles - Laboratory Blank Data Qualification Summary - SDG A12J515

No Sample Data Qualified in this SDG

LDC #: 28944C1

SDG #: A12J515

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/2/13

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/18/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 15/30
IV.	Continuing calibration/ICV	SW	~~[illegible]~~ CCV ≤ 20 ICV ≤ 30
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples A	~~SW~~	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

SOIL

1 1	AQ-ILF-05-10-12	11 1	1210630	21		31	
2 1	2 = MMM AQ-FSL-02-14-16	12 2	1210684	22		32	
3 1	AQ-FSL-01-4-6(b)	13		23		33	
4 1	AQ-FSL-03-5-7	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC #: 28944C1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: FT
2nd Reviewer: OR

METHOD: GC/MS VOA (EPA SW 846 Method 8260)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ≤25 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤25.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
-	10/4/12	2J03013-ICV1	F	~~27.8~~		All	J/UJ/A
-			OO	38.4		↓	↓
-			~~BB~~	~~24.4~~			
	10/21/12	2J21002-CCV1	F	36.8		1210630-MB,	J/UJ/A
			PP	25.1		1→4	
			X	35.9		↓	↓
			M	46.5			
+			G	27.1			J/A det
			MM	29.3			J/UJ/A
			TT	22.0			↓
			RR	25.8			
			L	22.8			
			SS	24.7			
			LLL	28.7			
			Z	43.7			
			Y	41.9			
			UU	21.6			
			BB	24.4			
			U	24.8			
			XX	25.5		↓	↓

LDC Report# 28944C2a

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 18, 2012
LDC Report Date:	January 4, 2013
Matrix:	Soil
Parameters:	Semivolatiles
Validation Level:	Stage 2B
Laboratory:	Apex Laboratories, LLC
Sample Delivery Group (SDG):	A12J515

Sample Identification

AQ-ILF-05-0-14
AQ-FSL-02-0-16
AQ-FSL-01-0-12
AQ-FSL-03-1-8.5

Introduction

This data review covers 4 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270D for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
10/24/12	Benzoic acid	20.7	AQ-ILF-05-0-14 AQ-FSL-02-0-16 AQ-FSL-01-0-12 AQ-FSL-03-1-8.5	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID	Compound	%R (Limits)	Associated Samples	Flag	A or P
1210677-LCS	4-Chloroaniline	43 (50-150)	All samples in SDG A12J515	J (all detects) UJ (all non-detects)	P
1210677-LCS	3,3'-Dichlorobenzidine	152 (50-150)	All samples in SDG A12J515	J (all detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to calibration %D and LCS %R problems, data were qualified as estimated in four samples.

The quality control criteria reviewed were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Semivolatiles - Data Qualification Summary - SDG A12J515

SDG	Sample	Compound	Flag	A or P	Reason
A12J515	AQ-ILF-05-0-14 AQ-FSL-02-0-16 AQ-FSL-01-0-12 AQ-FSL-03-1-8.5	Benzoic acid	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
A12J515	AQ-ILF-05-0-14 AQ-FSL-02-0-16 AQ-FSL-01-0-12 AQ-FSL-03-1-8.5	4-Chloroaniline	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)
A12J515	AQ-ILF-05-0-14 AQ-FSL-02-0-16 AQ-FSL-01-0-12 AQ-FSL-03-1-8.5	3,3'-Dichlorobenzidine	J (all detects)	P	Laboratory control samples (%R)

Millennium Bulk Terminals
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG A12J515

No Sample Data Qualified in this SDG

LDC #: 28944C2a

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

SDG #: A12J515

Laboratory: APEX Laboratories, LLC

Date: 1/2/13

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/18/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20, r²
IV.	Continuing calibration/ICV SA	~~SW~~	ICV/CCV ≤ 20/30
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	SW	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: SOIL

1	AQ-ILF-05-0-14	11	1210677	21		31	
2	AQ-FSL-02-0-16	12		22		32	
3	AQ-FSL-01-0-12	13		23		33	
4	AQ-FSL-03-1-8.5	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1- Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 28944C2a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of

Reviewer: FT

2nd Reviewer: CL

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?

Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?

Y N N/A Were all %D and RRFs within the validation criteria of ≤20 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤20.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
-	10/24/12	2J24003-CC01	PPP	20.7		1-4	J/UJ/A

CONCAL.2S

LDC #: 28944C2a

VALIDATION FINDINGS WORKSHEET
Surrogate Recovery

Page: 1 of 1
Reviewer: FT
2nd Reviewer: CR

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were percent recoveries (%R) for surrogates within QC limits?
Y N N/A If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?
Y N N/A If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

#	Date	Sample ID	Surrogate	%R (Limits)	Qualifications
		1	TBP	58 (35-125)	no qual
				( )	
				( )	
		2	TPH	126 (30-125)	no qual
			TBP	55 2 (35-125)	
				( )	
		3		191 ( )	no qual
				583 ( )	
				( )	
				( )	
				( )	
				( )	
		4	TBP	317 ( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

* QC limits are advisory	QC Limits (Soil)	QC Limits (Water)
S1 (NBZ) = Nitrobenzene-d5	23-120	35-114
S2 (FBP) = 2-Fluorobiphenyl	30-115	43-116
S3 (TPH) = Terphenyl-d14	18-137	33-141
S4 (PHL) = Phenol-d5	24-113	10-94

	QC Limits (Soil)	QC Limits (Water)
S5 (2FP)= 2-Fluorophenol	25-121	21-100
S6 (TBP) = 2,4,6-Tribromophenol	19-122	10-123
S7 (2CP) = 2-Chlorophenol-d4	20-130*	33-110*
S8 (DCB) = 1,2-Dichlorobenzene-d4	20-130*	16-110*

SUR.2S

LDC #: 28944C2a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FT
2nd Reviewer: CR

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?

Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		120677-LCS	T	43 (50-152)	( )	( )	All	J/UJ/P
			BBB	152 (↓)	( )	( )	↓	J/Pdet
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 18, 2012
LDC Report Date:	December 26, 2012
Matrix:	Soil
Parameters:	Polychlorinated Biphenyls
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J515

Sample Identification

AQ-ILF-05-0-14
AQ-FSL-02-0-16
AQ-FSL-01-0-12
AQ-FSL-03-1-8.5

Introduction

This data review covers 4 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082A for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. Surrogate recoveries (%R) were not within QC limits for samples AQ-FSL-02-0-16 and AQ-FSL-01-0-12. Since the samples were diluted out, no data were qualified.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

Raw data were not reviewed for this SDG.

XIII. Compound Quantitation and Reported RLs

Raw data were not reviewed for this SDG.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XV. Field Duplicates

No field duplicates were identified in this SDG.

XVI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polychlorinated Biphenyls - Data Qualification Summary - SDG A12J515

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG A12J515

No Sample Data Qualified in this SDG

LDC #: 28944C3b

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

SDG #: A12J515

Laboratory: APEX Laboratories, LLC

Date: 12/21/2012

Page: 1 of 1

Reviewer: SW

2nd Reviewer: [illegible]

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/18/2012
II.	GC/ECD Instrument Performance Check	N	
III.	Initial calibration	A	RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV / CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	N	CS
VIII.	Laboratory control samples	A	LCS
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	N	
XIII.	Compound quantitation/RL/LOQ/LODs	N	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

Soil

+ 1	AQ-ILF-05-0-14	11		21		31	1210801-BLK1
+ 2	AQ-FSL-02-0-16	12		22		32	
+ 3	AQ-FSL-01-0-12	13		23		33	
+ 4	AQ-FSL-03-1-8.5	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 28944 C3b

VALIDATION FINDINDS WORKSHEET
Surrogate Recovery

Reviewer: AA SW
2nd Reviewer: [illegible]

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)
Are surrogates required by the method? Yes X or No____.
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
(Y) N N/A Were surrogates spiked into all samples and blanks?
Y (N) N/A Did all surrogate recoveries (%R) meet the QC limits?

#	Sample ID	Detector/ Column	Surrogate Compound	%R (Limits)	Qualifications
	2		O	355 (55 - 130)	NQ (20x)
			↓	(↓)	
	3		↓	134 (↓)	NQ (10x)
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound		
A	Chlorobenzene (CBZ)	G	Octacosane	M	Benzo(e)Pyrene	S	1-Chloro-3-Nitrobenzene	Y	Tetrachloro-m- xylene
B	4-Bromofluorobenzene (BFB)	H	Ortho-Terphenyl	N	Terphenyl-D14	T	3,4-Dinitrotoluene		
C	a,a,a-Trifluorotoluene	I	Fluorobenzene (FBZ)	O	Decachlorobiphenyl (DCB)	U	Tripentyltin		
D	Bromochlorobenene	J	n-Triacontane	P	1-methylnaphthalene	V	Tri-n-propyltin		
E	1,4-Dichlorobutane	K	Hexacosane	Q	Dichlorophenyl Acetic Acid (DCAA)	W	Tributyl Phosphate		
F	1,4-Difluorobenzene (DFB)	L	Bromobenzene	R	4-Nitrophenol	X	Triphenyl Phosphate		

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 18, 2012
LDC Report Date:	December 20, 2012
Matrix:	Soil
Parameters:	Metals
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J515

Sample Identification

AQ-ILF-05-0-14
AQ-FSL-02-0-16
AQ-FSL-01-0-12
AQ-FSL-03-1-8.5
AQ-ILF-05-0-14(TCLP)
AQ-FSL-02-0-16(TCLP)
AQ-FSL-01-0-12(TCLP)
AQ-FSL-03-1-8.5(TCLP)
AQ-FSL-01-0-12(TCLP)MS
AQ-FSL-03-1-8.5(TCLP)MS

Introduction

This data review covers 10 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010C and 6020A for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, and Zinc.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Metals - Data Qualification Summary - SDG A12J515

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Metals - Laboratory Blank Data Qualification Summary - SDG A12J515

No Sample Data Qualified in this SDG

LDC #: 28944C4

SDG #: A12J515

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 12-17-12

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: Metals (EPA SW 846 Method 6010C/6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/18/12
II.	ICP/MS Tune	A	
III.	Calibration	SWA	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis		
VI.	Matrix Spike Analysis	A	MS
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	Not utilized
XI.	ICP Serial Dilution	N	Not performed
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil

1	AQ-ILF-05-0-14	11		21		31	
2	AQ-FSL-02-0-16	12		22		32	
3	AQ-FSL-01-0-12	13		23		33	
4	AQ-FSL-03-1-8.5	14		24		34	
5	AQ-ILF-05-0-14(TCLP)	15		25		35	
6	AQ-FSL-02-0-16(TCLP)	16		26		36	
7	AQ-FSL-01-0-12(TCLP)	17		27		37	
8	AQ-FSL-03-1-8.5(TCLP)	18		28		38	
9	AQ-FSL-01-0-12(TCLP) MS	19		29		39	
10	AQ-FSL-03-1-8.5(TCLP) MS	20		30		40	

Notes:

LDC #: 08944C4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: CB
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-8		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
9-10		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____

Comments: Mercury by CVAA if performed

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 18, 2012
LDC Report Date:	December 20, 2012
Matrix:	Soil
Parameters:	Wet Chemistry
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J515

Sample Identification

AQ-ILF-05-0-14
AQ-FSL-02-0-16
AQ-FSL-01-0-12
AQ-FSL-03-1-8.5
AQ-ILF-05-0-14DUP

Introduction

This data review covers 5 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 9014 for Total Cyanide, Standard Method 4500-CN (I/E) for Weak Acid Dissociable Cyanide, Standard Method 4500-F-C for Fluoride, and PSEP and Standard Method 5310B modified for Total Organic Carbon.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
AQ-ILF-05-0-14 AQ-FSL-02-0-16 AQ-FSL-01-0-12 AQ-FSL-03-1-8.5	Total organic carbon	16 days	14 days	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

All sample result verification met validation criteria with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
AQ-FSL-03-1-8.5	Total organic carbon	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	P

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to holding time and calibration range problems, data were qualified as estimated in four samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A12J515

SDG	Sample	Analyte	Flag	A or P	Reason
A12J515	AQ-ILF-05-0-14 AQ-FSL-02-0-16 AQ-FSL-01-0-12 AQ-FSL-03-1-8.5	Total organic carbon	J (all detects) UJ (all non-detects)	P	Technical holding time
A12J515	AQ-FSL-03-1-8.5	Total organic carbon	J (all detects)	P	Sample result verification (exceeded range)

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A12J515

No Sample Data Qualified in this SDG

LDC #: 28944C6

SDG #: A12J515

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 12-11-12

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: (Analyte) Total Cyanide (EPA SW846 Method ~~9013M~~/9014), WAD Cyanide (EPA SW846 Method ~~9013M~~/SM4500–CN-I/E), Fluoride (SM4500-F-C), TOC (PSEP/SM5310B Modified)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 10/~~12~~ 18/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	SW	MS (A12J509)
VI.	Duplicates	SW	DUP
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	SW	
IX.	Overall assessment of data	~~SW~~ A	
X.	Field duplicates	N	
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil

1	AQ-ILF-05-0-14	11		21		31	
2	AQ-FSL-02-0-16	12		22		32	
3	AQ-FSL-01-0-12	13		23		33	
4	AQ-FSL-03-1-8.5	14		24		34	
5	AQ-ILF-05-0-14DUP	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 28944C6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer: W

All circled methods are applicable to each sample.

Sample ID	Parameter
1-4	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 WAD CN
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
QC 5	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

LDC #: 01844C6

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page: 1 of 1
Reviewer: CR
2nd reviewer: ✓

All circled dates have exceeded the technical holding time.
Y N N/A Were all samples preserved as applicable to each method ?
Y N N/A Were all cooler temperatures within validation criteria?

Method:		PSEP					
Parameters:		TOC					
Technical holding time:		14 days					
Sample ID	**Sampling date**	**Analysis date**	**Analysis date**	**Analysis date**	**Analysis date**	**Analysis date**	**Qualifier**
1-4	10/18/12	11/3/12	(16 days)				J/UJ/P

HT.6

LDC #: 38944C6

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method see cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125 (85-115% for Method 300.0)? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
		AQ-ILF-02-0-12	S	WAD CN	30	None	~~J/UJ/A~~ No Qual
		(A12J501)				(2nd Client MS in batch	
						within limits)	

Comments: CN 74X

LDC #: 018944C6

VALIDATION FINDINGS WORKSHEET
Duplicate Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method see cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a duplicate sample analyzed for each matrix in this SDG?

Y N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for water and ≤ 35% for soil samples (≤ 10% for Method 300.0)? If no, see qualification below. A control limit of ±CRDL (±2X CRDL for soil) was used for samples that were ≤5X the CRDL, including when only one of the duplicate sample values were ≤5X the CRDL. If field blanks were used for laboratory duplicates, see overall assessment.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Duplicate ID	Matrix	Analyte	RPD (Limits)	Associated Samples	Qualifications
		AQ-ECA02-15 (A12J537)		TOC	63 (≤20)	None* *(2nd Client MS/Dup in batch within limits)	No Qual

Comments:

LDC #: 28944C6

VALIDATION FINDINGS WORKSHEET
Sample Result Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method see cover

#	Sample ID	Analyte	Lab Reporting Limit (units)	RDL (units)	Finding	Qualifications
	4	TOC			>Calibration range	J/P

Comments:

ABVCRDL.6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 18, 2012
LDC Report Date:	December 26, 2012
Matrix:	Soil
Parameters:	Total Petroleum Hydrocarbons as Extractables
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J515

Sample Identification

AQ-ILF-05-10-12
AQ-FSL-02-14-16
AQ-FSL-01-4-6(b)
AQ-FSL-01-8-10(b)
AQ-FSL-01-0-12
AQ-FSL-03-5-7
AQ-FSL-03-1-8.5

Introduction

This data review covers 7 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method NWTPH-DX for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 15.0% .

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 15.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. Surrogate recoveries (%R) were not within QC limits for samples AQ-ILF-02-6-8, AQ-ILF-03-8-10, and AQ-ILF-04-12-14. Since the samples were diluted out, no data were qualified.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XII. Field Duplicates

No field duplicates were identified in this SDG.

XIII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG A12J515

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG A12J515

No Sample Data Qualified in this SDG

LDC #: 28944C8

SDG #: A12J515

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 12/20/2012

Page: 1 of 1

Reviewer: SW

2nd Reviewer: [illegible]

METHOD: GC TPH as Extractables (NWTPH-Dx)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/18/2012
II	Initial calibration	A	RSD ≤ 15
III.	Calibration verification/ICV	A	icv / ccv ≤15
IV.	Blanks	A	
V	Surrogate recovery	SW	
VI.	Matrix spike/Matrix spike duplicates	N	CS
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	~~SW~~ N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

Soil

1 1	AQ-ILF-05-10-12	11		21		31 1	1210721-BLK1
2 1	AQ-FSL-02-14-16	12		22		32 2	1211034-BLK1
3 1	AQ-FSL-01-4-6(b)	13		23		33	
4 1	AQ-FSL-01-8-10(b)	14		24		34	
5 2	AQ-FSL-01-0-12	15		25		35	
6 1	AQ-FSL-03-5-7	16		26		36	
7 2	AQ-FSL-03-1-8.5	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 28944C8

VALIDATION FINDINDS WORKSHEET
Surrogate Recovery

Reviewer: SW
2nd Reviewer: Q

METHOD: X GC __ HPLC

Are surrogates required by the method? Yes X or No____.

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were surrogates spiked into all samples and blanks?

Y (N) N/A Did all surrogate recoveries (%R) meet the QC limits?

#	Sample ID	Detector/ Column	Surrogate Compound	%R (Limits)	Qualifications
	1	DUALFID 3R	H	0 (50 - 150)	NQ (40x)
		↓	↓	(↓)	
	3	↓	↓	0 (↓)	NQ (20x)
			↓	(↓)	
	5	DUALFID 4F	↓	0 (↓)	NQ (50x)
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound		
A	Chlorobenzene (CBZ)	G	Octacosane	M	Benzo(e)Pyrene	S	1-Chloro-3-Nitrobenzene	Y	Tetrachloro-m- xylene
B	4-Bromofluorobenzene (BFB)	H	Ortho-Terphenyl	N	Terphenyl-D14	T	3,4-Dinitrotoluene		
C	a,a,a-Trifluorotoluene	I	Fluorobenzene (FBZ)	O	Decachlorobiphenyl (DCB)	U	Tripentyltin		
D	Bromochlorobenene	J	n-Triacontane	P	1-methylnaphthalene	V	Tri-n-propyltin		
E	1,4-Dichlorobutane	K	Hexacosane	Q	Dichlorophenyl Acetic Acid (DCAA)	W	Tributyl Phosphate		
F	1,4-Difluorobenzene (DFB)	L	Bromobenzene	R	4-Nitrophenol	X	Triphenyl Phosphate		

Analytical Method APEXsolids

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-01-0-12	A12J515-27	Total solids	10/24/2012	73		Yes	Y				1.00	1.00	pct
AQ-FSL-01-4-6(B)	A12J515-25	Total solids	10/24/2012	61		Yes	Y				1.00	1.00	pct
AQ-FSL-01-8-10(B)	A12J515-26	Total solids	10/24/2012	70		Yes	Y				1.00	1.00	pct
AQ-FSL-02-0-16	A12J515-18	Total solids	10/24/2012	79.5		Yes	Y				1.00	1.00	pct
AQ-FSL-02-14-16	A12J515-17	Total solids	10/24/2012	73.6		Yes	Y				1.00	1.00	pct
AQ-FSL-03-1-8.5	A12J515-33	Total solids	10/24/2012	70.4		Yes	Y				1.00	1.00	pct
AQ-FSL-03-5-7	A12J515-32	Total solids	10/24/2012	62.2		Yes	Y				1.00	1.00	pct
AQ-ILF-05-0-14	A12J515-08	Total solids	10/24/2012	83.8		Yes	Y				1.00	1.00	pct
AQ-ILF-05-10-12	A12J515-09	Total solids	10/24/2012	79.5		Yes	Y				1.00	1.00	pct

Analytical Method NWTPHDx

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-01-0-12	A12J515-27	Diesel Range Hydrocarbons	11/2/2012	14400		Yes	Y	D			1250	627	mg/kg
AQ-FSL-01-0-12	A12J515-27	Oil	11/2/2012	6130		Yes	Y	D			2510	1250	mg/kg
AQ-FSL-01-4-6(B)	A12J515-25	Oil	10/25/2012	13000		Yes	Y	D			1270	634	mg/kg
AQ-FSL-01-4-6(B)	A12J515-25	Diesel Range Hydrocarbons	10/25/2012	2010		Yes	Y	D			634	317	mg/kg
AQ-FSL-01-8-10(B)	A12J515-26	Oil	10/25/2012	1180		Yes	Y	D			107	53.7	mg/kg
AQ-FSL-01-8-10(B)	A12J515-26	Diesel Range Hydrocarbons	10/25/2012	246		Yes	Y	D			53.7	26.9	mg/kg
AQ-FSL-02-14-16	A12J515-17	Oil	10/25/2012	933		Yes	Y	D			99.7	49.9	mg/kg
AQ-FSL-02-14-16	A12J515-17	Diesel Range Hydrocarbons	10/25/2012	708		Yes	Y	D			49.9	24.9	mg/kg
AQ-FSL-03-1-8.5	A12J515-33	Diesel Range Hydrocarbons	11/1/2012	2870		Yes	Y	D			568	284	mg/kg
AQ-FSL-03-1-8.5	A12J515-33	Oil	11/1/2012	4420		Yes	Y	D			1140	568	mg/kg
AQ-FSL-03-5-7	A12J515-32	Diesel Range Hydrocarbons	10/25/2012	116		Yes	Y				12.0	6.00	mg/kg
AQ-FSL-03-5-7	A12J515-32	Oil	10/25/2012	176		Yes	Y				24.0	12.0	mg/kg
AQ-ILF-05-10-12	A12J515-09	Diesel Range Hydrocarbons	10/25/2012	3300		Yes	Y	D			944	472	mg/kg
AQ-ILF-05-10-12	A12J515-09	Oil	10/25/2012	11800		Yes	Y	D			1890	944	mg/kg

Analytical Method SM4500CNE

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-01-0-12	A12J515-27RE1	Cyanide, total	10/26/2012	64.2		Yes	Y	D			3.28	3.28	mg/kg
AQ-FSL-02-0-16	A12J515-18	Cyanide, total	10/26/2012	102		Yes	Y	D			2.82	2.82	mg/kg
AQ-FSL-03-1-8.5	A12J515-33	Cyanide, total	10/26/2012	23.6		Yes	Y	D			3.28	3.28	mg/kg
AQ-ILF-05-0-14	A12J515-08	Cyanide, total	10/26/2012	34.1		Yes	Y	D			1.14	1.14	mg/kg

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-01-0-12	A12J515-27	Cyanide, Weak acid dissociable (WAD)	10/26/2012	7.28		Yes	Y				0.328	0.328	mg/kg
AQ-FSL-02-0-16	A12J515-18	Cyanide, Weak acid dissociable (WAD)	10/26/2012	2.11		Yes	Y				0.282	0.282	mg/kg
AQ-FSL-03-1-8.5	A12J515-33	Cyanide, Weak acid dissociable (WAD)	10/26/2012	2.22		Yes	Y				0.328	0.328	mg/kg
AQ-ILF-05-0-14	A12J515-08	Cyanide, Weak acid dissociable (WAD)	10/26/2012	0.69		Yes	Y				0.285	0.285	mg/kg

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-01-0-12	A12J515-27	Fluoride	10/29/2012	91600		Yes	Y	D			1180	1180	mg/kg
AQ-FSL-02-0-16	A12J515-18	Fluoride	10/29/2012	75600		Yes	Y	D			609	609	mg/kg
AQ-FSL-03-1-8.5	A12J515-33	Fluoride	10/29/2012	23800		Yes	Y	D			652	652	mg/kg
AQ-ILF-05-0-14	A12J515-08	Fluoride	10/29/2012	34800		Yes	Y	D			584	584	mg/kg

Analytical Method SM5310B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-01-0-12	A12J515-27	Total organic carbon	11/3/2012	140000		Yes	Y		J	1	200	100	mg/kg
AQ-FSL-02-0-16	A12J515-18	Total organic carbon	11/3/2012	100000		Yes	Y		J	1	200	100	mg/kg
AQ-FSL-03-1-8.5	A12J515-33	Total organic carbon	11/3/2012	210000		Yes	Y		J	1,20	200	100	mg/kg
AQ-ILF-05-0-14	A12J515-08	Total organic carbon	11/3/2012	66000		Yes	Y		J	1	200	100	mg/kg

Analytical Method SW6010C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-01-0-12	A12J515-27	Beryllium	11/1/2012	0.129		Yes	Y				0.100	0.0500	mg/L

Analytical Method SW6010C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-01-0-12	A12J515-27	Beryllium	11/1/2012	14.6	Yes	Y	D			5.33	2.67	mg/kg
AQ-FSL-02-0-16	A12J515-18	Beryllium	11/1/2012	0.098	Yes	Y	J			0.100	0.0500	mg/L
AQ-FSL-02-0-16	A12J515-18	Beryllium	11/1/2012	12.4	Yes	Y	D			5.39	2.69	mg/kg
AQ-FSL-03-1-8.5	A12J515-33	Beryllium	11/1/2012	0.067	Yes	Y	J			0.100	0.0500	mg/L
AQ-FSL-03-1-8.5	A12J515-33	Beryllium	11/1/2012	11.8	Yes	Y	D			5.51	2.75	mg/kg
AQ-ILF-05-0-14	A12J515-08	Beryllium	11/1/2012	0.096	Yes	Y	J			0.100	0.0500	mg/L
AQ-ILF-05-0-14	A12J515-08	Beryllium	11/1/2012	8	Yes	Y	D			4.88	2.44	mg/kg

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-01-0-12	A12J515-27	Copper	11/1/2012	736	Yes	Y	D			2.67	1.33	mg/kg
AQ-FSL-01-0-12	A12J515-27	Chromium	11/1/2012	100	Yes	Y	D			2.67	1.33	mg/kg
AQ-FSL-01-0-12	A12J515-27	Antimony	11/1/2012	4.33	Yes	Y	D			1.33	0.666	mg/kg
AQ-FSL-01-0-12	A12J515-27	Arsenic	11/1/2012	15.1	Yes	Y	D			2.67	0.666	mg/kg
AQ-FSL-01-0-12	A12J515-27	Silver	11/1/2012	1.33	Yes	N	D U			1.33	0.666	mg/kg
AQ-FSL-01-0-12	A12J515-27	Nickel	11/1/2012	265	Yes	Y	D			2.67	1.33	mg/kg
AQ-FSL-01-0-12	A12J515-27	Lead	11/1/2012	100	Yes	Y	D			1.33	0.666	mg/kg
AQ-FSL-01-0-12	A12J515-27	Thallium	11/1/2012	0.826	Yes	Y	D J			1.33	0.666	mg/kg
AQ-FSL-01-0-12	A12J515-27	Zinc	11/1/2012	153	Yes	Y	D			5.33	2.67	mg/kg
AQ-FSL-01-0-12	A12J515-27	Barium	11/1/2012	75.8	Yes	Y	D			1.33	0.666	mg/kg
AQ-FSL-01-0-12	A12J515-27	Cadmium	11/1/2012	3.68	Yes	Y	D			1.33	0.666	mg/kg
AQ-FSL-01-0-12	A12J515-27	Selenium	11/1/2012	2.93	Yes	Y	D			2.67	1.33	mg/kg
AQ-FSL-01-0-12	A12J515-27	Mercury	11/1/2012	0.405	Yes	Y	D			0.107	0.0533	mg/kg
AQ-FSL-01-0-12	A12J515-27	Mercury	11/1/2012	0.004	Yes	N	D U			0.00400	0.00250	mg/L
AQ-FSL-01-0-12	A12J515-27	Cadmium	11/1/2012	0.029	Yes	Y	D J			0.0500	0.0250	mg/L
AQ-FSL-01-0-12	A12J515-27	Lead	11/1/2012	0.0655	Yes	Y	D			0.0500	0.0250	mg/L

SDG: A12J515

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-01-0-12	A12J515-27	Selenium	11/1/2012	0.1	Yes	N	D U			0.100	0.0500	mg/L
AQ-FSL-01-0-12	A12J515-27	Copper	11/1/2012	0.225	Yes	Y	D J			0.250	0.125	mg/L
AQ-FSL-01-0-12	A12J515-27	Nickel	11/1/2012	1.44	Yes	Y	D			0.100	0.0500	mg/L
AQ-FSL-01-0-12	A12J515-27	Silver	11/1/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-FSL-01-0-12	A12J515-27	Chromium	11/1/2012	0.254	Yes	Y	D			0.100	0.0500	mg/L
AQ-FSL-01-0-12	A12J515-27	Thallium	11/1/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-FSL-01-0-12	A12J515-27	Antimony	11/1/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-FSL-01-0-12	A12J515-27	Arsenic	11/1/2012	0.1	Yes	N	D U			0.100	0.0500	mg/L
AQ-FSL-01-0-12	A12J515-27	Barium	11/1/2012	0.297	Yes	Y	D J			0.500	0.250	mg/L
AQ-FSL-01-0-12	A12J515-27	Zinc	11/1/2012	1.45	Yes	Y	D			0.250	0.125	mg/L
AQ-FSL-02-0-16	A12J515-18	Zinc	11/1/2012	236	Yes	Y	D			5.39	2.69	mg/kg
AQ-FSL-02-0-16	A12J515-18	Selenium	11/1/2012	2.69	Yes	N	D U			2.69	1.35	mg/kg
AQ-FSL-02-0-16	A12J515-18	Nickel	11/1/2012	193	Yes	Y	D			2.69	1.35	mg/kg
AQ-FSL-02-0-16	A12J515-18	Copper	11/1/2012	619	Yes	Y	D			2.69	1.35	mg/kg
AQ-FSL-02-0-16	A12J515-18	Mercury	11/1/2012	0.194	Yes	Y	D			0.108	0.0539	mg/kg
AQ-FSL-02-0-16	A12J515-18	Silver	11/1/2012	1.35	Yes	N	D U			1.35	0.673	mg/kg
AQ-FSL-02-0-16	A12J515-18	Thallium	11/1/2012	1.35	Yes	N	D U			1.35	0.673	mg/kg
AQ-FSL-02-0-16	A12J515-18	Antimony	11/1/2012	3.33	Yes	Y	D			1.35	0.673	mg/kg
AQ-FSL-02-0-16	A12J515-18	Chromium	11/1/2012	43	Yes	Y	D			2.69	1.35	mg/kg
AQ-FSL-02-0-16	A12J515-18	Barium	11/1/2012	65.7	Yes	Y	D			1.35	0.673	mg/kg
AQ-FSL-02-0-16	A12J515-18	Cadmium	11/1/2012	2.32	Yes	Y	D			1.35	0.673	mg/kg
AQ-FSL-02-0-16	A12J515-18	Arsenic	11/1/2012	10.1	Yes	Y	D			2.69	0.673	mg/kg
AQ-FSL-02-0-16	A12J515-18	Lead	11/1/2012	93.3	Yes	Y	D			1.35	0.673	mg/kg
AQ-FSL-02-0-16	A12J515-18	Thallium	11/1/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-FSL-02-0-16	A12J515-18	Silver	11/1/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-02-0-16	A12J515-18	Nickel	11/1/2012	1	Yes	Y	D			0.100	0.0500	mg/L
AQ-FSL-02-0-16	A12J515-18	Mercury	11/1/2012	0.004	Yes	N	D U			0.00400	0.00250	mg/L
AQ-FSL-02-0-16	A12J515-18	Lead	11/1/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-FSL-02-0-16	A12J515-18	Arsenic	11/1/2012	0.1	Yes	N	D U			0.100	0.0500	mg/L
AQ-FSL-02-0-16	A12J515-18	Barium	11/1/2012	0.386	Yes	Y	D J			0.500	0.250	mg/L
AQ-FSL-02-0-16	A12J515-18	Cadmium	11/1/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-FSL-02-0-16	A12J515-18	Chromium	11/1/2012	0.0945	Yes	Y	D J			0.100	0.0500	mg/L
AQ-FSL-02-0-16	A12J515-18	Copper	11/1/2012	0.314	Yes	Y	D			0.250	0.125	mg/L
AQ-FSL-02-0-16	A12J515-18	Zinc	11/1/2012	2.86	Yes	Y	D			0.250	0.125	mg/L
AQ-FSL-02-0-16	A12J515-18	Antimony	11/1/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-FSL-02-0-16	A12J515-18	Selenium	11/1/2012	0.1	Yes	N	D U			0.100	0.0500	mg/L
AQ-FSL-03-1-8.5	A12J515-33	Copper	11/1/2012	207	Yes	Y	D			2.75	1.38	mg/kg
AQ-FSL-03-1-8.5	A12J515-33	Antimony	11/1/2012	1.07	Yes	Y	D J			1.38	0.688	mg/kg
AQ-FSL-03-1-8.5	A12J515-33	Arsenic	11/1/2012	2.05	Yes	Y	D J			2.75	0.688	mg/kg
AQ-FSL-03-1-8.5	A12J515-33	Barium	11/1/2012	129	Yes	Y	D			1.38	0.688	mg/kg
AQ-FSL-03-1-8.5	A12J515-33	Lead	11/1/2012	16.8	Yes	Y	D			1.38	0.688	mg/kg
AQ-FSL-03-1-8.5	A12J515-33	Chromium	11/1/2012	25.1	Yes	Y	D			2.75	1.38	mg/kg
AQ-FSL-03-1-8.5	A12J515-33	Zinc	11/1/2012	61.1	Yes	Y	D			5.51	2.75	mg/kg
AQ-FSL-03-1-8.5	A12J515-33	Selenium	11/1/2012	2.75	Yes	N	D U			2.75	1.38	mg/kg
AQ-FSL-03-1-8.5	A12J515-33	Thallium	11/1/2012	1.38	Yes	N	D U			1.38	0.688	mg/kg
AQ-FSL-03-1-8.5	A12J515-33	Silver	11/1/2012	1.38	Yes	N	D U			1.38	0.688	mg/kg
AQ-FSL-03-1-8.5	A12J515-33	Nickel	11/1/2012	43	Yes	Y	D			2.75	1.38	mg/kg
AQ-FSL-03-1-8.5	A12J515-33	Mercury	11/1/2012	0.167	Yes	Y	D			0.110	0.0551	mg/kg
AQ-FSL-03-1-8.5	A12J515-33	Cadmium	11/1/2012	1.38	Yes	N	D U			1.38	0.688	mg/kg
AQ-FSL-03-1-8.5	A12J515-33	Zinc	11/1/2012	0.29	Yes	Y	D			0.250	0.125	mg/L

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-03-1-8.5	A12J515-33	Selenium	11/1/2012	0.1		Yes	N	D U			0.100	0.0500	mg/L
AQ-FSL-03-1-8.5	A12J515-33	Lead	11/1/2012	0.05		Yes	N	D U			0.0500	0.0250	mg/L
AQ-FSL-03-1-8.5	A12J515-33	Mercury	11/1/2012	0.004		Yes	N	D U			0.00400	0.00250	mg/L
AQ-FSL-03-1-8.5	A12J515-33	Nickel	11/1/2012	0.166		Yes	Y	D			0.100	0.0500	mg/L
AQ-FSL-03-1-8.5	A12J515-33	Silver	11/1/2012	0.05		Yes	N	D U			0.0500	0.0250	mg/L
AQ-FSL-03-1-8.5	A12J515-33	Thallium	11/1/2012	0.05		Yes	N	D U			0.0500	0.0250	mg/L
AQ-FSL-03-1-8.5	A12J515-33	Antimony	11/1/2012	0.05		Yes	N	D U			0.0500	0.0250	mg/L
AQ-FSL-03-1-8.5	A12J515-33	Arsenic	11/1/2012	0.1		Yes	N	D U			0.100	0.0500	mg/L
AQ-FSL-03-1-8.5	A12J515-33	Barium	11/1/2012	0.5		Yes	N	D U			0.500	0.250	mg/L
AQ-FSL-03-1-8.5	A12J515-33	Cadmium	11/1/2012	0.05		Yes	N	D U			0.0500	0.0250	mg/L
AQ-FSL-03-1-8.5	A12J515-33	Chromium	11/1/2012	0.1		Yes	N	D U			0.100	0.0500	mg/L
AQ-FSL-03-1-8.5	A12J515-33	Copper	11/1/2012	0.687		Yes	Y	D			0.250	0.125	mg/L
AQ-ILF-05-0-14	A12J515-08	Zinc	11/1/2012	81.5		Yes	Y	D			4.88	2.44	mg/kg
AQ-ILF-05-0-14	A12J515-08	Lead	11/1/2012	49.5		Yes	Y	D			1.22	0.610	mg/kg
AQ-ILF-05-0-14	A12J515-08	Mercury	11/1/2012	0.149		Yes	Y	D			0.0976	0.0488	mg/kg
AQ-ILF-05-0-14	A12J515-08	Nickel	11/1/2012	185		Yes	Y	D			2.44	1.22	mg/kg
AQ-ILF-05-0-14	A12J515-08	Silver	11/1/2012	1.22		Yes	N	D U			1.22	0.610	mg/kg
AQ-ILF-05-0-14	A12J515-08	Thallium	11/1/2012	1.22		Yes	N	D U			1.22	0.610	mg/kg
AQ-ILF-05-0-14	A12J515-08	Antimony	11/1/2012	1.79		Yes	Y	D			1.22	0.610	mg/kg
AQ-ILF-05-0-14	A12J515-08	Arsenic	11/1/2012	6.94		Yes	Y	D			2.44	0.610	mg/kg
AQ-ILF-05-0-14	A12J515-08	Barium	11/1/2012	64.9		Yes	Y	D			1.22	0.610	mg/kg
AQ-ILF-05-0-14	A12J515-08	Cadmium	11/1/2012	1.78		Yes	Y	D			1.22	0.610	mg/kg
AQ-ILF-05-0-14	A12J515-08	Chromium	11/1/2012	25		Yes	Y	D			2.44	1.22	mg/kg
AQ-ILF-05-0-14	A12J515-08	Copper	11/1/2012	307		Yes	Y	D			2.44	1.22	mg/kg
AQ-ILF-05-0-14	A12J515-08	Selenium	11/1/2012	2.44		Yes	N	D U			2.44	1.22	mg/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-05-0-14	A12J515-08	Zinc	11/1/2012	0.746	Yes	Y	D			0.250	0.125	mg/L
AQ-ILF-05-0-14	A12J515-08	Mercury	11/1/2012	0.004	Yes	N	D U			0.00400	0.00250	mg/L
AQ-ILF-05-0-14	A12J515-08	Lead	11/1/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-ILF-05-0-14	A12J515-08	Selenium	11/1/2012	0.1	Yes	N	D U			0.100	0.0500	mg/L
AQ-ILF-05-0-14	A12J515-08	Nickel	11/1/2012	1.7	Yes	Y	D			0.100	0.0500	mg/L
AQ-ILF-05-0-14	A12J515-08	Silver	11/1/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-ILF-05-0-14	A12J515-08	Thallium	11/1/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-ILF-05-0-14	A12J515-08	Antimony	11/1/2012	0.0275	Yes	Y	D J			0.0500	0.0250	mg/L
AQ-ILF-05-0-14	A12J515-08	Barium	11/1/2012	0.256	Yes	Y	D J			0.500	0.250	mg/L
AQ-ILF-05-0-14	A12J515-08	Cadmium	11/1/2012	0.0275	Yes	Y	D J			0.0500	0.0250	mg/L
AQ-ILF-05-0-14	A12J515-08	Chromium	11/1/2012	0.1	Yes	N	D U			0.100	0.0500	mg/L
AQ-ILF-05-0-14	A12J515-08	Copper	11/1/2012	3.03	Yes	Y	D			0.250	0.125	mg/L
AQ-ILF-05-0-14	A12J515-08	Arsenic	11/1/2012	0.1	Yes	N	D U			0.100	0.0500	mg/L

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-01-0-12	A12J515-27RE1	Aroclor 1260	10/29/2012	390	Yes	Y	D			129	64.6	ug/kg
AQ-FSL-01-0-12	A12J515-27RE1	Aroclor 1268	10/29/2012	1130	Yes	Y	D			129	64.6	ug/kg
AQ-FSL-01-0-12	A12J515-27RE1	Aroclor 1254	10/29/2012	530	Yes	Y	D			129	64.6	ug/kg
AQ-FSL-01-0-12	A12J515-27RE1	Aroclor 1232	10/29/2012	129	Yes	N	D U			129	64.6	ug/kg
AQ-FSL-01-0-12	A12J515-27RE1	Aroclor 1248	10/29/2012	129	Yes	N	D U			129	64.6	ug/kg
AQ-FSL-01-0-12	A12J515-27RE1	Aroclor 1016	10/29/2012	129	Yes	N	D U			129	64.6	ug/kg
AQ-FSL-01-0-12	A12J515-27RE1	Aroclor 1262	10/29/2012	129	Yes	N	D U			129	64.6	ug/kg
AQ-FSL-01-0-12	A12J515-27RE1	Aroclor 1242	10/29/2012	251	Yes	Y	D			129	64.6	ug/kg
AQ-FSL-01-0-12	A12J515-27RE1	Aroclor 1221	10/29/2012	129	Yes	N	D U			129	64.6	ug/kg
AQ-FSL-02-0-16	A12J515-18RE1	Aroclor 1260	10/29/2012	711	Yes	Y	D			226	113	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-02-0-16	A12J515-18RE1	Aroclor 1268	10/29/2012	4730	Yes	Y	D			226	113	ug/kg
AQ-FSL-02-0-16	A12J515-18RE1	Aroclor 1221	10/29/2012	226	Yes	N	D U			226	113	ug/kg
AQ-FSL-02-0-16	A12J515-18RE1	Aroclor 1232	10/29/2012	226	Yes	N	D U			226	113	ug/kg
AQ-FSL-02-0-16	A12J515-18RE1	Aroclor 1248	10/29/2012	226	Yes	N	D U			226	113	ug/kg
AQ-FSL-02-0-16	A12J515-18RE1	Aroclor 1016	10/29/2012	226	Yes	N	D U			226	113	ug/kg
AQ-FSL-02-0-16	A12J515-18RE1	Aroclor 1262	10/29/2012	226	Yes	N	D U			226	113	ug/kg
AQ-FSL-02-0-16	A12J515-18RE1	Aroclor 1254	10/29/2012	571	Yes	Y	D			226	113	ug/kg
AQ-FSL-02-0-16	A12J515-18RE1	Aroclor 1242	10/29/2012	455	Yes	Y	D			226	113	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Aroclor 1268	10/29/2012	455	Yes	Y	D			139	69.7	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Aroclor 1242	10/29/2012	139	Yes	N	D U			139	69.7	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Aroclor 1262	10/29/2012	139	Yes	N	D U			139	69.7	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Aroclor 1016	10/29/2012	139	Yes	N	D U			139	69.7	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Aroclor 1248	10/29/2012	1410	Yes	Y	D			139	69.7	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Aroclor 1260	10/29/2012	229	Yes	Y	D			139	69.7	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Aroclor 1221	10/29/2012	139	Yes	N	D U			139	69.7	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Aroclor 1254	10/29/2012	465	Yes	Y	D			139	69.7	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Aroclor 1232	10/29/2012	139	Yes	N	D U			139	69.7	ug/kg
AQ-ILF-05-0-14	A12J515-08	Aroclor 1268	10/26/2012	150	Yes	Y	D			108	54.2	ug/kg
AQ-ILF-05-0-14	A12J515-08	Aroclor 1248	10/26/2012	108	Yes	N	D U			108	54.2	ug/kg
AQ-ILF-05-0-14	A12J515-08	Aroclor 1232	10/26/2012	108	Yes	N	D U			108	54.2	ug/kg
AQ-ILF-05-0-14	A12J515-08	Aroclor 1260	10/26/2012	686	Yes	Y	D			108	54.2	ug/kg
AQ-ILF-05-0-14	A12J515-08	Aroclor 1254	10/26/2012	2070	Yes	Y	D			108	54.2	ug/kg
AQ-ILF-05-0-14	A12J515-08	Aroclor 1221	10/26/2012	108	Yes	N	D U			108	54.2	ug/kg
AQ-ILF-05-0-14	A12J515-08	Aroclor 1016	10/26/2012	108	Yes	N	D U			108	54.2	ug/kg
AQ-ILF-05-0-14	A12J515-08	Aroclor 1262	10/26/2012	108	Yes	N	D U			108	54.2	ug/kg

Analytical Method	SW8082A											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
AQ-ILF-05-0-14	A12J515-08	Aroclor 1242	10/26/2012	86.1	Yes	Y	D J			108	54.2	ug/kg

Analytical Method	SW8260B											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
AQ-FSL-01-4-6(B)	A12J515-25	Isopropylbenzene (Cumene)	10/21/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Dichloromethane (Methylene chloride)	10/21/2012	561	Yes	N	D U			561	280	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Carbon disulfide	10/21/2012	1120	Yes	N	D U			1120	561	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Bromoform (Tribromomethane)	10/21/2012	112	Yes	N	D U	UJ	5	112	56.1	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Bromodichloromethane	10/21/2012	56.1	Yes	N	D U			56.1	28.0	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	4-Chlorotoluene	10/21/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	1,1-Dichloroethane	10/21/2012	56.1	Yes	N	D U			56.1	33.2	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	1,1-Dichloroethene	10/21/2012	56.1	Yes	N	D U			56.1	30.1	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Trichlorofluoromethane (Fluorotrichloromethane)	10/21/2012	224	Yes	N	D U			224	224	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Dichlorodifluoromethane	10/21/2012	224	Yes	N	D U			224	112	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	1,2-Dichloropropane	10/21/2012	56.1	Yes	N	D U			56.1	28.0	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	2-Butanone (MEK)	10/21/2012	1120	Yes	N	D U	UJ	5	1120	561	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	1,1,2,2-Tetrachloroethane	10/21/2012	56.1	Yes	N	D U	UJ	5	56.1	28.0	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	1,4-Dichlorobenzene	10/21/2012	56.1	Yes	N	D U			56.1	28.0	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	1,2-Dichlorobenzene	10/21/2012	56.1	Yes	N	D U			56.1	28.0	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Trichloroethene (TCE)	10/21/2012	56.1	Yes	N	D U			56.1	40.6	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Vinyl chloride	10/21/2012	56.1	Yes	N	D U			56.1	40.7	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	tert-Butylbenzene	10/21/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Benzene	10/21/2012	28	Yes	N	D U			28.0	15.7	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	1,2,3-Trichloropropane	10/21/2012	112	Yes	N	D U	UJ	5	112	56.1	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	1,2-Dibromo-3-chloropropane	10/21/2012	561	Yes	N	D U	UJ	5	561	280	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	1,2,4-Trimethylbenzene	10/21/2012	112	Yes	N	D U			112	56.1	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-01-4-6(B)	A12J515-25	1,2,3-Trichlorobenzene	10/21/2012	561	Yes	N	D U			561	280	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/21/2012	224	Yes	N	D U	UJ	5	224	112	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Naphthalene	10/21/2012	224	Yes	N	D U			224	112	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	o-Xylene	10/21/2012	56.1	Yes	N	D U			56.1	28.0	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	2-Chlorotoluene	10/21/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	1,1,2-Trichloroethane	10/21/2012	112	Yes	N	D U	UJ	5	112	56.1	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Toluene	10/21/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	2-Hexanone (Methyl butyl ketone)	10/21/2012	1120	Yes	N	D U	UJ	5	1120	561	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	1,1-Dichloropropene	10/21/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Carbon tetrachloride (Tetrachloromethane)	10/21/2012	56.1	Yes	N	D U			56.1	28.0	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	1,3-Dichlorobenzene	10/21/2012	56.1	Yes	N	D U			56.1	28.0	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	m,p-Xylene	10/21/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Methyl tert-butyl ether (MTBE)	10/21/2012	112	Yes	N	D U			112	67.0	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	1,2-Dichloroethene, trans-	10/21/2012	56.1	Yes	N	D U			56.1	28.0	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	1,2-Dichloroethene, cis-	10/21/2012	56.1	Yes	N	D U			56.1	28.0	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	1,3-Dichloropropane	10/21/2012	56.1	Yes	N	D U	UJ	5	56.1	28.0	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	sec-Butylbenzene	10/21/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Tetrachloroethene (PCE)	10/21/2012	56.1	Yes	N	D U			56.1	28.0	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Dibromochloromethane	10/21/2012	224	Yes	N	D U			224	112	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Chloromethane	10/21/2012	561	Yes	N	D U			561	280	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Chlorobenzene	10/21/2012	56.1	Yes	N	D U			56.1	29.2	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Chloroethane	10/21/2012	1120	Yes	N	D U			1120	561	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Bromobenzene	10/21/2012	56.1	Yes	N	D U			56.1	30.6	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	1,3,5-Trimethylbenzene (Mesitylene)	10/21/2012	112	Yes	N	D U			112	56.1	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-01-4-6(B)	A12J515-25	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/21/2012	1120	Yes	N	D U	UJ	5	1120	561	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	1,2-Dichloroethane	10/21/2012	56.1	Yes	N	D U	UJ	5	56.1	28.0	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Ethylene dibromide (1,2-Dibromoethane)	10/21/2012	56.1	Yes	N	D U	UJ	5	56.1	34.0	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	1,1,1,2-Tetrachloroethane	10/21/2012	112	Yes	N	D U	UJ	5	112	56.1	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Acetone	10/21/2012	2240	Yes	N	D U	UJ	5	2240	1120	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	1,1,1-Trichloroethane	10/21/2012	56.1	Yes	N	D U			56.1	28.0	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Bromomethane (Methyl Bromide)	10/21/2012	1120	Yes	N	D U			1120	1120	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	n-Butylbenzene	10/21/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Dibromomethane	10/21/2012	112	Yes	N	D U	UJ	5	112	56.1	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Bromochloromethane	10/21/2012	56.1	Yes	N	D U	UJ	5	56.1	28.0	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	1,2,4-Trichlorobenzene	10/21/2012	561	Yes	N	D U			561	280	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	n-Propylbenzene	10/21/2012	56.1	Yes	N	D U			56.1	28.0	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	1,3-Dichloropropene, trans-	10/21/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	1,3-Dichloropropene, cis-	10/21/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Styrene	10/21/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	2,2-Dichloropropane	10/21/2012	112	Yes	N	D U	UJ	5	112	56.1	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Ethylbenzene	10/21/2012	56.1	Yes	N	D U			56.1	28.0	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	Chloroform	10/21/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-FSL-01-4-6(B)	A12J515-25	4-Isopropyltoluene (4-Cymene)	10/21/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-FSL-02-14-16	A12J515-17	2-Hexanone (Methyl butyl ketone)	10/21/2012	707	Yes	N	D U	UJ	5	707	353	ug/kg
AQ-FSL-02-14-16	A12J515-17	2,2-Dichloropropane	10/21/2012	70.7	Yes	N	D U	UJ	5	70.7	35.3	ug/kg
AQ-FSL-02-14-16	A12J515-17	1,1,1,2-Tetrachloroethane	10/21/2012	70.7	Yes	N	D U	UJ	5	70.7	35.3	ug/kg
AQ-FSL-02-14-16	A12J515-17	Acetone	10/21/2012	1410	Yes	N	D U	UJ	5	1410	707	ug/kg
AQ-FSL-02-14-16	A12J515-17	Chloroform	10/21/2012	70.7	Yes	N	D U			70.7	35.3	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-02-14-16	A12J515-17	Benzene	10/21/2012	17.7	Yes	N	D U			17.7	9.90	ug/kg
AQ-FSL-02-14-16	A12J515-17	1,1,1-Trichloroethane	10/21/2012	35.3	Yes	N	D U			35.3	17.7	ug/kg
AQ-FSL-02-14-16	A12J515-17	Bromomethane (Methyl Bromide)	10/21/2012	707	Yes	N	D U			707	707	ug/kg
AQ-FSL-02-14-16	A12J515-17	1,1-Dichloropropene	10/21/2012	70.7	Yes	N	D U			70.7	35.3	ug/kg
AQ-FSL-02-14-16	A12J515-17	Bromochloromethane	10/21/2012	35.3	Yes	N	D U	UJ	5	35.3	17.7	ug/kg
AQ-FSL-02-14-16	A12J515-17	Vinyl chloride	10/21/2012	35.3	Yes	N	D U			35.3	25.7	ug/kg
AQ-FSL-02-14-16	A12J515-17	Dichloromethane (Methylene chloride)	10/21/2012	353	Yes	N	D U			353	177	ug/kg
AQ-FSL-02-14-16	A12J515-17	Bromodichloromethane	10/21/2012	35.3	Yes	N	D U			35.3	17.7	ug/kg
AQ-FSL-02-14-16	A12J515-17	Chloromethane	10/21/2012	353	Yes	N	D U			353	177	ug/kg
AQ-FSL-02-14-16	A12J515-17	2-Butanone (MEK)	10/21/2012	707	Yes	N	D U	UJ	5	707	353	ug/kg
AQ-FSL-02-14-16	A12J515-17	1,3-Dichloropropene, trans-	10/21/2012	70.7	Yes	N	D U			70.7	35.3	ug/kg
AQ-FSL-02-14-16	A12J515-17	1,3-Dichloropropene, cis-	10/21/2012	70.7	Yes	N	D U			70.7	35.3	ug/kg
AQ-FSL-02-14-16	A12J515-17	Styrene	10/21/2012	70.7	Yes	N	D U			70.7	35.3	ug/kg
AQ-FSL-02-14-16	A12J515-17	Ethylbenzene	10/21/2012	35.3	Yes	N	D U			35.3	17.7	ug/kg
AQ-FSL-02-14-16	A12J515-17	1,1,2,2-Tetrachloroethane	10/21/2012	35.3	Yes	N	D U	UJ	5	35.3	17.7	ug/kg
AQ-FSL-02-14-16	A12J515-17	1,1-Dichloroethene	10/21/2012	35.3	Yes	N	D U			35.3	18.9	ug/kg
AQ-FSL-02-14-16	A12J515-17	1,1,2-Trichloroethane	10/21/2012	70.7	Yes	N	D U	UJ	5	70.7	35.3	ug/kg
AQ-FSL-02-14-16	A12J515-17	Carbon tetrachloride (Tetrachloromethane)	10/21/2012	35.3	Yes	N	D U			35.3	17.7	ug/kg
AQ-FSL-02-14-16	A12J515-17	1,2-Dichloropropane	10/21/2012	35.3	Yes	N	D U			35.3	17.7	ug/kg
AQ-FSL-02-14-16	A12J515-17	Dichlorodifluoromethane	10/21/2012	141	Yes	N	D U			141	70.7	ug/kg
AQ-FSL-02-14-16	A12J515-17	Chloroethane	10/21/2012	707	Yes	N	D U			707	353	ug/kg
AQ-FSL-02-14-16	A12J515-17	Trichlorofluoromethane (Fluorotrichloromethane)	10/21/2012	141	Yes	N	D U			141	70.7	ug/kg
AQ-FSL-02-14-16	A12J515-17	Carbon disulfide	10/21/2012	707	Yes	N	D U			707	353	ug/kg
AQ-FSL-02-14-16	A12J515-17	1,3-Dichlorobenzene	10/21/2012	35.3	Yes	N	D U			35.3	17.7	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-02-14-16	A12J515-17	Trichloroethene (TCE)	10/21/2012	35.3	Yes	N	D U			35.3	25.6	ug/kg
AQ-FSL-02-14-16	A12J515-17	Dibromochloromethane	10/21/2012	141	Yes	N	D U			141	70.7	ug/kg
AQ-FSL-02-14-16	A12J515-17	o-Xylene	10/21/2012	35.3	Yes	N	D U			35.3	17.7	ug/kg
AQ-FSL-02-14-16	A12J515-17	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/21/2012	141	Yes	N	D U	UJ	5	141	70.7	ug/kg
AQ-FSL-02-14-16	A12J515-17	1,2,3-Trichlorobenzene	10/21/2012	353	Yes	N	D U			353	177	ug/kg
AQ-FSL-02-14-16	A12J515-17	1,3,5-Trimethylbenzene (Mesitylene)	10/21/2012	70.7	Yes	N	D U			70.7	35.3	ug/kg
AQ-FSL-02-14-16	A12J515-17	n-Propylbenzene	10/21/2012	35.3	Yes	N	D U			35.3	17.7	ug/kg
AQ-FSL-02-14-16	A12J515-17	Toluene	10/21/2012	70.7	Yes	N	D U			70.7	35.3	ug/kg
AQ-FSL-02-14-16	A12J515-17	2-Chlorotoluene	10/21/2012	70.7	Yes	N	D U			70.7	35.3	ug/kg
AQ-FSL-02-14-16	A12J515-17	1,2,4-Trichlorobenzene	10/21/2012	353	Yes	N	D U			353	177	ug/kg
AQ-FSL-02-14-16	A12J515-17	Bromobenzene	10/21/2012	35.3	Yes	N	D U			35.3	19.3	ug/kg
AQ-FSL-02-14-16	A12J515-17	Tetrachloroethene (PCE)	10/21/2012	35.3	Yes	N	D U			35.3	17.7	ug/kg
AQ-FSL-02-14-16	A12J515-17	sec-Butylbenzene	10/21/2012	70.7	Yes	N	D U			70.7	35.3	ug/kg
AQ-FSL-02-14-16	A12J515-17	1,3-Dichloropropane	10/21/2012	35.3	Yes	N	D U	UJ	5	35.3	17.7	ug/kg
AQ-FSL-02-14-16	A12J515-17	1,2-Dichloroethene, cis-	10/21/2012	35.3	Yes	N	D U			35.3	17.7	ug/kg
AQ-FSL-02-14-16	A12J515-17	1,2-Dichloroethene, trans-	10/21/2012	35.3	Yes	N	D U			35.3	17.7	ug/kg
AQ-FSL-02-14-16	A12J515-17	Methyl tert-butyl ether (MTBE)	10/21/2012	70.7	Yes	N	D U			70.7	42.2	ug/kg
AQ-FSL-02-14-16	A12J515-17	m,p-Xylene	10/21/2012	70.7	Yes	N	D U			70.7	35.3	ug/kg
AQ-FSL-02-14-16	A12J515-17	Dibromomethane	10/21/2012	70.7	Yes	N	D U	UJ	5	70.7	35.3	ug/kg
AQ-FSL-02-14-16	A12J515-17	4-Chlorotoluene	10/21/2012	70.7	Yes	N	D U			70.7	35.3	ug/kg
AQ-FSL-02-14-16	A12J515-17	n-Butylbenzene	10/21/2012	70.7	Yes	N	D U			70.7	35.3	ug/kg
AQ-FSL-02-14-16	A12J515-17	Chlorobenzene	10/21/2012	35.3	Yes	N	D U			35.3	18.4	ug/kg
AQ-FSL-02-14-16	A12J515-17	Bromoform (Tribromomethane)	10/21/2012	70.7	Yes	N	D U	UJ	5	70.7	35.3	ug/kg
AQ-FSL-02-14-16	A12J515-17	1,2-Dichlorobenzene	10/21/2012	35.3	Yes	N	D U			35.3	17.7	ug/kg
AQ-FSL-02-14-16	A12J515-17	1,4-Dichlorobenzene	10/21/2012	35.3	Yes	N	D U			35.3	17.7	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-02-14-16	A12J515-17	Ethylene dibromide (1,2-Dibromoethane)	10/21/2012	35.3	Yes	N	D U	UJ	5	35.3	21.4	ug/kg
AQ-FSL-02-14-16	A12J515-17	1,2-Dichloroethane	10/21/2012	35.3	Yes	N	D U	UJ	5	35.3	17.7	ug/kg
AQ-FSL-02-14-16	A12J515-17	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/21/2012	707	Yes	N	D U	UJ	5	707	353	ug/kg
AQ-FSL-02-14-16	A12J515-17	1,2,3-Trichloropropane	10/21/2012	70.7	Yes	N	D U	UJ	5	70.7	35.3	ug/kg
AQ-FSL-02-14-16	A12J515-17	1,2-Dibromo-3-chloropropane	10/21/2012	353	Yes	N	D U	UJ	5	353	177	ug/kg
AQ-FSL-02-14-16	A12J515-17	tert-Butylbenzene	10/21/2012	70.7	Yes	N	D U			70.7	35.3	ug/kg
AQ-FSL-02-14-16	A12J515-17	Isopropylbenzene (Cumene)	10/21/2012	70.7	Yes	N	D U			70.7	35.3	ug/kg
AQ-FSL-02-14-16	A12J515-17	4-Isopropyltoluene (4-Cymene)	10/21/2012	70.7	Yes	N	D U			70.7	35.3	ug/kg
AQ-FSL-02-14-16	A12J515-17	1,1-Dichloroethane	10/21/2012	35.3	Yes	N	D U			35.3	20.9	ug/kg
AQ-FSL-02-14-16	A12J515-17	1,2,4-Trimethylbenzene	10/21/2012	70.7	Yes	N	D U			70.7	35.3	ug/kg
AQ-FSL-02-14-16	A12J515-17RE1	Naphthalene	10/23/2012	24300	Yes	Y	D			1410	707	ug/kg
AQ-FSL-03-5-7	A12J515-32	2-Chlorotoluene	10/21/2012	103	Yes	N	D U			103	51.7	ug/kg
AQ-FSL-03-5-7	A12J515-32	o-Xylene	10/21/2012	51.7	Yes	N	D U			51.7	25.9	ug/kg
AQ-FSL-03-5-7	A12J515-32	Styrene	10/21/2012	103	Yes	N	D U			103	51.7	ug/kg
AQ-FSL-03-5-7	A12J515-32	tert-Butylbenzene	10/21/2012	103	Yes	N	D U			103	51.7	ug/kg
AQ-FSL-03-5-7	A12J515-32	1,2-Dichlorobenzene	10/21/2012	51.7	Yes	N	D U			51.7	25.9	ug/kg
AQ-FSL-03-5-7	A12J515-32	1,2,4-Trimethylbenzene	10/21/2012	103	Yes	N	D U			103	51.7	ug/kg
AQ-FSL-03-5-7	A12J515-32	1,2-Dibromo-3-chloropropane	10/21/2012	517	Yes	N	D U	UJ	5	517	259	ug/kg
AQ-FSL-03-5-7	A12J515-32	1,2,3-Trichloropropane	10/21/2012	103	Yes	N	D U	UJ	5	103	51.7	ug/kg
AQ-FSL-03-5-7	A12J515-32	Isopropylbenzene (Cumene)	10/21/2012	103	Yes	N	D U			103	51.7	ug/kg
AQ-FSL-03-5-7	A12J515-32	n-Propylbenzene	10/21/2012	51.7	Yes	N	D U			51.7	25.9	ug/kg
AQ-FSL-03-5-7	A12J515-32	n-Butylbenzene	10/21/2012	103	Yes	N	D U			103	51.7	ug/kg
AQ-FSL-03-5-7	A12J515-32	1,3-Dichloropropene, cis-	10/21/2012	103	Yes	N	D U			103	51.7	ug/kg
AQ-FSL-03-5-7	A12J515-32	Ethylbenzene	10/21/2012	51.7	Yes	N	D U			51.7	25.9	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-03-5-7	A12J515-32	1,1,1-Trichloroethane	10/21/2012	51.7	Yes	N	D U			51.7	25.9	ug/kg
AQ-FSL-03-5-7	A12J515-32	Naphthalene	10/21/2012	1290	Yes	Y	D			207	103	ug/kg
AQ-FSL-03-5-7	A12J515-32	1,3-Dichloropropene, trans-	10/21/2012	103	Yes	N	D U			103	51.7	ug/kg
AQ-FSL-03-5-7	A12J515-32	1,2,4-Trichlorobenzene	10/21/2012	517	Yes	N	D U			517	259	ug/kg
AQ-FSL-03-5-7	A12J515-32	Chloromethane	10/21/2012	517	Yes	N	D U			517	259	ug/kg
AQ-FSL-03-5-7	A12J515-32	Carbon tetrachloride (Tetrachloromethane)	10/21/2012	51.7	Yes	N	D U			51.7	25.9	ug/kg
AQ-FSL-03-5-7	A12J515-32	1,3-Dichlorobenzene	10/21/2012	51.7	Yes	N	D U			51.7	25.9	ug/kg
AQ-FSL-03-5-7	A12J515-32	m,p-Xylene	10/21/2012	103	Yes	N	D U			103	51.7	ug/kg
AQ-FSL-03-5-7	A12J515-32	Methyl tert-butyl ether (MTBE)	10/21/2012	103	Yes	N	D U			103	61.8	ug/kg
AQ-FSL-03-5-7	A12J515-32	1,2-Dichloroethene, trans-	10/21/2012	51.7	Yes	N	D U			51.7	25.9	ug/kg
AQ-FSL-03-5-7	A12J515-32	1,2-Dichloroethene, cis-	10/21/2012	51.7	Yes	N	D U			51.7	25.9	ug/kg
AQ-FSL-03-5-7	A12J515-32	1,3-Dichloropropane	10/21/2012	51.7	Yes	N	D U	UJ	5	51.7	25.9	ug/kg
AQ-FSL-03-5-7	A12J515-32	sec-Butylbenzene	10/21/2012	103	Yes	N	D U			103	51.7	ug/kg
AQ-FSL-03-5-7	A12J515-32	2-Hexanone (Methyl butyl ketone)	10/21/2012	1030	Yes	N	D U	UJ	5	1030	517	ug/kg
AQ-FSL-03-5-7	A12J515-32	Dibromochloromethane	10/21/2012	207	Yes	N	D U			207	103	ug/kg
AQ-FSL-03-5-7	A12J515-32	2,2-Dichloropropane	10/21/2012	103	Yes	N	D U	UJ	5	103	51.7	ug/kg
AQ-FSL-03-5-7	A12J515-32	Chlorobenzene	10/21/2012	51.7	Yes	N	D U			51.7	26.9	ug/kg
AQ-FSL-03-5-7	A12J515-32	Toluene	10/21/2012	103	Yes	N	D U			103	51.7	ug/kg
AQ-FSL-03-5-7	A12J515-32	Bromobenzene	10/21/2012	51.7	Yes	N	D U			51.7	28.2	ug/kg
AQ-FSL-03-5-7	A12J515-32	1,3,5-Trimethylbenzene (Mesitylene)	10/21/2012	103	Yes	N	D U			103	51.7	ug/kg
AQ-FSL-03-5-7	A12J515-32	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/21/2012	1030	Yes	N	D U	UJ	5	1030	517	ug/kg
AQ-FSL-03-5-7	A12J515-32	1,2-Dichloroethane	10/21/2012	51.7	Yes	N	D U	UJ	5	51.7	25.9	ug/kg
AQ-FSL-03-5-7	A12J515-32	Ethylene dibromide (1,2-Dibromoethane)	10/21/2012	51.7	Yes	N	D U	UJ	5	51.7	31.3	ug/kg
AQ-FSL-03-5-7	A12J515-32	1,4-Dichlorobenzene	10/21/2012	51.7	Yes	N	D U			51.7	25.9	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-03-5-7	A12J515-32	4-Chlorotoluene	10/21/2012	103	Yes	N	D U			103	51.7	ug/kg
AQ-FSL-03-5-7	A12J515-32	4-Isopropyltoluene (4-Cymene)	10/21/2012	103	Yes	N	D U			103	51.7	ug/kg
AQ-FSL-03-5-7	A12J515-32	Tetrachloroethene (PCE)	10/21/2012	51.7	Yes	N	D U			51.7	25.9	ug/kg
AQ-FSL-03-5-7	A12J515-32	Bromoform (Tribromomethane)	10/21/2012	103	Yes	N	D U	UJ	5	103	51.7	ug/kg
AQ-FSL-03-5-7	A12J515-32	1,2,3-Trichlorobenzene	10/21/2012	517	Yes	N	D U			517	259	ug/kg
AQ-FSL-03-5-7	A12J515-32	1,1,2,2-Tetrachloroethane	10/21/2012	51.7	Yes	N	D U	UJ	5	51.7	25.9	ug/kg
AQ-FSL-03-5-7	A12J515-32	Trichloroethene (TCE)	10/21/2012	51.7	Yes	N	D U			51.7	37.5	ug/kg
AQ-FSL-03-5-7	A12J515-32	1,1,2-Trichloroethane	10/21/2012	103	Yes	N	D U	UJ	5	103	51.7	ug/kg
AQ-FSL-03-5-7	A12J515-32	2-Butanone (MEK)	10/21/2012	1030	Yes	N	D U	UJ	5	1030	517	ug/kg
AQ-FSL-03-5-7	A12J515-32	1,2-Dichloropropane	10/21/2012	51.7	Yes	N	D U			51.7	25.9	ug/kg
AQ-FSL-03-5-7	A12J515-32	Dichlorodifluoromethane	10/21/2012	207	Yes	N	D U			207	103	ug/kg
AQ-FSL-03-5-7	A12J515-32	Trichlorofluoromethane (Fluorotrichloromethane)	10/21/2012	207	Yes	N	D U			207	103	ug/kg
AQ-FSL-03-5-7	A12J515-32	1,1-Dichloroethene	10/21/2012	51.7	Yes	N	D U			51.7	27.7	ug/kg
AQ-FSL-03-5-7	A12J515-32	1,1-Dichloropropene	10/21/2012	103	Yes	N	D U			103	51.7	ug/kg
AQ-FSL-03-5-7	A12J515-32	Bromodichloromethane	10/21/2012	51.7	Yes	N	D U			51.7	25.9	ug/kg
AQ-FSL-03-5-7	A12J515-32	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/21/2012	207	Yes	N	D U	UJ	5	207	103	ug/kg
AQ-FSL-03-5-7	A12J515-32	Carbon disulfide	10/21/2012	1030	Yes	N	D U			1030	517	ug/kg
AQ-FSL-03-5-7	A12J515-32	Dichloromethane (Methylene chloride)	10/21/2012	517	Yes	N	D U			517	259	ug/kg
AQ-FSL-03-5-7	A12J515-32	Vinyl chloride	10/21/2012	51.7	Yes	N	D U			51.7	37.6	ug/kg
AQ-FSL-03-5-7	A12J515-32	Chloroethane	10/21/2012	1030	Yes	N	D U			1030	517	ug/kg
AQ-FSL-03-5-7	A12J515-32	Bromochloromethane	10/21/2012	51.7	Yes	N	D U	UJ	5	51.7	25.9	ug/kg
AQ-FSL-03-5-7	A12J515-32	Dibromomethane	10/21/2012	103	Yes	N	D U	UJ	5	103	51.7	ug/kg
AQ-FSL-03-5-7	A12J515-32	Bromomethane (Methyl Bromide)	10/21/2012	1030	Yes	N	D U			1030	1030	ug/kg
AQ-FSL-03-5-7	A12J515-32	Benzene	10/21/2012	25.9	Yes	N	D U			25.9	14.5	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-03-5-7	A12J515-32	Chloroform	10/21/2012	103	Yes	N	D U			103	51.7	ug/kg
AQ-FSL-03-5-7	A12J515-32	Acetone	10/21/2012	2070	Yes	N	D U	UJ	5	2070	1030	ug/kg
AQ-FSL-03-5-7	A12J515-32	1,1,1,2-Tetrachloroethane	10/21/2012	103	Yes	N	D U	UJ	5	103	51.7	ug/kg
AQ-FSL-03-5-7	A12J515-32	1,1-Dichloroethane	10/21/2012	51.7	Yes	N	D U			51.7	30.6	ug/kg
AQ-ILF-05-10-12	A12J515-09	1,2-Dichloroethane	10/21/2012	51	Yes	N	D U	UJ	5	51.0	25.5	ug/kg
AQ-ILF-05-10-12	A12J515-09	Chlorobenzene	10/21/2012	51	Yes	N	D U			51.0	26.5	ug/kg
AQ-ILF-05-10-12	A12J515-09	1,3,5-Trimethylbenzene (Mesitylene)	10/21/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-ILF-05-10-12	A12J515-09	4-Chlorotoluene	10/21/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-ILF-05-10-12	A12J515-09	1,4-Dichlorobenzene	10/21/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-ILF-05-10-12	A12J515-09	Ethylene dibromide (1,2-Dibromoethane)	10/21/2012	51	Yes	N	D U	UJ	5	51.0	30.9	ug/kg
AQ-ILF-05-10-12	A12J515-09	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/21/2012	1020	Yes	N	D U	UJ	5	1020	510	ug/kg
AQ-ILF-05-10-12	A12J515-09	n-Propylbenzene	10/21/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-ILF-05-10-12	A12J515-09	Toluene	10/21/2012	189	Yes	Y	D			102	51.0	ug/kg
AQ-ILF-05-10-12	A12J515-09	1,3-Dichloropropene, trans-	10/21/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-ILF-05-10-12	A12J515-09	1,2,4-Trichlorobenzene	10/21/2012	510	Yes	N	D U			510	255	ug/kg
AQ-ILF-05-10-12	A12J515-09	Dibromochloromethane	10/21/2012	204	Yes	N	D U			204	102	ug/kg
AQ-ILF-05-10-12	A12J515-09	Tetrachloroethene (PCE)	10/21/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-ILF-05-10-12	A12J515-09	sec-Butylbenzene	10/21/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-ILF-05-10-12	A12J515-09	1,3-Dichloropropane	10/21/2012	51	Yes	N	D U	UJ	5	51.0	25.5	ug/kg
AQ-ILF-05-10-12	A12J515-09	1,2-Dichloroethene, cis-	10/21/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-ILF-05-10-12	A12J515-09	Bromobenzene	10/21/2012	51	Yes	N	D U			51.0	27.8	ug/kg
AQ-ILF-05-10-12	A12J515-09	1,2,3-Trichloropropane	10/21/2012	102	Yes	N	D U	UJ	5	102	51.0	ug/kg
AQ-ILF-05-10-12	A12J515-09	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/21/2012	204	Yes	N	D U	UJ	5	204	102	ug/kg
AQ-ILF-05-10-12	A12J515-09	Naphthalene	10/21/2012	1000	Yes	Y	D			204	102	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-05-10-12	A12J515-09	o-Xylene	10/21/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-ILF-05-10-12	A12J515-09	2-Chlorotoluene	10/21/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-ILF-05-10-12	A12J515-09	1,2-Dichlorobenzene	10/21/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-ILF-05-10-12	A12J515-09	n-Butylbenzene	10/21/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-ILF-05-10-12	A12J515-09	1,2-Dibromo-3-chloropropane	10/21/2012	510	Yes	N	D U	UJ	5	510	255	ug/kg
AQ-ILF-05-10-12	A12J515-09	m,p-Xylene	10/21/2012	57.1	Yes	Y	D J			102	51.0	ug/kg
AQ-ILF-05-10-12	A12J515-09	tert-Butylbenzene	10/21/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-ILF-05-10-12	A12J515-09	Isopropylbenzene (Cumene)	10/21/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-ILF-05-10-12	A12J515-09	4-Isopropyltoluene (4-Cymene)	10/21/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-ILF-05-10-12	A12J515-09	Ethylbenzene	10/21/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-ILF-05-10-12	A12J515-09	Styrene	10/21/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-ILF-05-10-12	A12J515-09	1,3-Dichloropropene, cis-	10/21/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-ILF-05-10-12	A12J515-09	1,2,4-Trimethylbenzene	10/21/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-ILF-05-10-12	A12J515-09	Dichlorodifluoromethane	10/21/2012	204	Yes	N	D U			204	102	ug/kg
AQ-ILF-05-10-12	A12J515-09	Dichloromethane (Methylene chloride)	10/21/2012	510	Yes	N	D U			510	255	ug/kg
AQ-ILF-05-10-12	A12J515-09	Carbon disulfide	10/21/2012	1020	Yes	N	D U			1020	510	ug/kg
AQ-ILF-05-10-12	A12J515-09	Bromoform (Tribromomethane)	10/21/2012	102	Yes	N	D U	UJ	5	102	51.0	ug/kg
AQ-ILF-05-10-12	A12J515-09	Bromodichloromethane	10/21/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-ILF-05-10-12	A12J515-09	1,1-Dichloroethane	10/21/2012	51	Yes	N	D U			51.0	30.2	ug/kg
AQ-ILF-05-10-12	A12J515-09	1,2-Dichloroethene, trans-	10/21/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-ILF-05-10-12	A12J515-09	Trichlorofluoromethane (Fluorotrichloromethane)	10/21/2012	204	Yes	N	D U			204	102	ug/kg
AQ-ILF-05-10-12	A12J515-09	Bromochloromethane	10/21/2012	51	Yes	N	D U	UJ	5	51.0	25.5	ug/kg
AQ-ILF-05-10-12	A12J515-09	1,2-Dichloropropane	10/21/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-ILF-05-10-12	A12J515-09	2-Butanone (MEK)	10/21/2012	1020	Yes	N	D U	UJ	5	1020	510	ug/kg
AQ-ILF-05-10-12	A12J515-09	1,1,2-Trichloroethane	10/21/2012	102	Yes	N	D U	UJ	5	102	51.0	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-05-10-12	A12J515-09	Trichloroethene (TCE)	10/21/2012	51		Yes	N	D U			51.0	36.9	ug/kg
AQ-ILF-05-10-12	A12J515-09	1,1,2,2-Tetrachloroethane	10/21/2012	51		Yes	N	D U	UJ	5	51.0	25.5	ug/kg
AQ-ILF-05-10-12	A12J515-09	1,2,3-Trichlorobenzene	10/21/2012	510		Yes	N	D U			510	255	ug/kg
AQ-ILF-05-10-12	A12J515-09	1,1-Dichloroethene	10/21/2012	51		Yes	N	D U			51.0	27.3	ug/kg
AQ-ILF-05-10-12	A12J515-09	Chloroform	10/21/2012	102		Yes	N	D U			102	51.0	ug/kg
AQ-ILF-05-10-12	A12J515-09	1,3-Dichlorobenzene	10/21/2012	51		Yes	N	D U			51.0	25.5	ug/kg
AQ-ILF-05-10-12	A12J515-09	Carbon tetrachloride (Tetrachloromethane)	10/21/2012	51		Yes	N	D U			51.0	25.5	ug/kg
AQ-ILF-05-10-12	A12J515-09	1,1-Dichloropropene	10/21/2012	102		Yes	N	D U			102	51.0	ug/kg
AQ-ILF-05-10-12	A12J515-09	2-Hexanone (Methyl butyl ketone)	10/21/2012	1020		Yes	N	D U	UJ	5	1020	510	ug/kg
AQ-ILF-05-10-12	A12J515-09	2,2-Dichloropropane	10/21/2012	102		Yes	N	D U	UJ	5	102	51.0	ug/kg
AQ-ILF-05-10-12	A12J515-09	Vinyl chloride	10/21/2012	51		Yes	N	D U			51.0	37.0	ug/kg
AQ-ILF-05-10-12	A12J515-09	Acetone	10/21/2012	2040		Yes	N	D U	UJ	5	2040	1020	ug/kg
AQ-ILF-05-10-12	A12J515-09	Chloroethane	10/21/2012	1020		Yes	N	D U			1020	510	ug/kg
AQ-ILF-05-10-12	A12J515-09	Benzene	10/21/2012	25.5		Yes	N	D U			25.5	14.3	ug/kg
AQ-ILF-05-10-12	A12J515-09	1,1,1-Trichloroethane	10/21/2012	51		Yes	N	D U			51.0	25.5	ug/kg
AQ-ILF-05-10-12	A12J515-09	Bromomethane (Methyl Bromide)	10/21/2012	1020		Yes	N	D U			1020	1020	ug/kg
AQ-ILF-05-10-12	A12J515-09	Chloromethane	10/21/2012	510		Yes	N	D U			510	255	ug/kg
AQ-ILF-05-10-12	A12J515-09	Dibromomethane	10/21/2012	102		Yes	N	D U	UJ	5	102	51.0	ug/kg
AQ-ILF-05-10-12	A12J515-09	Methyl tert-butyl ether (MTBE)	10/21/2012	102		Yes	N	D U			102	60.9	ug/kg
AQ-ILF-05-10-12	A12J515-09	1,1,1,2-Tetrachloroethane	10/21/2012	102		Yes	N	D U	UJ	5	102	102	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-01-0-12	A12J515-27	3,3'-Dichlorobenzidine	10/24/2012	19900		Yes	N	D U			19900	9930	ug/kg
AQ-FSL-01-0-12	A12J515-27	4-Chloro-3-methylphenol	10/24/2012	19900		Yes	N	D U			19900	9930	ug/kg
AQ-FSL-01-0-12	A12J515-27	Pentachlorophenol	10/24/2012	39700		Yes	N	D U			39700	19900	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-01-0-12	A12J515-27	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/24/2012	4960	Yes	N	D U			4960	2480	ug/kg
AQ-FSL-01-0-12	A12J515-27	Carbazole	10/24/2012	93300	Yes	Y	D			2980	1490	ug/kg
AQ-FSL-01-0-12	A12J515-27	Fluorene	10/24/2012	384000	Yes	Y	D			1990	993	ug/kg
AQ-FSL-01-0-12	A12J515-27	Dibenzo(a,h)anthracene	10/24/2012	40600	Yes	Y	D			1990	993	ug/kg
AQ-FSL-01-0-12	A12J515-27	2,4-Dinitrophenol	10/24/2012	49600	Yes	N	D U			49600	24800	ug/kg
AQ-FSL-01-0-12	A12J515-27	Butylbenzyl phthalate	10/24/2012	39700	Yes	N	D U			39700	19900	ug/kg
AQ-FSL-01-0-12	A12J515-27	Benzo(a)pyrene	10/24/2012	231000	Yes	Y	D			2980	1490	ug/kg
AQ-FSL-01-0-12	A12J515-27	bis(2-Chloroisopropyl)ether	10/24/2012	4960	Yes	N	D U			4960	2480	ug/kg
AQ-FSL-01-0-12	A12J515-27	Chrysene	10/24/2012	348000	Yes	Y	D			1990	993	ug/kg
AQ-FSL-01-0-12	A12J515-27	Acenaphthylene	10/24/2012	5360	Yes	Y	D			1990	993	ug/kg
AQ-FSL-01-0-12	A12J515-27	2,4,6-Trichlorophenol	10/24/2012	9930	Yes	N	D U			9930	4960	ug/kg
AQ-FSL-01-0-12	A12J515-27	Benzo(b)fluoranthene	10/24/2012	449000	Yes	Y	D			2980	1490	ug/kg
AQ-FSL-01-0-12	A12J515-27	Benzo(k)fluoranthene	10/24/2012	125000	Yes	Y	D			2980	1490	ug/kg
AQ-FSL-01-0-12	A12J515-27	2,6-Dinitrotoluene	10/24/2012	19900	Yes	N	D U			19900	9930	ug/kg
AQ-FSL-01-0-12	A12J515-27	Aniline	10/24/2012	9930	Yes	N	D U			9930	4960	ug/kg
AQ-FSL-01-0-12	A12J515-27	N-Nitrosodimethylamine	10/24/2012	4960	Yes	N	D U			4960	2480	ug/kg
AQ-FSL-01-0-12	A12J515-27	N-Nitrosodi-N-propylamine	10/24/2012	4960	Yes	N	D U			4960	2480	ug/kg
AQ-FSL-01-0-12	A12J515-27	4-Chloroaniline	10/24/2012	4960	Yes	N	D U	UJ	10	4960	2480	ug/kg
AQ-FSL-01-0-12	A12J515-27	Hexachloroethane	10/24/2012	4960	Yes	N	D U			4960	2480	ug/kg
AQ-FSL-01-0-12	A12J515-27	4-Chlorophenyl phenyl ether	10/24/2012	4960	Yes	N	D U			4960	2480	ug/kg
AQ-FSL-01-0-12	A12J515-27	Hexachlorocyclopentadiene	10/24/2012	9930	Yes	N	D U			9930	4960	ug/kg
AQ-FSL-01-0-12	A12J515-27	Isophorone	10/24/2012	4960	Yes	N	D U			4960	2480	ug/kg
AQ-FSL-01-0-12	A12J515-27	Acenaphthene	10/24/2012	672000	Yes	Y	D			1990	993	ug/kg
AQ-FSL-01-0-12	A12J515-27	Diethyl phthalate	10/24/2012	9930	Yes	N	D U			9930	4960	ug/kg
AQ-FSL-01-0-12	A12J515-27	Di-n-butyl phthalate	10/24/2012	9930	Yes	N	D U			9930	4960	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-01-0-12	A12J515-27	Benzoic acid	10/24/2012	248000	Yes	N	D U	UJ	5	248000	124000	ug/kg
AQ-FSL-01-0-12	A12J515-27	2-Chlorophenol	10/24/2012	9930	Yes	N	D U			9930	4960	ug/kg
AQ-FSL-01-0-12	A12J515-27	Indeno(1,2,3-c,d)pyrene	10/24/2012	199000	Yes	Y	D			1990	993	ug/kg
AQ-FSL-01-0-12	A12J515-27	N-Nitrosodiphenylamine	10/24/2012	4960	Yes	N	D U			4960	4960	ug/kg
AQ-FSL-01-0-12	A12J515-27	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	10/24/2012	49600	Yes	N	D U			49600	24800	ug/kg
AQ-FSL-01-0-12	A12J515-27	1,3-Dichlorobenzene	10/24/2012	4960	Yes	N	D U			4960	2480	ug/kg
AQ-FSL-01-0-12	A12J515-27	Benzo(a)anthracene	10/24/2012	239000	Yes	Y	D			1990	993	ug/kg
AQ-FSL-01-0-12	A12J515-27	3-Nitroaniline	10/24/2012	39700	Yes	N	D U			39700	19900	ug/kg
AQ-FSL-01-0-12	A12J515-27	2-Nitroaniline	10/24/2012	39700	Yes	N	D U			39700	19900	ug/kg
AQ-FSL-01-0-12	A12J515-27	2,4,5-Trichlorophenol	10/24/2012	9930	Yes	N	D U			9930	4960	ug/kg
AQ-FSL-01-0-12	A12J515-27	1,2-Dichlorobenzene	10/24/2012	4960	Yes	N	D U			4960	2480	ug/kg
AQ-FSL-01-0-12	A12J515-27	2-Methylphenol (o-Cresol)	10/24/2012	4960	Yes	N	D U			4960	2480	ug/kg
AQ-FSL-01-0-12	A12J515-27	2,3,4,6-Tetrachlorophenol	10/24/2012	9930	Yes	N	D U			9930	4960	ug/kg
AQ-FSL-01-0-12	A12J515-27	2-Chloronaphthalene	10/24/2012	1990	Yes	N	D U			1990	993	ug/kg
AQ-FSL-01-0-12	A12J515-27	2-Methylnaphthalene	10/24/2012	133000	Yes	Y	D			3970	1990	ug/kg
AQ-FSL-01-0-12	A12J515-27	Naphthalene	10/24/2012	201000	Yes	Y	D			3970	1990	ug/kg
AQ-FSL-01-0-12	A12J515-27	1-Methylnaphthalene	10/24/2012	92900	Yes	Y	D			3970	1990	ug/kg
AQ-FSL-01-0-12	A12J515-27	2-Nitrophenol	10/24/2012	19900	Yes	N	D U			19900	9930	ug/kg
AQ-FSL-01-0-12	A12J515-27	Nitrobenzene	10/24/2012	19900	Yes	N	D U			19900	9930	ug/kg
AQ-FSL-01-0-12	A12J515-27	Anthracene	10/24/2012	288000	Yes	Y	D			1990	993	ug/kg
AQ-FSL-01-0-12	A12J515-27	bis(2-Chloroethoxy)methane	10/24/2012	4960	Yes	N	D U			4960	2480	ug/kg
AQ-FSL-01-0-12	A12J515-27	4-Nitroaniline	10/24/2012	39700	Yes	N	D U			39700	19900	ug/kg
AQ-FSL-01-0-12	A12J515-27	4-Nitrophenol	10/24/2012	19900	Yes	N	D U			19900	9930	ug/kg
AQ-FSL-01-0-12	A12J515-27	Benzyl alcohol	10/24/2012	9930	Yes	N	D U			9930	4960	ug/kg
AQ-FSL-01-0-12	A12J515-27	4-Bromophenyl-phenyl ether	10/24/2012	4960	Yes	N	D U			4960	2480	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-01-0-12	A12J515-27	2,4-Dimethylphenol	10/24/2012	9930	Yes	N	D U			9930	4960	ug/kg
AQ-FSL-01-0-12	A12J515-27	1,4-Dichlorobenzene	10/24/2012	4960	Yes	N	D U			4960	2480	ug/kg
AQ-FSL-01-0-12	A12J515-27	2,4-Dichlorophenol	10/24/2012	9930	Yes	N	D U			9930	4960	ug/kg
AQ-FSL-01-0-12	A12J515-27	bis(2-Chloroethyl)ether	10/24/2012	4960	Yes	N	D U			4960	2480	ug/kg
AQ-FSL-01-0-12	A12J515-27	Benzo(g,h,i)perylene	10/24/2012	221000	Yes	Y	D			1990	993	ug/kg
AQ-FSL-01-0-12	A12J515-27	Bis(2-ethylhexyl)phthalate	10/24/2012	39700	Yes	N	D U			39700	19900	ug/kg
AQ-FSL-01-0-12	A12J515-27	Di-n-octyl phthalate	10/24/2012	39700	Yes	N	D U			39700	19900	ug/kg
AQ-FSL-01-0-12	A12J515-27	Hexachlorobenzene	10/24/2012	1990	Yes	N	D U			1990	993	ug/kg
AQ-FSL-01-0-12	A12J515-27	1,2,4-Trichlorobenzene	10/24/2012	4960	Yes	N	D U			4960	2480	ug/kg
AQ-FSL-01-0-12	A12J515-27	2,4-Dinitrotoluene	10/24/2012	19900	Yes	N	D U			19900	19900	ug/kg
AQ-FSL-01-0-12	A12J515-27	Dimethyl phthalate	10/24/2012	9930	Yes	N	D U			9930	4960	ug/kg
AQ-FSL-01-0-12	A12J515-27	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	10/24/2012	4960	Yes	N	D U			4960	2480	ug/kg
AQ-FSL-01-0-12	A12J515-27	Dibenzofuran	10/24/2012	272000	Yes	Y	D			1990	993	ug/kg
AQ-FSL-01-0-12	A12J515-27	Phenol	10/24/2012	3970	Yes	N	D U			3970	1990	ug/kg
AQ-FSL-01-0-12	A12J515-27RE1	Fluoranthene	10/24/2012	1420000	Yes	Y	D			24800	12400	ug/kg
AQ-FSL-01-0-12	A12J515-27RE1	Phenanthrene	10/24/2012	1540000	Yes	Y	D			24800	12400	ug/kg
AQ-FSL-01-0-12	A12J515-27RE1	Pyrene	10/24/2012	1060000	Yes	Y	D			24800	12400	ug/kg
AQ-FSL-02-0-16	A12J515-18	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/24/2012	4560	Yes	N	D U			4560	2280	ug/kg
AQ-FSL-02-0-16	A12J515-18	Bis(2-ethylhexyl)phthalate	10/24/2012	36500	Yes	N	D U			36500	18200	ug/kg
AQ-FSL-02-0-16	A12J515-18	Di-n-octyl phthalate	10/24/2012	36500	Yes	N	D U			36500	18200	ug/kg
AQ-FSL-02-0-16	A12J515-18	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	10/24/2012	4560	Yes	N	D U			4560	2280	ug/kg
AQ-FSL-02-0-16	A12J515-18	2,4,6-Trichlorophenol	10/24/2012	9110	Yes	N	D U			9110	4560	ug/kg
AQ-FSL-02-0-16	A12J515-18	Hexachlorobenzene	10/24/2012	1820	Yes	N	D U			1820	911	ug/kg
AQ-FSL-02-0-16	A12J515-18	1,3-Dichlorobenzene	10/24/2012	4560	Yes	N	D U			4560	2280	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-02-0-16	A12J515-18	Carbazole	10/24/2012	9570	Yes	Y	D			2730	1370	ug/kg
AQ-FSL-02-0-16	A12J515-18	N-Nitrosodiphenylamine	10/24/2012	4560	Yes	N	D U			4560	2280	ug/kg
AQ-FSL-02-0-16	A12J515-18	Pentachlorophenol	10/24/2012	36500	Yes	N	D U			36500	18200	ug/kg
AQ-FSL-02-0-16	A12J515-18	1,2,4-Trichlorobenzene	10/24/2012	4560	Yes	N	D U			4560	2280	ug/kg
AQ-FSL-02-0-16	A12J515-18	2,4-Dichlorophenol	10/24/2012	9110	Yes	N	D U			9110	4560	ug/kg
AQ-FSL-02-0-16	A12J515-18	2,4-Dinitrotoluene	10/24/2012	18200	Yes	N	D U			18200	9110	ug/kg
AQ-FSL-02-0-16	A12J515-18	Pyrene	10/24/2012	166000	Yes	Y	D			1820	911	ug/kg
AQ-FSL-02-0-16	A12J515-18	Dimethyl phthalate	10/24/2012	9110	Yes	N	D U			9110	4560	ug/kg
AQ-FSL-02-0-16	A12J515-18	3,3'-Dichlorobenzidine	10/24/2012	18200	Yes	N	D U			18200	9110	ug/kg
AQ-FSL-02-0-16	A12J515-18	Benzo(a)anthracene	10/24/2012	60000	Yes	Y	D			1820	911	ug/kg
AQ-FSL-02-0-16	A12J515-18	2,3,4,6-Tetrachlorophenol	10/24/2012	9110	Yes	N	D U			9110	4560	ug/kg
AQ-FSL-02-0-16	A12J515-18	N-Nitrosodi-N-propylamine	10/24/2012	4560	Yes	N	D U			4560	2280	ug/kg
AQ-FSL-02-0-16	A12J515-18	4-Chloroaniline	10/24/2012	4560	Yes	N	D U	UJ	10	4560	2280	ug/kg
AQ-FSL-02-0-16	A12J515-18	Hexachloroethane	10/24/2012	4560	Yes	N	D U			4560	2280	ug/kg
AQ-FSL-02-0-16	A12J515-18	4-Chlorophenyl phenyl ether	10/24/2012	4560	Yes	N	D U			4560	2280	ug/kg
AQ-FSL-02-0-16	A12J515-18	Hexachlorocyclopentadiene	10/24/2012	9110	Yes	N	D U			9110	4560	ug/kg
AQ-FSL-02-0-16	A12J515-18	Isophorone	10/24/2012	4560	Yes	N	D U			4560	2280	ug/kg
AQ-FSL-02-0-16	A12J515-18	Aniline	10/24/2012	9110	Yes	N	D U			9110	4560	ug/kg
AQ-FSL-02-0-16	A12J515-18	bis(2-Chloroethoxy)methane	10/24/2012	4560	Yes	N	D U			4560	2280	ug/kg
AQ-FSL-02-0-16	A12J515-18	4-Chloro-3-methylphenol	10/24/2012	18200	Yes	N	D U			18200	9110	ug/kg
AQ-FSL-02-0-16	A12J515-18	Fluorene	10/24/2012	14800	Yes	Y	D			1820	911	ug/kg
AQ-FSL-02-0-16	A12J515-18	bis(2-Chloroethyl)ether	10/24/2012	4560	Yes	N	D U			4560	2280	ug/kg
AQ-FSL-02-0-16	A12J515-18	Acenaphthene	10/24/2012	29200	Yes	Y	D			1820	911	ug/kg
AQ-FSL-02-0-16	A12J515-18	Diethyl phthalate	10/24/2012	9110	Yes	N	D U			9110	4560	ug/kg
AQ-FSL-02-0-16	A12J515-18	Di-n-butyl phthalate	10/24/2012	9110	Yes	N	D U			9110	4560	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-02-0-16	A12J515-18	Phenanthrene	10/24/2012	106000	Yes	Y	D			1820	911	ug/kg
AQ-FSL-02-0-16	A12J515-18	Butylbenzyl phthalate	10/24/2012	36500	Yes	N	D U			36500	18200	ug/kg
AQ-FSL-02-0-16	A12J515-18	N-Nitrosodimethylamine	10/24/2012	4560	Yes	N	D U			4560	2280	ug/kg
AQ-FSL-02-0-16	A12J515-18	2,6-Dinitrotoluene	10/24/2012	18200	Yes	N	D U			18200	9110	ug/kg
AQ-FSL-02-0-16	A12J515-18	1-Methylnaphthalene	10/24/2012	1890	Yes	Y	D J			3650	1820	ug/kg
AQ-FSL-02-0-16	A12J515-18	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	10/24/2012	45600	Yes	N	D U			45600	22800	ug/kg
AQ-FSL-02-0-16	A12J515-18	Dibenzo(a,h)anthracene	10/24/2012	14700	Yes	Y	D			1820	911	ug/kg
AQ-FSL-02-0-16	A12J515-18	2,4-Dinitrophenol	10/24/2012	45600	Yes	N	D U			45600	22800	ug/kg
AQ-FSL-02-0-16	A12J515-18	2-Methylphenol (o-Cresol)	10/24/2012	4560	Yes	N	D U			4560	2280	ug/kg
AQ-FSL-02-0-16	A12J515-18	1,2-Dichlorobenzene	10/24/2012	4560	Yes	N	D U			4560	2280	ug/kg
AQ-FSL-02-0-16	A12J515-18	2-Chlorophenol	10/24/2012	9110	Yes	N	D U			9110	4560	ug/kg
AQ-FSL-02-0-16	A12J515-18	2,4,5-Trichlorophenol	10/24/2012	9110	Yes	N	D U			9110	4560	ug/kg
AQ-FSL-02-0-16	A12J515-18	Nitrobenzene	10/24/2012	18200	Yes	N	D U			18200	9110	ug/kg
AQ-FSL-02-0-16	A12J515-18	2-Nitrophenol	10/24/2012	18200	Yes	N	D U			18200	9110	ug/kg
AQ-FSL-02-0-16	A12J515-18	3-Nitroaniline	10/24/2012	36500	Yes	N	D U			36500	18200	ug/kg
AQ-FSL-02-0-16	A12J515-18	Dibenzofuran	10/24/2012	10500	Yes	Y	D			1820	911	ug/kg
AQ-FSL-02-0-16	A12J515-18	Benzoic acid	10/24/2012	228000	Yes	N	D U	UJ	5	228000	114000	ug/kg
AQ-FSL-02-0-16	A12J515-18	Anthracene	10/24/2012	29200	Yes	Y	D			1820	911	ug/kg
AQ-FSL-02-0-16	A12J515-18	Naphthalene	10/24/2012	5120	Yes	Y	D			3650	1820	ug/kg
AQ-FSL-02-0-16	A12J515-18	2-Methylnaphthalene	10/24/2012	2680	Yes	Y	D J			3650	1820	ug/kg
AQ-FSL-02-0-16	A12J515-18	2-Chloronaphthalene	10/24/2012	1820	Yes	N	D U			1820	911	ug/kg
AQ-FSL-02-0-16	A12J515-18	Benzo(a)pyrene	10/24/2012	76700	Yes	Y	D			2730	1370	ug/kg
AQ-FSL-02-0-16	A12J515-18	bis(2-Chloroisopropyl)ether	10/24/2012	4560	Yes	N	D U			4560	2280	ug/kg
AQ-FSL-02-0-16	A12J515-18	Chrysene	10/24/2012	118000	Yes	Y	D			1820	911	ug/kg
AQ-FSL-02-0-16	A12J515-18	Acenaphthylene	10/24/2012	1820	Yes	N	D U			1820	911	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-02-0-16	A12J515-18	Benzo(k)fluoranthene	10/24/2012	46300	Yes	Y	D			2730	1370	ug/kg
AQ-FSL-02-0-16	A12J515-18	Fluoranthene	10/24/2012	199000	Yes	Y	D			1820	911	ug/kg
AQ-FSL-02-0-16	A12J515-18	Benzo(b)fluoranthene	10/24/2012	172000	Yes	Y	D			2730	1370	ug/kg
AQ-FSL-02-0-16	A12J515-18	Indeno(1,2,3-c,d)pyrene	10/24/2012	64800	Yes	Y	D			1820	911	ug/kg
AQ-FSL-02-0-16	A12J515-18	Benzo(g,h,i)perylene	10/24/2012	80600	Yes	Y	D			1820	911	ug/kg
AQ-FSL-02-0-16	A12J515-18	2-Nitroaniline	10/24/2012	36500	Yes	N	D U			36500	18200	ug/kg
AQ-FSL-02-0-16	A12J515-18	1,4-Dichlorobenzene	10/24/2012	4560	Yes	N	D U			4560	2280	ug/kg
AQ-FSL-02-0-16	A12J515-18	Phenol	10/24/2012	3650	Yes	N	D U			3650	1820	ug/kg
AQ-FSL-02-0-16	A12J515-18	4-Bromophenyl-phenyl ether	10/24/2012	4560	Yes	N	D U			4560	2280	ug/kg
AQ-FSL-02-0-16	A12J515-18	2,4-Dimethylphenol	10/24/2012	9110	Yes	N	D U			9110	4560	ug/kg
AQ-FSL-02-0-16	A12J515-18	Benzyl alcohol	10/24/2012	9110	Yes	N	D U			9110	4560	ug/kg
AQ-FSL-02-0-16	A12J515-18	4-Nitrophenol	10/24/2012	18200	Yes	N	D U			18200	9110	ug/kg
AQ-FSL-02-0-16	A12J515-18	4-Nitroaniline	10/24/2012	36500	Yes	N	D U			36500	18200	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	4-Bromophenyl-phenyl ether	10/24/2012	2580	Yes	N	D U			2580	1290	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Aniline	10/24/2012	5160	Yes	N	D U			5160	2580	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Acenaphthylene	10/24/2012	1030	Yes	N	D U			1030	1030	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Acenaphthene	10/24/2012	72500	Yes	Y	D			1030	516	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	4-Nitrophenol	10/24/2012	10300	Yes	N	D U			10300	5160	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	4-Nitroaniline	10/24/2012	20600	Yes	N	D U			20600	10300	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	4-Chlorophenyl phenyl ether	10/24/2012	2580	Yes	N	D U			2580	1290	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	4-Chloro-3-methylphenol	10/24/2012	10300	Yes	N	D U			10300	5160	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	10/24/2012	2580	Yes	N	D U			2580	1290	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	4-Chloroaniline	10/24/2012	2580	Yes	N	D U	UJ	10	2580	1290	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Hexachlorobenzene	10/24/2012	1030	Yes	N	D U			1030	516	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Bis(2-ethylhexyl)phthalate	10/24/2012	20600	Yes	N	D U			20600	10300	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-03-1-8.5	A12J515-33	Butylbenzyl phthalate	10/24/2012	20600	Yes	N	D U			20600	10300	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Carbazole	10/24/2012	77100	Yes	Y	D			1550	774	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Chrysene	10/24/2012	140000	Yes	Y	D			1030	516	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Dibenzo(a,h)anthracene	10/24/2012	13700	Yes	Y	D			1030	516	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Dibenzofuran	10/24/2012	91500	Yes	Y	D			1030	516	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Diethyl phthalate	10/24/2012	5160	Yes	N	D U			5160	2580	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Dimethyl phthalate	10/24/2012	5160	Yes	N	D U			5160	2580	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Di-n-butyl phthalate	10/24/2012	5160	Yes	N	D U			5160	2580	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	10/24/2012	25800	Yes	N	D U			25800	12900	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Di-n-octyl phthalate	10/24/2012	20600	Yes	N	D U			20600	10300	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Benzoic acid	10/24/2012	129000	Yes	N	D U	UJ	5	129000	64500	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Fluorene	10/24/2012	222000	Yes	Y	D			1030	516	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	bis(2-Chloroethoxy)methane	10/24/2012	2580	Yes	N	D U			2580	1290	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/24/2012	2580	Yes	N	D U			2580	1290	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Hexachlorocyclopentadiene	10/24/2012	5160	Yes	N	D U			5160	2580	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Hexachloroethane	10/24/2012	2580	Yes	N	D U			2580	1290	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Isophorone	10/24/2012	2580	Yes	N	D U			2580	1290	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Naphthalene	10/24/2012	35000	Yes	Y	D			2060	1030	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Nitrobenzene	10/24/2012	10300	Yes	N	D U			10300	5160	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	N-Nitrosodimethylamine	10/24/2012	2580	Yes	N	D U			2580	1290	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	N-Nitrosodi-N-propylamine	10/24/2012	2580	Yes	N	D U			2580	1290	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Pentachlorophenol	10/24/2012	20600	Yes	N	D U			20600	10300	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Phenol	10/24/2012	2060	Yes	N	D U			2060	1030	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Pyrene	10/24/2012	250000	Yes	Y	D			1030	516	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-03-1-8.5	A12J515-33	Fluoranthene	10/24/2012	310000	Yes	Y	D			1030	516	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	2,4-Dinitrophenol	10/24/2012	25800	Yes	N	D U			25800	12900	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Benzo(k)fluoranthene	10/24/2012	50300	Yes	Y	D			1550	774	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Anthracene	10/24/2012	266000	Yes	Y	D			1030	516	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	3-Nitroaniline	10/24/2012	20600	Yes	N	D U			20600	10300	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Indeno(1,2,3-c,d)pyrene	10/24/2012	65900	Yes	Y	D			1030	516	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	3,3'-Dichlorobenzidine	10/24/2012	10300	Yes	N	D U			10300	5160	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	2-Nitrophenol	10/24/2012	10300	Yes	N	D U			10300	5160	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	2-Nitroaniline	10/24/2012	20600	Yes	N	D U			20600	10300	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	2-Methylphenol (o-Cresol)	10/24/2012	2580	Yes	N	D U			2580	1290	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	2-Methylnaphthalene	10/24/2012	15700	Yes	Y	D			2060	1030	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	2-Chlorophenol	10/24/2012	5160	Yes	N	D U			5160	2580	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	2-Chloronaphthalene	10/24/2012	1030	Yes	N	D U			1030	516	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	bis(2-Chloroisopropyl)ether	10/24/2012	2580	Yes	N	D U			2580	1290	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	2,4-Dinitrotoluene	10/24/2012	10300	Yes	N	D U			10300	5160	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	bis(2-Chloroethyl)ether	10/24/2012	2580	Yes	N	D U			2580	1290	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	2,4-Dimethylphenol	10/24/2012	5160	Yes	N	D U			5160	2580	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	2,4-Dichlorophenol	10/24/2012	5160	Yes	N	D U			5160	2580	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	2,4,6-Trichlorophenol	10/24/2012	5160	Yes	N	D U			5160	2580	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	2,4,5-Trichlorophenol	10/24/2012	5160	Yes	N	D U			5160	2580	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	2,3,4,6-Tetrachlorophenol	10/24/2012	5160	Yes	N	D U			5160	2580	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	1-Methylnaphthalene	10/24/2012	9130	Yes	Y	D			2060	1030	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	1,4-Dichlorobenzene	10/24/2012	2580	Yes	N	D U			2580	1290	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	1,3-Dichlorobenzene	10/24/2012	2580	Yes	N	D U			2580	1290	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	1,2-Dichlorobenzene	10/24/2012	2580	Yes	N	D U			2580	1290	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-03-1-8.5	A12J515-33	1,2,4-Trichlorobenzene	10/24/2012	2580	Yes	N	D U			2580	1290	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Benzyl alcohol	10/24/2012	5160	Yes	N	D U			5160	2580	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Benzo(g,h,i)perylene	10/24/2012	61700	Yes	Y	D			1030	516	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	2,6-Dinitrotoluene	10/24/2012	10300	Yes	N	D U			10300	5160	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Benzo(a)anthracene	10/24/2012	116000	Yes	Y	D			1030	516	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Benzo(a)pyrene	10/24/2012	104000	Yes	Y	D			1550	774	ug/kg
AQ-FSL-03-1-8.5	A12J515-33	Benzo(b)fluoranthene	10/24/2012	153000	Yes	Y	D			1550	774	ug/kg
AQ-FSL-03-1-8.5	A12J515-33RE1	Phenanthrene	10/24/2012	677000	Yes	Y	D			10300	5160	ug/kg
AQ-ILF-05-0-14	A12J515-08	bis(2-Chloroisopropyl)ether	10/24/2012	4330	Yes	N	D U			4330	2160	ug/kg
AQ-ILF-05-0-14	A12J515-08	2,4-Dimethylphenol	10/24/2012	8660	Yes	N	D U			8660	4330	ug/kg
AQ-ILF-05-0-14	A12J515-08	2,4-Dichlorophenol	10/24/2012	8660	Yes	N	D U			8660	4330	ug/kg
AQ-ILF-05-0-14	A12J515-08	2,4,6-Trichlorophenol	10/24/2012	8660	Yes	N	D U			8660	4330	ug/kg
AQ-ILF-05-0-14	A12J515-08	2,4,5-Trichlorophenol	10/24/2012	8660	Yes	N	D U			8660	4330	ug/kg
AQ-ILF-05-0-14	A12J515-08	1-Methylnaphthalene	10/24/2012	3460	Yes	N	D U			3460	1730	ug/kg
AQ-ILF-05-0-14	A12J515-08	1,3-Dichlorobenzene	10/24/2012	4330	Yes	N	D U			4330	2160	ug/kg
AQ-ILF-05-0-14	A12J515-08	Benzo(g,h,i)perylene	10/24/2012	193000	Yes	Y	D			1730	866	ug/kg
AQ-ILF-05-0-14	A12J515-08	1,2-Dichlorobenzene	10/24/2012	4330	Yes	N	D U			4330	2160	ug/kg
AQ-ILF-05-0-14	A12J515-08	1,2,4-Trichlorobenzene	10/24/2012	4330	Yes	N	D U			4330	2160	ug/kg
AQ-ILF-05-0-14	A12J515-08	N-Nitrosodi-N-propylamine	10/24/2012	4330	Yes	N	D U			4330	2160	ug/kg
AQ-ILF-05-0-14	A12J515-08	bis(2-Chloroethyl)ether	10/24/2012	4330	Yes	N	D U			4330	2160	ug/kg
AQ-ILF-05-0-14	A12J515-08	Phenanthrene	10/24/2012	59200	Yes	Y	D			1730	866	ug/kg
AQ-ILF-05-0-14	A12J515-08	Bis(2-ethylhexyl)phthalate	10/24/2012	34600	Yes	N	D U			34600	17300	ug/kg
AQ-ILF-05-0-14	A12J515-08	Butylbenzyl phthalate	10/24/2012	34600	Yes	N	D U			34600	17300	ug/kg
AQ-ILF-05-0-14	A12J515-08	Carbazole	10/24/2012	7760	Yes	Y	D			2600	1300	ug/kg
AQ-ILF-05-0-14	A12J515-08	Chrysene	10/24/2012	145000	Yes	Y	D			1730	866	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-05-0-14	A12J515-08	Dibenzo(a,h)anthracene	10/24/2012	30700	Yes	Y	D			1730	866	ug/kg
AQ-ILF-05-0-14	A12J515-08	Dibenzofuran	10/24/2012	3710	Yes	Y	D			1730	866	ug/kg
AQ-ILF-05-0-14	A12J515-08	Diethyl phthalate	10/24/2012	8660	Yes	N	D U			8660	4330	ug/kg
AQ-ILF-05-0-14	A12J515-08	Dimethyl phthalate	10/24/2012	8660	Yes	N	D U			8660	4330	ug/kg
AQ-ILF-05-0-14	A12J515-08	bis(2-Chloroethoxy)methane	10/24/2012	4330	Yes	N	D U			4330	2160	ug/kg
AQ-ILF-05-0-14	A12J515-08	2,6-Dinitrotoluene	10/24/2012	17300	Yes	N	D U			17300	8660	ug/kg
AQ-ILF-05-0-14	A12J515-08	4-Bromophenyl-phenyl ether	10/24/2012	4330	Yes	N	D U			4330	2160	ug/kg
AQ-ILF-05-0-14	A12J515-08	3-Nitroaniline	10/24/2012	34600	Yes	N	D U			34600	17300	ug/kg
AQ-ILF-05-0-14	A12J515-08	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	10/24/2012	4330	Yes	N	D U			4330	2160	ug/kg
AQ-ILF-05-0-14	A12J515-08	3,3'-Dichlorobenzidine	10/24/2012	17300	Yes	N	D U			17300	8660	ug/kg
AQ-ILF-05-0-14	A12J515-08	2-Nitrophenol	10/24/2012	17300	Yes	N	D U			17300	8660	ug/kg
AQ-ILF-05-0-14	A12J515-08	2-Nitroaniline	10/24/2012	34600	Yes	N	D U			34600	17300	ug/kg
AQ-ILF-05-0-14	A12J515-08	2-Methylphenol (o-Cresol)	10/24/2012	4330	Yes	N	D U			4330	2160	ug/kg
AQ-ILF-05-0-14	A12J515-08	2-Methylnaphthalene	10/24/2012	3460	Yes	N	D U			3460	1730	ug/kg
AQ-ILF-05-0-14	A12J515-08	N-Nitrosodiphenylamine	10/24/2012	4330	Yes	N	D U			4330	2160	ug/kg
AQ-ILF-05-0-14	A12J515-08	2-Chloronaphthalene	10/24/2012	1730	Yes	N	D U			1730	866	ug/kg
AQ-ILF-05-0-14	A12J515-08	Di-n-butyl phthalate	10/24/2012	8660	Yes	N	D U			8660	4330	ug/kg
AQ-ILF-05-0-14	A12J515-08	2,4-Dinitrotoluene	10/24/2012	17300	Yes	N	D U			17300	8660	ug/kg
AQ-ILF-05-0-14	A12J515-08	2,4-Dinitrophenol	10/24/2012	43300	Yes	N	D U			43300	21600	ug/kg
AQ-ILF-05-0-14	A12J515-08	Pyrene	10/24/2012	132000	Yes	Y	D			1730	866	ug/kg
AQ-ILF-05-0-14	A12J515-08	Phenol	10/24/2012	3460	Yes	N	D U			3460	1730	ug/kg
AQ-ILF-05-0-14	A12J515-08	Benzyl alcohol	10/24/2012	8660	Yes	N	D U			8660	4330	ug/kg
AQ-ILF-05-0-14	A12J515-08	Benzoic acid	10/24/2012	216000	Yes	N	D U	UJ	5	216000	108000	ug/kg
AQ-ILF-05-0-14	A12J515-08	Benzo(k)fluoranthene	10/24/2012	81500	Yes	Y	D			2600	1300	ug/kg
AQ-ILF-05-0-14	A12J515-08	1,4-Dichlorobenzene	10/24/2012	4330	Yes	N	D U			4330	2160	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-05-0-14	A12J515-08	Pentachlorophenol	10/24/2012	34600	Yes	N	D U			34600	17300	ug/kg
AQ-ILF-05-0-14	A12J515-08	2-Chlorophenol	10/24/2012	8660	Yes	N	D U			8660	4330	ug/kg
AQ-ILF-05-0-14	A12J515-08	Naphthalene	10/24/2012	3460	Yes	N	D U			3460	1730	ug/kg
AQ-ILF-05-0-14	A12J515-08	4-Nitrophenol	10/24/2012	17300	Yes	N	D U			17300	8660	ug/kg
AQ-ILF-05-0-14	A12J515-08	Acenaphthylene	10/24/2012	1730	Yes	N	D U			1730	866	ug/kg
AQ-ILF-05-0-14	A12J515-08	4-Nitroaniline	10/24/2012	34600	Yes	N	D U			34600	17300	ug/kg
AQ-ILF-05-0-14	A12J515-08	Isophorone	10/24/2012	4330	Yes	N	D U			4330	2160	ug/kg
AQ-ILF-05-0-14	A12J515-08	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	10/24/2012	43300	Yes	N	D U			43300	21600	ug/kg
AQ-ILF-05-0-14	A12J515-08	4-Chlorophenyl phenyl ether	10/24/2012	4330	Yes	N	D U			4330	2160	ug/kg
AQ-ILF-05-0-14	A12J515-08	Aniline	10/24/2012	8660	Yes	N	D U			8660	4330	ug/kg
AQ-ILF-05-0-14	A12J515-08	N-Nitrosodimethylamine	10/24/2012	4330	Yes	N	D U			4330	2160	ug/kg
AQ-ILF-05-0-14	A12J515-08	Benzo(a)pyrene	10/24/2012	155000	Yes	Y	D			2600	1300	ug/kg
AQ-ILF-05-0-14	A12J515-08	2,3,4,6-Tetrachlorophenol	10/24/2012	8660	Yes	N	D U			8660	4330	ug/kg
AQ-ILF-05-0-14	A12J515-08	4-Chloro-3-methylphenol	10/24/2012	17300	Yes	N	D U			17300	8660	ug/kg
AQ-ILF-05-0-14	A12J515-08	Acenaphthene	10/24/2012	8950	Yes	Y	D			1730	866	ug/kg
AQ-ILF-05-0-14	A12J515-08	Anthracene	10/24/2012	14500	Yes	Y	D			1730	866	ug/kg
AQ-ILF-05-0-14	A12J515-08	Benzo(a)anthracene	10/24/2012	81800	Yes	Y	D			1730	866	ug/kg
AQ-ILF-05-0-14	A12J515-08	4-Chloroaniline	10/24/2012	4330	Yes	N	D U	UJ	10	4330	2160	ug/kg
AQ-ILF-05-0-14	A12J515-08	Indeno(1,2,3-c,d)pyrene	10/24/2012	159000	Yes	Y	D			1730	866	ug/kg
AQ-ILF-05-0-14	A12J515-08	Hexachloroethane	10/24/2012	4330	Yes	N	D U			4330	2160	ug/kg
AQ-ILF-05-0-14	A12J515-08	Hexachlorocyclopentadiene	10/24/2012	8660	Yes	N	D U			8660	4330	ug/kg
AQ-ILF-05-0-14	A12J515-08	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/24/2012	4330	Yes	N	D U			4330	2160	ug/kg
AQ-ILF-05-0-14	A12J515-08	Hexachlorobenzene	10/24/2012	1730	Yes	N	D U			1730	866	ug/kg
AQ-ILF-05-0-14	A12J515-08	Fluorene	10/24/2012	5170	Yes	Y	D			1730	866	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ILF-05-0-14	A12J515-08	Fluoranthene	10/24/2012	135000	Yes	Y	D			1730	866	ug/kg
AQ-ILF-05-0-14	A12J515-08	Di-n-octyl phthalate	10/24/2012	34600	Yes	N	D U			34600	17300	ug/kg
AQ-ILF-05-0-14	A12J515-08	Nitrobenzene	10/24/2012	17300	Yes	N	D U			17300	8660	ug/kg
AQ-ILF-05-0-14	A12J515-08	Benzo(b)fluoranthene	10/24/2012	284000	Yes	Y	D			2600	1300	ug/kg

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 19, 2012
LDC Report Date:	January 3, 2013
Matrix:	Soil
Parameters:	Volatiles
Validation Level:	Stage 2B
Laboratory:	Apex Laboratories, LLC
Sample Delivery Group (SDG):	A12J537

Sample Identification

AQ-ECA-03-5-7
Trip Blank

Introduction

This data review covers 2 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. Cooler temperatures for samples in this SDG were reported at 14.5°C to 16.9°C upon receipt by the laboratory. Since the samples were received the same day that they were collected, time did not allow for sufficient cooling of the samples, therefore no data were qualified.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
10/4/12	Acetone Bromochloromethane Bromoform 2-Butanone 1,2-Dibromo-3-chloropropane 1,2-Dibromoethane Dibromomethane 1,2-Dichloroethane 1,3-Dichloropropane Hexachlorobutadiene 2-Hexanone 4-Methyl-2-pentanone 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,2,3-Trichloropropane	31.8 24.5 34.5 35.4 28.2 20.6 25.6 22.2 24.7 25.2 33.7 38.4 20.1 21.9 29.4	All samples in SDG A12J537	J (all detects) UJ (all non-detects)	A
10/4/12	Carbon disulfide	33.6	All samples in SDG A12J537	J (all detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
10/4/12	2,2-Dichloropropane	38.4	All samples in SDG A12J537	J (all detects) UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID	Compound	%R (Limits)	Associated Samples	Flag	A or P
1210643-LCS	Acetone 2-Butanone 2-Hexanone	42 (50-150) 46 (50-150) 43 (50-150)	All samples in SDG A12J537	J (all detects) UJ (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

All tentatively identified compounds were within validation criteria.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

Due to calibration %D and LCS %R problems, data were qualified as estimated in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Volatiles - Data Qualification Summary - SDG A12J537

SDG	Sample	Compound	Flag	A or P	Reason
A12J537	AQ-ECA-03-5-7 Trip Blank	Acetone Bromochloromethane Bromoform 2-Butanone 1,2-Dibromo-3-chloropropane 1,2-Dibromoethane Dibromomethane 1,2-Dichloroethane 1,3-Dichloropropane Hexachlorobutadiene 2-Hexanone 4-Methyl-2-pentanone 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,2,3-Trichloropropane	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
A12J537	AQ-ECA-03-5-7 Trip Blank	Carbon disulfide	J (all detects)	A	Continuing calibration (%D)
A12J537	AQ-ECA-03-5-7 Trip Blank	2,2-Dichloropropane	J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D)
A12J537	AQ-ECA-03-5-7 Trip Blank	Acetone 2-Butanone 2-Hexanone	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)

Millennium Bulk Terminals
Volatiles - Laboratory Blank Data Qualification Summary - SDG A12J537

No Sample Data Qualified in this SDG

LDC #: 28944D1

SDG #: A12J537

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/2/13

Page: 1 of 1

Reviewer: FJ

2nd Reviewer: SV

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

Temp Blank = 16.9 & 14.5 °C not enough time to cool down

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/19/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 15/30
IV.	Continuing calibration/ICV	SW	CCV ≤ 20 ICV ≤ 30
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client specific
VIII.	Laboratory control samples	SW	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB = 2

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

SOIL ~~+ water~~

1 +	AQ-ECA-03-5-7 S	11	1210643	21		31	
2 −	Trip Blank S ~~W~~	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC #: 28944D1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: FT
2nd Reviewer: CQ

METHOD: GC/MS VOA (EPA SW 846 Method 8260)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ~~≤25%~~ 30 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ~~≤25.0%~~ 30)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
-	10/4/12	2J030113-ICV1	~~E~~	~~22.8~~		All	J/UJ/A
-			OO	38.4 (≤ 30)			
-			~~BB~~	~~24.4~~			
	10/4/12	2J122005-CCV4	F	31.8		All	J/UJ/A
			PP	24.5			
			X	34.5			
			M	35.4			
+			G	33.6			J/A det
			MM	28.2			J/UJ/A
			TT	20.6			
			RR	25.6			
			L	22.2			
			SS	24.7			
			LLL	25.2			
			Z	33.7			
			Y	38.4			
			BB	20.1			
			U	21.9			
			XX	29.4			

LDC #: 28944D 1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?

Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		1210643-LCS	F	42 (~~65-135~~)	50-150 ( )	( )	All	J/UJ/P
			M	46 (50-150)	( )	( )	↓	↓
			Z	43 (↓)	( )	( )	↓	↓
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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LDC Report# 28944D2a

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 19, 2012
LDC Report Date:	January 4, 2013
Matrix:	Soil/Water
Parameters:	Semivolatiles
Validation Level:	Stage 2B
Laboratory:	Apex Laboratories, LLC
Sample Delivery Group (SDG):	A12J537

Sample Identification

AQ-ECA-03-1-7
AQ-RB-101912

Introduction

This data review covers one soil sample and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270D for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
1210796-MB	10/26/12	Naphthalene	0.0272 ug/L	All water samples in SDG A12J537

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
AQ-RB-101912	Naphthalene	0.0385 ug/L	0.0385U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
1210677-LCS (All soil samples in SDG A12J537)	4-Chloroaniline	43 (50-150)	-	-	J (all detects) UJ (all non-detects)	P
1210677-LCS (All soil samples in SDG A12J537)	3,3'-Dichlorobenzidine	152 (50-150)	-	-	J (all detects)	P
1210796-LCS (All water samples in SDG A12J537)	Phenol N-Nitrosodimethylamine 3-Nitroaniline Benzoic acid 2,4-Dimethylphenol 4-Nitrophenol	37 (60-140) 52 (60-140) 42 (60-140) 47 (60-140) - -	39 (60-140) 54 (60-140) 47 (60-140) 45 (60-140) 52 (60-140) 35 (60-140)	- - - - - -	J (all detects) UJ (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to LCS %R problems, data were qualified as estimated in two samples.

Due to method blank contamination problems, data were qualified as not detected in one sample.

The quality control criteria reviewed were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

Sample AQ-RB-101912 was identified as a rinsate blank. No semivolatile contaminants were found with the following exceptions:

Blank ID	Compound	Concentration
AQ-RB-101912	Fluoranthene Naphthalene Phenanthrene Pyrene	0.0268 ug/L 0.0385 ug/L 0.0147 ug/L 0.0187 ug/L

Millennium Bulk Terminals
Semivolatiles - Data Qualification Summary - SDG A12J537

SDG	Sample	Compound	Flag	A or P	Reason
A12J537	AQ-ECA-03-1-7	Benzoic acid	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)
A12J537	AQ-ECA-03-1-7	4-Chloroaniline	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)
A12J537	AQ-RB-101912	Phenol N-Nitrosodimethylamine 3-Nitroaniline Benzoic acid 2,4-Dimethylphenol 4-Nitrophenol	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)

Millennium Bulk Terminals
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG A12J537

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
A12J537	AQ-RB-101912	Naphthalene	0.0385U ug/L	A

LDC #: 28944D2a

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

SDG #: A12J537

Laboratory: APEX Laboratories, LLC

Date: 1/2/13

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/19/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 20/30
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	SW	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	RB = 2

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

SOIL + water

1 1	AQ-ECA-03-1-7 S	11 1	1210677	21	4	31	
2 2	AQ-RB-101912 W	12 2	1210796	22	17	32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1- Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 28944D2a

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: FT
2nd Reviewer: OL

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a method blank analyzed for each matrix?
Y N N/A Was a method blank analyzed for each concentration preparation level?
Y N N/A Was a method blank associated with every sample?
Y N N/A Was the blank contaminated? If yes, please see qualification below.

Blank extraction date: 10/26/12 **Blank analysis date:** 10/26/12
Conc. units: ug/L Associated Samples: All water

Compound	Blank ID	Sample Identification								
	1210796-MB			2						
S	0.0272			0.0385/U						

Blank extraction date:_____ **Blank analysis date:**_____
Conc. units:_____ Associated Samples:_____

Compound	Blank ID	Sample Identification								

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 28944D2a

VALIDATION FINDINGS WORKSHEET
Surrogate Recovery

Page: 1 of 1
Reviewer: FT
2nd Reviewer: 02

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were percent recoveries (%R) for surrogates within QC limits?
Y N N/A If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?
Y N N/A If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

#	Date	Sample ID	Surrogate	%R (Limits)	Qualifications
		1	TPH	142 (30-125)	no qual
			TBP	166 (35-125)	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
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				( )	
				( )	
				( )	
				( )	

* QC limits are advisory	QC Limits (Soil)	QC Limits (Water)		QC Limits (Soil)	QC Limits (Water)
S1 (NBZ) = Nitrobenzene-d5	23-120	35-114	S5 (2FP)= 2-Fluorophenol	25-121	21-100
S2 (FBP) = 2-Fluorobiphenyl	30-115	43-116	S6 (TBP) = 2,4,6-Tribromophenol	19-122	10-123
S3 (TPH) = Terphenyl-d14	18-137	33-141	S7 (2CP) = 2-Chlorophenol-d4	20-130*	33-110*
S4 (PHL) = Phenol-d5	24-113	10-94	S8 (DCB) = 1,2-Dichlorobenzene-d4	20-130*	16-110*

LDC #: 28944D2c

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FT
2nd Reviewer: 02

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Was a LCS required?
Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		1210677-LCS	T	43 (50-152)	( )	( )	All soils	J/UJ/P
			BBB	152 (↓)	( )	( )	↓	J/P det
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				(60-140)	( )	( )		
		1210796-LCS	A	37 (~~10-120~~)	39 (60-140)	( )	all water	J/UJ/P
			OOO	52 (60-140)	54 (60-140)	( )	↓	↓
			FF	42 (↓)	47 (60-140)	( )		
			PPP	47 (↓)	45 (60-140)	( )		
			θ	( )	52 (60-140)	( )		
			II	( )	35 (↓)	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

LDC #: 28944D2c
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer:
2nd reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds identified in the field blanks?

Sample: RB Field Blank / Trip Blank / Rinsate (circle one)

Compound	Concentration Units (ug/L)
YY	0.0268
~~AA~~ S	0.0385
UU	0.0147
ZZ	0.0187

Sample: _____ Field Blank / Trip Blank / Rinsate (circle one)

Compound	Concentration Units ( )

Sample: _____ Field Blank / Trip Blank / Rinsate (circle one)

Compound	Concentration Units ( )

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October, 19, 2012
LDC Report Date:	January 4, 2013
Matrix:	Soil
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	Stage 2B
Laboratory:	Apex Laboratories, LLC
Sample Delivery Group (SDG):	A12J537

Sample Identification

AQ-ECA-01-2-5
AQ-ECA-04-2-8
AQ-ECA-02-1-5
AQ-ECA-01-2-5DUP

Introduction

This data review covers 4 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. Cooler temperatures for samples in this SDG were reported at 14.5°C to 16.9°C upon receipt by the laboratory. Since the samples were received the same day that they were collected, time did not allow for sufficient cooling of the samples, therefore no data were qualified.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
1210831-MB	10/29/12	Fluoranthene Phenanthrene Pyrene	5.20 ug/Kg 5.37 ug/Kg 3.92 ug/Kg	All samples in SDG A12J537

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. Surrogate recoveries (%R) were not within QC limits for all samples. Since the samples were diluted out, no data were qualified.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Compound	RPD (Limits)	Flag	A or P
AQ-ECA-01-2-5DUP (AQ-ECA-01-2-5)	Phenanthrene	36 (≤35)	J (all detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to Duplicate RPD problems, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A12J537

SDG	Sample	Compound	Flag	A or P	Reason
A12J537	AQ-ECA-01-2-5	Phenanthrene	J (all detects)	A	Duplicate sample analysis (RPD)

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A12J537

No Sample Data Qualified in this SDG

LDC #: 28944D2b

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

SDG #: A12J537

Laboratory: APEX Laboratories, LLC

Date: 1/3/12

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

temp Blank = 16.9 & 14.5 °C not enough time to cool/down

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/19/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 20/30
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates /DUP	~~N~~ SW	client specified
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

SOIL

1	AQ-ECA-01-2-5	11	1210831	21		31	
2	AQ-ECA-04-2-8	12		22		32	
3	AQ-ECA-02-1-5	13		23		33	
4	AQ-ECA-01-2-5DUP	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1- Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 28944D2b

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer: FT
2nd Reviewer: 02

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a method blank analyzed for each matrix?
Y N N/A Was a method blank analyzed for each concentration preparation level?
Y N N/A Was a method blank associated with every sample?
Y N N/A Was the blank contaminated? If yes, please see qualification below.

Blank extraction date: 10/29/12 **Blank analysis date:** 10/30/12
Conc. units: ug/kg Associated Samples: All > 5x

Compound	Blank ID	Sample Identification								
	1210831-MB									
YY	5.20									
UU	5.37									
ZZ	3.92									

Blank extraction date:_____ **Blank analysis date:**_____
Conc. units:_____ Associated Samples:_____

Compound	Blank ID	Sample Identification								

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 28941D2b

VALIDATION FINDINGS WORKSHEET
Surrogate Recovery

Page: 1 of 1
Reviewer: FT
2nd Reviewer: ok

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were percent recoveries (%R) for surrogates within QC limits?
Y N N/A If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?
Y N N/A If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

#	Date	Sample ID	Surrogate	%R (Limits)	Qualifications
		1, 2, 3	TPH	152 (30-120)	no qual > 5x DL
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
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				( )	
				( )	
				( )	
				( )	

* QC limits are advisory	QC Limits (Soil)	QC Limits (Water)		QC Limits (Soil)	QC Limits (Water)
S1 (NBZ) = Nitrobenzene-d5	23-120	35-114	S5 (2FP)= 2-Fluorophenol	25-121	21-100
S2 (FBP) = 2-Fluorobiphenyl	30-115	43-116	S6 (TBP) = 2,4,6-Tribromophenol	19-122	10-123
S3 (TPH) = Terphenyl-d14	18-137	33-141	S7 (2CP) = 2-Chlorophenol-d4	20-130*	33-110*
S4 (PHL) = Phenol-d5	24-113	10-94	S8 (DCB) = 1,2-Dichlorobenzene-d4	20-130*	16-110*

LDC #: 28944D2b

VALIDATION FINDINGS WORKSHEET

~~Matrix Spike/Matrix Spike Duplicates~~ Laboratory Duplicates

Reviewer: FT

2nd Reviewer: CR

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N (N/A) Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

Y N (N/A) Was a MS/MSD analyzed every 20 samples of each matrix?

Y (N) N/A Were the ~~MS/MSD~~ Lab Dup percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	Lab Dup ~~MS/MSD ID~~	Compound	MS ~~%R (Limits)~~ Results	MSD ~~%R (Limits)~~ Results	RPD (Limits)	Associated Samples	Qualifications
		1 + 4	UU	561000 ug/kg	810000 ug/kg	36 (35)	1	J/A det
		RL = 12400						

MSD.2S

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 19, 2012
LDC Report Date:	December 26, 2012
Matrix:	Soil/Water
Parameters:	Polychlorinated Biphenyls
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J537

Sample Identification

AQ-ECA-03-1-7
AQ-RB-101912

Introduction

This data review covers one soil sample and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082A for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Column	Surrogate	%R (Limits)	Compound	Flag	A or P
AQ-RB-101912	Not specified	Decachlorobiphenyl	53 (55-130)	All TCL compounds	J (all detects) UJ (all non-detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

Raw data were not reviewed for this SDG.

XIII. Compound Quantitation and Reported RLs

Raw data were not reviewed for this SDG.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to surrogate %R problems, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XV. Field Duplicates

No field duplicates were identified in this SDG.

XVI. Field Blanks

Sample AQ-RB-101912 was identified as a rinsate blank. No polychlorinated biphenyl contaminants were found.

Millennium Bulk Terminals
Polychlorinated Biphenyls - Data Qualification Summary - SDG A12J537

SDG	Sample	Compound	Flag	A or P	Reason
A12J537	AQ-RB-101912	All TCL compounds	J (all detects) UJ (all non-detects)	P	Surrogate spikes (%R)

Millennium Bulk Terminals
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG A12J537

No Sample Data Qualified in this SDG

LDC #: 28944D3b

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 12/20/2012

SDG #: A12J537

Page: 1 of 1

Laboratory: APEX Laboratories, LLC

Reviewer: SW

2nd Reviewer: [illegible]

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/19/2012
II.	GC/ECD Instrument Performance Check	N	
III.	Initial calibration	A	RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	N	CS
VIII.	Laboratory control samples	A	LCS / LCSD
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	N	
XIII.	Compound quantitation/RL/LOQ/LODs	N	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	ND	RB = 2

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

SOIL + WATER

+ 1	2	AQ-ECA-03-1-7	Soil	11		21		31	1 1210797-BLK2
− 2	1	AQ-RB-101912	WATER	12		22		32	2 1210801-BLK1
3				13		23		33	
4				14		24		34	
5				15		25		35	
6				16		26		36	
7				17		27		37	
8				18		28		38	
9				19		29		39	
10				20		30		40	

LDC #: 28944 D3b

VALIDATION FINDINDS WORKSHEET
Surrogate Recovery

Reviewer: ~~AA~~ SW
2nd Reviewer: [illegible]

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)
Are surrogates required by the method? Yes X or No____.
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
(Y) N N/A Were surrogates spiked into all samples and blanks?
Y (N) N/A Did all surrogate recoveries (%R) meet the QC limits?

#	Sample ID	Detector/ Column	Surrogate Compound	%R (Limits)	Qualifications
	2		O	53 (55 - 130)	J/UJ all compounds / ~~A~~ P
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
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				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound		
A	Chlorobenzene (CBZ)	G	Octacosane	M	Benzo(e)Pyrene	S	1-Chloro-3-Nitrobenzene	Y	Tetrachloro-m- xylene
B	4-Bromofluorobenzene (BFB)	H	Ortho-Terphenyl	N	Terphenyl-D14	T	3,4-Dinitrotoluene		
C	a,a,a-Trifluorotoluene	I	Fluorobenzene (FBZ)	O	Decachlorobiphenyl (DCB)	U	Tripentyltin		
D	Bromochlorobenene	J	n-Triacontane	P	1-methylnaphthalene	V	Tri-n-propyltin		
E	1,4-Dichlorobutane	K	Hexacosane	Q	Dichlorophenyl Acetic Acid (DCAA)	W	Tributyl Phosphate		
F	1,4-Difluorobenzene (DFB)	L	Bromobenzene	R	4-Nitrophenol	X	Triphenyl Phosphate		

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Millennium Bulk Terminals

Collection Date: October 19, 2012

LDC Report Date: December 20, 2012

Matrix: Soil/Water

Parameters: Metals

Validation Level: Stage 2B

Laboratory: APEX Laboratories, LLC

Sample Delivery Group (SDG): A12J537

Sample Identification

AQ-ECA-03-1-7
AQ-ECA-01-2-5
AQ-ECA-04-2-8
AQ-ECA-02-1-5
AQ-RB-101912
AQ-ECA-04-2-8(TCLP)
AQ-RB-101912MS
AQ-ECA-04-2-8(TCLP)MS

Introduction

This data review covers 6 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010C and 6020A for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, and Zinc.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
AQ-ECA-04-2-8(TCLP) AQ-ECA-04-2-8(TCLP)MS	Mercury	32	28	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to holding time problems, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

Sample AQ-RB-101912 was identified as a rinsate blank. No metal contaminants were found with the following exceptions:

Blank ID	Analyte	Concentration (ug/L)
AQ-RB-101912	Chromium	0.644

Millennium Bulk Terminals
Metals - Data Qualification Summary - SDG A12J537

SDG	Sample	Analyte	Flag	A or P	Reason
A12J537	AQ-ECA-04-2-8(TCLP)	Mercury	J (all detects) UJ (all non-detects)	P	Technical holding time

Millennium Bulk Terminals
Metals - Laboratory Blank Data Qualification Summary - SDG A12J537

No Sample Data Qualified in this SDG

LDC #: 28944D4

SDG #: A12J537

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 12-19-12

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6010C/6020) A

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 10/19/12
II.	ICP/MS Tune	A	
III.	Calibration	SW	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	A	MS
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	Not utilized
XI.	ICP Serial Dilution	N	Not performed
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	SW	RB=5

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: soil / water

1	AQ-ECA-03-1-7	11		21		31	
2	AQ-ECA-01-2-5	12		22		32	
3	AQ-ECA-04-2-8	13		23		33	
4	AQ-ECA-02-1-5	14		24		34	
5	AQ-RB-101912 W	15		25		35	
6	AQ-ECA-04-2-8(TCLP)	16		26		36	
7	AQ-RB-101912MS W	17		27		37	
8	AQ-ECA-04-2-8(TCLP)MS	18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 28944W1

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: CR
2nd reviewer: ✓

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-5		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
6		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
QC 8		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
7		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___

Comments: Mercury by CVAA if performed

LDC #: 26944D4

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page: 6 of 1
Reviewer:
2nd reviewer:

Were samples preserved? Y N N/A
All circled dates have exceeded the technical holding time.
(Y) N N/A Were all cooler temperatures within validation criteria?

METHOD: EPA SW 846 Method 6010/6020/7000		(CVAA) Hg (28 days)	(ICP) Al, As, Sb, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Ni, K, Se, Ag, Na, Tl, V, Zn	(ICP-MS) Al, As, Sb, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Ni, K, Se, Ag, Na, Tl, V, Zn	(GFAA) —	(GFAA) —	
Sample ID:	Sampling Date	Extraction ~~Analysis~~ Date	Analysis Date	Analysis Date	Analysis Date	Analysis Date	Qualifier
6,8	10/19/12	11/20/12	(32 days)				J/UJ/P

Technical Holding Time Criteria

Mercury: 28 days preserved pH <2
All other metals 6 months preserved pH <2
Organic lead Extracted within 14 days for soils and 7 days for waters, analyzed within 40 days of extraction. (no preservation)

LDC #: 01894D1

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target analytes detected in the field blanks?

Sample: 5 Field Blank / Trip Blank / Rinsate / Other RB (circle one)

Analyte	Concentration Units ug/L
Cr	0.644

Sample: _____ Field Blank / Trip Blank / Rinsate / Other_____ (circle one)

Analyte	Concentration Units ( )

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 19, 2012
LDC Report Date:	December 20, 2012
Matrix:	Soil/Water
Parameters:	Wet Chemistry
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J537

Sample Identification

AQ-ECA-03-1-7
AQ-ECA-01-2-5
AQ-ECA-04-2-8
AQ-ECA-02-1-5
AQ-RB-101912
AQ-ECA-02-1-5DUP
AQ-RB-101912MS
AQ-RB-101912DUP

Introduction

This data review covers 5 soil samples and 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 335.4, EPA SW 846 Methods 9013M and 9014 for Total Cyanide, Standard Method 4500-CN (I/E) for Weak Acid Dissociable Cyanide, and Standard Method 4500-F-C for Fluoride, and PSEP and Standard Method 5310B modified for Total Organic Carbon.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
AQ-ECA-03-1-7 AQ-ECA-01-2-5	Total organic carbon	15 days	14 days	J (all detects) UJ (all non-detects)	P
AQ-ECA-04-2-8 AQ-ECA-02-1-5	Total organic carbon	18 days	14 days	J (all detects) UJ (all non-detects)	P
AQ-ECA-02-1-5DUP	Total organic carbon	17 days	14 days	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Analyte	RPD (Limits)	Difference (Limits)	Flag	A or P
AQ-ECA-02-1-5DUP (All soil samples in SDG A12J537)	Total organic carbon	63 (≤20)	-	J (all detects) UJ (all non-detects)	A

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

All sample result verification met validation criteria with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
AQ-ECA-03-1-7 AQ-ECA-01-2-5 AQ-ECA-02-1-5 AQ-ECA-02-1-5DUP	Total organic carbon	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	P

Sample	Analyte	Finding	Flag	A or P
AQ-ECA-04-2-8	Total organic carbon	Due to an incomplete combustion, some organic components were possibly not included in measurement.	J (all detects) UJ (all non-detects)	A

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to holding time, duplicate RPD, calibration range, and analysis problems, data were qualified as estimated in four samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

Sample AQ-RB-101912 was identified as a rinsate blank. No contaminant concentrations were found with the following exceptions:

Blank ID	Analyte	Concentration (mg/L)
AQ-RB-101912	Fluoride	0.146

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A12J537

SDG	Sample	Analyte	Flag	A or P	Reason
A12J537	AQ-ECA-03-1-7 AQ-ECA-01-2-5 AQ-ECA-04-2-8 AQ-ECA-02-1-5	Total organic carbon	J (all detects) UJ (all non-detects)	P	Technical holding time
A12J537	AQ-ECA-03-1-7 AQ-ECA-01-2-5 AQ-ECA-04-2-8 AQ-ECA-02-1-5	Total organic carbon	J (all detects) UJ (all non-detects)	A	Duplicate sample analysis (RPD)
A12J537	AQ-ECA-03-1-7 AQ-ECA-01-2-5 AQ-ECA-02-1-5	Total organic carbon	J (all detects)	P	Sample result verification (exceeded range)
A12J537	AQ-ECA-04-2-8	Total organic carbon	J (all detects) UJ (all non-detects)	A	Sample result verification

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A12J537

No Sample Data Qualified in this SDG

LDC #: 28944D6

SDG #: A12J537

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 10-19-12

Page: 1 of 1

Reviewer: CL

2nd Reviewer: W

METHOD: (Analyte) Total Cyanide (EPA Method 335.4/EPA SW846 Method ~~9013M~~/9014), WAD Cyanide (EPA SW846 Method ~~9013M~~/SM4500-CN-I/E), Fluoride (SM4500-F-C), TOC (PSEP/SM5310B Modified)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 10/19/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	SW	MS
VI.	Duplicates	A	Dup
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	SW	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI	Field blanks	SW	RB=5

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil/water

1	AQ-ECA-03-1-7	11		21		31	
2	AQ-ECA-01-2-5	12		22		32	
3	AQ-ECA-04-2-8	13		23		33	
4	AQ-ECA-02-1-5	14		24		34	
5	AQ-RB-101912 W	15		25		35	
6	AQ-ECA-02-1-5DUP	16		26		36	
7	AQ-RB-101912MS W	17		27		37	
8	AQ-RB-101912DUP ↓	18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 28944D6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Reviewer: CR
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Parameter
1-5	pH TDS Cl (F) NO_3 NO_2 SO_4 O-PO_4 Alk (CN) NH_3 TKN TOC Cr6+ ClO_4 (WAD CN)
1-4	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN (TOC) Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
6	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN (TOC) Cr6+ ClO_4
7	pH TDS Cl (F) NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 (WAD CN)
8	pH TDS Cl (F) NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 (WADCN)
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

LDC #: 08944V6

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Reviewer: CR
2nd reviewer: [illegible]

All circled dates have exceeded the technical holding time.
Y N N/A Were all samples preserved as applicable to each method ?
Y N N/A Were all cooler temperatures within validation criteria?

Method:		PSEP					
Parameters:		TOC					
Technical holding time:		14 days					
Sample ID	**Sampling date**	**Analysis date**	**Analysis date**	**Analysis date**	**Analysis date**	**Analysis date**	**Qualifier**
1,2	10/19/12	11/3/12	(15 days)				J/UJ/P
3,4	↓	11/6/12	(18 days)				↓
6	↓	11/5/12	(17 days)				↓

LDC #: 018944D6

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125 (85-115% for Method 300.0)? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
		AQ-ILF-02-0-12 (A1AJ509)	S	WADCN	30	None*	No Qual

Comments: *2nd Client MS in batch within limits

MS.6

LDC #: 28944D1

VALIDATION FINDINGS WORKSHEET
Duplicate Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method see cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a duplicate sample analyzed for each matrix in this SDG?

Y N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for water and ≤ 35% for soil samples (≤ 10% for Method 300.0)? If no, see qualification below. A control limit of ±CRDL (±2X CRDL for soil) was used for samples that were ≤5X the CRDL, including when only one of the duplicate sample values were ≤5X the CRDL. If field blanks were used for laboratory duplicates, see overall assessment.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Duplicate ID	Matrix	Analyte	RPD (Limits)	Associated Samples	Qualifications
		6	S	TOC	63 (≤20)	All Soil	J/UJ/A

Comments:

LDC #: 25894D6

VALIDATION FINDINGS WORKSHEET
Sample Result Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer: [illegible]

METHOD: Inorganics, Method see cover

#	Sample ID	Analyte	Lab Reporting Limit (units)	RDL (units)	Finding	Qualifications
	1,2,4,6	TOC			> Calibration range	J / P
	3	TOC			Due to an incomplete combustion some organic components were possibly not included in measurement.	~~Text~~ J/UJ/A

Comments:

ABVCRDL.6

LDC #: 08944D6
SDG #: —

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

(Y) N N/A Were field blanks identified in this SDG?
(Y) N N/A Were target analytes detected in the field blanks?

Sample: 5 Field Blank / Trip Blank / Rinsate / Other (RB) (circle one)

Analyte	Concentration Units (mg/L)
F	0.146

Sample: _____ Field Blank / Trip Blank / Rinsate / Other _____ (circle one)

Analyte	Concentration Units ( )

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 19, 2012
LDC Report Date:	December 26, 2012
Matrix:	Soil/Water
Parameters:	Total Petroleum Hydrocarbons as Extractables
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J537

Sample Identification

AQ-ECA-03-5-7
AQ-ECA-02-1-5
AQ-ECA-02-3-5
AQ-RB-101912
AQ-ECA-02-1-5DUP
AQ-ECA-02-3-5DUP

Introduction

This data review covers 5 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method NWTPH-DX for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 15.0% .

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 15.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XII. Field Duplicates

No field duplicates were identified in this SDG.

XIII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG A12J537

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG A12J537

No Sample Data Qualified in this SDG

LDC #: 28944D8

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 12/20/2012

SDG #: A12J537

Page: 1 of 1

Laboratory: APEX Laboratories, LLC

Reviewer: SW

2nd Reviewer: [illegible]

METHOD: GC TPH as Extractables (NWTPH-Dx)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/19/2012
II	Initial calibration	A	RSD ≤ 15
III.	Calibration verification/ICV	A	ICV/CCV ≤ 15
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	CS
VII.	Laboratory control samples	A	LCS / LCSD
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	~~SW~~ N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	ND	RB = 4

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

Soil + WATER

+1	1	AQ-ECA-03-5-7	Soil	11		21		31 1	1210721 - BLK1
+2	3	AQ-ECA-02-1-5	↓	12		22		32 2	1210679 - BLK1
+3	1	AQ-ECA-02-3-5	↓	13		23		33 3	1211034 - BLK1
-4	2	AQ-RB-101912	WATER	14		24		34	
5		AQ-ECA-02-1-5DUP	Soil	15		25		35	
6		AQ-ECA-02-3-5DUP	↓	16		26		36	
7				17		27		37	
8				18		28		38	
9				19		29		39	
10				20		30		40	

Notes:

Analytical Method APEXsolids

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ECA-01-2-5	A12J537-08	Total solids	10/24/2012	61.2		Yes	Y				1.00	1.00	pct
AQ-ECA-02-1-5	A12J537-15	Total solids	10/24/2012	60.6		Yes	Y				1.00	1.00	pct
AQ-ECA-02-3-5	A12J537-16	Total solids	10/24/2012	61.3		Yes	Y				1.00	1.00	pct
AQ-ECA-03-1-7	A12J537-04	Total solids	10/24/2012	68.5		Yes	Y				1.00	1.00	pct
AQ-ECA-03-5-7	A12J537-05	Total solids	10/24/2012	67.4		Yes	Y				1.00	1.00	pct
AQ-ECA-04-2-8	A12J537-12	Total solids	10/24/2012	63.6		Yes	Y				1.00	1.00	pct

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-RB-101912	A12J537-17	Cyanide, total	10/25/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L

Analytical Method NWTPHDx

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ECA-02-1-5	A12J537-15	Oil	11/2/2012	889		Yes	Y				26.2	13.1	mg/kg
AQ-ECA-02-1-5	A12J537-15	Diesel Range Hydrocarbons	11/2/2012	867		Yes	Y				13.1	6.56	mg/kg
AQ-ECA-02-3-5	A12J537-16	Diesel Range Hydrocarbons	10/25/2012	1510		Yes	Y				12.7	6.34	mg/kg
AQ-ECA-02-3-5	A12J537-16	Oil	10/25/2012	1190		Yes	Y				25.3	12.7	mg/kg
AQ-ECA-03-5-7	A12J537-05	Oil	10/25/2012	256		Yes	Y				22.8	11.4	mg/kg
AQ-ECA-03-5-7	A12J537-05	Diesel Range Hydrocarbons	10/25/2012	916		Yes	Y				11.4	5.71	mg/kg
AQ-RB-101912	A12J537-17	Oil	10/23/2012	0.15		Yes	N	U			0.150	0.0748	mg/L
AQ-RB-101912	A12J537-17	Diesel Range Hydrocarbons	10/23/2012	0.0748		Yes	N	U			0.0748	0.0374	mg/L

Analytical Method SM4500CNE

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ECA-01-2-5	A12J537-08RE1	Cyanide, total	10/26/2012	90.5		Yes	Y	D			3.63	3.63	mg/kg
AQ-ECA-02-1-5	A12J537-15	Cyanide, total	10/26/2012	26		Yes	Y	D			3.95	3.95	mg/kg
AQ-ECA-03-1-7	A12J537-04RE1	Cyanide, total	10/26/2012	5.36		Yes	Y				0.361	0.361	mg/kg
AQ-ECA-04-2-8	A12J537-12	Cyanide, total	10/26/2012	18.4		Yes	Y	D			3.80	3.80	mg/kg

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ECA-01-2-5	A12J537-08RE1	Cyanide, Weak acid dissociable (WAD)	10/26/2012	48.6	Yes	Y	D			2.90	2.90	mg/kg
AQ-ECA-02-1-5	A12J537-15	Cyanide, Weak acid dissociable (WAD)	10/26/2012	1.13	Yes	Y				0.395	0.395	mg/kg
AQ-ECA-03-1-7	A12J537-04	Cyanide, Weak acid dissociable (WAD)	10/26/2012	4.3	Yes	Y				0.361	0.361	mg/kg
AQ-ECA-04-2-8	A12J537-12RE1	Cyanide, Weak acid dissociable (WAD)	10/26/2012	2.75	Yes	Y				0.380	0.380	mg/kg
AQ-RB-101912	A12J537-17	Cyanide, Weak acid dissociable (WAD)	10/30/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ECA-01-2-5	A12J537-08	Fluoride	10/29/2012	30900	Yes	Y	D			756	756	mg/kg
AQ-ECA-02-1-5	A12J537-15	Fluoride	10/29/2012	46200	Yes	Y	D			750	750	mg/kg
AQ-ECA-03-1-7	A12J537-04	Fluoride	10/29/2012	34300	Yes	Y	D			730	730	mg/kg
AQ-ECA-04-2-8	A12J537-12	Fluoride	10/29/2012	40200	Yes	Y	D			744	744	mg/kg
AQ-RB-101912	A12J537-17	Fluoride	11/1/2012	0.146	Yes	Y				0.100	0.100	mg/L

Analytical Method SM5310B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ECA-01-2-5	A12J537-08	Total organic carbon	11/3/2012	360000	Yes	Y		J	1,9,20	200	100	mg/kg
AQ-ECA-02-1-5	A12J537-15	Total organic carbon	11/6/2012	3500000	Yes	Y		J	1,9,20	200	100	mg/kg
AQ-ECA-03-1-7	A12J537-04	Total organic carbon	11/3/2012	370000	Yes	Y		J	1,9,20	200	100	mg/kg
AQ-ECA-04-2-8	A12J537-12	Total organic carbon	11/6/2012	68000	Yes	Y		J	1,9,24	200	100	mg/kg

Analytical Method SW6010C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ECA-01-2-5	A12J537-08	Beryllium	11/1/2012	11.9	Yes	Y	D			6.87	3.43	mg/kg
AQ-ECA-02-1-5	A12J537-15	Beryllium	11/1/2012	12	Yes	Y	D			6.96	3.48	mg/kg
AQ-ECA-03-1-7	A12J537-04	Beryllium	11/1/2012	12.4	Yes	Y	D			5.91	2.96	mg/kg
AQ-ECA-04-2-8	A12J537-12	Beryllium	11/1/2012	6.99	Yes	Y	D			6.59	3.30	mg/kg

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ECA-01-2-5	A12J537-08	Arsenic	11/1/2012	3.67	Yes	Y	D			3.43	0.858	mg/kg
AQ-ECA-01-2-5	A12J537-08	Lead	11/1/2012	12.3	Yes	Y	D			1.72	0.858	mg/kg
AQ-ECA-01-2-5	A12J537-08	Antimony	11/1/2012	1.72	Yes	N	D U			1.72	0.858	mg/kg
AQ-ECA-01-2-5	A12J537-08	Selenium	11/1/2012	3.43	Yes	N	D U			3.43	1.72	mg/kg
AQ-ECA-01-2-5	A12J537-08	Thallium	11/1/2012	1.72	Yes	N	D U			1.72	0.858	mg/kg
AQ-ECA-01-2-5	A12J537-08	Zinc	11/1/2012	27.1	Yes	Y	D			6.87	3.43	mg/kg
AQ-ECA-01-2-5	A12J537-08	Copper	11/1/2012	132	Yes	Y	D			3.43	1.72	mg/kg
AQ-ECA-01-2-5	A12J537-08	Cadmium	11/1/2012	1.72	Yes	N	D U			1.72	0.858	mg/kg
AQ-ECA-01-2-5	A12J537-08	Chromium	11/1/2012	16.5	Yes	Y	D			3.43	1.72	mg/kg
AQ-ECA-01-2-5	A12J537-08	Nickel	11/1/2012	164	Yes	Y	D			3.43	1.72	mg/kg
AQ-ECA-01-2-5	A12J537-08	Mercury	11/1/2012	0.137	Yes	N	D U			0.137	0.0687	mg/kg
AQ-ECA-01-2-5	A12J537-08	Silver	11/1/2012	1.72	Yes	N	D U			1.72	0.858	mg/kg
AQ-ECA-02-1-5	A12J537-15	Lead	11/1/2012	12.6	Yes	Y	D			1.74	0.870	mg/kg
AQ-ECA-02-1-5	A12J537-15	Copper	11/1/2012	218	Yes	Y	D			3.48	1.74	mg/kg
AQ-ECA-02-1-5	A12J537-15	Chromium	11/1/2012	15.5	Yes	Y	D			3.48	1.74	mg/kg
AQ-ECA-02-1-5	A12J537-15	Cadmium	11/1/2012	1.74	Yes	N	D U			1.74	0.870	mg/kg
AQ-ECA-02-1-5	A12J537-15	Antimony	11/1/2012	1.74	Yes	N	D U			1.74	0.870	mg/kg
AQ-ECA-02-1-5	A12J537-15	Silver	11/1/2012	1.74	Yes	N	D U			1.74	0.870	mg/kg
AQ-ECA-02-1-5	A12J537-15	Nickel	11/1/2012	181	Yes	Y	D			3.48	1.74	mg/kg
AQ-ECA-02-1-5	A12J537-15	Zinc	11/1/2012	22.5	Yes	Y	D			6.96	3.48	mg/kg
AQ-ECA-02-1-5	A12J537-15	Arsenic	11/1/2012	2.37	Yes	Y	D J			3.48	0.870	mg/kg
AQ-ECA-02-1-5	A12J537-15	Mercury	11/1/2012	0.139	Yes	N	D U			0.139	0.0696	mg/kg
AQ-ECA-02-1-5	A12J537-15	Thallium	11/1/2012	1.74	Yes	N	D U			1.74	0.870	mg/kg
AQ-ECA-02-1-5	A12J537-15	Selenium	11/1/2012	3.48	Yes	N	D U			3.48	1.74	mg/kg
AQ-ECA-03-1-7	A12J537-04	Thallium	11/1/2012	1.48	Yes	N	D U			1.48	0.739	mg/kg

SDG: A12J537

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ECA-03-1-7	A12J537-04	Lead	11/1/2012	9.26	Yes	Y	D			1.48	0.739	mg/kg
AQ-ECA-03-1-7	A12J537-04	Mercury	11/1/2012	0.118	Yes	N	D U			0.118	0.0591	mg/kg
AQ-ECA-03-1-7	A12J537-04	Silver	11/1/2012	1.48	Yes	N	D U			1.48	0.739	mg/kg
AQ-ECA-03-1-7	A12J537-04	Antimony	11/1/2012	1.48	Yes	N	D U			1.48	0.739	mg/kg
AQ-ECA-03-1-7	A12J537-04	Arsenic	11/1/2012	2.33	Yes	Y	D J			2.96	0.739	mg/kg
AQ-ECA-03-1-7	A12J537-04	Cadmium	11/1/2012	0.857	Yes	Y	D J			1.48	0.739	mg/kg
AQ-ECA-03-1-7	A12J537-04	Chromium	11/1/2012	13.4	Yes	Y	D			2.96	1.48	mg/kg
AQ-ECA-03-1-7	A12J537-04	Copper	11/1/2012	208	Yes	Y	D			2.96	1.48	mg/kg
AQ-ECA-03-1-7	A12J537-04	Zinc	11/1/2012	20.1	Yes	Y	D			5.91	2.96	mg/kg
AQ-ECA-03-1-7	A12J537-04	Selenium	11/1/2012	2.96	Yes	N	D U			2.96	1.48	mg/kg
AQ-ECA-03-1-7	A12J537-04	Nickel	11/1/2012	229	Yes	Y	D			2.96	1.48	mg/kg
AQ-ECA-04-2-8	A12J537-12	Mercury	11/1/2012	0.132	Yes	N	D U			0.132	0.0659	mg/kg
AQ-ECA-04-2-8	A12J537-12	Antimony	11/1/2012	1.65	Yes	N	D U			1.65	0.824	mg/kg
AQ-ECA-04-2-8	A12J537-12	Arsenic	11/1/2012	5.57	Yes	Y	D			3.30	0.824	mg/kg
AQ-ECA-04-2-8	A12J537-12	Barium	11/1/2012	167	Yes	Y	D			1.65	0.824	mg/kg
AQ-ECA-04-2-8	A12J537-12	Thallium	11/1/2012	1.65	Yes	N	D U			1.65	0.824	mg/kg
AQ-ECA-04-2-8	A12J537-12	Nickel	11/1/2012	143	Yes	Y	D			3.30	1.65	mg/kg
AQ-ECA-04-2-8	A12J537-12	Lead	11/1/2012	16	Yes	Y	D			1.65	0.824	mg/kg
AQ-ECA-04-2-8	A12J537-12	Cadmium	11/1/2012	0.972	Yes	Y	D J			1.65	0.824	mg/kg
AQ-ECA-04-2-8	A12J537-12	Chromium	11/1/2012	23.9	Yes	Y	D			3.30	1.65	mg/kg
AQ-ECA-04-2-8	A12J537-12	Copper	11/1/2012	111	Yes	Y	D			3.30	1.65	mg/kg
AQ-ECA-04-2-8	A12J537-12	Selenium	11/1/2012	3.3	Yes	N	D U			3.30	1.65	mg/kg
AQ-ECA-04-2-8	A12J537-12	Zinc	11/1/2012	37.2	Yes	Y	D			6.59	3.30	mg/kg
AQ-ECA-04-2-8	A12J537-12	Silver	11/1/2012	1.65	Yes	N	D U			1.65	0.824	mg/kg
AQ-ECA-04-2-8	A12J537-12	Thallium	11/20/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L

SDG: A12J537

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ECA-04-2-8	A12J537-12	Nickel	11/20/2012	0.104		Yes	Y	D			0.100	0.0500	mg/L
AQ-ECA-04-2-8	A12J537-12	Mercury	11/20/2012	0.004		Yes	N	D U	UJ	1	0.00400	0.00250	mg/L
AQ-ECA-04-2-8	A12J537-12	Lead	11/20/2012	0.05		Yes	N	D U			0.0500	0.0250	mg/L
AQ-ECA-04-2-8	A12J537-12	Silver	11/20/2012	0.05		Yes	N	D U			0.0500	0.0250	mg/L
AQ-ECA-04-2-8	A12J537-12	Zinc	11/20/2012	0.25		Yes	N	D U			0.250	0.125	mg/L
AQ-ECA-04-2-8	A12J537-12	Arsenic	11/20/2012	0.1		Yes	N	D U			0.100	0.0500	mg/L
AQ-ECA-04-2-8	A12J537-12	Copper	11/20/2012	0.614		Yes	Y	D			0.250	0.125	mg/L
AQ-ECA-04-2-8	A12J537-12	Chromium	11/20/2012	0.1		Yes	N	D U			0.100	0.0500	mg/L
AQ-ECA-04-2-8	A12J537-12	Cadmium	11/20/2012	0.05		Yes	N	D U			0.0500	0.0250	mg/L
AQ-ECA-04-2-8	A12J537-12	Beryllium	11/20/2012	0.05		Yes	N	D U			0.0500	0.0250	mg/L
AQ-ECA-04-2-8	A12J537-12	Barium	11/20/2012	0.569		Yes	Y	D			0.500	0.250	mg/L
AQ-ECA-04-2-8	A12J537-12	Antimony	11/20/2012	0.05		Yes	N	D U			0.0500	0.0250	mg/L
AQ-ECA-04-2-8	A12J537-12	Selenium	11/20/2012	0.1		Yes	N	D U			0.100	0.0500	mg/L
AQ-RB-101912	A12J537-17	Lead	10/31/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-101912	A12J537-17	Beryllium	10/31/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-101912	A12J537-17	Silver	10/31/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-101912	A12J537-17	Copper	10/31/2012	2		Yes	N	U			2.00	1.00	ug/L
AQ-RB-101912	A12J537-17	Chromium	10/31/2012	0.644		Yes	Y	J			2.00	0.500	ug/L
AQ-RB-101912	A12J537-17	Cadmium	10/31/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-101912	A12J537-17	Zinc	10/31/2012	4		Yes	N	U			4.00	2.00	ug/L
AQ-RB-101912	A12J537-17	Mercury	10/31/2012	0.08		Yes	N	U			0.0800	0.0400	ug/L
AQ-RB-101912	A12J537-17	Thallium	10/31/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-101912	A12J537-17	Antimony	10/31/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-101912	A12J537-17	Nickel	10/31/2012	2		Yes	N	U			2.00	0.500	ug/L
AQ-RB-101912	A12J537-17	Arsenic	10/31/2012	2		Yes	N	U			2.00	0.500	ug/L

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-RB-101912	A12J537-17	Selenium	10/31/2012	2	Yes	N	U			2.00	1.00	ug/L

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ECA-03-1-7	A12J537-04RE2	Aroclor 1016	10/30/2012	34.2	Yes	N	D U			34.2	34.2	ug/kg
AQ-ECA-03-1-7	A12J537-04RE2	Aroclor 1254	10/30/2012	34.2	Yes	N	D U			34.2	34.2	ug/kg
AQ-ECA-03-1-7	A12J537-04RE2	Aroclor 1242	10/30/2012	37.7	Yes	N	D U			37.7	37.7	ug/kg
AQ-ECA-03-1-7	A12J537-04RE2	Aroclor 1248	10/30/2012	34.2	Yes	N	D U			34.2	34.2	ug/kg
AQ-ECA-03-1-7	A12J537-04RE2	Aroclor 1260	10/30/2012	34.2	Yes	N	D U			34.2	34.2	ug/kg
AQ-ECA-03-1-7	A12J537-04RE2	Aroclor 1268	10/30/2012	34.2	Yes	N	D U			34.2	34.2	ug/kg
AQ-ECA-03-1-7	A12J537-04RE2	Aroclor 1221	10/30/2012	34.2	Yes	N	D U			34.2	34.2	ug/kg
AQ-ECA-03-1-7	A12J537-04RE2	Aroclor 1232	10/30/2012	37.7	Yes	N	D U			37.7	37.7	ug/kg
AQ-ECA-03-1-7	A12J537-04RE2	Aroclor 1262	10/30/2012	34.2	Yes	N	D U			34.2	34.2	ug/kg
AQ-RB-101912	A12J537-17RE1	Aroclor 1016	10/29/2012	0.0374	Yes	N	U	UJ	13	0.0374	0.0187	ug/L
AQ-RB-101912	A12J537-17RE1	Aroclor 1268	10/29/2012	0.0374	Yes	N	U	UJ	13	0.0374	0.0187	ug/L
AQ-RB-101912	A12J537-17RE1	Aroclor 1262	10/29/2012	0.0374	Yes	N	U	UJ	13	0.0374	0.0187	ug/L
AQ-RB-101912	A12J537-17RE1	Aroclor 1221	10/29/2012	0.0374	Yes	N	U	UJ	13	0.0374	0.0187	ug/L
AQ-RB-101912	A12J537-17RE1	Aroclor 1254	10/29/2012	0.0374	Yes	N	U	UJ	13	0.0374	0.0187	ug/L
AQ-RB-101912	A12J537-17RE1	Aroclor 1260	10/29/2012	0.0374	Yes	N	U	UJ	13	0.0374	0.0187	ug/L
AQ-RB-101912	A12J537-17RE1	Aroclor 1232	10/29/2012	0.0374	Yes	N	U	UJ	13	0.0374	0.0187	ug/L
AQ-RB-101912	A12J537-17RE1	Aroclor 1242	10/29/2012	0.0374	Yes	N	U	UJ	13	0.0374	0.0187	ug/L
AQ-RB-101912	A12J537-17RE1	Aroclor 1248	10/29/2012	0.0374	Yes	N	U	UJ	13	0.0374	0.0187	ug/L

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ECA-03-5-7	A12J537-05	1,2,4-Trichlorobenzene	10/22/2012	621	Yes	N	D U			621	310	ug/kg
AQ-ECA-03-5-7	A12J537-05	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/22/2012	1240	Yes	N	D U	UJ	5	1240	621	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ECA-03-5-7	A12J537-05	1,3,5-Trimethylbenzene (Mesitylene)	10/22/2012	124	Yes	N	D U			124	62.1	ug/kg
AQ-ECA-03-5-7	A12J537-05	Bromobenzene	10/22/2012	62.1	Yes	N	D U			62.1	33.9	ug/kg
AQ-ECA-03-5-7	A12J537-05	Chlorobenzene	10/22/2012	62.1	Yes	N	D U			62.1	32.3	ug/kg
AQ-ECA-03-5-7	A12J537-05	Dibromochloromethane	10/22/2012	248	Yes	N	D U			248	124	ug/kg
AQ-ECA-03-5-7	A12J537-05	Tetrachloroethene (PCE)	10/22/2012	62.1	Yes	N	D U			62.1	31.0	ug/kg
AQ-ECA-03-5-7	A12J537-05	sec-Butylbenzene	10/22/2012	124	Yes	N	D U			124	62.1	ug/kg
AQ-ECA-03-5-7	A12J537-05	Toluene	10/22/2012	124	Yes	N	D U			124	62.1	ug/kg
AQ-ECA-03-5-7	A12J537-05	Ethylbenzene	10/22/2012	62.1	Yes	N	D U			62.1	31.0	ug/kg
AQ-ECA-03-5-7	A12J537-05	o-Xylene	10/22/2012	62.1	Yes	N	D U			62.1	31.0	ug/kg
AQ-ECA-03-5-7	A12J537-05	2-Chlorotoluene	10/22/2012	124	Yes	N	D U			124	62.1	ug/kg
AQ-ECA-03-5-7	A12J537-05	1,3-Dichloropropane	10/22/2012	62.1	Yes	N	D U	UJ	5	62.1	31.0	ug/kg
AQ-ECA-03-5-7	A12J537-05	1,2-Dichlorobenzene	10/22/2012	62.1	Yes	N	D U			62.1	31.0	ug/kg
AQ-ECA-03-5-7	A12J537-05	4-Isopropyltoluene (4-Cymene)	10/22/2012	124	Yes	N	D U			124	62.1	ug/kg
AQ-ECA-03-5-7	A12J537-05	Isopropylbenzene (Cumene)	10/22/2012	124	Yes	N	D U			124	62.1	ug/kg
AQ-ECA-03-5-7	A12J537-05	1,2,4-Trimethylbenzene	10/22/2012	124	Yes	N	D U			124	62.1	ug/kg
AQ-ECA-03-5-7	A12J537-05	tert-Butylbenzene	10/22/2012	124	Yes	N	D U			124	62.1	ug/kg
AQ-ECA-03-5-7	A12J537-05	1,3-Dichloropropene, cis-	10/22/2012	124	Yes	N	D U			124	62.1	ug/kg
AQ-ECA-03-5-7	A12J537-05	1,2-Dibromo-3-chloropropane	10/22/2012	621	Yes	N	D U	UJ	5	621	310	ug/kg
AQ-ECA-03-5-7	A12J537-05	1,2-Dichloroethane	10/22/2012	62.1	Yes	N	D U	UJ	5	62.1	31.0	ug/kg
AQ-ECA-03-5-7	A12J537-05	Styrene	10/22/2012	124	Yes	N	D U			124	62.1	ug/kg
AQ-ECA-03-5-7	A12J537-05	Naphthalene	10/22/2012	452	Yes	Y	D			248	124	ug/kg
AQ-ECA-03-5-7	A12J537-05	1,3-Dichloropropene, trans-	10/22/2012	124	Yes	N	D U			124	62.1	ug/kg
AQ-ECA-03-5-7	A12J537-05	n-Propylbenzene	10/22/2012	62.1	Yes	N	D U			62.1	31.0	ug/kg
AQ-ECA-03-5-7	A12J537-05	n-Butylbenzene	10/22/2012	124	Yes	N	D U			124	62.1	ug/kg
AQ-ECA-03-5-7	A12J537-05	4-Chlorotoluene	10/22/2012	124	Yes	N	D U			124	62.1	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ECA-03-5-7	A12J537-05	1,4-Dichlorobenzene	10/22/2012	62.1	Yes	N	D U			62.1	31.0	ug/kg
AQ-ECA-03-5-7	A12J537-05	Ethylene dibromide (1,2-Dibromoethane)	10/22/2012	62.1	Yes	N	D U	UJ	5	62.1	37.6	ug/kg
AQ-ECA-03-5-7	A12J537-05	1,2,3-Trichloropropane	10/22/2012	124	Yes	N	D U	UJ	5	124	62.1	ug/kg
AQ-ECA-03-5-7	A12J537-05	Chloroform	10/22/2012	124	Yes	N	D U			124	62.1	ug/kg
AQ-ECA-03-5-7	A12J537-05	Carbon tetrachloride (Tetrachloromethane)	10/22/2012	62.1	Yes	N	D U			62.1	31.0	ug/kg
AQ-ECA-03-5-7	A12J537-05	1,1,2,2-Tetrachloroethane	10/22/2012	62.1	Yes	N	D U	UJ	5	62.1	31.0	ug/kg
AQ-ECA-03-5-7	A12J537-05	1,1-Dichloropropene	10/22/2012	124	Yes	N	D U			124	62.1	ug/kg
AQ-ECA-03-5-7	A12J537-05	Trichloroethene (TCE)	10/22/2012	62.1	Yes	N	D U			62.1	44.9	ug/kg
AQ-ECA-03-5-7	A12J537-05	2-Hexanone (Methyl butyl ketone)	10/22/2012	1240	Yes	N	D U	UJ	5,10	1240	621	ug/kg
AQ-ECA-03-5-7	A12J537-05	1,1,2-Trichloroethane	10/22/2012	124	Yes	N	D U	UJ	5	124	62.1	ug/kg
AQ-ECA-03-5-7	A12J537-05	2,2-Dichloropropane	10/22/2012	124	Yes	N	D U	UJ	5	124	62.1	ug/kg
AQ-ECA-03-5-7	A12J537-05	2-Butanone (MEK)	10/22/2012	1240	Yes	N	D U	UJ	5,10	1240	621	ug/kg
AQ-ECA-03-5-7	A12J537-05	1,1,1,2-Tetrachloroethane	10/22/2012	124	Yes	N	D U			124	62.1	ug/kg
AQ-ECA-03-5-7	A12J537-05	1,2-Dichloropropane	10/22/2012	62.1	Yes	N	D U			62.1	31.0	ug/kg
AQ-ECA-03-5-7	A12J537-05	Acetone	10/22/2012	2480	Yes	N	D U	UJ	5,10	2480	1240	ug/kg
AQ-ECA-03-5-7	A12J537-05	Dichlorodifluoromethane	10/22/2012	248	Yes	N	D U			248	124	ug/kg
AQ-ECA-03-5-7	A12J537-05	1,2,3-Trichlorobenzene	10/22/2012	621	Yes	N	D U			621	310	ug/kg
AQ-ECA-03-5-7	A12J537-05	1,1-Dichloroethene	10/22/2012	62.1	Yes	N	D U			62.1	33.3	ug/kg
AQ-ECA-03-5-7	A12J537-05	Benzene	10/22/2012	31	Yes	N	D U			31.0	17.4	ug/kg
AQ-ECA-03-5-7	A12J537-05	1,1,1-Trichloroethane	10/22/2012	62.1	Yes	N	D U			62.1	31.0	ug/kg
AQ-ECA-03-5-7	A12J537-05	Bromomethane (Methyl Bromide)	10/22/2012	1240	Yes	N	D U			1240	1240	ug/kg
AQ-ECA-03-5-7	A12J537-05	Chloromethane	10/22/2012	621	Yes	N	D U			621	310	ug/kg
AQ-ECA-03-5-7	A12J537-05	Dibromomethane	10/22/2012	124	Yes	N	D U	UJ	5	124	62.1	ug/kg
AQ-ECA-03-5-7	A12J537-05	Bromochloromethane	10/22/2012	62.1	Yes	N	D U	UJ	5	62.1	31.0	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ECA-03-5-7	A12J537-05	Chloroethane	10/22/2012	1240	Yes	N	D U			1240	621	ug/kg
AQ-ECA-03-5-7	A12J537-05	Vinyl chloride	10/22/2012	62.1	Yes	N	D U			62.1	45.1	ug/kg
AQ-ECA-03-5-7	A12J537-05	Dichloromethane (Methylene chloride)	10/22/2012	621	Yes	N	D U			621	310	ug/kg
AQ-ECA-03-5-7	A12J537-05	Carbon disulfide	10/22/2012	1240	Yes	N	D U			1240	621	ug/kg
AQ-ECA-03-5-7	A12J537-05	Bromoform (Tribromomethane)	10/22/2012	124	Yes	N	D U	UJ	5	124	62.1	ug/kg
AQ-ECA-03-5-7	A12J537-05	Bromodichloromethane	10/22/2012	62.1	Yes	N	D U			62.1	31.0	ug/kg
AQ-ECA-03-5-7	A12J537-05	1,1-Dichloroethane	10/22/2012	62.1	Yes	N	D U			62.1	36.8	ug/kg
AQ-ECA-03-5-7	A12J537-05	Trichlorofluoromethane (Fluorotrichloromethane)	10/22/2012	248	Yes	N	D U			248	124	ug/kg
AQ-ECA-03-5-7	A12J537-05	1,2-Dichloroethene, trans-	10/22/2012	62.1	Yes	N	D U			62.1	31.0	ug/kg
AQ-ECA-03-5-7	A12J537-05	1,2-Dichloroethene, cis-	10/22/2012	62.1	Yes	N	D U			62.1	31.0	ug/kg
AQ-ECA-03-5-7	A12J537-05	1,3-Dichlorobenzene	10/22/2012	62.1	Yes	N	D U			62.1	31.0	ug/kg
AQ-ECA-03-5-7	A12J537-05	Methyl tert-butyl ether (MTBE)	10/22/2012	124	Yes	N	D U			124	74.1	ug/kg
AQ-ECA-03-5-7	A12J537-05	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/22/2012	248	Yes	N	D U	UJ	5	248	124	ug/kg
AQ-ECA-03-5-7	A12J537-05	m,p-Xylene	10/22/2012	124	Yes	N	D U			124	62.1	ug/kg
TRIP_BLANK_20121019	A12J537-18	Ethylbenzene	10/22/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121019	A12J537-18	Acetone	10/22/2012	1000	Yes	N	D U	UJ	5,10	1000	500	ug/kg
TRIP_BLANK_20121019	A12J537-18	1,3-Dichlorobenzene	10/22/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121019	A12J537-18	1,3-Dichloropropane	10/22/2012	25	Yes	N	D U	UJ	5	25.0	12.5	ug/kg
TRIP_BLANK_20121019	A12J537-18	1,2-Dichloroethene, cis-	10/22/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121019	A12J537-18	1,2-Dichloroethene, trans-	10/22/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121019	A12J537-18	Methyl tert-butyl ether (MTBE)	10/22/2012	50	Yes	N	D U			50.0	29.8	ug/kg
TRIP_BLANK_20121019	A12J537-18	m,p-Xylene	10/22/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	Carbon tetrachloride (Tetrachloromethane)	10/22/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121019	A12J537-18	1,1-Dichloropropene	10/22/2012	50	Yes	N	D U			50.0	25.0	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
TRIP_BLANK_20121019	A12J537-18	2-Hexanone (Methyl butyl ketone)	10/22/2012	500	Yes	N	D U	UJ	5,10	500	250	ug/kg
TRIP_BLANK_20121019	A12J537-18	sec-Butylbenzene	10/22/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	1,1,1,2-Tetrachloroethane	10/22/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	1,3,5-Trimethylbenzene (Mesitylene)	10/22/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	Chloroform	10/22/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	2,2-Dichloropropane	10/22/2012	50	Yes	N	D U	UJ	5	50.0	25.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	Ethylene dibromide (1,2-Dibromoethane)	10/22/2012	25	Yes	N	D U	UJ	5	25.0	15.2	ug/kg
TRIP_BLANK_20121019	A12J537-18	Styrene	10/22/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	1,3-Dichloropropene, cis-	10/22/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	1,3-Dichloropropene, trans-	10/22/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	n-Propylbenzene	10/22/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121019	A12J537-18	n-Butylbenzene	10/22/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	Chlorobenzene	10/22/2012	25	Yes	N	D U			25.0	13.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	1,4-Dichlorobenzene	10/22/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121019	A12J537-18	Tetrachloroethene (PCE)	10/22/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121019	A12J537-18	1,2-Dichloroethane	10/22/2012	25	Yes	N	D U	UJ	5	25.0	12.5	ug/kg
TRIP_BLANK_20121019	A12J537-18	Bromobenzene	10/22/2012	25	Yes	N	D U			25.0	13.6	ug/kg
TRIP_BLANK_20121019	A12J537-18	Toluene	10/22/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	Benzene	10/22/2012	12.5	Yes	N	D U			12.5	7.00	ug/kg
TRIP_BLANK_20121019	A12J537-18	1,2,4-Trichlorobenzene	10/22/2012	250	Yes	N	D U			250	125	ug/kg
TRIP_BLANK_20121019	A12J537-18	Dibromochloromethane	10/22/2012	100	Yes	N	D U			100	50.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	4-Chlorotoluene	10/22/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	1,2-Dichlorobenzene	10/22/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121019	A12J537-18	Trichloroethene (TCE)	10/22/2012	25	Yes	N	D U			25.0	18.1	ug/kg
TRIP_BLANK_20121019	A12J537-18	1,1,2,2-Tetrachloroethane	10/22/2012	25	Yes	N	D U	UJ	5	25.0	12.5	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
TRIP_BLANK_20121019	A12J537-18	4-Isopropyltoluene (4-Cymene)	10/22/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	Isopropylbenzene (Cumene)	10/22/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	Naphthalene	10/22/2012	100	Yes	N	D U			100	50.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	1,1,2-Trichloroethane	10/22/2012	50	Yes	N	D U	UJ	5	50.0	25.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	2-Chlorotoluene	10/22/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	1,2,3-Trichlorobenzene	10/22/2012	250	Yes	N	D U			250	125	ug/kg
TRIP_BLANK_20121019	A12J537-18	1,2,4-Trimethylbenzene	10/22/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	1,2-Dibromo-3-chloropropane	10/22/2012	250	Yes	N	D U	UJ	5	250	125	ug/kg
TRIP_BLANK_20121019	A12J537-18	1,2,3-Trichloropropane	10/22/2012	50	Yes	N	D U	UJ	5	50.0	25.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	tert-Butylbenzene	10/22/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	1,1,1-Trichloroethane	10/22/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121019	A12J537-18	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/22/2012	500	Yes	N	D U	UJ	5	500	250	ug/kg
TRIP_BLANK_20121019	A12J537-18	o-Xylene	10/22/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121019	A12J537-18	Chloroethane	10/22/2012	500	Yes	N	D U			500	250	ug/kg
TRIP_BLANK_20121019	A12J537-18	Bromomethane (Methyl Bromide)	10/22/2012	500	Yes	N	D U			500	500	ug/kg
TRIP_BLANK_20121019	A12J537-18	Chloromethane	10/22/2012	250	Yes	N	D U			250	125	ug/kg
TRIP_BLANK_20121019	A12J537-18	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/22/2012	100	Yes	N	D U	UJ	5	100	50.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	Bromochloromethane	10/22/2012	25	Yes	N	D U	UJ	5	25.0	12.5	ug/kg
TRIP_BLANK_20121019	A12J537-18	2-Butanone (MEK)	10/22/2012	500	Yes	N	D U	UJ	5,10	500	250	ug/kg
TRIP_BLANK_20121019	A12J537-18	Vinyl chloride	10/22/2012	25	Yes	N	D U			25.0	18.2	ug/kg
TRIP_BLANK_20121019	A12J537-18	Dichloromethane (Methylene chloride)	10/22/2012	250	Yes	N	D U			250	125	ug/kg
TRIP_BLANK_20121019	A12J537-18	Carbon disulfide	10/22/2012	500	Yes	N	D U			500	250	ug/kg
TRIP_BLANK_20121019	A12J537-18	Bromodichloromethane	10/22/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121019	A12J537-18	1,2-Dichloropropane	10/22/2012	25	Yes	N	D U			25.0	12.5	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
TRIP_BLANK_20121019	A12J537-18	1,1-Dichloroethane	10/22/2012	25		Yes	N	D U			25.0	14.8	ug/kg
TRIP_BLANK_20121019	A12J537-18	Dichlorodifluoromethane	10/22/2012	100		Yes	N	D U			100	50.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	1,1-Dichloroethene	10/22/2012	25		Yes	N	D U			25.0	13.4	ug/kg
TRIP_BLANK_20121019	A12J537-18	Trichlorofluoromethane (Fluorotrichloromethane)	10/22/2012	100		Yes	N	D U			100	50.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	Bromoform (Tribromomethane)	10/22/2012	50		Yes	N	D U	UJ	5	50.0	25.0	ug/kg
TRIP_BLANK_20121019	A12J537-18	Dibromomethane	10/22/2012	50		Yes	N	D U	UJ	5	50.0	25.0	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ECA-03-1-7	A12J537-04	Indeno(1,2,3-c,d)pyrene	10/24/2012	2550		Yes	Y	D			526	263	ug/kg
AQ-ECA-03-1-7	A12J537-04	Phenol	10/24/2012	1050		Yes	N	D U			1050	526	ug/kg
AQ-ECA-03-1-7	A12J537-04	4-Chloroaniline	10/24/2012	1320		Yes	N	D U	UJ	10	1320	658	ug/kg
AQ-ECA-03-1-7	A12J537-04	2,4-Dinitrotoluene	10/24/2012	5260		Yes	N	D U			5260	2630	ug/kg
AQ-ECA-03-1-7	A12J537-04	2,4-Dichlorophenol	10/24/2012	2630		Yes	N	D U			2630	1320	ug/kg
AQ-ECA-03-1-7	A12J537-04	2,4,6-Trichlorophenol	10/24/2012	2630		Yes	N	D U			2630	1320	ug/kg
AQ-ECA-03-1-7	A12J537-04	Di-n-butyl phthalate	10/24/2012	2630		Yes	N	D U			2630	1320	ug/kg
AQ-ECA-03-1-7	A12J537-04	Butylbenzyl phthalate	10/24/2012	10500		Yes	N	D U			10500	5260	ug/kg
AQ-ECA-03-1-7	A12J537-04	N-Nitrosodiphenylamine	10/24/2012	1320		Yes	N	D U			1320	658	ug/kg
AQ-ECA-03-1-7	A12J537-04	1,4-Dichlorobenzene	10/24/2012	1320		Yes	N	D U			1320	658	ug/kg
AQ-ECA-03-1-7	A12J537-04	Fluorene	10/24/2012	6330		Yes	Y	D			526	263	ug/kg
AQ-ECA-03-1-7	A12J537-04	Carbazole	10/24/2012	61600		Yes	Y	D			789	395	ug/kg
AQ-ECA-03-1-7	A12J537-04	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/24/2012	1320		Yes	N	D U			1320	658	ug/kg
AQ-ECA-03-1-7	A12J537-04	Pentachlorophenol	10/24/2012	10500		Yes	N	D U			10500	5260	ug/kg
AQ-ECA-03-1-7	A12J537-04	Acenaphthene	10/24/2012	17400		Yes	Y	D			526	263	ug/kg
AQ-ECA-03-1-7	A12J537-04	1-Methylnaphthalene	10/24/2012	679		Yes	Y	D J			1050	526	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ECA-03-1-7	A12J537-04	2,4,5-Trichlorophenol	10/24/2012	2630	Yes	N	D U			2630	1320	ug/kg
AQ-ECA-03-1-7	A12J537-04	2-Chlorophenol	10/24/2012	2630	Yes	N	D U			2630	1320	ug/kg
AQ-ECA-03-1-7	A12J537-04	1,2-Dichlorobenzene	10/24/2012	1320	Yes	N	D U			1320	658	ug/kg
AQ-ECA-03-1-7	A12J537-04	2-Methylphenol (o-Cresol)	10/24/2012	1320	Yes	N	D U			1320	658	ug/kg
AQ-ECA-03-1-7	A12J537-04	3,3'-Dichlorobenzidine	10/24/2012	5260	Yes	N	D U			5260	2630	ug/kg
AQ-ECA-03-1-7	A12J537-04	2-Chloronaphthalene	10/24/2012	526	Yes	N	D U			526	263	ug/kg
AQ-ECA-03-1-7	A12J537-04	Benzo(g,h,i)perylene	10/24/2012	2750	Yes	Y	D			526	263	ug/kg
AQ-ECA-03-1-7	A12J537-04	Naphthalene	10/24/2012	1050	Yes	N	D U			1050	526	ug/kg
AQ-ECA-03-1-7	A12J537-04	2-Nitroaniline	10/24/2012	10500	Yes	N	D U			10500	5260	ug/kg
AQ-ECA-03-1-7	A12J537-04	2-Nitrophenol	10/24/2012	5260	Yes	N	D U			5260	2630	ug/kg
AQ-ECA-03-1-7	A12J537-04	Dibenzofuran	10/24/2012	9270	Yes	Y	D			526	263	ug/kg
AQ-ECA-03-1-7	A12J537-04	Hexachloroethane	10/24/2012	1320	Yes	N	D U			1320	658	ug/kg
AQ-ECA-03-1-7	A12J537-04	bis(2-Chloroethoxy)methane	10/24/2012	1320	Yes	N	D U			1320	658	ug/kg
AQ-ECA-03-1-7	A12J537-04	Benzo(b)fluoranthene	10/24/2012	45400	Yes	Y	D			789	395	ug/kg
AQ-ECA-03-1-7	A12J537-04	bis(2-Chloroethyl)ether	10/24/2012	1320	Yes	N	D U			1320	658	ug/kg
AQ-ECA-03-1-7	A12J537-04	2-Methylnaphthalene	10/24/2012	791	Yes	Y	D J			1050	526	ug/kg
AQ-ECA-03-1-7	A12J537-04	Benzo(a)pyrene	10/24/2012	12400	Yes	Y	D			789	395	ug/kg
AQ-ECA-03-1-7	A12J537-04	Hexachlorocyclopentadiene	10/24/2012	2630	Yes	N	D U			2630	1320	ug/kg
AQ-ECA-03-1-7	A12J537-04	Hexachlorobenzene	10/24/2012	526	Yes	N	D U			526	263	ug/kg
AQ-ECA-03-1-7	A12J537-04	Diethyl phthalate	10/24/2012	2630	Yes	N	D U			2630	1320	ug/kg
AQ-ECA-03-1-7	A12J537-04	Nitrobenzene	10/24/2012	5260	Yes	N	D U			5260	2630	ug/kg
AQ-ECA-03-1-7	A12J537-04	Chrysene	10/24/2012	116000	Yes	Y	D			526	263	ug/kg
AQ-ECA-03-1-7	A12J537-04	Di-n-octyl phthalate	10/24/2012	10500	Yes	N	D U			10500	5260	ug/kg
AQ-ECA-03-1-7	A12J537-04	Dimethyl phthalate	10/24/2012	2630	Yes	N	D U			2630	1320	ug/kg
AQ-ECA-03-1-7	A12J537-04	Bis(2-ethylhexyl)phthalate	10/24/2012	10500	Yes	N	D U			10500	5260	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ECA-03-1-7	A12J537-04	Acenaphthylene	10/24/2012	527		Yes	Y	D			526	263	ug/kg
AQ-ECA-03-1-7	A12J537-04	2,4-Dinitrophenol	10/24/2012	13200		Yes	N	D U			13200	6580	ug/kg
AQ-ECA-03-1-7	A12J537-04	Dibenzo(a,h)anthracene	10/24/2012	1010		Yes	Y	D			526	263	ug/kg
AQ-ECA-03-1-7	A12J537-04	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	10/24/2012	13200		Yes	N	D U			13200	6580	ug/kg
AQ-ECA-03-1-7	A12J537-04	1,3-Dichlorobenzene	10/24/2012	1320		Yes	N	D U			1320	658	ug/kg
AQ-ECA-03-1-7	A12J537-04	4-Chloro-3-methylphenol	10/24/2012	5260		Yes	N	D U			5260	2630	ug/kg
AQ-ECA-03-1-7	A12J537-04	2,3,4,6-Tetrachlorophenol	10/24/2012	2630		Yes	N	D U			2630	1320	ug/kg
AQ-ECA-03-1-7	A12J537-04	bis(2-Chloroisopropyl)ether	10/24/2012	1320		Yes	N	D U			1320	658	ug/kg
AQ-ECA-03-1-7	A12J537-04	1,2,4-Trichlorobenzene	10/24/2012	1320		Yes	N	D U			1320	658	ug/kg
AQ-ECA-03-1-7	A12J537-04	4-Nitroaniline	10/24/2012	10500		Yes	N	D U			10500	5260	ug/kg
AQ-ECA-03-1-7	A12J537-04	4-Chlorophenyl phenyl ether	10/24/2012	1320		Yes	N	D U			1320	658	ug/kg
AQ-ECA-03-1-7	A12J537-04	Benzo(a)anthracene	10/24/2012	53700		Yes	Y	D			526	263	ug/kg
AQ-ECA-03-1-7	A12J537-04	Benzoic acid	10/24/2012	65800		Yes	N	D U	UJ	10	65800	32900	ug/kg
AQ-ECA-03-1-7	A12J537-04	N-Nitrosodi-N-propylamine	10/24/2012	1320		Yes	N	D U			1320	658	ug/kg
AQ-ECA-03-1-7	A12J537-04	N-Nitrosodimethylamine	10/24/2012	1320		Yes	N	D U			1320	658	ug/kg
AQ-ECA-03-1-7	A12J537-04	3-Nitroaniline	10/24/2012	10500		Yes	N	D U			10500	5260	ug/kg
AQ-ECA-03-1-7	A12J537-04	2,6-Dinitrotoluene	10/24/2012	5260		Yes	N	D U			5260	2630	ug/kg
AQ-ECA-03-1-7	A12J537-04	2,4-Dimethylphenol	10/24/2012	2630		Yes	N	D U			2630	1320	ug/kg
AQ-ECA-03-1-7	A12J537-04	4-Bromophenyl-phenyl ether	10/24/2012	1320		Yes	N	D U			1320	658	ug/kg
AQ-ECA-03-1-7	A12J537-04	Benzo(k)fluoranthene	10/24/2012	9400		Yes	Y	D			789	395	ug/kg
AQ-ECA-03-1-7	A12J537-04	Benzyl alcohol	10/24/2012	2630		Yes	N	D U			2630	1320	ug/kg
AQ-ECA-03-1-7	A12J537-04	Anthracene	10/24/2012	112000		Yes	Y	D			526	263	ug/kg
AQ-ECA-03-1-7	A12J537-04	4-Nitrophenol	10/24/2012	5260		Yes	N	D U			5260	2630	ug/kg
AQ-ECA-03-1-7	A12J537-04	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	10/24/2012	1320		Yes	N	D U			1320	658	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ECA-03-1-7	A12J537-04	Aniline	10/24/2012	2630	Yes	N	D U			2630	1320	ug/kg
AQ-ECA-03-1-7	A12J537-04	Isophorone	10/24/2012	1320	Yes	N	D U			1320	658	ug/kg
AQ-ECA-03-1-7	A12J537-04RE1	Fluoranthene	10/24/2012	553000	Yes	Y	D			13200	6580	ug/kg
AQ-ECA-03-1-7	A12J537-04RE1	Pyrene	10/24/2012	489000	Yes	Y	D			13200	6580	ug/kg
AQ-ECA-03-1-7	A12J537-04RE1	Phenanthrene	10/24/2012	859000	Yes	Y	D			13200	6580	ug/kg
AQ-RB-101912	A12J537-17	Indeno(1,2,3-c,d)pyrene	10/26/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
AQ-RB-101912	A12J537-17	1,2,4-Trichlorobenzene	10/26/2012	0.0467	Yes	N	U			0.0467	0.0234	ug/L
AQ-RB-101912	A12J537-17	2,4-Dichlorophenol	10/26/2012	0.0935	Yes	N	U			0.0935	0.0467	ug/L
AQ-RB-101912	A12J537-17	2,4-Dinitrotoluene	10/26/2012	0.187	Yes	N	U			0.187	0.0935	ug/L
AQ-RB-101912	A12J537-17	Pyrene	10/26/2012	0.0187	Yes	Y	J			0.0187	0.00935	ug/L
AQ-RB-101912	A12J537-17	Dimethyl phthalate	10/26/2012	2.8	Yes	N	U			2.80	1.40	ug/L
AQ-RB-101912	A12J537-17	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	10/26/2012	0.0467	Yes	N	U			0.0467	0.0234	ug/L
AQ-RB-101912	A12J537-17	Benzo(g,h,i)perylene	10/26/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
AQ-RB-101912	A12J537-17	Bis(2-ethylhexyl)phthalate	10/26/2012	2.06	Yes	N	U			2.06	1.03	ug/L
AQ-RB-101912	A12J537-17	Benzo(b)fluoranthene	10/26/2012	0.028	Yes	N	U			0.0280	0.0140	ug/L
AQ-RB-101912	A12J537-17	Fluoranthene	10/26/2012	0.0268	Yes	Y				0.0187	0.00935	ug/L
AQ-RB-101912	A12J537-17	Benzo(k)fluoranthene	10/26/2012	0.028	Yes	N	U			0.0280	0.0140	ug/L
AQ-RB-101912	A12J537-17	Acenaphthylene	10/26/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
AQ-RB-101912	A12J537-17	Chrysene	10/26/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
AQ-RB-101912	A12J537-17	bis(2-Chloroisopropyl)ether	10/26/2012	0.0467	Yes	N	U			0.0467	0.0234	ug/L
AQ-RB-101912	A12J537-17	Dibenzofuran	10/26/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
AQ-RB-101912	A12J537-17	1,4-Dichlorobenzene	10/26/2012	0.0467	Yes	N	U			0.0467	0.0234	ug/L
AQ-RB-101912	A12J537-17	3-Nitroaniline	10/26/2012	0.374	Yes	N	U	UJ	10	0.374	0.187	ug/L
AQ-RB-101912	A12J537-17	Nitrobenzene	10/26/2012	0.187	Yes	N	U			0.187	0.0935	ug/L
AQ-RB-101912	A12J537-17	2,4,5-Trichlorophenol	10/26/2012	0.0935	Yes	N	U			0.0935	0.0467	ug/L

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-RB-101912	A12J537-17	2-Chlorophenol	10/26/2012	0.0935	Yes	N	U			0.0935	0.0467	ug/L
AQ-RB-101912	A12J537-17	4-Nitroaniline	10/26/2012	0.374	Yes	N	U			0.374	0.187	ug/L
AQ-RB-101912	A12J537-17	Benzyl alcohol	10/26/2012	0.187	Yes	N	U			0.187	0.187	ug/L
AQ-RB-101912	A12J537-17	Hexachlorobenzene	10/26/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
AQ-RB-101912	A12J537-17	2,4-Dimethylphenol	10/26/2012	0.0935	Yes	N	U	UJ	10	0.0935	0.0467	ug/L
AQ-RB-101912	A12J537-17	Anthracene	10/26/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
AQ-RB-101912	A12J537-17	4-Chloroaniline	10/26/2012	0.0467	Yes	N	U			0.0467	0.0467	ug/L
AQ-RB-101912	A12J537-17	Phenol	10/26/2012	0.374	Yes	N	U	UJ	10	0.374	0.187	ug/L
AQ-RB-101912	A12J537-17	bis(2-Chloroethyl)ether	10/26/2012	0.0467	Yes	N	U			0.0467	0.0467	ug/L
AQ-RB-101912	A12J537-17	bis(2-Chloroethoxy)methane	10/26/2012	0.0467	Yes	N	U			0.0467	0.0234	ug/L
AQ-RB-101912	A12J537-17	Dibenzo(a,h)anthracene	10/26/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
AQ-RB-101912	A12J537-17	Di-n-octyl phthalate	10/26/2012	2.8	Yes	N	U			2.80	1.40	ug/L
AQ-RB-101912	A12J537-17	4-Bromophenyl-phenyl ether	10/26/2012	0.0467	Yes	N	U			0.0467	0.0234	ug/L
AQ-RB-101912	A12J537-17	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/26/2012	0.0467	Yes	N	U			0.0467	0.0234	ug/L
AQ-RB-101912	A12J537-17	Benzo(a)pyrene	10/26/2012	0.028	Yes	N	U			0.0280	0.0140	ug/L
AQ-RB-101912	A12J537-17	2-Methylnaphthalene	10/26/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
AQ-RB-101912	A12J537-17	Naphthalene	10/26/2012	0.0385	Yes	N		U	7	0.0374	0.0187	ug/L
AQ-RB-101912	A12J537-17	1-Methylnaphthalene	10/26/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
AQ-RB-101912	A12J537-17	2-Nitrophenol	10/26/2012	0.187	Yes	N	U			0.187	0.0935	ug/L
AQ-RB-101912	A12J537-17	2-Nitroaniline	10/26/2012	0.374	Yes	N	U			0.374	0.187	ug/L
AQ-RB-101912	A12J537-17	3,3'-Dichlorobenzidine	10/26/2012	0.187	Yes	N	U			0.187	0.0935	ug/L
AQ-RB-101912	A12J537-17	Pentachlorophenol	10/26/2012	0.374	Yes	N	U			0.374	0.187	ug/L
AQ-RB-101912	A12J537-17	2-Methylphenol (o-Cresol)	10/26/2012	0.0467	Yes	N	U			0.0467	0.0234	ug/L
AQ-RB-101912	A12J537-17	Carbazole	10/26/2012	0.028	Yes	N	U			0.0280	0.0140	ug/L
AQ-RB-101912	A12J537-17	Fluorene	10/26/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-RB-101912	A12J537-17	N-Nitrosodiphenylamine	10/26/2012	0.0467	Yes	N	U			0.0467	0.0234	ug/L
AQ-RB-101912	A12J537-17	Butylbenzyl phthalate	10/26/2012	2.8	Yes	N	U			2.80	1.40	ug/L
AQ-RB-101912	A12J537-17	Phenanthrene	10/26/2012	0.0147	Yes	Y	J			0.0187	0.00935	ug/L
AQ-RB-101912	A12J537-17	Di-n-butyl phthalate	10/26/2012	2.8	Yes	N	U			2.80	1.40	ug/L
AQ-RB-101912	A12J537-17	Diethyl phthalate	10/26/2012	2.8	Yes	N	U			2.80	1.40	ug/L
AQ-RB-101912	A12J537-17	2,4,6-Trichlorophenol	10/26/2012	0.0935	Yes	N	U			0.0935	0.0467	ug/L
AQ-RB-101912	A12J537-17	N-Nitrosodimethylamine	10/26/2012	0.0467	Yes	N	U	UJ	10	0.0467	0.0234	ug/L
AQ-RB-101912	A12J537-17	1,2-Dichlorobenzene	10/26/2012	0.0467	Yes	N	U			0.0467	0.0234	ug/L
AQ-RB-101912	A12J537-17	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	10/26/2012	0.467	Yes	N	U			0.467	0.234	ug/L
AQ-RB-101912	A12J537-17	1,3-Dichlorobenzene	10/26/2012	0.0467	Yes	N	U			0.0467	0.0234	ug/L
AQ-RB-101912	A12J537-17	Benzo(a)anthracene	10/26/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
AQ-RB-101912	A12J537-17	2,3,4,6-Tetrachlorophenol	10/26/2012	0.0935	Yes	N	U			0.0935	0.0467	ug/L
AQ-RB-101912	A12J537-17	4-Chloro-3-methylphenol	10/26/2012	0.187	Yes	N	U			0.187	0.0935	ug/L
AQ-RB-101912	A12J537-17	2-Chloronaphthalene	10/26/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
AQ-RB-101912	A12J537-17	Aniline	10/26/2012	0.0935	Yes	N	U			0.0935	0.0467	ug/L
AQ-RB-101912	A12J537-17	2,4-Dinitrophenol	10/26/2012	0.467	Yes	N	U			0.467	0.234	ug/L
AQ-RB-101912	A12J537-17	N-Nitrosodi-N-propylamine	10/26/2012	0.0467	Yes	N	U			0.0467	0.0467	ug/L
AQ-RB-101912	A12J537-17	Benzoic acid	10/26/2012	2.34	Yes	N	U	UJ	10	2.34	1.17	ug/L
AQ-RB-101912	A12J537-17	Hexachloroethane	10/26/2012	0.0467	Yes	N	U			0.0467	0.0234	ug/L
AQ-RB-101912	A12J537-17	4-Chlorophenyl phenyl ether	10/26/2012	0.0467	Yes	N	U			0.0467	0.0234	ug/L
AQ-RB-101912	A12J537-17	Hexachlorocyclopentadiene	10/26/2012	0.0935	Yes	N	U			0.0935	0.0467	ug/L
AQ-RB-101912	A12J537-17	Isophorone	10/26/2012	0.0467	Yes	N	U			0.0467	0.0234	ug/L
AQ-RB-101912	A12J537-17	Acenaphthene	10/26/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
AQ-RB-101912	A12J537-17	2,6-Dinitrotoluene	10/26/2012	0.187	Yes	N	U			0.187	0.0935	ug/L
AQ-RB-101912	A12J537-17	4-Nitrophenol	10/26/2012	0.187	Yes	N	U	UJ	10	0.187	0.0935	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ECA-01-2-5	A12J537-08	Benzo(a)pyrene	10/30/2012	10500	Yes	Y	D			32.5	16.2	ug/kg
AQ-ECA-01-2-5	A12J537-08	Benzo(g,h,i)perylene	10/30/2012	1980	Yes	Y	D			32.5	16.2	ug/kg
AQ-ECA-01-2-5	A12J537-08	Acenaphthylene	10/30/2012	447	Yes	Y	D			32.5	16.2	ug/kg
AQ-ECA-01-2-5	A12J537-08	Dibenzo(a,h)anthracene	10/30/2012	1120	Yes	Y	D			32.5	16.2	ug/kg
AQ-ECA-01-2-5	A12J537-08	Acenaphthene	10/30/2012	3440	Yes	Y	D			32.5	16.2	ug/kg
AQ-ECA-01-2-5	A12J537-08	Fluorene	10/30/2012	969	Yes	Y	D			32.5	16.2	ug/kg
AQ-ECA-01-2-5	A12J537-08	1-Methylnaphthalene	10/30/2012	514	Yes	Y	D			64.9	32.5	ug/kg
AQ-ECA-01-2-5	A12J537-08	Naphthalene	10/30/2012	522	Yes	Y	D			64.9	32.5	ug/kg
AQ-ECA-01-2-5	A12J537-08	2-Methylnaphthalene	10/30/2012	671	Yes	Y	D			64.9	32.5	ug/kg
AQ-ECA-01-2-5	A12J537-08	Indeno(1,2,3-c,d)pyrene	10/30/2012	2150	Yes	Y	D			32.5	16.2	ug/kg
AQ-ECA-01-2-5	A12J537-08RE1	Benzo(b,k)fluoranthene	10/30/2012	65300	Yes	Y	D			2600	1300	ug/kg
AQ-ECA-01-2-5	A12J537-08RE1	Anthracene	10/30/2012	155000	Yes	Y	D			1300	649	ug/kg
AQ-ECA-01-2-5	A12J537-08RE1	Dibenzofuran	10/30/2012	15600	Yes	Y	D			1300	649	ug/kg
AQ-ECA-01-2-5	A12J537-08RE1	Chrysene	10/30/2012	146000	Yes	Y	D			1300	649	ug/kg
AQ-ECA-01-2-5	A12J537-08RE1	Benzo(a)anthracene	10/30/2012	68500	Yes	Y	D			1300	649	ug/kg
AQ-ECA-01-2-5	A12J537-08RE2	Fluoranthene	10/31/2012	803000	Yes	Y	D			13000	6490	ug/kg
AQ-ECA-01-2-5	A12J537-08RE2	Pyrene	10/31/2012	612000	Yes	Y	D			13000	6490	ug/kg
AQ-ECA-01-2-5	A12J537-08RE2	Phenanthrene	10/31/2012	810000	Yes	Y	D	J	9	13000	6490	ug/kg
AQ-ECA-02-1-5	A12J537-15	Indeno(1,2,3-c,d)pyrene	10/30/2012	4620	Yes	Y	D			1250	623	ug/kg
AQ-ECA-02-1-5	A12J537-15	Dibenzofuran	10/30/2012	2390	Yes	Y	D			1250	623	ug/kg
AQ-ECA-02-1-5	A12J537-15	Pyrene	10/30/2012	192000	Yes	Y	D			1250	623	ug/kg
AQ-ECA-02-1-5	A12J537-15	Anthracene	10/30/2012	27600	Yes	Y	D			1250	623	ug/kg
AQ-ECA-02-1-5	A12J537-15	Fluoranthene	10/30/2012	247000	Yes	Y	D			1250	623	ug/kg
AQ-ECA-02-1-5	A12J537-15	Benzo(g,h,i)perylene	10/30/2012	4020	Yes	Y	D			1250	623	ug/kg
AQ-ECA-02-1-5	A12J537-15	Chrysene	10/30/2012	88100	Yes	Y	D			1250	623	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ECA-02-1-5	A12J537-15	Benzo(a)pyrene	10/30/2012	10000		Yes	Y	D			1250	623	ug/kg
AQ-ECA-02-1-5	A12J537-15	Dibenzo(a,h)anthracene	10/30/2012	1790		Yes	Y	D			1250	623	ug/kg
AQ-ECA-02-1-5	A12J537-15	Benzo(a)anthracene	10/30/2012	40100		Yes	Y	D			1250	623	ug/kg
AQ-ECA-02-1-5	A12J537-15	Acenaphthene	10/30/2012	821		Yes	Y	D J			1250	623	ug/kg
AQ-ECA-02-1-5	A12J537-15	Phenanthrene	10/30/2012	107000		Yes	Y	D			1250	623	ug/kg
AQ-ECA-02-1-5	A12J537-15	Fluorene	10/30/2012	1250		Yes	N	D U			1250	623	ug/kg
AQ-ECA-02-1-5	A12J537-15	1-Methylnaphthalene	10/30/2012	2490		Yes	N	D U			2490	1250	ug/kg
AQ-ECA-02-1-5	A12J537-15	Naphthalene	10/30/2012	2490		Yes	N	D U			2490	1250	ug/kg
AQ-ECA-02-1-5	A12J537-15	2-Methylnaphthalene	10/30/2012	2490		Yes	N	D U			2490	1250	ug/kg
AQ-ECA-02-1-5	A12J537-15	Benzo(b,k)fluoranthene	10/30/2012	62200		Yes	Y	D			2490	1250	ug/kg
AQ-ECA-02-1-5	A12J537-15	Acenaphthylene	10/30/2012	1250		Yes	N	D U			1250	623	ug/kg
AQ-ECA-04-2-8	A12J537-12	Benzo(a)anthracene	10/30/2012	31000		Yes	Y	D			1250	625	ug/kg
AQ-ECA-04-2-8	A12J537-12	Dibenzo(a,h)anthracene	10/30/2012	3250		Yes	Y	D			1250	625	ug/kg
AQ-ECA-04-2-8	A12J537-12	2-Methylnaphthalene	10/30/2012	2500		Yes	N	D U			2500	1250	ug/kg
AQ-ECA-04-2-8	A12J537-12	Acenaphthene	10/30/2012	1250		Yes	N	D U			1250	625	ug/kg
AQ-ECA-04-2-8	A12J537-12	Naphthalene	10/30/2012	2500		Yes	N	D U			2500	1250	ug/kg
AQ-ECA-04-2-8	A12J537-12	1-Methylnaphthalene	10/30/2012	2500		Yes	N	D U			2500	1250	ug/kg
AQ-ECA-04-2-8	A12J537-12	Fluorene	10/30/2012	1250		Yes	N	D U			1250	625	ug/kg
AQ-ECA-04-2-8	A12J537-12	Phenanthrene	10/30/2012	32000		Yes	Y	D			1250	625	ug/kg
AQ-ECA-04-2-8	A12J537-12	Benzo(a)pyrene	10/30/2012	16700		Yes	Y	D			1250	625	ug/kg
AQ-ECA-04-2-8	A12J537-12	Benzo(b,k)fluoranthene	10/30/2012	66800		Yes	Y	D			2500	1250	ug/kg
AQ-ECA-04-2-8	A12J537-12	Pyrene	10/30/2012	140000		Yes	Y	D			1250	625	ug/kg
AQ-ECA-04-2-8	A12J537-12	Chrysene	10/30/2012	72900		Yes	Y	D			1250	625	ug/kg
AQ-ECA-04-2-8	A12J537-12	Acenaphthylene	10/30/2012	1250		Yes	N	D U			1250	625	ug/kg
AQ-ECA-04-2-8	A12J537-12	Fluoranthene	10/30/2012	145000		Yes	Y	D			1250	625	ug/kg

SDG: A12J537

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-ECA-04-2-8	A12J537-12	Indeno(1,2,3-c,d)pyrene	10/30/2012	8120	Yes	Y	D			1250	625	ug/kg
AQ-ECA-04-2-8	A12J537-12	Dibenzofuran	10/30/2012	655	Yes	Y	D J			1250	625	ug/kg
AQ-ECA-04-2-8	A12J537-12	Anthracene	10/30/2012	7530	Yes	Y	D			1250	625	ug/kg
AQ-ECA-04-2-8	A12J537-12	Benzo(g,h,i)perylene	10/30/2012	6830	Yes	Y	D			1250	625	ug/kg

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 23, 2012
LDC Report Date:	January 3, 2013
Matrix:	Soil/Water
Parameters:	Volatiles
Validation Level:	Stage 2B
Laboratory:	Apex Laboratories, LLC
Sample Delivery Group (SDG):	A12J621

Sample Identification

AQ-RB-102312
Trip Blank

Introduction

This data review covers one soil sample and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
10/25/12	Acetone Bromoform 2-Butanone 1,2-Dibromo-3-chloropropane 2-Hexanone 4-Methyl-2-pentanone 1,2,3-Trichloropropane	41.5 22.0 40.8 22.3 40.4 26.6 21.0	Trip Blank 1210748-MB	J (all detects) UJ (all non-detects)	A
10/25/12	Bromomethane	26.9	Trip Blank 1210748-MB	J (all detects)	A
10/24/12	Chloroethane	37.8	AQ-RB-102312 1210723-MB	J (all detects)	A

Date	Compound	%D	Associated Samples	Flag	A or P
10/24/12	Chloromethane	26.2	AQ-RB-102312 1210723-MB	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

All tentatively identified compounds were within validation criteria.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to calibration %D problems, data were qualified as estimated in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

Sample Trip Blank was identified as a trip blank. No volatile contaminants were found.

Sample AQ-RB-102312 was identified as a rinsate blank. No volatile contaminants were found with the following exceptions:

Blank ID	Compound	Concentration
AQ-RB-102312	Chloroform	0.970 ug/L

Millennium Bulk Terminals
Volatiles - Data Qualification Summary - SDG A12J621

SDG	Sample	Compound	Flag	A or P	Reason
A12J621	Trip Blank	Acetone Bromoform 2-Butanone 1,2-Dibromo-3-chloropropane 2-Hexanone 4-Methyl-2-pentanone 1,2,3-Trichloropropane	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
A12J621	Trip Blank	Bromomethane	J (all detects)	A	Continuing calibration (%D)
A12J621	AQ-RB-102312	Chloroethane	J (all detects)	A	Continuing calibration (%D)
A12J621	AQ-RB-102312	Chloromethane	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)

Millennium Bulk Terminals
Volatiles - Laboratory Blank Data Qualification Summary - SDG A12J621

No Sample Data Qualified in this SDG

LDC #: 28944E1

SDG #: A12J621

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/3/13

Page: 1 of 1

Reviewer: FT

2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/23/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 15/30, r²
IV.	Continuing calibration/ICV	SW	CCV ≤ 20 ICV ≤ 30
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	QC samples
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	RB = 1 TB = 2

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

water + soil

1	AQ-RB-102312 W	11	1210723	21		31	
2	Trip Blank S	12	1210748	22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC #: 28944E1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ≤~~25%~~ 20%D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤~~25.0%~~ 20%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
+	~~10/20/12~~	~~2J19026-ICV1~~	~~LL~~	~~20.9~~		~~1210748-MB, 2~~	~~J/A det~~
	10/25/12	2J25001-CCV1	F	41.5			J/UJ/A
			X	22.0			↓
			M	40.8			↓
+			B	26.9			J/A det
			MM	22.3			J/UJ/A
			Z	40.4			↓
			Y	26.6			↓
			XX	21.0		↓	↓
-	~~10/18/12~~	~~2J18014-ICV1~~	~~A~~	~~22.2~~		~~1210723-MB, 1~~	~~J/UJ/A~~
+			~~KKK~~	~~24.4~~		↓	~~J/A det~~
+	10/24/12	2J24006-CCV1	D	37.8		↓	J/A det
-			A	26.2		↓	J/UJ/A

LDC #: 28944E1

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?

Sample: 1 Field Blank / Trip Blank / Rinsate / Other RB (circle one)

Compound	Concentration Units (ug/L)
K	0.970

Sample: _____ Field Blank / Trip Blank / Rinsate / Other_____ (circle one)

Compound	Concentration Units ( )

Sample: _____ Field Blank / Trip Blank / Rinsate / Other_____ (circle one)

Compound	Concentration Units ( )

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 23, 2012
LDC Report Date:	January 4, 2013
Matrix:	Soil
Parameters:	Semivolatiles
Validation Level:	Stage 2B
Laboratory:	Apex Laboratories, LLC
Sample Delivery Group (SDG):	A12J621

Sample Identification

AQ-BMP-04-1.5-13.5

Introduction

This data review covers one soil sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270D for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
1210829-LCS (All samples in SDG A12J621)	4-Chloroaniline	47 (50-150)	-	-	J (all detects) UJ (all non-detects)	P
1210829-LCS (All samples in SDG A12J621)	3,3'-Dichlorobenzidine	165 (50-150)	-	-	J (all detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to LCS %R problems, data were qualified as estimated in one sample.

The quality control criteria reviewed were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Semivolatiles - Data Qualification Summary - SDG A12J621

SDG	Sample	Compound	Flag	A or P	Reason
A12J621	AQ-BMP-04-1.5-13.5	4-Chloroaniline	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)
A12J621	AQ-BMP-04-1.5-13.5	3,3'-Dichlorobenzidine	J (all detects)	P	Laboratory control samples (%R)

Millennium Bulk Terminals
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG A12J621

No Sample Data Qualified in this SDG

LDC #: 28944E2a

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

SDG #: A12J621

Laboratory: APEX Laboratories, LLC

Date: 1/3/13

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/23/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20, r²
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 20/30
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	SW	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	AQ-BMP-04-1.5-13.5	11	1210829 SQL	21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1- Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 28944E29

VALIDATION FINDINGS WORKSHEET
Surrogate Recovery

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were percent recoveries (%R) for surrogates within QC limits?
Y N N/A If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?
Y N N/A If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

#	Date	Sample ID	Surrogate	%R (Limits)	Qualifications
		1	TBP	35 (35-125)	no qual
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
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				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

* QC limits are advisory	QC Limits (Soil)	QC Limits (Water)
S1 (NBZ) = Nitrobenzene-d5	23-120	35-114
S2 (FBP) = 2-Fluorobiphenyl	30-115	43-116
S3 (TPH) = Terphenyl-d14	18-137	33-141
S4 (PHL) = Phenol-d5	24-113	10-94

	QC Limits (Soil)	QC Limits (Water)
S5 (2FP)= 2-Fluorophenol	25-121	21-100
S6 (TBP) = 2,4,6-Tribromophenol	19-122	10-123
S7 (2CP) = 2-Chlorophenol-d4	20-130*	33-110*
S8 (DCB) = 1,2-Dichlorobenzene-d4	20-130*	16-110*

LDC #: 28944E2a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?
Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		1210829-LCS	T	47 (50-150)	( )	( )	All	J/UJ/P
			BBB	165 (↓)	( )	( )	↓	J/Pdet
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		
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				( )	( )	( )		
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				( )	( )	( )		
				( )	( )	( )		

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October, 23, 2012
LDC Report Date:	January 4, 2013
Matrix:	Soil
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	Stage 2B
Laboratory:	Apex Laboratories, LLC
Sample Delivery Group (SDG):	A12J621

Sample Identification

AQ-BMD-08-2-4-B
AQ-BMP-05-1.5-15.5
AQ-BMP-03-2-16

Introduction

This data review covers 3 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
1210831-MB	10/29/12	Fluoranthene Phenanthrene Pyrene	5.20 ug/Kg 5.37 ug/Kg 3.92 ug/Kg	All samples in SDG A12J621

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. Surrogate recoveries (%R) were not within QC limits for all samples. Since the samples were diluted out, no data were qualified.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A12J621

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A12J621

No Sample Data Qualified in this SDG

LDC #: 28944E2b

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

SDG #: A12J621

Laboratory: APEX Laboratories, LLC

Date: 1/3/13

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/23/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ ~~15/30~~ 20
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 20/30
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

	SOIL						
1	AQ-BMD-08-2-4-B	11	121083I	21		31	
2	AQ-BMP-05-1.5-15.5	12		22		32	
3	AQ-BMP-03-2-16	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1- Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 28944E2b

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: FT
2nd Reviewer: a

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a method blank analyzed for each matrix?
Y N N/A Was a method blank analyzed for each concentration preparation level?
Y N N/A Was a method blank associated with every sample?
Y N N/A Was the blank contaminated? If yes, please see qualification below.

Blank extraction date: 10/29/12 **Blank analysis date:** 10/30/12
Conc. units: ug/kg Associated Samples: All > 5X

Compound	Blank ID	Sample Identification								
	121083I-MB									
YY	5.20									
UU	5.37									
ZZ	3.92									

Blank extraction date:_____ **Blank analysis date:**_____
Conc. units:_____ Associated Samples:_____

Compound	Blank ID	Sample Identification								

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 28944E 2b

VALIDATION FINDINGS WORKSHEET
Surrogate Recovery

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were percent recoveries (%R) for surrogates within QC limits?
Y N N/A If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?
Y N N/A If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

#	Date	Sample ID	Surrogate	%R (Limits)	Qualifications
		1	TPH	127 (30-120)	no qual > 5 x PL
				( )	
		2	↓	226 (↓)	↓
				( )	
		3	↓	214 (↓)	↓
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

* QC limits are advisory	QC Limits (Soil)	QC Limits (Water)		QC Limits (Soil)	QC Limits (Water)
S1 (NBZ) = Nitrobenzene-d5	23-120	35-114	S5 (2FP)= 2-Fluorophenol	25-121	21-100
S2 (FBP) = 2-Fluorobiphenyl	30-115	43-116	S6 (TBP) = 2,4,6-Tribromophenol	19-122	10-123
S3 (TPH) = Terphenyl-d14	18-137	33-141	S7 (2CP) = 2-Chlorophenol-d4	20-130*	33-110*
S4 (PHL) = Phenol-d5	24-113	10-94	S8 (DCB) = 1,2-Dichlorobenzene-d4	20-130*	16-110*

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 22, 2012
LDC Report Date:	December 26, 2012
Matrix:	Soil
Parameters:	Polychlorinated Biphenyls
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J621

Sample Identification

AQ-BMP-04-1.5-13.5

Introduction

This data review covers one soil sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082A for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

Raw data were not reviewed for this SDG.

XIII. Compound Quantitation and Reported RLs

Raw data were not reviewed for this SDG.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XV. Field Duplicates

No field duplicates were identified in this SDG.

XVI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polychlorinated Biphenyls - Data Qualification Summary - SDG A12J621

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG A12J621

No Sample Data Qualified in this SDG

LDC #: 28944E3b

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 12/20/2012

SDG #: A12J621

Page: 1 of 1

Laboratory: APEX Laboratories, LLC

Reviewer: SW

2nd Reviewer: [illegible]

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/23/2012
II.	GC/ECD Instrument Performance Check	N	
III.	Initial calibration	A	RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	CS
VIII.	Laboratory control samples	A	LCS
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	N	
XIII.	Compound quantitation/RL/LOQ/LODs	N	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

Soil

+ 1	AQ-BMP-04-1.5-13.5	11		21		31	1210801-BLK1
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 23, 2012
LDC Report Date:	December 20, 2012
Matrix:	Soil
Parameters:	Metals
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J621

Sample Identification

AQ-BMD-08-2-4-B
AQ-BMP-04-1.5-13.5
AQ-BMP-05-1.5-15.5
AQ-BMP-03-2-16
AQ-BMP-04-1.5-13.5(TCLP)
AQ-BMP-04-1.5-13.5(TCLP)MS

Introduction

This data review covers 6 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010C and 6020A for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, and Zinc.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Metals - Data Qualification Summary - SDG A12J621

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Metals - Laboratory Blank Data Qualification Summary - SDG A12J621

No Sample Data Qualified in this SDG

LDC #: 28944E4

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 12-19-12

SDG #: A12J621

Page: 1 of 1

Laboratory: APEX Laboratories, LLC

Reviewer:

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6010C/6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/23/12
II.	ICP/MS Tune	A	
III.	Calibration	~~SW~~ A	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	A	MS
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	Not utilized
XI.	ICP Serial Dilution	N	Not performed
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil

1	AQ-BMD-08-2-4-B	11		21		31	
2	AQ-BMP-04-1.5-13.5	12		22		32	
3	AQ-BMP-05-1.5-15.5	13		23		33	
4	AQ-BMP-03-2-16	14		24		34	
5	AQ-BMP-04-1.5-13.5(TCLP)	15		25		35	
6	AQ-BMP-04-1.5-13.5(TCLP)MS	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 28445 1

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: CR
2nd reviewer: W

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-4		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
5		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
QC6		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___

Comments: Mercury by CVAA if performed

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 23, 2012
LDC Report Date:	December 20, 2012
Matrix:	Soil
Parameters:	Wet Chemistry
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J621

Sample Identification

AQ-BMD-08-2-4-B
AQ-BMP-04-1.5-13.5
AQ-BMP-05-1.5-15.5
AQ-BMP-03-2-16
AQ-BMD-08-2-4-BMS
AQ-BMD-08-2-4-BDUP
AQ-BMP-04-1.5-13.5MS
AQ-BMP-04-1.5-13.5DUP

Introduction

This data review covers 8 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 9014 for Total Cyanide, Standard Method 4500-CN (I/E) for Weak Acid Dissociable Cyanide, Standard Method 4500-F-C for Fluoride, and PSEP and Standard Method 5310B modified for Total Organic Carbon.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
AQ-BMP-04-1.5-13.5MS (AQ-BMP-04-1.5-13.5 AQ-BMP-05-1.5-15.5 AQ-BMP-03-2-16)	Weak acid dissociable cyanide	448 (75-125)	J (all detects)	A

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Analyte	RPD (Limits)	Difference (Limits)	Flag	A or P
AQ-BMD-08-2-4-BDUP (AQ-BMD-08-2-4-B)	Weak acid dissociable cyanide	86 (≤20)	-	J (all detects) UJ (all non-detects)	A
AQ-BMP-04-1.5-13.5DUP (AQ-BMP-04-1.5-13.5 AQ-BMP-05-1.5-15.5 AQ-BMP-03-2-16)	Weak acid dissociable cyanide	37 (≤20)	-	J (all detects) UJ (all non-detects)	A

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

All sample result verification met validation criteria with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
AQ-BMD-08-2-4-B AQ-BMP-05-1.5-15.5	Total organic carbon	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	P

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS %R, duplicate RPD, and calibration range problems, data were qualified as estimated in four samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A12J621

SDG	Sample	Analyte	Flag	A or P	Reason
A12J621	AQ-BMP-04-1.5-13.5 AQ-BMP-05-1.5-15.5 AQ-BMP-03-2-16	Weak acid dissociable cyanide	J (all detects)	A	Matrix spike (%R)
A12J621	AQ-BMD-08-2-4-B AQ-BMP-04-1.5-13.5 AQ-BMP-05-1.5-15.5 AQ-BMP-03-2-16	Weak acid dissociable cyanide	J (all detects) UJ (all non-detects)	A	Duplicate sample analysis (RPD)
A12J621	AQ-BMD-08-2-4-B AQ-BMP-05-1.5-15.5	Total organic carbon	J (all detects)	P	Sample result verification (exceeded range)

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A12J621

No Sample Data Qualified in this SDG

LDC #: 28944E6

SDG #: A12J621

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 12-19-12

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: (Analyte) Total Cyanide (EPA SW846 Method ~~9013M~~/9014), WAD Cyanide (EPA SW846 Method ~~9013M~~/SM4500–CN-I-E), Fluoride (SM4500-F-C), TOC (PSEP/SM5310B Modified)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/23/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	SW	MS
VI.	Duplicates	SW	DUP
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	SW	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil

1	AQ-BMD-08-2-4-B	11		21		31	
2	AQ-BMP-04-1.5-13.5	12		22		32	
3	AQ-BMP-05-1.5-15.5	13		23		33	
4	AQ-BMP-03-2-16	14		24		34	
5	AQ-BMD-08-2-4-BMS	15		25		35	
6	AQ-BMD-08-2-4-BDUP	16		26		36	
7	AQ-BMP-04-1.5-13.5MS	17		27		37	
8	AQ-BMP-04-1.5-13.5DUP	18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 28944E6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Parameter
1-4	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 WAD CN
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
QC 5	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 WAD CN
6	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 WAD CN
7	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
8	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 WAD CN
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

LDC #: 08944E6

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: OR
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125 (85-115% for Method 300.0)? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
		AQ-ILF-020-12 (A12J509)	S	WAD CN	30	None (2nd client MS in batch	No Quals within limits)
		7	S	WAD CN	448	2-4	J det/A

Comments:

LDC #: 28944F6

VALIDATION FINDINGS WORKSHEET
Duplicate Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method see cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a duplicate sample analyzed for each matrix in this SDG?

Y N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for water and ≤ 35% for soil samples (≤ 10% for Method 300.0)? If no, see qualification below. A control limit of ±CRDL (±2X CRDL for soil) was used for samples that were ≤5X the CRDL, including when only one of the duplicate sample values were ≤5X the CRDL. If field blanks were used for laboratory duplicates, see overall assessment.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Duplicate ID	Matrix	Analyte	RPD (Limits)	Associated Samples	Qualifications
		6	S	WAD CN	86 (≤20)	1	J/UJ/A
		8	S	WAD CN	37 ↓	2-4	J/UJ/A

Comments:

LDC #: 28944E6

VALIDATION FINDINGS WORKSHEET
Sample Result Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

#	Sample ID	Analyte	Lab Reporting Limit (units)	RDL (units)	Finding	Qualifications
	1,3	TOC			>Calibration range	Jdet. IP

Comments:

ABVCRDL.6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 23, 2012
LDC Report Date:	December 26, 2012
Matrix:	Soil
Parameters:	Total Petroleum Hydrocarbons as Extractables
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J621

Sample Identification

AQ-BMP-05-1.5-15.5

Introduction

This data review covers one soil sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method NWTPH-DX for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
AQ-BMP-05-1.5-15.5	TPH as extractables	15	14	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 15.0% .

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 15.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to extraction holding time problems, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

XIII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG A12J621

SDG	Sample	Compound	Flag	A or P	Reason
A12J621	AQ-BMP-05-1.5-15.5	TPH as extractables	J (all detects) UJ (all non-detects)	P	Technical holding times

Millennium Bulk Terminals
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG A12J621

No Sample Data Qualified in this SDG

LDC #: 28944E8

SDG #: A12J621

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 12/20/2012

Page: 1 of 1

Reviewer: GW

2nd Reviewer:

METHOD: GC TPH as Extractables (NWTPH-Dx)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 10/23/12
II	Initial calibration	A	RSD ≤ 15
III.	Calibration verification/ICV	A	ICV/CCV ≤ 15
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	CS
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	~~SW~~ N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

	Soil						
1+	AQ-BMP-05-1.5-15.5	11		21		31	1211183-BLK1
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 28944E8

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page: 1 of 1
Reviewer: SW
2nd Reviewer: 9

All circled dates have exceeded the technical holding times.
(Y) N N/A Were all cooler temperatures within validation criteria?

METHOD : ✓ GC __ HPLC

Sample ID	Matrix	Preserved	Sampling Date	Extraction date	Analysis date	Total # of Days	Qualifier
1	Soil	No	10/23/2012	11/07/2012	~~11/08/2012~~	15	J/UJ/P

TECHNICAL HOLDING TIME CRITERIA

VOLATILES:	Water unpreserved:	Aromatic within 7 days, non-aromatic within 14 days of sample collection.
	Water preserved:	Both within 14 days of sample collection.
	Soils:	Both within 14 days of sample collection.
EXTRACTABLES:		
	Water:	Extracted within 7 days, analyzed within 40 days.
	Soil:	Extracted within 14 days, analyzed within 40 days.

Analytical Method APEXsolids

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-08-2-4-B	A12J621-02	Total solids	10/29/2012	67.7		Yes	Y				1.00	1.00	pct
AQ-BMP-03-2-16	A12J621-28	Total solids	10/28/2012	59.7		Yes	Y				1.00	1.00	pct
AQ-BMP-04-1.5-13.5	A12J621-10	Total solids	10/28/2012	57.1		Yes	Y				1.00	1.00	pct
AQ-BMP-05-1.5-15.5	A12J621-18	Total solids	10/28/2012	69.9		Yes	Y				1.00	1.00	pct

Analytical Method NWTPHDx

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-05-1.5-15.5	A12J621-18	Diesel Range Hydrocarbons	11/8/2012	3420		Yes	Y	D	J	1	107	53.3	mg/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Oil	11/8/2012	2640		Yes	Y	D	J	1	213	107	mg/kg

Analytical Method SM4500CNE

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-08-2-4-B	A12J621-02	Cyanide, total	10/26/2012	16.2		Yes	Y	D			3.48	3.48	mg/kg
AQ-BMP-03-2-16	A12J621-28	Cyanide, total	10/30/2012	15.5		Yes	Y				0.418	0.418	mg/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Cyanide, total	10/30/2012	12.8		Yes	Y				0.433	0.433	mg/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Cyanide, total	10/30/2012	9.67		Yes	Y				0.337	0.337	mg/kg

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-08-2-4-B	A12J621-02	Cyanide, Weak acid dissociable (WAD)	10/26/2012	4.6		Yes	Y		J	9	0.348	0.348	mg/kg
AQ-BMP-03-2-16	A12J621-28	Cyanide, Weak acid dissociable (WAD)	10/30/2012	1.8		Yes	Y		J	8,9	0.418	0.418	mg/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Cyanide, Weak acid dissociable (WAD)	10/30/2012	9.65		Yes	Y		J	8,9	0.433	0.433	mg/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Cyanide, Weak acid dissociable (WAD)	10/30/2012	1.31		Yes	Y		J	8,9	0.337	0.337	mg/kg

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-08-2-4-B	A12J621-02	Fluoride	11/1/2012	40600		Yes	Y	D			736	736	mg/kg
AQ-BMP-03-2-16	A12J621-28	Fluoride	11/1/2012	55800		Yes	Y	D			765	765	mg/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Fluoride	11/1/2012	69900		Yes	Y	D			1290	1290	mg/kg

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-05-1.5-15.5	A12J621-18	Fluoride	11/1/2012	47100		Yes	Y	D			1300	1300	mg/kg

Analytical Method SM5310B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-08-2-4-B	A12J621-02	Total organic carbon	11/5/2012	3100000		Yes	Y		J	20	200	100	mg/kg
AQ-BMP-03-2-16	A12J621-28	Total organic carbon	11/5/2012	240000		Yes	Y				200	100	mg/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Total organic carbon	11/5/2012	89000		Yes	Y				200	100	mg/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Total organic carbon	11/5/2012	520000		Yes	Y		J	20	200	100	mg/kg

Analytical Method SW6010C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-08-2-4-B	A12J621-02	Beryllium	11/5/2012	14.9		Yes	Y	D			6.52	3.26	mg/kg
AQ-BMP-03-2-16	A12J621-28	Beryllium	11/5/2012	22.1		Yes	Y	D			6.45	3.23	mg/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Beryllium	11/5/2012	22.2		Yes	Y	D			6.88	3.44	mg/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Beryllium	11/5/2012	19.6		Yes	Y	D			5.89	2.94	mg/kg

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-08-2-4-B	A12J621-02	Cadmium	11/2/2012	0.913		Yes	Y	D J			1.63	0.815	mg/kg
AQ-BMD-08-2-4-B	A12J621-02	Selenium	11/2/2012	3.26		Yes	N	D U			3.26	1.63	mg/kg
AQ-BMD-08-2-4-B	A12J621-02	Mercury	11/2/2012	0.13		Yes	N	D U			0.130	0.0652	mg/kg
AQ-BMD-08-2-4-B	A12J621-02	Thallium	11/2/2012	1.63		Yes	N	D U			1.63	0.815	mg/kg
AQ-BMD-08-2-4-B	A12J621-02	Lead	11/2/2012	17.5		Yes	Y	D			1.63	0.815	mg/kg
AQ-BMD-08-2-4-B	A12J621-02	Silver	11/2/2012	1.63		Yes	N	D U			1.63	0.815	mg/kg
AQ-BMD-08-2-4-B	A12J621-02	Nickel	11/2/2012	368		Yes	Y	D			3.26	1.63	mg/kg
AQ-BMD-08-2-4-B	A12J621-02	Copper	11/2/2012	171		Yes	Y	D			3.26	1.63	mg/kg
AQ-BMD-08-2-4-B	A12J621-02	Antimony	11/2/2012	1.63		Yes	Y	D			1.63	0.815	mg/kg
AQ-BMD-08-2-4-B	A12J621-02	Arsenic	11/2/2012	5.27		Yes	Y	D			3.26	0.815	mg/kg

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-08-2-4-B	A12J621-02	Chromium	11/2/2012	23.8	Yes	Y	D			3.26	1.63	mg/kg
AQ-BMD-08-2-4-B	A12J621-02	Zinc	11/2/2012	25	Yes	Y	D			6.52	3.26	mg/kg
AQ-BMP-03-2-16	A12J621-28	Zinc	11/2/2012	57.6	Yes	Y	D			6.45	3.23	mg/kg
AQ-BMP-03-2-16	A12J621-28	Copper	11/2/2012	128	Yes	Y	D			3.23	1.61	mg/kg
AQ-BMP-03-2-16	A12J621-28	Chromium	11/2/2012	30.4	Yes	Y	D			3.23	1.61	mg/kg
AQ-BMP-03-2-16	A12J621-28	Cadmium	11/2/2012	0.904	Yes	Y	D J			1.61	0.807	mg/kg
AQ-BMP-03-2-16	A12J621-28	Selenium	11/2/2012	3.23	Yes	N	D U			3.23	1.61	mg/kg
AQ-BMP-03-2-16	A12J621-28	Antimony	11/2/2012	1.65	Yes	Y	D			1.61	0.807	mg/kg
AQ-BMP-03-2-16	A12J621-28	Thallium	11/2/2012	1.61	Yes	N	D U			1.61	0.807	mg/kg
AQ-BMP-03-2-16	A12J621-28	Silver	11/2/2012	1.61	Yes	N	D U			1.61	0.807	mg/kg
AQ-BMP-03-2-16	A12J621-28	Nickel	11/2/2012	502	Yes	Y	D			3.23	1.61	mg/kg
AQ-BMP-03-2-16	A12J621-28	Lead	11/2/2012	22.2	Yes	Y	D			1.61	0.807	mg/kg
AQ-BMP-03-2-16	A12J621-28	Arsenic	11/2/2012	7.47	Yes	Y	D			3.23	0.807	mg/kg
AQ-BMP-03-2-16	A12J621-28	Mercury	11/4/2012	0.119	Yes	Y	D J			0.129	0.0645	mg/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Chromium	11/2/2012	30.2	Yes	Y	D			3.44	1.72	mg/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Copper	11/2/2012	128	Yes	Y	D			3.44	1.72	mg/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Selenium	11/2/2012	3.44	Yes	N	D U			3.44	1.72	mg/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Cadmium	11/2/2012	1.29	Yes	Y	D J			1.72	0.860	mg/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Barium	11/2/2012	116	Yes	Y	D			1.72	0.860	mg/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Arsenic	11/2/2012	11.3	Yes	Y	D			3.44	0.860	mg/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Antimony	11/2/2012	1.79	Yes	Y	D			1.72	0.860	mg/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Thallium	11/2/2012	1.72	Yes	N	D U			1.72	0.860	mg/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Silver	11/2/2012	1.72	Yes	N	D U			1.72	0.860	mg/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Nickel	11/2/2012	890	Yes	Y	D			3.44	1.72	mg/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Lead	11/2/2012	33.2	Yes	Y	D			1.72	0.860	mg/kg

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-04-1.5-13.5	A12J621-10	Zinc	11/2/2012	98.9		Yes	Y	D			6.88	3.44	mg/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Mercury	11/4/2012	0.14		Yes	Y	D			0.138	0.0688	mg/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Barium	11/20/2012	0.304		Yes	Y	D J			0.500	0.250	mg/L
AQ-BMP-04-1.5-13.5	A12J621-10	Arsenic	11/20/2012	0.1		Yes	N	D U			0.100	0.0500	mg/L
AQ-BMP-04-1.5-13.5	A12J621-10	Antimony	11/20/2012	0.05		Yes	N	D U			0.0500	0.0250	mg/L
AQ-BMP-04-1.5-13.5	A12J621-10	Thallium	11/20/2012	0.05		Yes	N	D U			0.0500	0.0250	mg/L
AQ-BMP-04-1.5-13.5	A12J621-10	Mercury	11/20/2012	0.004		Yes	N	D U			0.00400	0.00250	mg/L
AQ-BMP-04-1.5-13.5	A12J621-10	Nickel	11/20/2012	0.274		Yes	Y	D			0.100	0.0500	mg/L
AQ-BMP-04-1.5-13.5	A12J621-10	Silver	11/20/2012	0.05		Yes	N	D U			0.0500	0.0250	mg/L
AQ-BMP-04-1.5-13.5	A12J621-10	Lead	11/20/2012	0.05		Yes	N	D U			0.0500	0.0250	mg/L
AQ-BMP-04-1.5-13.5	A12J621-10	Beryllium	11/20/2012	0.072		Yes	Y	D			0.0500	0.0250	mg/L
AQ-BMP-04-1.5-13.5	A12J621-10	Selenium	11/20/2012	0.1		Yes	N	D U			0.100	0.0500	mg/L
AQ-BMP-04-1.5-13.5	A12J621-10	Copper	11/20/2012	0.334		Yes	Y	D			0.250	0.125	mg/L
AQ-BMP-04-1.5-13.5	A12J621-10	Cadmium	11/20/2012	0.05		Yes	N	D U			0.0500	0.0250	mg/L
AQ-BMP-04-1.5-13.5	A12J621-10	Chromium	11/20/2012	0.1		Yes	N	D U			0.100	0.0500	mg/L
AQ-BMP-04-1.5-13.5	A12J621-10	Zinc	11/20/2012	0.146		Yes	Y	D J			0.250	0.125	mg/L
AQ-BMP-05-1.5-15.5	A12J621-18	Chromium	11/2/2012	36.3		Yes	Y	D			2.94	1.47	mg/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Arsenic	11/2/2012	5.84		Yes	Y	D			2.94	0.736	mg/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Antimony	11/2/2012	1.07		Yes	Y	D J			1.47	0.736	mg/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Cadmium	11/2/2012	1.47		Yes	N	D U			1.47	0.736	mg/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Copper	11/2/2012	303		Yes	Y	D			2.94	1.47	mg/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Lead	11/2/2012	17.6		Yes	Y	D			1.47	0.736	mg/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Thallium	11/2/2012	1.47		Yes	N	D U			1.47	0.736	mg/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Zinc	11/2/2012	78.5		Yes	Y	D			5.89	2.94	mg/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Selenium	11/2/2012	2.94		Yes	N	D U			2.94	1.47	mg/kg

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-05-1.5-15.5	A12J621-18	Silver	11/2/2012	1.47	Yes	N	D U			1.47	0.736	mg/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Nickel	11/2/2012	388	Yes	Y	D			2.94	1.47	mg/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Mercury	11/4/2012	0.106	Yes	Y	D J			0.118	0.0589	mg/kg

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-04-1.5-13.5	A12J621-10RE2	Aroclor 1016	10/29/2012	65.5	Yes	N	D U			65.5	32.7	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10RE2	Aroclor 1262	10/29/2012	65.5	Yes	N	D U			65.5	32.7	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10RE2	Aroclor 1248	10/29/2012	65.5	Yes	N	D U			65.5	32.7	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10RE2	Aroclor 1232	10/29/2012	65.5	Yes	N	D U			65.5	32.7	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10RE2	Aroclor 1221	10/29/2012	65.5	Yes	N	D U			65.5	32.7	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10RE2	Aroclor 1268	10/29/2012	56.6	Yes	Y	D J			65.5	32.7	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10RE2	Aroclor 1260	10/29/2012	299	Yes	Y	D			65.5	32.7	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10RE2	Aroclor 1254	10/29/2012	703	Yes	Y	D			65.5	32.7	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10RE2	Aroclor 1242	10/29/2012	180	Yes	Y	D			65.5	32.7	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-RB-102312	A12J621-29	1,3,5-Trimethylbenzene (Mesitylene)	10/24/2012	1	Yes	N	U			1.00	0.500	ug/L
AQ-RB-102312	A12J621-29	Bromobenzene	10/24/2012	0.5	Yes	N	U			0.500	0.250	ug/L
AQ-RB-102312	A12J621-29	Toluene	10/24/2012	1	Yes	N	U			1.00	0.500	ug/L
AQ-RB-102312	A12J621-29	Chlorobenzene	10/24/2012	0.5	Yes	N	U			0.500	0.250	ug/L
AQ-RB-102312	A12J621-29	1,2,4-Trichlorobenzene	10/24/2012	2	Yes	N	U			2.00	1.00	ug/L
AQ-RB-102312	A12J621-29	Carbon tetrachloride (Tetrachloromethane)	10/24/2012	0.5	Yes	N	U			0.500	0.250	ug/L
AQ-RB-102312	A12J621-29	1,1-Dichloropropene	10/24/2012	1	Yes	N	U			1.00	0.500	ug/L
AQ-RB-102312	A12J621-29	Tetrachloroethene (PCE)	10/24/2012	0.5	Yes	N	U			0.500	0.250	ug/L
AQ-RB-102312	A12J621-29	Dibromochloromethane	10/24/2012	1	Yes	N	U			1.00	0.500	ug/L

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-RB-102312	A12J621-29	Acetone	10/24/2012	20		Yes	N	U			20.0	10.0	ug/L
AQ-RB-102312	A12J621-29	Bromodichloromethane	10/24/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-102312	A12J621-29	1,1-Dichloroethane	10/24/2012	0.5		Yes	N	U			0.500	0.250	ug/L
AQ-RB-102312	A12J621-29	1,1-Dichloroethene	10/24/2012	0.5		Yes	N	U			0.500	0.250	ug/L
AQ-RB-102312	A12J621-29	Isopropylbenzene (Cumene)	10/24/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-102312	A12J621-29	1,2-Dichlorobenzene	10/24/2012	0.5		Yes	N	U			0.500	0.250	ug/L
AQ-RB-102312	A12J621-29	2-Chlorotoluene	10/24/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-102312	A12J621-29	o-Xylene	10/24/2012	0.5		Yes	N	U			0.500	0.250	ug/L
AQ-RB-102312	A12J621-29	1,2,3-Trichloropropane	10/24/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-102312	A12J621-29	1,3-Dichloropropene, trans-	10/24/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-102312	A12J621-29	Trichlorofluoromethane (Fluorotrichloromethane)	10/24/2012	2		Yes	N	U			2.00	1.00	ug/L
AQ-RB-102312	A12J621-29	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/24/2012	10		Yes	N	U			10.0	5.00	ug/L
AQ-RB-102312	A12J621-29	Naphthalene	10/24/2012	2		Yes	N	U			2.00	1.00	ug/L
AQ-RB-102312	A12J621-29	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/24/2012	5		Yes	N	U			5.00	2.50	ug/L
AQ-RB-102312	A12J621-29	4-Isopropyltoluene (4-Cymene)	10/24/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-102312	A12J621-29	2-Hexanone (Methyl butyl ketone)	10/24/2012	10		Yes	N	U			10.0	5.00	ug/L
AQ-RB-102312	A12J621-29	2,2-Dichloropropane	10/24/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-102312	A12J621-29	1,2-Dibromo-3-chloropropane	10/24/2012	5		Yes	N	U			5.00	2.50	ug/L
AQ-RB-102312	A12J621-29	1,2,4-Trimethylbenzene	10/24/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-102312	A12J621-29	tert-Butylbenzene	10/24/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-102312	A12J621-29	1,1,1-Trichloroethane	10/24/2012	0.5		Yes	N	U			0.500	0.250	ug/L
AQ-RB-102312	A12J621-29	Dichloromethane (Methylene chloride)	10/24/2012	5		Yes	N	U			5.00	2.50	ug/L
AQ-RB-102312	A12J621-29	1,2-Dichloropropane	10/24/2012	0.5		Yes	N	U			0.500	0.250	ug/L
AQ-RB-102312	A12J621-29	2-Butanone (MEK)	10/24/2012	10		Yes	N	U			10.0	5.00	ug/L

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-RB-102312	A12J621-29	1,1,2-Trichloroethane	10/24/2012	0.5		Yes	N	U			0.500	0.250	ug/L
AQ-RB-102312	A12J621-29	Trichloroethene (TCE)	10/24/2012	0.5		Yes	N	U			0.500	0.250	ug/L
AQ-RB-102312	A12J621-29	1,1,2,2-Tetrachloroethane	10/24/2012	0.5		Yes	N	U			0.500	0.250	ug/L
AQ-RB-102312	A12J621-29	n-Butylbenzene	10/24/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-102312	A12J621-29	Benzene	10/24/2012	0.25		Yes	N	U			0.250	0.125	ug/L
AQ-RB-102312	A12J621-29	Methyl tert-butyl ether (MTBE)	10/24/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-102312	A12J621-29	Bromomethane (Methyl Bromide)	10/24/2012	5		Yes	N	U			5.00	5.00	ug/L
AQ-RB-102312	A12J621-29	Chloromethane	10/24/2012	5		Yes	N	U	UJ	5	5.00	2.50	ug/L
AQ-RB-102312	A12J621-29	Vinyl chloride	10/24/2012	0.5		Yes	N	U			0.500	0.250	ug/L
AQ-RB-102312	A12J621-29	Dibromomethane	10/24/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-102312	A12J621-29	Bromochloromethane	10/24/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-102312	A12J621-29	Chloroethane	10/24/2012	5		Yes	N	U			5.00	5.00	ug/L
AQ-RB-102312	A12J621-29	1,2,3-Trichlorobenzene	10/24/2012	2		Yes	N	U			2.00	1.00	ug/L
AQ-RB-102312	A12J621-29	Chloroform	10/24/2012	0.97		Yes	Y	J			1.00	0.500	ug/L
AQ-RB-102312	A12J621-29	sec-Butylbenzene	10/24/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-102312	A12J621-29	Ethylene dibromide (1,2-Dibromoethane)	10/24/2012	0.5		Yes	N	U			0.500	0.250	ug/L
AQ-RB-102312	A12J621-29	1,4-Dichlorobenzene	10/24/2012	0.5		Yes	N	U			0.500	0.250	ug/L
AQ-RB-102312	A12J621-29	4-Chlorotoluene	10/24/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-102312	A12J621-29	1,3-Dichlorobenzene	10/24/2012	0.5		Yes	N	U			0.500	0.250	ug/L
AQ-RB-102312	A12J621-29	Dichlorodifluoromethane	10/24/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-102312	A12J621-29	n-Propylbenzene	10/24/2012	0.5		Yes	N	U			0.500	0.250	ug/L
AQ-RB-102312	A12J621-29	1,1,1,2-Tetrachloroethane	10/24/2012	0.5		Yes	N	U			0.500	0.250	ug/L
AQ-RB-102312	A12J621-29	Styrene	10/24/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-102312	A12J621-29	m,p-Xylene	10/24/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-102312	A12J621-29	Ethylbenzene	10/24/2012	0.5		Yes	N	U			0.500	0.250	ug/L

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-RB-102312	A12J621-29	1,3-Dichloropropane	10/24/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-102312	A12J621-29	1,2-Dichloroethene, cis-	10/24/2012	0.5		Yes	N	U			0.500	0.250	ug/L
AQ-RB-102312	A12J621-29	1,2-Dichloroethene, trans-	10/24/2012	0.5		Yes	N	U			0.500	0.250	ug/L
AQ-RB-102312	A12J621-29	Carbon disulfide	10/24/2012	10		Yes	N	U			10.0	5.00	ug/L
AQ-RB-102312	A12J621-29	Bromoform (Tribromomethane)	10/24/2012	1		Yes	N	U			1.00	0.500	ug/L
AQ-RB-102312	A12J621-29	1,2-Dichloroethane	10/24/2012	0.5		Yes	N	U			0.500	0.250	ug/L
AQ-RB-102312	A12J621-29	1,3-Dichloropropene, cis-	10/24/2012	1		Yes	N	U			1.00	0.500	ug/L
TRIP_BLANK_20121023	A12J621-30	4-Isopropyltoluene (4-Cymene)	10/25/2012	50		Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	Naphthalene	10/25/2012	100		Yes	N	D U			100	50.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	1,2,4-Trimethylbenzene	10/25/2012	50		Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	1,2-Dibromo-3-chloropropane	10/25/2012	250		Yes	N	D U	UJ	5	250	125	ug/kg
TRIP_BLANK_20121023	A12J621-30	1,2,3-Trichloropropane	10/25/2012	50		Yes	N	D U	UJ	5	50.0	25.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	tert-Butylbenzene	10/25/2012	50		Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	2-Chlorotoluene	10/25/2012	50		Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	o-Xylene	10/25/2012	25		Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121023	A12J621-30	Isopropylbenzene (Cumene)	10/25/2012	50		Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/25/2012	100		Yes	N	D U			100	50.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	1,2,3-Trichlorobenzene	10/25/2012	500		Yes	N	D U			500	250	ug/kg
TRIP_BLANK_20121023	A12J621-30	1,1,2,2-Tetrachloroethane	10/25/2012	25		Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121023	A12J621-30	1,3-Dichloropropene, cis-	10/25/2012	50		Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	Styrene	10/25/2012	50		Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	Ethylbenzene	10/25/2012	25		Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121023	A12J621-30	1,2-Dichlorobenzene	10/25/2012	25		Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121023	A12J621-30	Methyl tert-butyl ether (MTBE)	10/25/2012	50		Yes	N	D U			50.0	29.8	ug/kg
TRIP_BLANK_20121023	A12J621-30	Dibromochloromethane	10/25/2012	100		Yes	N	D U			100	50.0	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
TRIP_BLANK_20121023	A12J621-30	Tetrachloroethene (PCE)	10/25/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121023	A12J621-30	sec-Butylbenzene	10/25/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	1,3-Dichloropropane	10/25/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121023	A12J621-30	1,2-Dichloroethene, trans-	10/25/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121023	A12J621-30	Carbon tetrachloride (Tetrachloromethane)	10/25/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121023	A12J621-30	m,p-Xylene	10/25/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	1,2,4-Trichlorobenzene	10/25/2012	250	Yes	N	D U			250	125	ug/kg
TRIP_BLANK_20121023	A12J621-30	1,4-Dichlorobenzene	10/25/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121023	A12J621-30	1,3-Dichlorobenzene	10/25/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121023	A12J621-30	1,2-Dichloroethene, cis-	10/25/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121023	A12J621-30	Chlorobenzene	10/25/2012	25	Yes	N	D U			25.0	13.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	Toluene	10/25/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	Bromobenzene	10/25/2012	25	Yes	N	D U			25.0	13.6	ug/kg
TRIP_BLANK_20121023	A12J621-30	1,3,5-Trimethylbenzene (Mesitylene)	10/25/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/25/2012	500	Yes	N	D U	UJ	5	500	250	ug/kg
TRIP_BLANK_20121023	A12J621-30	Ethylene dibromide (1,2-Dibromoethane)	10/25/2012	25	Yes	N	D U			25.0	15.2	ug/kg
TRIP_BLANK_20121023	A12J621-30	4-Chlorotoluene	10/25/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	n-Butylbenzene	10/25/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	n-Propylbenzene	10/25/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121023	A12J621-30	1,3-Dichloropropene, trans-	10/25/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	Benzene	10/25/2012	12.5	Yes	N	D U			12.5	7.00	ug/kg
TRIP_BLANK_20121023	A12J621-30	1,1-Dichloropropene	10/25/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	1,2-Dichloroethane	10/25/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121023	A12J621-30	Chloroethane	10/25/2012	500	Yes	N	D U			500	250	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
TRIP_BLANK_20121023	A12J621-30	2-Hexanone (Methyl butyl ketone)	10/25/2012	500	Yes	N	D U	UJ	5	500	250	ug/kg
TRIP_BLANK_20121023	A12J621-30	1,1,1,2-Tetrachloroethane	10/25/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121023	A12J621-30	Chloroform	10/25/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	1,1,1-Trichloroethane	10/25/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121023	A12J621-30	Bromomethane (Methyl Bromide)	10/25/2012	500	Yes	N	D U			500	500	ug/kg
TRIP_BLANK_20121023	A12J621-30	Chloromethane	10/25/2012	250	Yes	N	D U			250	125	ug/kg
TRIP_BLANK_20121023	A12J621-30	Acetone	10/25/2012	1000	Yes	N	D U	UJ	5	1000	500	ug/kg
TRIP_BLANK_20121023	A12J621-30	Bromochloromethane	10/25/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121023	A12J621-30	Vinyl chloride	10/25/2012	25	Yes	N	D U			25.0	18.2	ug/kg
TRIP_BLANK_20121023	A12J621-30	Dichloromethane (Methylene chloride)	10/25/2012	250	Yes	N	D U			250	125	ug/kg
TRIP_BLANK_20121023	A12J621-30	Carbon disulfide	10/25/2012	500	Yes	N	D U			500	250	ug/kg
TRIP_BLANK_20121023	A12J621-30	1,1,2-Trichloroethane	10/25/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121023	A12J621-30	2,2-Dichloropropane	10/25/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	Dibromomethane	10/25/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	Trichloroethene (TCE)	10/25/2012	25	Yes	N	D U			25.0	18.1	ug/kg
TRIP_BLANK_20121023	A12J621-30	Bromoform (Tribromomethane)	10/25/2012	50	Yes	N	D U	UJ	5	50.0	25.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	2-Butanone (MEK)	10/25/2012	500	Yes	N	D U	UJ	5	500	250	ug/kg
TRIP_BLANK_20121023	A12J621-30	1,2-Dichloropropane	10/25/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121023	A12J621-30	Dichlorodifluoromethane	10/25/2012	100	Yes	N	D U			100	50.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	Trichlorofluoromethane (Fluorotrichloromethane)	10/25/2012	100	Yes	N	D U			100	50.0	ug/kg
TRIP_BLANK_20121023	A12J621-30	1,1-Dichloroethene	10/25/2012	25	Yes	N	D U			25.0	13.4	ug/kg
TRIP_BLANK_20121023	A12J621-30	1,1-Dichloroethane	10/25/2012	25	Yes	N	D U			25.0	14.8	ug/kg
TRIP_BLANK_20121023	A12J621-30	Bromodichloromethane	10/25/2012	25	Yes	N	D U			25.0	12.5	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-04-1.5-13.5	A12J621-10	3,3'-Dichlorobenzidine	10/29/2012	13200	Yes	N	D U			13200	6600	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Carbazole	10/29/2012	6610	Yes	Y	D			1980	991	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Hexachloroethane	10/29/2012	3300	Yes	N	D U			3300	1650	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	4-Chlorophenyl phenyl ether	10/29/2012	3300	Yes	N	D U			3300	1650	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Hexachlorocyclopentadiene	10/29/2012	6600	Yes	N	D U			6600	3300	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Isophorone	10/29/2012	3300	Yes	N	D U			3300	1650	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Acenaphthene	10/29/2012	4010	Yes	Y	D			1320	660	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Diethyl phthalate	10/29/2012	6600	Yes	N	D U			6600	3300	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Di-n-butyl phthalate	10/29/2012	6600	Yes	N	D U			6600	3300	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Phenanthrene	10/29/2012	80400	Yes	Y	D			1320	660	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Butylbenzyl phthalate	10/29/2012	26400	Yes	N	D U			26400	13200	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	2-Methylphenol (o-Cresol)	10/29/2012	3300	Yes	N	D U			3300	1650	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Fluorene	10/29/2012	2670	Yes	Y	D			1320	660	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	N-Nitrosodimethylamine	10/29/2012	3300	Yes	N	D U			3300	1650	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/29/2012	3300	Yes	N	D U			3300	1650	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Pentachlorophenol	10/29/2012	26400	Yes	N	D U			26400	13200	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	2,4,6-Trichlorophenol	10/29/2012	6600	Yes	N	D U			6600	3300	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	2-Nitroaniline	10/29/2012	26400	Yes	N	D U			26400	13200	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	2-Nitrophenol	10/29/2012	13200	Yes	N	D U			13200	6600	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	1-Methylnaphthalene	10/29/2012	2640	Yes	N	D U			2640	1320	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Naphthalene	10/29/2012	2640	Yes	N	D U			2640	1320	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	2-Chloronaphthalene	10/29/2012	1320	Yes	N	D U			1320	660	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	1,2-Dichlorobenzene	10/29/2012	3300	Yes	N	D U			3300	1650	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	N-Nitrosodiphenylamine	10/29/2012	3300	Yes	N	D U			3300	1650	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	3-Nitroaniline	10/29/2012	26400	Yes	N	D U			26400	13200	ug/kg

SDG: A12J621

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-04-1.5-13.5	A12J621-10	2-Chlorophenol	10/29/2012	6600	Yes	N	D U			6600	3300	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	2,4,5-Trichlorophenol	10/29/2012	6600	Yes	N	D U			6600	3300	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Nitrobenzene	10/29/2012	13200	Yes	N	D U			13200	6600	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	2-Methylnaphthalene	10/29/2012	2640	Yes	N	D U			2640	1320	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	N-Nitrosodi-N-propylamine	10/29/2012	3300	Yes	N	D U			3300	1650	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Benzoic acid	10/29/2012	165000	Yes	N	D U			165000	82500	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Phenol	10/29/2012	2640	Yes	N	D U			2640	1320	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	2,6-Dinitrotoluene	10/29/2012	13200	Yes	N	D U			13200	6600	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	4-Chloro-3-methylphenol	10/29/2012	13200	Yes	N	D U			13200	6600	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	4-Nitroaniline	10/29/2012	26400	Yes	N	D U			26400	13200	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	4-Nitrophenol	10/29/2012	13200	Yes	N	D U			13200	6600	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Benzyl alcohol	10/29/2012	6600	Yes	N	D U			6600	3300	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	4-Bromophenyl-phenyl ether	10/29/2012	3300	Yes	N	D U			3300	1650	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	2,4-Dimethylphenol	10/29/2012	6600	Yes	N	D U			6600	3300	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Aniline	10/29/2012	6600	Yes	N	D U			6600	3300	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Chrysene	10/29/2012	103000	Yes	Y	D			1320	660	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Anthracene	10/29/2012	14300	Yes	Y	D			1320	660	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	1,2,4-Trichlorobenzene	10/29/2012	3300	Yes	N	D U			3300	1650	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	2,4-Dichlorophenol	10/29/2012	6600	Yes	N	D U			6600	3300	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	2,4-Dinitrotoluene	10/29/2012	13200	Yes	N	D U			13200	6600	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Pyrene	10/29/2012	258000	Yes	Y	D			1320	660	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Dimethyl phthalate	10/29/2012	6600	Yes	N	D U			6600	3300	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	10/29/2012	3300	Yes	N	D U			3300	1650	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Dibenzofuran	10/29/2012	756	Yes	Y	D J			1320	660	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Benzo(g,h,i)perylene	10/29/2012	21400	Yes	Y	D			1320	660	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-04-1.5-13.5	A12J621-10	Indeno(1,2,3-c,d)pyrene	10/29/2012	20100	Yes	Y	D			1320	660	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Benzo(b)fluoranthene	10/29/2012	99900	Yes	Y	D			1980	991	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Fluoranthene	10/29/2012	270000	Yes	Y	D			1320	660	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	1,4-Dichlorobenzene	10/29/2012	3300	Yes	N	D U			3300	1650	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Acenaphthylene	10/29/2012	1320	Yes	N	D U			1320	660	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	4-Chloroaniline	10/29/2012	3300	Yes	N	D U	UJ	10	3300	1650	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	bis(2-Chloroisopropyl)ether	10/29/2012	3300	Yes	N	D U			3300	1650	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Benzo(a)pyrene	10/29/2012	35500	Yes	Y	D			1980	991	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	2,4-Dinitrophenol	10/29/2012	33000	Yes	N	D U			33000	16500	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Dibenzo(a,h)anthracene	10/29/2012	4770	Yes	Y	D			1320	660	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	10/29/2012	33000	Yes	N	D U			33000	16500	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	1,3-Dichlorobenzene	10/29/2012	3300	Yes	N	D U			3300	1650	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Benzo(a)anthracene	10/29/2012	47300	Yes	Y	D			1320	660	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	2,3,4,6-Tetrachlorophenol	10/29/2012	6600	Yes	N	D U			6600	3300	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Hexachlorobenzene	10/29/2012	1320	Yes	N	D U			1320	660	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Di-n-octyl phthalate	10/29/2012	26400	Yes	N	D U			26400	13200	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Bis(2-ethylhexyl)phthalate	10/29/2012	26400	Yes	N	D U			26400	13200	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	bis(2-Chloroethoxy)methane	10/29/2012	3300	Yes	N	D U			3300	1650	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	bis(2-Chloroethyl)ether	10/29/2012	3300	Yes	N	D U			3300	1650	ug/kg
AQ-BMP-04-1.5-13.5	A12J621-10	Benzo(k)fluoranthene	10/29/2012	24200	Yes	Y	D			1980	991	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-08-2-4-B	A12J621-02	Chrysene	10/30/2012	23700	Yes	Y	D			2730	1370	ug/kg
AQ-BMD-08-2-4-B	A12J621-02	Benzo(b,k)fluoranthene	10/30/2012	42100	Yes	Y	D			5470	2730	ug/kg
AQ-BMD-08-2-4-B	A12J621-02	2-Methylnaphthalene	10/30/2012	5470	Yes	N	D U			5470	2730	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-08-2-4-B	A12J621-02	Naphthalene	10/30/2012	5470	Yes	N	D U			5470	2730	ug/kg
AQ-BMD-08-2-4-B	A12J621-02	1-Methylnaphthalene	10/30/2012	5470	Yes	N	D U			5470	2730	ug/kg
AQ-BMD-08-2-4-B	A12J621-02	Fluorene	10/30/2012	2730	Yes	N	D U			2730	1370	ug/kg
AQ-BMD-08-2-4-B	A12J621-02	Phenanthrene	10/30/2012	27600	Yes	Y	D			2730	1370	ug/kg
AQ-BMD-08-2-4-B	A12J621-02	Acenaphthene	10/30/2012	2730	Yes	N	D U			2730	1370	ug/kg
AQ-BMD-08-2-4-B	A12J621-02	Benzo(a)anthracene	10/30/2012	7730	Yes	Y	D			2730	1370	ug/kg
AQ-BMD-08-2-4-B	A12J621-02	Benzo(a)pyrene	10/30/2012	5070	Yes	Y	D			2730	1370	ug/kg
AQ-BMD-08-2-4-B	A12J621-02	Acenaphthylene	10/30/2012	2730	Yes	N	D U			2730	1370	ug/kg
AQ-BMD-08-2-4-B	A12J621-02	Fluoranthene	10/30/2012	38900	Yes	Y	D			2730	1370	ug/kg
AQ-BMD-08-2-4-B	A12J621-02	Indeno(1,2,3-c,d)pyrene	10/30/2012	9940	Yes	Y	D			2730	1370	ug/kg
AQ-BMD-08-2-4-B	A12J621-02	Benzo(g,h,i)perylene	10/30/2012	8480	Yes	Y	D			2730	1370	ug/kg
AQ-BMD-08-2-4-B	A12J621-02	Pyrene	10/30/2012	33100	Yes	Y	D			2730	1370	ug/kg
AQ-BMD-08-2-4-B	A12J621-02	Anthracene	10/30/2012	4270	Yes	Y	D			2730	1370	ug/kg
AQ-BMD-08-2-4-B	A12J621-02	Dibenzo(a,h)anthracene	10/30/2012	3050	Yes	Y	D			2730	1370	ug/kg
AQ-BMD-08-2-4-B	A12J621-02	Dibenzofuran	10/30/2012	2730	Yes	N	D U			2730	1370	ug/kg
AQ-BMP-03-2-16	A12J621-28	Benzo(g,h,i)perylene	10/30/2012	34900	Yes	Y	D			3200	1600	ug/kg
AQ-BMP-03-2-16	A12J621-28	Indeno(1,2,3-c,d)pyrene	10/30/2012	41100	Yes	Y	D			3200	1600	ug/kg
AQ-BMP-03-2-16	A12J621-28	Anthracene	10/30/2012	100000	Yes	Y	D			3200	1600	ug/kg
AQ-BMP-03-2-16	A12J621-28	Pyrene	10/30/2012	1110000	Yes	Y	D			3200	1600	ug/kg
AQ-BMP-03-2-16	A12J621-28	Dibenzofuran	10/30/2012	4230	Yes	Y	D			3200	1600	ug/kg
AQ-BMP-03-2-16	A12J621-28	Acenaphthylene	10/30/2012	3200	Yes	N	D U			3200	1600	ug/kg
AQ-BMP-03-2-16	A12J621-28	Chrysene	10/30/2012	402000	Yes	Y	D			3200	1600	ug/kg
AQ-BMP-03-2-16	A12J621-28	Benzo(a)pyrene	10/30/2012	98000	Yes	Y	D			3200	1600	ug/kg
AQ-BMP-03-2-16	A12J621-28	Dibenzo(a,h)anthracene	10/30/2012	14500	Yes	Y	D			3200	1600	ug/kg
AQ-BMP-03-2-16	A12J621-28	1-Methylnaphthalene	10/30/2012	6410	Yes	N	D U			6410	3200	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-03-2-16	A12J621-28	Acenaphthene	10/30/2012	10300		Yes	Y	D			3200	1600	ug/kg
AQ-BMP-03-2-16	A12J621-28	Phenanthrene	10/30/2012	553000		Yes	Y	D			3200	1600	ug/kg
AQ-BMP-03-2-16	A12J621-28	Fluorene	10/30/2012	6320		Yes	Y	D			3200	1600	ug/kg
AQ-BMP-03-2-16	A12J621-28	Benzo(a)anthracene	10/30/2012	181000		Yes	Y	D			3200	1600	ug/kg
AQ-BMP-03-2-16	A12J621-28	Naphthalene	10/30/2012	6410		Yes	N	D U			6410	3200	ug/kg
AQ-BMP-03-2-16	A12J621-28	Fluoranthene	10/30/2012	1240000		Yes	Y	D			3200	1600	ug/kg
AQ-BMP-03-2-16	A12J621-28	Benzo(b,k)fluoranthene	10/30/2012	384000		Yes	Y	D			6410	3200	ug/kg
AQ-BMP-03-2-16	A12J621-28	2-Methylnaphthalene	10/30/2012	6410		Yes	N	D U			6410	3200	ug/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Acenaphthene	10/30/2012	16200		Yes	Y	D			2700	1350	ug/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Fluorene	10/30/2012	9450		Yes	Y	D			2700	1350	ug/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Chrysene	10/30/2012	460000		Yes	Y	D			2700	1350	ug/kg
AQ-BMP-05-1.5-15.5	A12J621-18	1-Methylnaphthalene	10/30/2012	5400		Yes	N	D U			5400	2700	ug/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Naphthalene	10/30/2012	5400		Yes	N	D U			5400	2700	ug/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Benzo(b,k)fluoranthene	10/30/2012	457000		Yes	Y	D			5400	2700	ug/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Phenanthrene	10/30/2012	517000		Yes	Y	D			2700	1350	ug/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Benzo(a)anthracene	10/30/2012	227000		Yes	Y	D			2700	1350	ug/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Acenaphthylene	10/30/2012	2700		Yes	N	D U			2700	1350	ug/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Benzo(a)pyrene	10/30/2012	116000		Yes	Y	D			2700	1350	ug/kg
AQ-BMP-05-1.5-15.5	A12J621-18	2-Methylnaphthalene	10/30/2012	5400		Yes	N	D U			5400	2700	ug/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Indeno(1,2,3-c,d)pyrene	10/30/2012	40900		Yes	Y	D			2700	1350	ug/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Benzo(g,h,i)perylene	10/30/2012	35100		Yes	Y	D			2700	1350	ug/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Dibenzofuran	10/30/2012	4050		Yes	Y	D			2700	1350	ug/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Anthracene	10/30/2012	90400		Yes	Y	D			2700	1350	ug/kg
AQ-BMP-05-1.5-15.5	A12J621-18	Dibenzo(a,h)anthracene	10/30/2012	13600		Yes	Y	D			2700	1350	ug/kg
AQ-BMP-05-1.5-15.5	A12J621-18RE1	Fluoranthene	10/31/2012	1480000		Yes	Y	D			27000	13500	ug/kg

SDG: A12J621

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-05-1.5-15.5	A12J621-18RE1	Pyrene	10/31/2012	1340000		Yes	Y	D			27000	13500	ug/kg

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Millennium Bulk Terminals

Collection Date: September 26, 2012

LDC Report Date: December 20, 2012

Matrix: Water

Parameters: Dissolved Metals

Validation Level: Stage 2B

Laboratory: APEX Laboratories, LLC

Sample Delivery Group (SDG): A12I470

Sample Identification

GC-LY-08-092612
GC-LY-07-092612
GC-LY-05-092612
GC-LY-06-092612
GC-LY-01-092612
GC-LY-02-092612
GC-LY-04-092612
GC-LY-07-092612DUP
GC-LY-06-092612MS

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Methods 200.7 and 200.8 for Dissolved Metals. The metals analyzed were Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium, and Silicon.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No dissolved metal contaminants were found in the initial, continuing and preparation blanks.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Dissolved Metals - Data Qualification Summary - SDG A12I470

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG A12I470

No Sample Data Qualified in this SDG

LDC #: 28944F4

SDG #: A12I470

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 12-19-12

Page: 1 of 1

Reviewer: CR

2nd Reviewer: [illegible]

METHOD: Dissolved Metals (EPA Method 200.7/200.8)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/26/12
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	A	MS (Na74/K)
VII.	Duplicate Sample Analysis	A	Dup
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	Not utilized
XI.	ICP Serial Dilution	N	Not performed
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	GC-LY-08-092612	11		21		31	
2	GC-LY-07-092612	12		22		32	
3	GC-LY-05-092612	13		23		33	
4	GC-LY-06-092612	14		24		34	
5	GC-LY-01-092612	15		25		35	
6	GC-LY-02-092612	16		26		36	
7	GC-LY-04-092612	17		27		37	
8	GC-LY-07-092612DUP	18		28		38	
9	GC-LY-06-092612MS	19		29		39	
10		20		30		40	

Notes:

LDC #: 28444T1

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-7		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
QC: 8,9		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti

Comments: Mercury by CVAA if performed

ELEMENTS.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	September 26, 2012
LDC Report Date:	December 20, 2012
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12I470

Sample Identification

GC-LY-08-092612
GC-LY-07-092612
GC-LY-05-092612
GC-LY-06-092612
GC-LY-01-092612
GC-LY-02-092612
GC-LY-04-092612
GC-LY-06-092612DUP

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2320B for Alkalinity, EPA Method 300.0 for Chloride and Sulfate, Standard Method 4500-F-C for Fluoride and Dissolved Fluoride, Standard Method 4500-P-B for Phosphorus, and EPA Method 150.1 for pH.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A12I470

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A12I470

No Sample Data Qualified in this SDG

LDC #: 28944F6

SDG #: A12I470

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 12-17-12

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: (Analyte) Alkalinity (SM2320B), Chloride, Sulfate (EPA Method 300.0), Fluoride, Dissolved Fluoride (SM4500-F-C), Phosphours (SM4500-P-B), pH (EPA Method 150.1)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/26/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	N	CS
VI.	Duplicates	A	DUP
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	GC-LY-08-092612	11		21		31	
2	GC-LY-07-092612	12		22		32	
3	GC-LY-05-092612	13		23		33	
4	GC-LY-06-092612	14		24		34	
5	GC-LY-01-092612	15		25		35	
6	GC-LY-02-092612	16		26		36	
7	GC-LY-04-092612	17		27		37	
8	GC-LY-06-092612DUP	18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 08944F6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Parameter
1-7	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Diss F P
1-4, 7	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
QC: 8	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

Millennium Bulk Terminals - LDC# 28944

SDG: A12I470

Analytical Method E150.1

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
GC-LY-01-092612	A12I470-05	Temperature	9/26/2012	21.1		Yes	Y						su
GC-LY-01-092612	A12I470-05	pH	9/26/2012	9.67		Yes	Y						su
GC-LY-02-092612	A12I470-06	Temperature	9/26/2012	20.5		Yes	Y						su
GC-LY-02-092612	A12I470-06	pH	9/26/2012	11.6		Yes	Y						su
GC-LY-04-092612	A12I470-07	Temperature	9/26/2012	20.5		Yes	Y						su
GC-LY-04-092612	A12I470-07	pH	9/26/2012	7.72		Yes	Y						su
GC-LY-05-092612	A12I470-03	Temperature	9/26/2012	22.4		Yes	Y						su
GC-LY-05-092612	A12I470-03	pH	9/26/2012	8.68		Yes	Y						su
GC-LY-06-092612	A12I470-04	pH	9/26/2012	7.49		Yes	Y						su
GC-LY-06-092612	A12I470-04	Temperature	9/26/2012	23.1		Yes	Y						su
GC-LY-07-092612	A12I470-02	Temperature	9/26/2012	22.1		Yes	Y						su
GC-LY-07-092612	A12I470-02	pH	9/26/2012	7.75		Yes	Y						su
GC-LY-08-092612	A12I470-01	pH	9/26/2012	8.04		Yes	Y						su
GC-LY-08-092612	A12I470-01	Temperature	9/26/2012	23		Yes	Y						su

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
GC-LY-01-092612	A12I470-05	Silicon	10/2/2012	3.46		Yes	Y				0.100	0.0500	mg/L
GC-LY-02-092612	A12I470-06	Silicon	10/2/2012	7.22		Yes	Y				0.100	0.0500	mg/L
GC-LY-04-092612	A12I470-07	Silicon	10/2/2012	17.2		Yes	Y				0.100	0.0500	mg/L
GC-LY-05-092612	A12I470-03	Silicon	10/2/2012	7.31		Yes	Y				0.100	0.0500	mg/L
GC-LY-06-092612	A12I470-04	Silicon	10/2/2012	20.1		Yes	Y				0.100	0.0500	mg/L
GC-LY-07-092612	A12I470-02	Silicon	10/2/2012	17.2		Yes	Y				0.100	0.0500	mg/L
GC-LY-08-092612	A12I470-01	Silicon	10/2/2012	14.5		Yes	Y				0.100	0.0500	mg/L

SDG: A12I470

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
GC-LY-01-092612	A12I470-05	Aluminum	10/2/2012	2910	Yes	Y	D			500	250	ug/L
GC-LY-01-092612	A12I470-05	Magnesium	10/2/2012	298	Yes	Y	D J			500	250	ug/L
GC-LY-01-092612	A12I470-05	Potassium	10/2/2012	2090	Yes	Y	D			1000	500	ug/L
GC-LY-01-092612	A12I470-05	Sodium	10/2/2012	383000	Yes	Y	D			1000	500	ug/L
GC-LY-01-092612	A12I470-05	Calcium	10/2/2012	631	Yes	Y	D J			1000	500	ug/L
GC-LY-01-092612	A12I470-05	Iron	10/2/2012	225	Yes	Y				50.0	25.0	ug/L
GC-LY-01-092612	A12I470-05	Manganese	10/2/2012	0.611	Yes	Y	J			1.00	0.500	ug/L
GC-LY-02-092612	A12I470-06	Calcium	10/2/2012	1000	Yes	N	D U			1000	500	ug/L
GC-LY-02-092612	A12I470-06	Aluminum	10/2/2012	35600	Yes	Y	D			500	250	ug/L
GC-LY-02-092612	A12I470-06	Magnesium	10/2/2012	500	Yes	N	D U			500	250	ug/L
GC-LY-02-092612	A12I470-06	Potassium	10/2/2012	3930	Yes	Y	D			1000	500	ug/L
GC-LY-02-092612	A12I470-06	Sodium	10/2/2012	374000	Yes	Y	D			1000	500	ug/L
GC-LY-02-092612	A12I470-06	Iron	10/2/2012	122	Yes	Y				50.0	25.0	ug/L
GC-LY-02-092612	A12I470-06	Manganese	10/2/2012	0.511	Yes	Y	J			1.00	0.500	ug/L
GC-LY-04-092612	A12I470-07	Potassium	10/2/2012	1550	Yes	Y	D			1000	500	ug/L
GC-LY-04-092612	A12I470-07	Sodium	10/2/2012	346000	Yes	Y	D			1000	500	ug/L
GC-LY-04-092612	A12I470-07	Calcium	10/2/2012	11500	Yes	Y	D			1000	500	ug/L
GC-LY-04-092612	A12I470-07	Aluminum	10/2/2012	3070	Yes	Y	D			500	250	ug/L
GC-LY-04-092612	A12I470-07	Magnesium	10/2/2012	6150	Yes	Y	D			500	250	ug/L
GC-LY-04-092612	A12I470-07	Iron	10/2/2012	186	Yes	Y				50.0	25.0	ug/L
GC-LY-04-092612	A12I470-07	Manganese	10/2/2012	1.13	Yes	Y				1.00	0.500	ug/L
GC-LY-05-092612	A12I470-03	Calcium	10/2/2012	1050	Yes	Y	D			1000	500	ug/L
GC-LY-05-092612	A12I470-03	Aluminum	10/2/2012	269	Yes	Y	D J			500	250	ug/L
GC-LY-05-092612	A12I470-03	Magnesium	10/2/2012	1600	Yes	Y	D			500	250	ug/L
GC-LY-05-092612	A12I470-03	Potassium	10/2/2012	2810	Yes	Y	D			1000	500	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
GC-LY-05-092612	A12I470-03	Manganese	10/2/2012	99.8		Yes	Y	D			5.00	2.50	ug/L
GC-LY-05-092612	A12I470-03	Iron	10/2/2012	1130		Yes	Y	D			250	125	ug/L
GC-LY-05-092612	A12I470-03	Sodium	10/2/2012	833000		Yes	Y	D			5000	2500	ug/L
GC-LY-06-092612	A12I470-04	Calcium	10/2/2012	6790		Yes	Y	D			1000	500	ug/L
GC-LY-06-092612	A12I470-04	Magnesium	10/2/2012	2960		Yes	Y	D			500	250	ug/L
GC-LY-06-092612	A12I470-04	Sodium	10/2/2012	298000		Yes	Y	D			1000	500	ug/L
GC-LY-06-092612	A12I470-04	Aluminum	10/2/2012	7220		Yes	Y	D			500	250	ug/L
GC-LY-06-092612	A12I470-04	Potassium	10/2/2012	2630		Yes	Y	D			1000	500	ug/L
GC-LY-06-092612	A12I470-04	Manganese	10/2/2012	53.8		Yes	Y	D			2.00	1.00	ug/L
GC-LY-06-092612	A12I470-04	Iron	10/2/2012	384		Yes	Y	D			100	50.0	ug/L
GC-LY-07-092612	A12I470-02	Magnesium	10/2/2012	13200		Yes	Y	D			500	250	ug/L
GC-LY-07-092612	A12I470-02	Potassium	10/2/2012	2680		Yes	Y	D			1000	500	ug/L
GC-LY-07-092612	A12I470-02	Aluminum	10/2/2012	1690		Yes	Y	D			500	250	ug/L
GC-LY-07-092612	A12I470-02	Sodium	10/2/2012	485000		Yes	Y	D			1000	500	ug/L
GC-LY-07-092612	A12I470-02	Calcium	10/2/2012	15000		Yes	Y	D			1000	500	ug/L
GC-LY-07-092612	A12I470-02	Manganese	10/2/2012	1.76		Yes	Y				1.00	0.500	ug/L
GC-LY-07-092612	A12I470-02	Iron	10/2/2012	245		Yes	Y				50.0	25.0	ug/L
GC-LY-08-092612	A12I470-01	Aluminum	10/2/2012	2930		Yes	Y	D			500	250	ug/L
GC-LY-08-092612	A12I470-01	Sodium	10/2/2012	390000		Yes	Y	D			1000	500	ug/L
GC-LY-08-092612	A12I470-01	Potassium	10/2/2012	2310		Yes	Y	D			1000	500	ug/L
GC-LY-08-092612	A12I470-01	Magnesium	10/2/2012	3170		Yes	Y	D			500	250	ug/L
GC-LY-08-092612	A12I470-01	Calcium	10/2/2012	3840		Yes	Y	D			1000	500	ug/L
GC-LY-08-092612	A12I470-01	Manganese	10/2/2012	2.02		Yes	Y				1.00	0.500	ug/L
GC-LY-08-092612	A12I470-01	Iron	10/2/2012	139		Yes	Y				50.0	25.0	ug/L

Analytical Method E300.0

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
GC-LY-01-092612	A12I470-05	Chloride (total)	9/27/2012	6.11		Yes	Y				1.00	1.00	mg/L
GC-LY-01-092612	A12I470-05	Sulfate	9/27/2012	31.2		Yes	Y				1.00	1.00	mg/L
GC-LY-02-092612	A12I470-06	Chloride (total)	9/27/2012	8.87		Yes	Y				1.00	1.00	mg/L
GC-LY-02-092612	A12I470-06	Sulfate	9/27/2012	29.7		Yes	Y				1.00	1.00	mg/L
GC-LY-04-092612	A12I470-07	Sulfate	9/27/2012	5.98		Yes	Y				1.00	1.00	mg/L
GC-LY-04-092612	A12I470-07	Chloride (total)	9/27/2012	1.17		Yes	Y				1.00	1.00	mg/L
GC-LY-05-092612	A12I470-03	Chloride (total)	9/27/2012	8.72		Yes	Y				1.00	1.00	mg/L
GC-LY-05-092612	A12I470-03RE1	Sulfate	9/28/2012	154		Yes	Y	D			10.0	10.0	mg/L
GC-LY-06-092612	A12I470-04	Chloride (total)	9/27/2012	2.71		Yes	Y				1.00	1.00	mg/L
GC-LY-06-092612	A12I470-04RE1	Sulfate	9/28/2012	65.2		Yes	Y	D			10.0	10.0	mg/L
GC-LY-07-092612	A12I470-02	Chloride (total)	9/27/2012	2.19		Yes	Y				1.00	1.00	mg/L
GC-LY-07-092612	A12I470-02	Sulfate	9/27/2012	19		Yes	Y				1.00	1.00	mg/L
GC-LY-08-092612	A12I470-01	Sulfate	9/27/2012	38.6		Yes	Y				1.00	1.00	mg/L
GC-LY-08-092612	A12I470-01	Chloride (total)	9/27/2012	2.51		Yes	Y				1.00	1.00	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
GC-LY-01-092612	A12I470-05	Alkalinity, total as calcium carbonate (CaCO3)	10/1/2012	540		Yes	Y				1.00	1.00	mg/L
GC-LY-02-092612	A12I470-06	Alkalinity, total as calcium carbonate (CaCO3)	10/1/2012	738		Yes	Y				1.00	1.00	mg/L
GC-LY-04-092612	A12I470-07	Alkalinity, total as calcium carbonate (CaCO3)	10/1/2012	706		Yes	Y				1.00	1.00	mg/L
GC-LY-05-092612	A12I470-03	Alkalinity, total as calcium carbonate (CaCO3)	10/1/2012	1060		Yes	Y				1.00	1.00	mg/L
GC-LY-06-092612	A12I470-04	Alkalinity, total as calcium carbonate (CaCO3)	10/1/2012	454		Yes	Y				1.00	1.00	mg/L
GC-LY-07-092612	A12I470-02	Alkalinity, total as calcium carbonate (CaCO3)	10/1/2012	979		Yes	Y				1.00	1.00	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
GC-LY-08-092612	A12I470-01	Alkalinity, total as calcium carbonate (CaCO3)	10/1/2012	508	Yes	Y				1.00	1.00	mg/L

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
GC-LY-01-092612	A12I470-05	Fluoride	10/4/2012	94.7	Yes	Y				2.50	2.50	mg/L
GC-LY-02-092612	A12I470-06	Fluoride	10/4/2012	107	Yes	Y				2.50	2.50	mg/L
GC-LY-04-092612	A12I470-07	Fluoride	10/3/2012	53.8	Yes	Y				2.50	2.50	mg/L
GC-LY-04-092612	A12I470-07	Fluoride	10/4/2012	59.9	Yes	Y				2.50	2.50	mg/L
GC-LY-05-092612	A12I470-03	Fluoride	10/3/2012	163	Yes	Y				2.50	2.50	mg/L
GC-LY-05-092612	A12I470-03	Fluoride	10/4/2012	164	Yes	Y				2.50	2.50	mg/L
GC-LY-06-092612	A12I470-04	Fluoride	10/3/2012	79.8	Yes	Y				2.50	2.50	mg/L
GC-LY-06-092612	A12I470-04	Fluoride	10/4/2012	82.9	Yes	Y				2.50	2.50	mg/L
GC-LY-07-092612	A12I470-02	Fluoride	10/3/2012	62.4	Yes	Y				2.50	2.50	mg/L
GC-LY-07-092612	A12I470-02	Fluoride	10/4/2012	64.6	Yes	Y				2.50	2.50	mg/L
GC-LY-08-092612	A12I470-01	Fluoride	10/3/2012	119	Yes	Y				2.50	2.50	mg/L
GC-LY-08-092612	A12I470-01	Fluoride	10/4/2012	123	Yes	Y				2.50	2.50	mg/L

Analytical Method SM4500P

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
GC-LY-01-092612	A12I470-05	Phosphorus	10/1/2012	0.032	Yes	Y	J			0.100	0.0100	mg/L
GC-LY-02-092612	A12I470-06	Phosphorus	10/1/2012	0.046	Yes	Y	J			0.100	0.0100	mg/L
GC-LY-04-092612	A12I470-07	Phosphorus	10/1/2012	0.012	Yes	Y	J			0.100	0.0100	mg/L
GC-LY-05-092612	A12I470-03	Phosphorus	10/1/2012	0.04	Yes	Y	J			0.100	0.0100	mg/L
GC-LY-06-092612	A12I470-04	Phosphorus	10/1/2012	0.078	Yes	Y	J			0.100	0.0100	mg/L
GC-LY-07-092612	A12I470-02	Phosphorus	10/1/2012	0.068	Yes	Y	J			0.100	0.0100	mg/L
GC-LY-08-092612	A12I470-01	Phosphorus	10/1/2012	0.178	Yes	Y				0.100	0.0100	mg/L

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 3, 2012
LDC Report Date:	January 3, 2013
Matrix:	Water
Parameters:	Volatiles
Validation Level:	Stage 2B
Laboratory:	Apex Laboratories, LLC
Sample Delivery Group (SDG):	A12J102

Sample Identification

G2-S-100312
G4-S-100312
R-2-100312
G2-S-100312DUP

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
10/5/12	Acetone 2-Butanone Trichlorofluoromethane	64 37.4 45.2	G2-S-100312 G2-S-100312DUP 1210184-MB	J (all detects) J (all detects) J (all detects)	A
10/5/12	Bromomethane Chloromethane Carbon disulfide	28.6 33.8 23.1	G2-S-100312 G2-S-100312DUP 1210184-MB	J (all detects) UJ (all non-detects)	A
10/6/12	Acetone 2-Butanone n-Butylbenzene sec-Butylbenzene Chloroethane Trichlorofluoromethane	32.4 27.8 24.9 20.5 79.7 48.6	G4-S-100312 R-2-100312 1210190-MB	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A

Date	Compound	%D	Associated Samples	Flag	A or P
10/6/12	Bromomethane Chloromethane 4-Methyl-2-pentanone	23.9 43.9 21.5	G4-S-100312 R-2-100312 1210190-MB	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID	Compound	%R (Limits)	Associated Samples	Flag	A or P
1210184-LCS	Acetone 2-Butanone Trichlorofluoromethane	162 (60-140) 141 (60-140) 146 (60-140)	G2-S-100312 1210184-MB	J (all detects) J (all detects) J (all detects)	P
1210190-LCS	Acetone	152 (60-140)	G4-S-100312 R-2-100312 1210190-MB	J (all detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

All tentatively identified compounds were within validation criteria.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to calibration %D problems, data were qualified as estimated in three samples.

No data were qualified due to high LCS %Rs, the associated results were non-detected.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Volatiles - Data Qualification Summary - SDG A12J102

SDG	Sample	Compound	Flag	A or P	Reason
A12J102	G2-S-100312	Acetone 2-Butanone Trichlorofluoromethane	J (all detects) J (all detects) J (all detects)	A	Continuing calibration (%D)
A12J102	G2-S-100312 G4-S-100312 R-2-100312	Bromomethane Chloromethane	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
A12J102	G4-S-100312 R-2-100312	Acetone 2-Butanone n-Butylbenzene sec-Butylbenzene Chloroethane Trichlorofluoromethane	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A	Continuing calibration (%D)
A12J102	G2-S-100312	Carbon disulfide	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
A12J102	G4-S-100312 R-2-100312	4-Methyl-2-pentanone	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
A12J102	G2-S-100312	Acetone 2-Butanone Trichlorofluoromethane	J (all detects) J (all detects) J (all detects)	P	Laboratory control samples (%R)
A12J102	G4-S-100312 R-2-100312	Acetone	J (all detects)	P	Laboratory control samples (%R)

Millennium Bulk Terminals
Volatiles - Laboratory Blank Data Qualification Summary - SDG A12J102

No Sample Data Qualified in this SDG

LDC #: 28944G1

SDG #: A12J102

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/3/13

Page: 1 of 1

Reviewer: FZ

2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/3/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 15/30
IV.	Continuing calibration/ICV	SW	CCV ≤ 20 ICV ≤ 30
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates /DUP	N / A	client specific
VIII.	Laboratory control samples	SW	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Water

1 1	G2-S-100312	11 1	1210184	21	1	31	
2 2	G4-S-100312	12 2	1210190	22		32	
3 2	R-2-100312	13		23		33	
4	G2-S-100312DUP	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC #: 28944G1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: FT
2nd Reviewer: a

METHOD: GC/MS VOA (EPA SW 846 Method 8260)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ≤~~25~~ 20 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤~~25.0~~ 20%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
+	10/05/12	2J05031_ccv3	F	64		1210184-MB, 1,	J/A det
-			B	28.6		4	J/UJ/A
+			M	37.4			J/A det
-			A	33.8			J/UJ/A
+			KK	45.2			J/A det
-			G	23.1			J/UJ/A
+	10/06/12	2J06002_ccv1	F	32.4		1210190-MB,	J/A det
-			B	23.9		2, 3	J/UJ/A
+			M	27.8			J/A det
+			III	24.9			
+			EEE	20.5			
+			D	79.7			
-			A	43.9			J/UJ/A
-			Y	21.5			
+			KK	48.6			J/A det

LDC #: 28944G1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FT
2nd Reviewer: CR

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?

Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		1210184-lcs	F	162 (60-140)	( )	( )	1210184-MB, 1	J / Pdet
			M	141 (↓)	( )	( )	↓	↓
			KK	146 (↓)	( )	( )	↓	↓
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
		1210190-lcs	F	152 (60-140)	( )	( )	1210190-MB, 2, 3	J / Pdet
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 3, 2012
LDC Report Date:	January 4, 2013
Matrix:	Water
Parameters:	Semivolatiles
Validation Level:	Stage 2B
Laboratory:	Apex Laboratories, LLC
Sample Delivery Group (SDG):	A12J102

Sample Identification

G2-S-100312
G4-S-100312
R-2-100312

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270D for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
10/9/12	Carbazole	20.8	All samples in SDG A12J102	J (all detects)	A
	2,4-Dinitrophenol	27.6		J (all detects)	
	4,6-Dinitro-2-methylphenol	26.2		J (all detects)	
	3,3'-Dichlorobenzidine	23.4		J (all detects)	
	3-Nitroaniline	30.1		J (all detects)	

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
1210238-MB	10/9/12	Naphthalene	0.0236 ug/L	All samples in SDG A12J102

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
1210238-LCS/D (All samples in SDG A12J102)	4-Nitrophenol	34 (60-140)	36 (60-140)	-	J (all detects)	P
	Phenol	32 (60-140)	32 (60-140)	-	UJ (all non-detects)	
	N-Nitrosodimethylamine	45 (60-140)	44 (60-140)	-		
	Hexachlorobutadiene	59 (60-140)	54 (60-140)	-		
	Hexachloroethane	58 (60-140)	53 (60-140)	-		
	1,2-Dichlorobenzene	59 (60-140)	56 (60-140)	-		
	1,3-Dichlorobenzene	55 (60-140)	51 (60-140)	-		
	1,4-Dichlorobenzene	57 (60-140)	52 (60-140)	-		
	Aniline	58 (60-140)	49 (60-140)	-		
	4-Chloroaniline	42 (60-140)	36 (60-140)	-		
	Pyridine	50 (60-140)	55 (60-140)	-		
	2,4-Dimethylphenol	-	50 (60-140)	-		
	4-Nitroaniline	-	59 (60-140)	-		
	3,3'-Dichlorobenzidine	-	27 (60-140)	-		
	3-Nitroaniline	-	50 (60-140)	-		

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to calibration %D and LCS %R problems, data were qualified as estimated in three samples.

The quality control criteria reviewed were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Semivolatiles - Data Qualification Summary - SDG A12J102

SDG	Sample	Compound	Flag	A or P	Reason
A12J102	G2-S-100312 G4-S-100312 R-2-100312	Carbazole 2,4-Dinitrophenol 4,6-Dinitro-2-methylphenol 3,3'-Dichlorobenzidine 3-Nitroaniline	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A	Continuing calibration (%D)
A12J102	G2-S-100312 G4-S-100312 R-2-100312	4-Nitrophenol Phenol N-Nitrosodimethylamine Hexachlorobutadiene Hexachloroethane 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Aniline 4-Chloroaniline Pyridine 2,4-Dimethylphenol 4-Nitroaniline 3,3'-Dichlorobenzidine 3-Nitroaniline	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)

Millennium Bulk Terminals
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG A12J102

No Sample Data Qualified in this SDG

LDC #: 28944G2a

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

SDG #: A12J102

Laboratory: APEX Laboratories, LLC

Date: 1/3/13

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	Δ	Sampling dates: 10/3/12
II.	GC/MS Instrument performance check	Δ	
III.	Initial calibration	Δ	% RSD ≤ 20, r^2
IV.	Continuing calibration/ICV	SW	ICV/CCV ≤ 20/30
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	SW	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	Δ	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	Δ	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Waters

1	G2-S-100312	11	1210238	21		31	
2	G4-S-100312	12		22		32	
3	R-2-100312	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1- Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 28944G2a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: FT
2nd Reviewer: a

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ≤20 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤20.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
+	10/09/12	2J09023-CCV1	Carbazole	20.8		All	J/A det
+			HH	27.6		↓	↓
+			PP	26.2			
+			BBB	23.4			
+			FF	30.1			

CONCAL.2S

LDC #: 28944G2a

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer: FT
2nd Reviewer: 02

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a method blank analyzed for each matrix?
Y N N/A Was a method blank analyzed for each concentration preparation level?
Y N N/A Was a method blank associated with every sample?
Y N N/A Was the blank contaminated? If yes, please see qualification below.

Blank extraction date: 10/09/12 **Blank analysis date:** 10/09/12
Conc. units: ug/L Associated Samples: All (ND)

Compound	Blank ID	Sample Identification								
	1210238-MB									
S	0.0236									

Blank extraction date:_____ **Blank analysis date:**_____
Conc. units:_____ Associated Samples:_____

Compound	Blank ID	Sample Identification								

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 28944G2a

VALIDATION FINDINGS WORKSHEET
Surrogate Recovery

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were percent recoveries (%R) for surrogates within QC limits?
Y N N/A If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?
Y N N/A If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

#	Date	Sample ID	Surrogate	%R (Limits)	Qualifications
		1	TBP	129 (35-125)	no qual
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
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				( )	
				( )	

* QC limits are advisory	QC Limits (Soil)	QC Limits (Water)
S1 (NBZ) = Nitrobenzene-d5	23-120	35-114
S2 (FBP) = 2-Fluorobiphenyl	30-115	43-116
S3 (TPH) = Terphenyl-d14	18-137	33-141
S4 (PHL) = Phenol-d5	24-113	10-94

	QC Limits (Soil)	QC Limits (Water)
S5 (2FP)= 2-Fluorophenol	25-121	21-100
S6 (TBP) = 2,4,6-Tribromophenol	19-122	10-123
S7 (2CP) = 2-Chlorophenol-d4	20-130*	33-110*
S8 (DCB) = 1,2-Dichlorobenzene-d4	20-130*	16-110*

LDC #: 28944 G2a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FT
2nd Reviewer: CR

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?
Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		1210238-LCS/D	II	34 (60-140)	36 (60-140)	( )	All	J/UJ/P
			A	32 ( )	32 ( )	( )		
			~~OOO~~	45 ( )	44 ( )	( )		
			U	59 ( )	54 ( )	( )		
			K	58 ( )	53 ( )	( )		
			F	59 ( )	56 ( )	( )		
			D	55 ( )	51 ( )	( )		
			E	57 ( )	52 ( )	( )		
			NNN	58 ( )	49 ( )	( )		
			T	42 ( )	36 ( )	( )		
			RRR	50 ( )	~~50~~ 55 ( )	( )		
			~~O~~	( )	50 ( )	( )		
			~~OO~~	( )	59 ( )	( )		
			BBB	( )	27 ( )	( )		
			FF	( )	50 ( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 3, 2012
LDC Report Date:	December 26, 2012
Matrix:	Water
Parameters:	Polychlorinated Biphenyls
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J102

Sample Identification

G2-S-100312
G4-S-100312
R-2-100312

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082A for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

Raw data were not reviewed for this SDG.

XIII. Compound Quantitation and Reported RLs

Raw data were not reviewed for this SDG.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XV. Field Duplicates

No field duplicates were identified in this SDG.

XVI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polychlorinated Biphenyls - Data Qualification Summary - SDG A12J102

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG A12J102

No Sample Data Qualified in this SDG

LDC #: 28944G3b

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

SDG #: A12J102

Laboratory: APEX Laboratories, LLC

Date: 12/20/2012

Page: 1 of 1

Reviewer: SW

2nd Reviewer: [illegible]

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/03/2012
II.	GC/ECD Instrument Performance Check	N	
III.	Initial calibration	A	RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV / CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	CS
VIII.	Laboratory control samples	A	LCS / LCSD
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	N	
XIII.	Compound quantitation/RL/LOQ/LODs	N	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

WATER

1	G2-S-100312	11		21		31	1210281-BLK1
2	G4-S-100312	12		22		32	
3	R-2-100312	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 3, 2012
LDC Report Date:	December 20, 2012
Matrix:	Water
Parameters:	Metals
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J102

Sample Identification

W8-100312
G2-S-100312
G2-D-100312
G4-S-100312
R-2-100312
W8-100312F
G2-S-100312F
G2-D-100312F
G4-S-100312F
R-2-100312F
W8-100312DUP
G4-S-100312MS
W8-100312FDUP
G4-S-100312FMS

Samples appended with F were analyzed for dissolved metals.

Introduction

This data review covers 14 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Methods 200.7 and 200.8 for Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Beryllium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Potassium, Selenium, Silver, Silicon, Sodium, Thallium, and Zinc.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Arsenic Chromium Manganese	0.589 ug/L 0.933 ug/L 3.17 ug/L	W8-100312 G2-S-100312 G2-D-100312 G4-S-100312 R-2-100312
ICB/CCB	Iron Potassium	36.9 ug/L 63.9 ug/L	W8-100312F G2-S-100312F G2-D-100312F G4-S-100312F R-2-100312F

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
W8-100312	Arsenic Manganese	0.911 ug/L 8.01 ug/L	0.911U ug/L 8.01U ug/L
G4-S-100312	Chromium	4.24 ug/L	4.24U ug/L

Sample	Analyte	Reported Concentration	Modified Final Concentration
R-2-100312	Arsenic Chromium	2.64 ug/L 1.13 ug/L	2.64U ug/L 1.13U ug/L
W8-100312F	Iron	115 ug/L	115U ug/L

V. ICP Interference Check Sample (ICS) Analysis

ICP Interference check sample analysis was not required by the methods.

VI. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
G4-S-100312MS (G2-S-100312 G2-D-100312 G4-S-100312 W8-100312 R-2-100312)	Aluminum	124 (80-120)	J (all detects)	A

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this method.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS %R problems, data were qualified as estimated in five samples

Due to calibration and method blank contamination problems, data were qualified as not detected in four samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Metals - Data Qualification Summary - SDG A12J102

SDG	Sample	Analyte	Flag	A or P	Reason
A12J102	G2-S-100312 G2-D-100312 G4-S-100312 W8-100312 R-2-100312	Aluminum	J (all detects)	A	Matrix spike (%R)

Millennium Bulk Terminals
Metals - Laboratory Blank Data Qualification Summary - SDG A12J102

SDG	Sample	Analyte	Modified Final Concentration	A or P
A12J102	W8-100312	Arsenic Manganese	0.911U ug/L 8.01U ug/L	A
A12J102	G4-S-100312	Chromium	4.24U ug/L	A
A12J102	R-2-100312	Arsenic Chromium	2.64U ug/L 1.13U ug/L	A
A12J102	W8-100312F	Iron	115U ug/L	A

LDC #: 28944G4

SDG #: A12J102

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 12-19-12

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: Metals (EPA Method 200.7/200.8)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/3/12
II.	ICP/MS Tune	1	
III.	Calibration	A	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis		
VI.	Matrix Spike Analysis	SW	MS ~~CS~~
VII.	Duplicate Sample Analysis	A	Dup (As, Cr, Cu, Zn or by difference)
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	Not utilized
XI.	ICP Serial Dilution	N	Not performed
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	W8-100312	11	W8-100312DUP	21		31	
2	G2-S-100312	12	G4-S-100312MS	22		32	
3	G2-D-100312	13	W8-100312FDUP	23		33	
4	G4-S-100312	14	G4-S-100312FMS	24		34	
5	R-2-100312	15		25		35	
6	W8-100312F	16		26		36	
7	G2-S-100312F	17		27		37	
8	G2-D-100312F	18		28		38	
9	G4-S-100312F	19		29		39	
10	R-2-100312F	20		30		40	

Notes: Samples appended with "F" were analyzed for dissolved metals

LDC #: 28944G4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: CR
2nd reviewer: ✓

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1,3,6,8		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
2,4,5,7,9,10		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
QC:11		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
12		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
13		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
14		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___

Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___

Comments: Mercury by CVAA if performed

LDC #: 28944G4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: CL
2nd Reviewer: [illegible]

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)
Soil preparation factor applied: NA
Sample Concentration units, unless otherwise noted: ug/L
Associated Samples: 1-5

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	1	4	5						
As		0.589		2.945	0.911		2.64						
Cr		0.933		4.665		4.24	1.13						
Mn		3.17		15.85	8.01								

Sample Concentration units, unless otherwise noted: ug/L
Associated Samples: 6-10

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	6								
Fe			36.9	184.5	115								
K			63.9	319.5									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 0894464

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of ~~75-125~~? 80-120 If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

Y N N/A Was a post digestion spike analyzed for ICP elements that did not meet the required criteria for matrix spike recovery?

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
		8 12	W	Al	124	~~2-4~~ 1-5	J det/A

Comments: 12: Si, Ca, Mg, Mn >4X 14: Mn >4X

MS.4SW

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 3, 2012
LDC Report Date:	December 20, 2012
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J102

Sample Identification

W8-100312
G2-S-100312
G2-D-100312
G4-S-100312
R-2-100312
W8-100312MS
W8-100312DUP
G2-S-100312MS
G2-S-100312DUP
G4-S-100312DUP

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2320B for Alkalinity, EPA Method 300.0 for Chloride and Sulfate, EPA Method 335.4 for Total Cyanide and Dissolved Cyanide, Standard Method 4500-CN (I/E) for Weak Acid Dissociable Cyanide and Dissolved Weak Acid Dissociable Cyanide, ASTM D4282 for Free Cyanide and Dissolved Free Cyanide, Standard Method 4500-F-C for Fluoride and Dissolved Fluoride, Standard Method 4500-P-B for Phosphorus, Standard Method 2540C for Total Dissolved Solids, and Standard Method 2540D for Total Suspended Solids.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
W8-100312 G2-S-100312 G2-D-100312 G4-S-100312 R-2-100312	Total dissolved solids Total suspended solids	23 days	7 days	J (all detects) R (all non-detects) J (all detects) R (all non-detects)	P
W8-100312DUP	Total dissolved solids	23 days	7 days	J (all detects) R (all non-detects)	P
G2-S-100312DUP	Total suspended solids	23 days	7 days	J (all detects) R (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
G2-S-100312MS (G2-S-100312 G2-D-100312 G4-S-100312 W8-100312 R-2-100312)	Free cyanide	35 (80-120)	J (all detects) UJ (all non-detects)	A

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

Due to holding time problems, data were qualified as rejected in two sample.

Due to holding time and MS %R problems, data were qualified as estimated in five samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be rejected (R) are unusable for all purposes. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A12J102

SDG	Sample	Analyte	Flag	A or P	Reason
A12J102	W8-100312 G2-S-100312 G2-D-100312 G4-S-100312 R-2-100312	Total dissolved solids Total suspended solids	J (all detects) R (all non-detects) J (all detects) R (all non-detects)	P	Technical holding time
A12J102	G2-S-100312 G2-D-100312 G4-S-100312 W8-100312 R-2-100312	Free cyanide	J (all detects) UJ (all non-detects)	A	Matrix spike (%R)

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A12J102

No Sample Data Qualified in this SDG

LDC #: 28944G6

SDG #: A12J102

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 12-19-12

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: (Analyte) Alkalinity (SM2320B), Chloride, Sulfate (EPA Method 300.0), Total Cyanide, Dissolved Cyanide (EPA Method 335.4), WAD Cyanide, Dissolved WAD Cyanide (~~EPA SW846 Method 9013M~~/SM4500-CN-I/E), Free Cyanide, Dissolved Free Cyanide (ASTM D4282), Fluoride, Dissolved Fluoride (SM4500-F-C), Phosphorus (SM4500-P-B), TDS (SM2540C), TSS (SM2540D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 10/3/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	SW	MS
VI.	Duplicates	A	Dup
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	W8-100312	11		21		31	
2	G2-S-100312	12		22		32	
3	G2-D-100312	13		23		33	
4	G4-S-100312	14		24		34	
5	R-2-100312	15		25		35	
6	W8-100312MS	16		26		36	
7	W8-100312DUP	17		27		37	
8	G2-S-100312MS	18		28		38	
9	G2-S-100312DUP	19		29		39	
10	G4-S-100312DUP	20		30		40	

Notes:

LDC #: 0894466

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer: V

All circled methods are applicable to each sample.

Sample ID	Parameter
1-5	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Diss F WAD CN Free CN Diss CN
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Diss WAD CN Diss Free CN P TSS
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
QC: 6	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Diss WAD CN Diss Free CN P
7	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Diss WAD CN Diss Free CN P
8	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Diss F Free CN
9	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Diss F Free CN TSS
10	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

LDC #: 2844466

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page: 1 of 1
Reviewer: CR
2nd reviewer: [illegible]

All circled dates have exceeded the technical holding time.
Y N N/A Were all samples preserved as applicable to each method ?
Y N N/A Were all cooler temperatures within validation criteria?

Method:		~~2540~~	2540C/D				
Parameters:		~~2540C/D~~	TDS/TSS				
Technical holding time:			7 days				
Sample ID	**Sampling date**	**Analysis date**	**Analysis date**	**Analysis date**	**Analysis date**	**Analysis date**	**Qualifier**
1-5 ~~7,9~~	10/3/12		10/29/12	(26 days) 23			J/R/P
7 (TDS only)	↓		↓	↓			↓
9 (TSS only)							

HT.6

LDC #: 28944G6

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: CR
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions ~~are identified~~ as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of ~~75-125~~ 80-120 (85-115% for Method 300.0)? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
		8	W	FreeCN	35	~~2-4~~ 1-5	J/UJ/N

Comments:

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-D-100312	A12J102-03	Cyanide, free	10/4/2012	0.005	Yes	N	U	UJ	5	0.00500	0.00200	mg/L
G2-D-100312	A12J102-03	Cyanide, free	10/4/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
G2-S-100312	A12J102-02	Cyanide, free	10/4/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
G2-S-100312	A12J102-02	Cyanide, free	10/4/2012	0.005	Yes	N	U	UJ	5	0.00500	0.00200	mg/L
G4-S-100312	A12J102-04	Cyanide, free	10/4/2012	0.005	Yes	N	U	UJ	5	0.00500	0.00200	mg/L
G4-S-100312	A12J102-04	Cyanide, free	10/4/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
R-2-100312	A12J102-05	Cyanide, free	10/4/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
R-2-100312	A12J102-05	Cyanide, free	10/4/2012	0.005	Yes	N	U	UJ	5	0.00500	0.00200	mg/L
W8-100312	A12J102-01	Cyanide, free	10/4/2012	0.005	Yes	N	U	UJ	5	0.00500	0.00200	mg/L
W8-100312	A12J102-01	Cyanide, free	10/4/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-D-100312	A12J102-03	Silicon	10/12/2012	72.8	Yes	Y				0.100	0.0500	mg/L
G2-D-100312	A12J102-03	Silicon	10/12/2012	29.4	Yes	Y				0.100	0.0500	mg/L
G2-S-100312	A12J102-02	Silicon	10/12/2012	23.9	Yes	Y				0.100	0.0500	mg/L
G2-S-100312	A12J102-02	Silicon	10/12/2012	23.9	Yes	Y				0.100	0.0500	mg/L
G4-S-100312	A12J102-04	Silicon	10/12/2012	40.8	Yes	Y				0.100	0.0500	mg/L
G4-S-100312	A12J102-04	Silicon	10/12/2012	35.5	Yes	Y				0.100	0.0500	mg/L
R-2-100312	A12J102-05	Silicon	10/12/2012	32.2	Yes	Y				0.100	0.0500	mg/L
R-2-100312	A12J102-05	Silicon	10/12/2012	31.5	Yes	Y				0.100	0.0500	mg/L
W8-100312	A12J102-01	Silicon	10/12/2012	4.82	Yes	Y				0.100	0.0500	mg/L
W8-100312	A12J102-01	Silicon	10/12/2012	4.71	Yes	Y				0.100	0.0500	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-D-100312	A12J102-03	Nickel	10/18/2012	7.61	Yes	Y	D J			10.0	2.50	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-D-100312	A12J102-03	Aluminum	10/18/2012	250		Yes	N	D U			250	125	ug/L
G2-D-100312	A12J102-03	Iron	10/18/2012	5370		Yes	Y	D			500	125	ug/L
G2-D-100312	A12J102-03	Manganese	10/18/2012	1040		Yes	Y	D			5.00	2.50	ug/L
G2-D-100312	A12J102-03	Calcium	10/18/2012	65100		Yes	Y	D			500	250	ug/L
G2-D-100312	A12J102-03	Potassium	10/18/2012	4330		Yes	Y	D			1000	250	ug/L
G2-D-100312	A12J102-03	Arsenic	10/18/2012	17.2		Yes	Y	D			10.0	2.50	ug/L
G2-D-100312	A12J102-03	Chromium	10/18/2012	2.72		Yes	Y	D J			10.0	2.50	ug/L
G2-D-100312	A12J102-03	Copper	10/18/2012	20		Yes	N	D U			20.0	5.00	ug/L
G2-D-100312	A12J102-03	Magnesium	10/18/2012	33900		Yes	Y	D			250	125	ug/L
G2-D-100312	A12J102-03	Sodium	10/18/2012	835000		Yes	Y	D			5000	2500	ug/L
G2-D-100312	A12J102-03	Arsenic	10/19/2012	42.9		Yes	Y	D			10.0	2.50	ug/L
G2-D-100312	A12J102-03	Aluminum	10/19/2012	51100		Yes	Y	D			250	125	ug/L
G2-D-100312	A12J102-03	Calcium	10/19/2012	85600		Yes	Y	D			500	250	ug/L
G2-D-100312	A12J102-03	Chromium	10/19/2012	58.3		Yes	Y	D			20.0	2.50	ug/L
G2-D-100312	A12J102-03	Potassium	10/19/2012	7030		Yes	Y	D			1000	250	ug/L
G2-D-100312	A12J102-03	Nickel	10/19/2012	83.8		Yes	Y	D			10.0	2.50	ug/L
G2-D-100312	A12J102-03	Manganese	10/19/2012	2360		Yes	Y	D			5.00	2.50	ug/L
G2-D-100312	A12J102-03	Magnesium	10/19/2012	53400		Yes	Y	D			250	125	ug/L
G2-D-100312	A12J102-03	Iron	10/19/2012	94800		Yes	Y	D			1000	125	ug/L
G2-D-100312	A12J102-03	Copper	10/19/2012	189		Yes	Y	D			10.0	5.00	ug/L
G2-D-100312	A12J102-03	Sodium	10/19/2012	868		Yes	Y	D			2.50	1.25	mg/L
G2-S-100312	A12J102-02	Beryllium	10/18/2012	5		Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Potassium	10/18/2012	11400		Yes	Y	D			1000	250	ug/L
G2-S-100312	A12J102-02	Silver	10/18/2012	5		Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Nickel	10/18/2012	8.78		Yes	Y	D J			10.0	2.50	ug/L

SDG: A12J102

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-S-100312	A12J102-02	Thallium	10/18/2012	5	Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Mercury	10/18/2012	0.4	Yes	N	D U			0.400	0.200	ug/L
G2-S-100312	A12J102-02	Antimony	10/18/2012	5	Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Arsenic	10/18/2012	33.3	Yes	Y	D			10.0	2.50	ug/L
G2-S-100312	A12J102-02	Iron	10/18/2012	22100	Yes	Y	D			500	125	ug/L
G2-S-100312	A12J102-02	Aluminum	10/18/2012	250	Yes	N	D U			250	125	ug/L
G2-S-100312	A12J102-02	Magnesium	10/18/2012	55700	Yes	Y	D			250	125	ug/L
G2-S-100312	A12J102-02	Manganese	10/18/2012	2730	Yes	Y	D			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Selenium	10/18/2012	10	Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	Calcium	10/18/2012	78700	Yes	Y	D			500	250	ug/L
G2-S-100312	A12J102-02	Zinc	10/18/2012	20	Yes	N	D U			20.0	10.0	ug/L
G2-S-100312	A12J102-02	Copper	10/18/2012	20	Yes	N	D U			20.0	5.00	ug/L
G2-S-100312	A12J102-02	Chromium	10/18/2012	3.22	Yes	Y	D J			10.0	2.50	ug/L
G2-S-100312	A12J102-02	Cadmium	10/18/2012	5	Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Lead	10/18/2012	5	Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Sodium	10/18/2012	788000	Yes	Y	D			5000	2500	ug/L
G2-S-100312	A12J102-02	Chromium	10/19/2012	20	Yes	N	D U			20.0	2.50	ug/L
G2-S-100312	A12J102-02	Calcium	10/19/2012	82600	Yes	Y	D			500	250	ug/L
G2-S-100312	A12J102-02	Selenium	10/19/2012	10	Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	Potassium	10/19/2012	12100	Yes	Y	D			1000	250	ug/L
G2-S-100312	A12J102-02	Aluminum	10/19/2012	126	Yes	Y	D J			250	125	ug/L
G2-S-100312	A12J102-02	Iron	10/19/2012	23000	Yes	Y	D			1000	125	ug/L
G2-S-100312	A12J102-02	Lead	10/19/2012	5	Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Magnesium	10/19/2012	57900	Yes	Y	D			250	125	ug/L
G2-S-100312	A12J102-02	Manganese	10/19/2012	2910	Yes	Y	D			5.00	2.50	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-S-100312	A12J102-02	Zinc	10/19/2012	20	Yes	N	D U			20.0	10.0	ug/L
G2-S-100312	A12J102-02	Nickel	10/19/2012	9.94	Yes	Y	D J			10.0	2.50	ug/L
G2-S-100312	A12J102-02	Silver	10/19/2012	5	Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Thallium	10/19/2012	5	Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Antimony	10/19/2012	5	Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Arsenic	10/19/2012	30.9	Yes	Y	D			10.0	2.50	ug/L
G2-S-100312	A12J102-02	Beryllium	10/19/2012	5	Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Cadmium	10/19/2012	5	Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Copper	10/19/2012	10	Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	Mercury	10/19/2012	0.4	Yes	N	D U			0.400	0.200	ug/L
G2-S-100312	A12J102-02	Sodium	10/19/2012	775	Yes	Y	D			2.50	1.25	mg/L
G4-S-100312	A12J102-04	Manganese	10/18/2012	2400	Yes	Y				1.00	0.500	ug/L
G4-S-100312	A12J102-04	Copper	10/18/2012	4	Yes	N	U			4.00	1.00	ug/L
G4-S-100312	A12J102-04	Aluminum	10/18/2012	50	Yes	N	U			50.0	25.0	ug/L
G4-S-100312	A12J102-04	Lead	10/18/2012	1	Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04	Magnesium	10/18/2012	42800	Yes	Y				50.0	25.0	ug/L
G4-S-100312	A12J102-04	Antimony	10/18/2012	1	Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04	Nickel	10/18/2012	1.66	Yes	Y	J			2.00	0.500	ug/L
G4-S-100312	A12J102-04	Potassium	10/18/2012	2220	Yes	Y				200	50.0	ug/L
G4-S-100312	A12J102-04	Silver	10/18/2012	1	Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04	Sodium	10/18/2012	23000	Yes	Y				100	50.0	ug/L
G4-S-100312	A12J102-04	Thallium	10/18/2012	1	Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04	Mercury	10/18/2012	0.08	Yes	N	U			0.0800	0.0400	ug/L
G4-S-100312	A12J102-04	Selenium	10/18/2012	1.26	Yes	Y	J			2.00	1.00	ug/L
G4-S-100312	A12J102-04	Cadmium	10/18/2012	1	Yes	N	U			1.00	0.500	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G4-S-100312	A12J102-04	Arsenic	10/18/2012	5.19	Yes	Y				2.00	0.500	ug/L
G4-S-100312	A12J102-04	Beryllium	10/18/2012	1	Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04	Chromium	10/18/2012	0.611	Yes	Y	J			2.00	0.500	ug/L
G4-S-100312	A12J102-04	Zinc	10/18/2012	4	Yes	N	U			4.00	2.00	ug/L
G4-S-100312	A12J102-04	Calcium	10/18/2012	91800	Yes	Y	D			500	250	ug/L
G4-S-100312	A12J102-04	Iron	10/18/2012	75800	Yes	Y	D			500	125	ug/L
G4-S-100312	A12J102-04	Lead	10/19/2012	2.16	Yes	Y				1.00	0.500	ug/L
G4-S-100312	A12J102-04	Arsenic	10/19/2012	5.43	Yes	Y				2.00	0.500	ug/L
G4-S-100312	A12J102-04	Antimony	10/19/2012	1	Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04	Magnesium	10/19/2012	44400	Yes	Y				50.0	25.0	ug/L
G4-S-100312	A12J102-04	Zinc	10/19/2012	19.7	Yes	Y				4.00	2.00	ug/L
G4-S-100312	A12J102-04	Aluminum	10/19/2012	3160	Yes	Y				50.0	25.0	ug/L
G4-S-100312	A12J102-04	Manganese	10/19/2012	2410	Yes	Y				1.00	0.500	ug/L
G4-S-100312	A12J102-04	Mercury	10/19/2012	0.08	Yes	N	U			0.0800	0.0400	ug/L
G4-S-100312	A12J102-04	Copper	10/19/2012	9.46	Yes	Y				2.00	1.00	ug/L
G4-S-100312	A12J102-04	Selenium	10/19/2012	2	Yes	N	U			2.00	1.00	ug/L
G4-S-100312	A12J102-04	Nickel	10/19/2012	4.64	Yes	Y				2.00	0.500	ug/L
G4-S-100312	A12J102-04	Sodium	10/19/2012	23.2	Yes	Y				0.100	0.0500	mg/L
G4-S-100312	A12J102-04	Thallium	10/19/2012	1	Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04	Chromium	10/19/2012	4.24	Yes	Y				4.00	0.500	ug/L
G4-S-100312	A12J102-04	Beryllium	10/19/2012	1	Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04	Potassium	10/19/2012	2440	Yes	Y				200	50.0	ug/L
G4-S-100312	A12J102-04	Cadmium	10/19/2012	1	Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04	Silver	10/19/2012	1	Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04	Iron	10/19/2012	82100	Yes	Y	D			1000	125	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G4-S-100312	A12J102-04	Calcium	10/19/2012	95800	Yes	Y	D			500	250	ug/L
R-2-100312	A12J102-05	Sodium	10/18/2012	26700	Yes	Y				100	50.0	ug/L
R-2-100312	A12J102-05	Antimony	10/18/2012	1	Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05	Arsenic	10/18/2012	3.02	Yes	Y				2.00	0.500	ug/L
R-2-100312	A12J102-05	Beryllium	10/18/2012	1	Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05	Cadmium	10/18/2012	1	Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05	Chromium	10/18/2012	1.32	Yes	Y	J			2.00	0.500	ug/L
R-2-100312	A12J102-05	Selenium	10/18/2012	2	Yes	N	U			2.00	1.00	ug/L
R-2-100312	A12J102-05	Copper	10/18/2012	4	Yes	N	U			4.00	1.00	ug/L
R-2-100312	A12J102-05	Zinc	10/18/2012	2.76	Yes	Y	J			4.00	2.00	ug/L
R-2-100312	A12J102-05	Calcium	10/18/2012	26500	Yes	Y				100	50.0	ug/L
R-2-100312	A12J102-05	Thallium	10/18/2012	1	Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05	Silver	10/18/2012	1	Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05	Mercury	10/18/2012	0.08	Yes	N	U			0.0800	0.0400	ug/L
R-2-100312	A12J102-05	Iron	10/18/2012	29400	Yes	Y				100	25.0	ug/L
R-2-100312	A12J102-05	Lead	10/18/2012	1	Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05	Manganese	10/18/2012	1860	Yes	Y				1.00	0.500	ug/L
R-2-100312	A12J102-05	Nickel	10/18/2012	1.03	Yes	Y	J			2.00	0.500	ug/L
R-2-100312	A12J102-05	Potassium	10/18/2012	1300	Yes	Y				200	50.0	ug/L
R-2-100312	A12J102-05	Aluminum	10/18/2012	50	Yes	N	U			50.0	25.0	ug/L
R-2-100312	A12J102-05	Magnesium	10/18/2012	12100	Yes	Y				50.0	25.0	ug/L
R-2-100312	A12J102-05	Lead	10/19/2012	1	Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05	Selenium	10/19/2012	2	Yes	N	U			2.00	1.00	ug/L
R-2-100312	A12J102-05	Iron	10/19/2012	29400	Yes	Y				200	25.0	ug/L
R-2-100312	A12J102-05	Magnesium	10/19/2012	12200	Yes	Y				50.0	25.0	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-2-100312	A12J102-05	Aluminum	10/19/2012	110		Yes	Y				50.0	25.0	ug/L
R-2-100312	A12J102-05	Beryllium	10/19/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05	Copper	10/19/2012	3.16		Yes	Y				2.00	1.00	ug/L
R-2-100312	A12J102-05	Nickel	10/19/2012	1.08		Yes	Y	J			2.00	0.500	ug/L
R-2-100312	A12J102-05	Zinc	10/19/2012	2.88		Yes	Y	J			4.00	2.00	ug/L
R-2-100312	A12J102-05	Calcium	10/19/2012	26600		Yes	Y				100	50.0	ug/L
R-2-100312	A12J102-05	Chromium	10/19/2012	1.13		Yes	Y	J			4.00	0.500	ug/L
R-2-100312	A12J102-05	Cadmium	10/19/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05	Arsenic	10/19/2012	2.64		Yes	Y				2.00	0.500	ug/L
R-2-100312	A12J102-05	Antimony	10/19/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05	Thallium	10/19/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05	Sodium	10/19/2012	26.6		Yes	Y				0.100	0.0500	mg/L
R-2-100312	A12J102-05	Silver	10/19/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05	Potassium	10/19/2012	1280		Yes	Y				200	50.0	ug/L
R-2-100312	A12J102-05	Manganese	10/19/2012	1870		Yes	Y				1.00	0.500	ug/L
R-2-100312	A12J102-05	Mercury	10/19/2012	0.08		Yes	N	U			0.0800	0.0400	ug/L
W8-100312	A12J102-01	Manganese	10/18/2012	3.78		Yes	Y				1.00	0.500	ug/L
W8-100312	A12J102-01	Sodium	10/18/2012	9450		Yes	Y				100	50.0	ug/L
W8-100312	A12J102-01	Iron	10/18/2012	115		Yes	Y				100	25.0	ug/L
W8-100312	A12J102-01	Aluminum	10/18/2012	50		Yes	N	U			50.0	25.0	ug/L
W8-100312	A12J102-01	Calcium	10/18/2012	14500		Yes	Y				100	50.0	ug/L
W8-100312	A12J102-01	Magnesium	10/18/2012	4520		Yes	Y				50.0	25.0	ug/L
W8-100312	A12J102-01	Potassium	10/18/2012	1160		Yes	Y				200	50.0	ug/L
W8-100312	A12J102-01	Arsenic	10/18/2012	1.86		Yes	Y	J			2.00	0.500	ug/L
W8-100312	A12J102-01	Chromium	10/18/2012	1.29		Yes	Y	J			2.00	0.500	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W8-100312	A12J102-01	Copper	10/18/2012	1.52		Yes	Y	J			4.00	1.00	ug/L
W8-100312	A12J102-01	Nickel	10/18/2012	2		Yes	N	U			2.00	0.500	ug/L
W8-100312	A12J102-01	Nickel	10/19/2012	0.556		Yes	Y	J			2.00	0.500	ug/L
W8-100312	A12J102-01	Sodium	10/19/2012	9.48		Yes	Y				0.100	0.0500	mg/L
W8-100312	A12J102-01	Copper	10/19/2012	1.49		Yes	Y	J			2.00	1.00	ug/L
W8-100312	A12J102-01	Potassium	10/19/2012	1160		Yes	Y				200	50.0	ug/L
W8-100312	A12J102-01	Magnesium	10/19/2012	4590		Yes	Y				50.0	25.0	ug/L
W8-100312	A12J102-01	Arsenic	10/19/2012	0.911		Yes	Y	J			2.00	0.500	ug/L
W8-100312	A12J102-01	Iron	10/19/2012	170		Yes	Y	J			200	25.0	ug/L
W8-100312	A12J102-01	Aluminum	10/19/2012	47.9		Yes	Y	J			50.0	25.0	ug/L
W8-100312	A12J102-01	Calcium	10/19/2012	14800		Yes	Y				100	50.0	ug/L
W8-100312	A12J102-01	Chromium	10/19/2012	4		Yes	N	U			4.00	0.500	ug/L
W8-100312	A12J102-01RE1	Manganese	10/23/2012	8.01		Yes	Y				1.00	0.500	ug/L

Analytical Method E300.0

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-D-100312	A12J102-03RE1	Sulfate	10/8/2012	67.1		Yes	Y	D			5.00	5.00	mg/L
G2-D-100312	A12J102-03RE1	Chloride (total)	10/8/2012	134		Yes	Y	D			5.00	5.00	mg/L
G2-S-100312	A12J102-02RE1	Chloride (total)	10/8/2012	83.4		Yes	Y	D			5.00	5.00	mg/L
G2-S-100312	A12J102-02RE1	Sulfate	10/8/2012	5		Yes	N	D U			5.00	5.00	mg/L
G4-S-100312	A12J102-04	Sulfate	10/6/2012	1		Yes	N	U			1.00	1.00	mg/L
G4-S-100312	A12J102-04	Chloride (total)	10/6/2012	1.38		Yes	Y				1.00	1.00	mg/L
R-2-100312	A12J102-05	Chloride (total)	10/6/2012	5.58		Yes	Y				1.00	1.00	mg/L
R-2-100312	A12J102-05	Sulfate	10/6/2012	1		Yes	N	U			1.00	1.00	mg/L
W8-100312	A12J102-01	Sulfate	10/6/2012	10.3		Yes	Y				1.00	1.00	mg/L
W8-100312	A12J102-01	Chloride (total)	10/6/2012	9.71		Yes	Y				1.00	1.00	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-D-100312	A12J102-03RE1	Cyanide, total	10/5/2012	0.324	Yes	Y	D			0.0100	0.0100	mg/L
G2-D-100312	A12J102-03RE1	Cyanide, total	10/8/2012	0.314	Yes	Y	D			0.0100	0.0100	mg/L
G2-S-100312	A12J102-02	Cyanide, total	10/8/2012	0.261	Yes	Y	D			0.0100	0.0100	mg/L
G2-S-100312	A12J102-02RE1	Cyanide, total	10/5/2012	0.27	Yes	Y	D			0.0100	0.0100	mg/L
G4-S-100312	A12J102-04	Cyanide, total	10/5/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
G4-S-100312	A12J102-04RE1	Cyanide, total	10/8/2012	0.0063	Yes	Y				0.00500	0.00500	mg/L
R-2-100312	A12J102-05	Cyanide, total	10/5/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
R-2-100312	A12J102-05RE1	Cyanide, total	10/8/2012	0.0057	Yes	Y				0.00500	0.00500	mg/L
W8-100312	A12J102-01	Cyanide, total	10/5/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
W8-100312	A12J102-01	Cyanide, total	10/8/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-D-100312	A12J102-03	Alkalinity, total as calcium carbonate (CaCO3)	10/16/2012	1840	Yes	Y				1.00	1.00	mg/L
G2-S-100312	A12J102-02	Alkalinity, total as calcium carbonate (CaCO3)	10/16/2012	2010	Yes	Y				1.00	1.00	mg/L
G4-S-100312	A12J102-04	Alkalinity, total as calcium carbonate (CaCO3)	10/16/2012	592	Yes	Y				1.00	1.00	mg/L
R-2-100312	A12J102-05	Alkalinity, total as calcium carbonate (CaCO3)	10/16/2012	139	Yes	Y				1.00	1.00	mg/L
W8-100312	A12J102-01	Alkalinity, total as calcium carbonate (CaCO3)	10/15/2012	37	Yes	Y				1.00	1.00	mg/L

Analytical Method SM2540C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-D-100312	A12J102-03	Total dissolved solids	10/29/2012	2280	Yes	Y		J	1	40.0	40.0	mg/L
G2-S-100312	A12J102-02	Total dissolved solids	10/29/2012	2300	Yes	Y		J	1	40.0	40.0	mg/L
G4-S-100312	A12J102-04	Total dissolved solids	10/29/2012	482	Yes	Y		J	1	20.0	20.0	mg/L
R-2-100312	A12J102-05	Total dissolved solids	10/29/2012	235	Yes	Y		J	1	10.0	10.0	mg/L

Analytical Method SM2540C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W8-100312	A12J102-01	Total dissolved solids	10/29/2012	78		Yes	Y		J	1	10.0	10.0	mg/L

Analytical Method SM2540D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-D-100312	A12J102-03	Total suspended solids	10/29/2012	7210		Yes	Y		J	1	20.0	20.0	mg/L
G2-S-100312	A12J102-02	Total suspended solids	10/29/2012	5		Yes	N	U	R	1	5.00	5.00	mg/L
G4-S-100312	A12J102-04	Total suspended solids	10/29/2012	288		Yes	Y		J	1	10.0	10.0	mg/L
R-2-100312	A12J102-05	Total suspended solids	10/29/2012	69		Yes	Y		J	1	5.00	5.00	mg/L
W8-100312	A12J102-01	Total suspended solids	10/29/2012	5		Yes	N	U	R	1	5.00	5.00	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-D-100312	A12J102-03	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.025		Yes	Y	D			0.0100	0.0100	mg/L
G2-D-100312	A12J102-03	Cyanide, Weak acid dissociable (WAD)	10/12/2012	0.0292		Yes	Y	D			0.0100	0.0100	mg/L
G2-S-100312	A12J102-02	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.0326		Yes	Y	D			0.0100	0.0100	mg/L
G2-S-100312	A12J102-02	Cyanide, Weak acid dissociable (WAD)	10/12/2012	0.0298		Yes	Y	D			0.0100	0.0100	mg/L
G4-S-100312	A12J102-04	Cyanide, Weak acid dissociable (WAD)	10/12/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
G4-S-100312	A12J102-04RE1	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
R-2-100312	A12J102-05	Cyanide, Weak acid dissociable (WAD)	10/12/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
R-2-100312	A12J102-05RE1	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
W8-100312	A12J102-01	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
W8-100312	A12J102-01	Cyanide, Weak acid dissociable (WAD)	10/12/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-D-100312	A12J102-03	Fluoride	10/29/2012	0.59		Yes	Y				0.100	0.100	mg/L
G2-D-100312	A12J102-03	Fluoride	10/29/2012	0.597		Yes	Y				0.100	0.100	mg/L
G2-S-100312	A12J102-02	Fluoride	10/29/2012	21.9		Yes	Y	D			0.500	0.500	mg/L

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-S-100312	A12J102-02	Fluoride	10/29/2012	22.4	Yes	Y	D			0.500	0.500	mg/L
G4-S-100312	A12J102-04	Fluoride	10/29/2012	0.252	Yes	Y				0.100	0.100	mg/L
G4-S-100312	A12J102-04	Fluoride	10/29/2012	0.277	Yes	Y				0.100	0.100	mg/L
R-2-100312	A12J102-05	Fluoride	10/29/2012	0.509	Yes	Y				0.100	0.100	mg/L
R-2-100312	A12J102-05	Fluoride	10/29/2012	0.465	Yes	Y				0.100	0.100	mg/L
W8-100312	A12J102-01	Fluoride	10/29/2012	0.106	Yes	Y				0.100	0.100	mg/L
W8-100312	A12J102-01	Fluoride	10/29/2012	0.113	Yes	Y				0.100	0.100	mg/L

Analytical Method SM4500P

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-D-100312	A12J102-03	Phosphorus	10/11/2012	0.775	Yes	Y				0.250	0.0250	mg/L
G2-S-100312	A12J102-02	Phosphorus	10/11/2012	2.88	Yes	Y				0.167	0.0167	mg/L
G4-S-100312	A12J102-04	Phosphorus	10/11/2012	1.88	Yes	Y				0.100	0.0100	mg/L
R-2-100312	A12J102-05	Phosphorus	10/11/2012	3.74	Yes	Y	D			0.200	0.0200	mg/L
W8-100312	A12J102-01	Phosphorus	10/11/2012	0.05	Yes	Y	J			0.100	0.0100	mg/L

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-S-100312	A12J102-02	Aroclor 1260	10/11/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
G2-S-100312	A12J102-02	Aroclor 1254	10/11/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
G2-S-100312	A12J102-02	Aroclor 1268	10/11/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
G2-S-100312	A12J102-02	Aroclor 1221	10/11/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
G2-S-100312	A12J102-02	Aroclor 1248	10/11/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
G2-S-100312	A12J102-02	Aroclor 1016	10/11/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
G2-S-100312	A12J102-02	Aroclor 1262	10/11/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
G2-S-100312	A12J102-02	Aroclor 1242	10/11/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
G2-S-100312	A12J102-02	Aroclor 1232	10/11/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G4-S-100312	A12J102-04	Aroclor 1242	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
G4-S-100312	A12J102-04	Aroclor 1262	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
G4-S-100312	A12J102-04	Aroclor 1254	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
G4-S-100312	A12J102-04	Aroclor 1268	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
G4-S-100312	A12J102-04	Aroclor 1221	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
G4-S-100312	A12J102-04	Aroclor 1232	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
G4-S-100312	A12J102-04	Aroclor 1016	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
G4-S-100312	A12J102-04	Aroclor 1260	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
G4-S-100312	A12J102-04	Aroclor 1248	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R-2-100312	A12J102-05	Aroclor 1248	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R-2-100312	A12J102-05	Aroclor 1242	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R-2-100312	A12J102-05	Aroclor 1232	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R-2-100312	A12J102-05	Aroclor 1262	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R-2-100312	A12J102-05	Aroclor 1260	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R-2-100312	A12J102-05	Aroclor 1254	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R-2-100312	A12J102-05	Aroclor 1268	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R-2-100312	A12J102-05	Aroclor 1221	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
R-2-100312	A12J102-05	Aroclor 1016	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-S-100312	A12J102-02	Methyl tert-butyl ether (MTBE)	10/6/2012	10	Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	Bromomethane (Methyl Bromide)	10/6/2012	50	Yes	N	D U	UJ	5	50.0	50.0	ug/L
G2-S-100312	A12J102-02	1,1,1-Trichloroethane	10/6/2012	5	Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Chloroform	10/6/2012	10	Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	1,1,1,2-Tetrachloroethane	10/6/2012	5	Yes	N	D U			5.00	2.50	ug/L

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-S-100312	A12J102-02	2,2-Dichloropropane	10/6/2012	10		Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	2-Hexanone (Methyl butyl ketone)	10/6/2012	100		Yes	N	D U			100	50.0	ug/L
G2-S-100312	A12J102-02	1,1-Dichloropropene	10/6/2012	10		Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	Carbon tetrachloride (Tetrachloromethane)	10/6/2012	5		Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	m,p-Xylene	10/6/2012	10		Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	1,1,2-Trichloroethane	10/6/2012	5		Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	1,2-Dichloroethene, trans-	10/6/2012	5		Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	1,2-Dichloroethene, cis-	10/6/2012	5		Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Chloromethane	10/6/2012	50		Yes	N	D U	UJ	5	50.0	25.0	ug/L
G2-S-100312	A12J102-02	1,3-Dichlorobenzene	10/6/2012	5		Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Acetone	10/6/2012	200		Yes	N	D U			200	100	ug/L
G2-S-100312	A12J102-02	4-Isopropyltoluene (4-Cymene)	10/6/2012	10		Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	Isopropylbenzene (Cumene)	10/6/2012	10		Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	tert-Butylbenzene	10/6/2012	10		Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	1,2,3-Trichloropropane	10/6/2012	10		Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	1,2-Dibromo-3-chloropropane	10/6/2012	50		Yes	N	D U			50.0	25.0	ug/L
G2-S-100312	A12J102-02	1,2,4-Trimethylbenzene	10/6/2012	10		Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	1,2-Dichlorobenzene	10/6/2012	5		Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	2-Chlorotoluene	10/6/2012	10		Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	o-Xylene	10/6/2012	5		Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Naphthalene	10/6/2012	20		Yes	N	D U			20.0	10.0	ug/L
G2-S-100312	A12J102-02	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/6/2012	50		Yes	N	D U			50.0	25.0	ug/L
G2-S-100312	A12J102-02	1,2,3-Trichlorobenzene	10/6/2012	20		Yes	N	D U			20.0	10.0	ug/L
G2-S-100312	A12J102-02	1,2-Dichloropropane	10/6/2012	5		Yes	N	D U			5.00	2.50	ug/L

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-S-100312	A12J102-02	Trichloroethene (TCE)	10/6/2012	5	Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Dibromomethane	10/6/2012	10	Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	2-Butanone (MEK)	10/6/2012	100	Yes	N	D U			100	50.0	ug/L
G2-S-100312	A12J102-02	Dichlorodifluoromethane	10/6/2012	10	Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	Trichlorofluoromethane (Fluorotrichloromethane)	10/6/2012	20	Yes	N	D U			20.0	10.0	ug/L
G2-S-100312	A12J102-02	1,1-Dichloroethene	10/6/2012	5	Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	1,1-Dichloroethane	10/6/2012	5	Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Bromodichloromethane	10/6/2012	10	Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	Bromoform (Tribromomethane)	10/6/2012	10	Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	Carbon disulfide	10/6/2012	100	Yes	N	D U	UJ	5	100	50.0	ug/L
G2-S-100312	A12J102-02	Dichloromethane (Methylene chloride)	10/6/2012	50	Yes	N	D U			50.0	25.0	ug/L
G2-S-100312	A12J102-02	Vinyl chloride	10/6/2012	5	Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Chloroethane	10/6/2012	50	Yes	N	D U			50.0	50.0	ug/L
G2-S-100312	A12J102-02	Bromochloromethane	10/6/2012	10	Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	1,1,2,2-Tetrachloroethane	10/6/2012	5	Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Ethylene dibromide (1,2-Dibromoethane)	10/6/2012	5	Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	sec-Butylbenzene	10/6/2012	10	Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	Tetrachloroethene (PCE)	10/6/2012	5	Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Dibromochloromethane	10/6/2012	10	Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	1,2,4-Trichlorobenzene	10/6/2012	20	Yes	N	D U			20.0	10.0	ug/L
G2-S-100312	A12J102-02	Chlorobenzene	10/6/2012	5	Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Bromobenzene	10/6/2012	5	Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Benzene	10/6/2012	2.5	Yes	N	D U			2.50	1.70	ug/L
G2-S-100312	A12J102-02	1,3,5-Trimethylbenzene (Mesitylene)	10/6/2012	10	Yes	N	D U			10.0	5.00	ug/L

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-S-100312	A12J102-02	1,3-Dichloropropane	10/6/2012	10		Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	1,2-Dichloroethane	10/6/2012	5		Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Toluene	10/6/2012	10		Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	1,4-Dichlorobenzene	10/6/2012	5		Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	4-Chlorotoluene	10/6/2012	10		Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	n-Butylbenzene	10/6/2012	10		Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	n-Propylbenzene	10/6/2012	5		Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	1,3-Dichloropropene, trans-	10/6/2012	10		Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	1,3-Dichloropropene, cis-	10/6/2012	10		Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	Styrene	10/6/2012	10		Yes	N	D U			10.0	5.00	ug/L
G2-S-100312	A12J102-02	Ethylbenzene	10/6/2012	5		Yes	N	D U			5.00	2.50	ug/L
G2-S-100312	A12J102-02	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/6/2012	100		Yes	N	D U			100	50.0	ug/L
G4-S-100312	A12J102-04RE1	tert-Butylbenzene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	1,2-Dichloroethane	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
G4-S-100312	A12J102-04RE1	Tetrachloroethene (PCE)	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
G4-S-100312	A12J102-04RE1	sec-Butylbenzene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	1,3-Dichloropropane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	1,2-Dichloroethene, cis-	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
G4-S-100312	A12J102-04RE1	1,2,3-Trichlorobenzene	10/6/2012	2		Yes	N	U			2.00	1.00	ug/L
G4-S-100312	A12J102-04RE1	Isopropylbenzene (Cumene)	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	Dibromochloromethane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	1,2,3-Trichloropropane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	1,2,4-Trimethylbenzene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	2-Chlorotoluene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	o-Xylene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G4-S-100312	A12J102-04RE1	Naphthalene	10/6/2012	2	Yes	N	U			2.00	1.00	ug/L
G4-S-100312	A12J102-04RE1	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/6/2012	5	Yes	N	U			5.00	2.50	ug/L
G4-S-100312	A12J102-04RE1	4-Isopropyltoluene (4-Cymene)	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	n-Butylbenzene	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	Bromobenzene	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
G4-S-100312	A12J102-04RE1	1,2-Dichloroethene, trans-	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
G4-S-100312	A12J102-04RE1	1,3,5-Trimethylbenzene (Mesitylene)	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	Ethylbenzene	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
G4-S-100312	A12J102-04RE1	Styrene	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	1,3-Dichloropropene, cis-	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	Ethylene dibromide (1,2-Dibromoethane)	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
G4-S-100312	A12J102-04RE1	n-Propylbenzene	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
G4-S-100312	A12J102-04RE1	1,4-Dichlorobenzene	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
G4-S-100312	A12J102-04RE1	4-Chlorotoluene	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	Toluene	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	Chlorobenzene	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
G4-S-100312	A12J102-04RE1	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/6/2012	10	Yes	N	U	UJ	5	10.0	5.00	ug/L
G4-S-100312	A12J102-04RE1	1,2,4-Trichlorobenzene	10/6/2012	2	Yes	N	U			2.00	1.00	ug/L
G4-S-100312	A12J102-04RE1	1,2-Dichlorobenzene	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
G4-S-100312	A12J102-04RE1	1,3-Dichloropropene, trans-	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	2,2-Dichloropropane	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	Dibromomethane	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	1,1,2,2-Tetrachloroethane	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
G4-S-100312	A12J102-04RE1	Bromomethane (Methyl Bromide)	10/6/2012	5	Yes	N	U	UJ	5	5.00	5.00	ug/L

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G4-S-100312	A12J102-04RE1	1,2-Dibromo-3-chloropropane	10/6/2012	5		Yes	N	U			5.00	2.50	ug/L
G4-S-100312	A12J102-04RE1	Benzene	10/6/2012	0.25		Yes	N	U			0.250	0.125	ug/L
G4-S-100312	A12J102-04RE1	Chloroform	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	Bromochloromethane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	1,1,1,2-Tetrachloroethane	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
G4-S-100312	A12J102-04RE1	Chloromethane	10/6/2012	5		Yes	N	U	UJ	5	5.00	2.50	ug/L
G4-S-100312	A12J102-04RE1	2-Hexanone (Methyl butyl ketone)	10/6/2012	10		Yes	N	U			10.0	5.00	ug/L
G4-S-100312	A12J102-04RE1	1,1-Dichloropropene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	Carbon tetrachloride (Tetrachloromethane)	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
G4-S-100312	A12J102-04RE1	1,3-Dichlorobenzene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
G4-S-100312	A12J102-04RE1	m,p-Xylene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	Methyl tert-butyl ether (MTBE)	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	Acetone	10/6/2012	20		Yes	N	U			20.0	10.0	ug/L
G4-S-100312	A12J102-04RE1	Dichlorodifluoromethane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	Trichloroethene (TCE)	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
G4-S-100312	A12J102-04RE1	1,1,2-Trichloroethane	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
G4-S-100312	A12J102-04RE1	2-Butanone (MEK)	10/6/2012	10		Yes	N	U			10.0	5.00	ug/L
G4-S-100312	A12J102-04RE1	1,1,1-Trichloroethane	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
G4-S-100312	A12J102-04RE1	1,2-Dichloropropane	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
G4-S-100312	A12J102-04RE1	Trichlorofluoromethane (Fluorotrichloromethane)	10/6/2012	2		Yes	N	U			2.00	1.00	ug/L
G4-S-100312	A12J102-04RE1	1,1-Dichloroethene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
G4-S-100312	A12J102-04RE1	1,1-Dichloroethane	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
G4-S-100312	A12J102-04RE1	Bromoform (Tribromomethane)	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
G4-S-100312	A12J102-04RE1	Carbon disulfide	10/6/2012	10		Yes	N	U			10.0	5.00	ug/L

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G4-S-100312	A12J102-04RE1	Dichloromethane (Methylene chloride)	10/6/2012	5		Yes	N	U			5.00	2.50	ug/L
G4-S-100312	A12J102-04RE1	Vinyl chloride	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
G4-S-100312	A12J102-04RE1	Chloroethane	10/6/2012	5		Yes	N	U			5.00	5.00	ug/L
G4-S-100312	A12J102-04RE1	Bromodichloromethane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	Tetrachloroethene (PCE)	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
R-2-100312	A12J102-05RE1	Ethylene dibromide (1,2-Dibromoethane)	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
R-2-100312	A12J102-05RE1	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/6/2012	10		Yes	N	U	UJ	5	10.0	5.00	ug/L
R-2-100312	A12J102-05RE1	1,3,5-Trimethylbenzene (Mesitylene)	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	Bromobenzene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
R-2-100312	A12J102-05RE1	Toluene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	Chlorobenzene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
R-2-100312	A12J102-05RE1	4-Chlorotoluene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	Dibromochloromethane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	1,4-Dichlorobenzene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
R-2-100312	A12J102-05RE1	sec-Butylbenzene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	1,3-Dichloropropane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	1,2-Dichloroethene, cis-	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
R-2-100312	A12J102-05RE1	1,2-Dichloroethene, trans-	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
R-2-100312	A12J102-05RE1	Methyl tert-butyl ether (MTBE)	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	m,p-Xylene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	1,3-Dichlorobenzene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
R-2-100312	A12J102-05RE1	1,2,4-Trichlorobenzene	10/6/2012	2		Yes	N	U			2.00	1.00	ug/L
R-2-100312	A12J102-05RE1	n-Propylbenzene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
R-2-100312	A12J102-05RE1	1,3-Dichloropropene, trans-	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-2-100312	A12J102-05RE1	1,3-Dichloropropene, cis-	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	Styrene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	Ethylbenzene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
R-2-100312	A12J102-05RE1	1,2-Dichloroethane	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
R-2-100312	A12J102-05RE1	n-Butylbenzene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	4-Isopropyltoluene (4-Cymene)	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	Trichloroethene (TCE)	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
R-2-100312	A12J102-05RE1	1,1,2,2-Tetrachloroethane	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
R-2-100312	A12J102-05RE1	1,2,3-Trichlorobenzene	10/6/2012	2		Yes	N	U			2.00	1.00	ug/L
R-2-100312	A12J102-05RE1	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/6/2012	5		Yes	N	U			5.00	2.50	ug/L
R-2-100312	A12J102-05RE1	Naphthalene	10/6/2012	2		Yes	N	U			2.00	1.00	ug/L
R-2-100312	A12J102-05RE1	o-Xylene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
R-2-100312	A12J102-05RE1	2-Chlorotoluene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	1,2-Dichlorobenzene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
R-2-100312	A12J102-05RE1	Dibromomethane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	1,2-Dibromo-3-chloropropane	10/6/2012	5		Yes	N	U			5.00	2.50	ug/L
R-2-100312	A12J102-05RE1	tert-Butylbenzene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	1,2,3-Trichloropropane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	Isopropylbenzene (Cumene)	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	1,1,2-Trichloroethane	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
R-2-100312	A12J102-05RE1	1,2,4-Trimethylbenzene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	1,1-Dichloropropene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	Chloroethane	10/6/2012	5		Yes	N	U			5.00	5.00	ug/L
R-2-100312	A12J102-05RE1	2-Butanone (MEK)	10/6/2012	10		Yes	N	U			10.0	5.00	ug/L
R-2-100312	A12J102-05RE1	Chloromethane	10/6/2012	5		Yes	N	U	UJ	5	5.00	2.50	ug/L

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-2-100312	A12J102-05RE1	Bromomethane (Methyl Bromide)	10/6/2012	5		Yes	N	U	UJ	5	5.00	5.00	ug/L
R-2-100312	A12J102-05RE1	1,1,1-Trichloroethane	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
R-2-100312	A12J102-05RE1	Benzene	10/6/2012	0.25		Yes	N	U			0.250	0.125	ug/L
R-2-100312	A12J102-05RE1	Chloroform	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	Acetone	10/6/2012	20		Yes	N	U			20.0	10.0	ug/L
R-2-100312	A12J102-05RE1	1,1,1,2-Tetrachloroethane	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
R-2-100312	A12J102-05RE1	Bromochloromethane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	2-Hexanone (Methyl butyl ketone)	10/6/2012	10		Yes	N	U			10.0	5.00	ug/L
R-2-100312	A12J102-05RE1	Carbon tetrachloride (Tetrachloromethane)	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
R-2-100312	A12J102-05RE1	1,1-Dichloroethane	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
R-2-100312	A12J102-05RE1	1,2-Dichloropropane	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
R-2-100312	A12J102-05RE1	Dichlorodifluoromethane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	2,2-Dichloropropane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	1,1-Dichloroethene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
R-2-100312	A12J102-05RE1	Bromodichloromethane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	Bromoform (Tribromomethane)	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
R-2-100312	A12J102-05RE1	Carbon disulfide	10/6/2012	10		Yes	N	U			10.0	5.00	ug/L
R-2-100312	A12J102-05RE1	Dichloromethane (Methylene chloride)	10/6/2012	5		Yes	N	U			5.00	2.50	ug/L
R-2-100312	A12J102-05RE1	Vinyl chloride	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
R-2-100312	A12J102-05RE1	Trichlorofluoromethane (Fluorotrichloromethane)	10/6/2012	2		Yes	N	U			2.00	1.00	ug/L

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-S-100312	A12J102-02RE1	4-Nitroaniline	10/9/2012	1.87		Yes	N	D U	UJ	10	1.87	0.935	ug/L
G2-S-100312	A12J102-02RE1	Fluorene	10/9/2012	0.105		Yes	Y	D			0.0935	0.0467	ug/L

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-S-100312	A12J102-02RE1	1,2,4-Trichlorobenzene	10/9/2012	0.234	Yes	N	D U			0.234	0.117	ug/L
G2-S-100312	A12J102-02RE1	Acenaphthylene	10/9/2012	0.0935	Yes	N	D U			0.0935	0.0467	ug/L
G2-S-100312	A12J102-02RE1	Chrysene	10/9/2012	0.115	Yes	Y	D			0.0935	0.0467	ug/L
G2-S-100312	A12J102-02RE1	Benzo(k)fluoranthene	10/9/2012	0.14	Yes	N	D U			0.140	0.0701	ug/L
G2-S-100312	A12J102-02RE1	4-Nitrophenol	10/9/2012	0.935	Yes	N	D U	UJ	10	0.935	0.467	ug/L
G2-S-100312	A12J102-02RE1	Fluoranthene	10/9/2012	0.497	Yes	Y	D			0.0935	0.0467	ug/L
G2-S-100312	A12J102-02RE1	Benzo(b)fluoranthene	10/9/2012	0.172	Yes	Y	D			0.140	0.0701	ug/L
G2-S-100312	A12J102-02RE1	Indeno(1,2,3-c,d)pyrene	10/9/2012	0.0576	Yes	Y	D J			0.0935	0.0467	ug/L
G2-S-100312	A12J102-02RE1	Benzo(g,h,i)perylene	10/9/2012	0.0651	Yes	Y	D J			0.0935	0.0467	ug/L
G2-S-100312	A12J102-02RE1	bis(2-Chloroethyl)ether	10/9/2012	0.234	Yes	N	D U			0.234	0.117	ug/L
G2-S-100312	A12J102-02RE1	1,4-Dinitrobenzene	10/9/2012	2.34	Yes	N	D U			2.34	1.17	ug/L
G2-S-100312	A12J102-02RE1	Benzyl alcohol	10/9/2012	0.935	Yes	N	D U			0.935	0.467	ug/L
G2-S-100312	A12J102-02RE1	4-Bromophenyl-phenyl ether	10/9/2012	0.234	Yes	N	D U			0.234	0.117	ug/L
G2-S-100312	A12J102-02RE1	bis(2-Ethylhexyl)adipate	10/9/2012	0.701	Yes	N	D U			0.701	0.350	ug/L
G2-S-100312	A12J102-02RE1	Azobenzene	10/9/2012	0.234	Yes	N	D U			0.234	0.117	ug/L
G2-S-100312	A12J102-02RE1	2,4-Dimethylphenol	10/9/2012	0.467	Yes	N	D U	UJ	10	0.467	0.234	ug/L
G2-S-100312	A12J102-02RE1	1,4-Dichlorobenzene	10/9/2012	0.234	Yes	N	D U	UJ	10	0.234	0.117	ug/L
G2-S-100312	A12J102-02RE1	4-Chloroaniline	10/9/2012	0.234	Yes	N	D U	UJ	10	0.234	0.117	ug/L
G2-S-100312	A12J102-02RE1	2,4-Dinitrotoluene	10/9/2012	0.935	Yes	N	D U			0.935	0.467	ug/L
G2-S-100312	A12J102-02RE1	Pyridine	10/9/2012	0.935	Yes	N	D U	UJ	10	0.935	0.467	ug/L
G2-S-100312	A12J102-02RE1	Dibenzofuran	10/9/2012	0.0469	Yes	Y	D J			0.0935	0.0467	ug/L
G2-S-100312	A12J102-02RE1	bis(2-Chloroethoxy)methane	10/9/2012	0.234	Yes	N	D U			0.234	0.117	ug/L
G2-S-100312	A12J102-02RE1	Bis(2-ethylhexyl)phthalate	10/9/2012	10.3	Yes	N	D U			10.3	5.14	ug/L
G2-S-100312	A12J102-02RE1	Di-n-octyl phthalate	10/9/2012	14	Yes	N	D U			14.0	7.01	ug/L
G2-S-100312	A12J102-02RE1	Hexachlorobenzene	10/9/2012	0.0935	Yes	N	D U			0.0935	0.0467	ug/L

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-S-100312	A12J102-02RE1	Anthracene	10/9/2012	0.165	Yes	Y	D			0.0935	0.0467	ug/L
G2-S-100312	A12J102-02RE1	2,4-Dichlorophenol	10/9/2012	0.467	Yes	N	D U			0.467	0.234	ug/L
G2-S-100312	A12J102-02RE1	Pyrene	10/9/2012	0.339	Yes	Y	D			0.0935	0.0467	ug/L
G2-S-100312	A12J102-02RE1	Dimethyl phthalate	10/9/2012	14	Yes	N	D U			14.0	7.01	ug/L
G2-S-100312	A12J102-02RE1	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	10/9/2012	0.234	Yes	N	D U			0.234	0.117	ug/L
G2-S-100312	A12J102-02RE1	Phenol	10/9/2012	1.87	Yes	N	D U	UJ	10	1.87	0.935	ug/L
G2-S-100312	A12J102-02RE1	Acenaphthene	10/9/2012	0.136	Yes	Y	D			0.0935	0.0467	ug/L
G2-S-100312	A12J102-02RE1	N-Nitrosodimethylamine	10/9/2012	0.234	Yes	N	D U	UJ	10	0.234	0.117	ug/L
G2-S-100312	A12J102-02RE1	Butylbenzyl phthalate	10/9/2012	14	Yes	N	D U			14.0	7.01	ug/L
G2-S-100312	A12J102-02RE1	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/9/2012	0.234	Yes	N	D U	UJ	10	0.234	0.117	ug/L
G2-S-100312	A12J102-02RE1	bis(2-Chloroisopropyl)ether	10/9/2012	0.234	Yes	N	D U			0.234	0.117	ug/L
G2-S-100312	A12J102-02RE1	N-Nitrosodiphenylamine	10/9/2012	0.234	Yes	N	D U			0.234	0.117	ug/L
G2-S-100312	A12J102-02RE1	Phenanthrene	10/9/2012	0.26	Yes	Y	D			0.0935	0.0467	ug/L
G2-S-100312	A12J102-02RE1	2,4,6-Trichlorophenol	10/9/2012	0.467	Yes	N	D U			0.467	0.234	ug/L
G2-S-100312	A12J102-02RE1	Diethyl phthalate	10/9/2012	14	Yes	N	D U			14.0	7.01	ug/L
G2-S-100312	A12J102-02RE1	2-Nitroaniline	10/9/2012	1.87	Yes	N	D U			1.87	0.935	ug/L
G2-S-100312	A12J102-02RE1	Isophorone	10/9/2012	0.234	Yes	N	D U			0.234	0.117	ug/L
G2-S-100312	A12J102-02RE1	Hexachlorocyclopentadiene	10/9/2012	0.467	Yes	N	D U			0.467	0.234	ug/L
G2-S-100312	A12J102-02RE1	4-Chlorophenyl phenyl ether	10/9/2012	0.234	Yes	N	D U			0.234	0.117	ug/L
G2-S-100312	A12J102-02RE1	Hexachloroethane	10/9/2012	0.234	Yes	N	D U	UJ	10	0.234	0.117	ug/L
G2-S-100312	A12J102-02RE1	Benzoic acid	10/9/2012	11.7	Yes	N	D U			11.7	5.84	ug/L
G2-S-100312	A12J102-02RE1	N-Nitrosodi-N-propylamine	10/9/2012	0.234	Yes	N	D U			0.234	0.117	ug/L
G2-S-100312	A12J102-02RE1	Di-n-butyl phthalate	10/9/2012	14	Yes	N	D U			14.0	7.01	ug/L
G2-S-100312	A12J102-02RE1	Benzidine	10/9/2012	2.34	Yes	N	D U			2.34	1.17	ug/L

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-S-100312	A12J102-02RE1	1,3-Dinitrobenzene	10/9/2012	2.34	Yes	N	D U			2.34	1.17	ug/L
G2-S-100312	A12J102-02RE1	3-Nitroaniline	10/9/2012	1.87	Yes	N	D U	UJ	10	1.87	0.935	ug/L
G2-S-100312	A12J102-02RE1	Nitrobenzene	10/9/2012	0.935	Yes	N	D U			0.935	0.467	ug/L
G2-S-100312	A12J102-02RE1	2,4,5-Trichlorophenol	10/9/2012	0.467	Yes	N	D U			0.467	0.234	ug/L
G2-S-100312	A12J102-02RE1	2-Chlorophenol	10/9/2012	0.467	Yes	N	D U			0.467	0.234	ug/L
G2-S-100312	A12J102-02RE1	1,2-Dichlorobenzene	10/9/2012	0.234	Yes	N	D U	UJ	10	0.234	0.117	ug/L
G2-S-100312	A12J102-02RE1	Pentachlorophenol	10/9/2012	1.87	Yes	N	D U			1.87	0.935	ug/L
G2-S-100312	A12J102-02RE1	2,3,5,6-Tetrachlorophenol	10/9/2012	0.467	Yes	N	D U			0.467	0.234	ug/L
G2-S-100312	A12J102-02RE1	Carbazole	10/9/2012	0.0747	Yes	Y	D J	J	5	0.140	0.0701	ug/L
G2-S-100312	A12J102-02RE1	3,3'-Dichlorobenzidine	10/9/2012	0.935	Yes	N	D U	UJ	10	0.935	0.467	ug/L
G2-S-100312	A12J102-02RE1	2-Chloronaphthalene	10/9/2012	0.0935	Yes	N	D U			0.0935	0.0467	ug/L
G2-S-100312	A12J102-02RE1	2-Methylnaphthalene	10/9/2012	0.187	Yes	N	D U			0.187	0.0935	ug/L
G2-S-100312	A12J102-02RE1	Naphthalene	10/9/2012	0.187	Yes	N	D U			0.187	0.0935	ug/L
G2-S-100312	A12J102-02RE1	1-Methylnaphthalene	10/9/2012	0.187	Yes	N	D U			0.187	0.0935	ug/L
G2-S-100312	A12J102-02RE1	2-Nitrophenol	10/9/2012	0.935	Yes	N	D U			0.935	0.467	ug/L
G2-S-100312	A12J102-02RE1	2-Methylphenol (o-Cresol)	10/9/2012	0.234	Yes	N	D U			0.234	0.117	ug/L
G2-S-100312	A12J102-02RE1	Benzo(a)pyrene	10/9/2012	0.0927	Yes	Y	D J			0.140	0.0701	ug/L
G2-S-100312	A12J102-02RE1	1,2-Dinitrobenzene	10/9/2012	2.34	Yes	N	D U			2.34	1.17	ug/L
G2-S-100312	A12J102-02RE1	1,3-Dichlorobenzene	10/9/2012	0.234	Yes	N	D U	UJ	10	0.234	0.117	ug/L
G2-S-100312	A12J102-02RE1	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	10/9/2012	2.34	Yes	N	D U			2.34	1.17	ug/L
G2-S-100312	A12J102-02RE1	Benzo(a)anthracene	10/9/2012	0.102	Yes	Y	D			0.0935	0.0467	ug/L
G2-S-100312	A12J102-02RE1	Aniline	10/9/2012	0.467	Yes	N	D U	UJ	10	0.467	0.234	ug/L
G2-S-100312	A12J102-02RE1	2,4-Dinitrophenol	10/9/2012	2.34	Yes	N	D U			2.34	1.17	ug/L
G2-S-100312	A12J102-02RE1	4-Chloro-3-methylphenol	10/9/2012	0.935	Yes	N	D U			0.935	0.467	ug/L
G2-S-100312	A12J102-02RE1	Dibenzo(a,h)anthracene	10/9/2012	0.0935	Yes	N	D U			0.0935	0.0467	ug/L

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-S-100312	A12J102-02RE1	2,6-Dinitrotoluene	10/9/2012	0.935		Yes	N	D U			0.935	0.467	ug/L
G2-S-100312	A12J102-02RE1	2,3,4,6-Tetrachlorophenol	10/9/2012	0.467		Yes	N	D U			0.467	0.234	ug/L
G4-S-100312	A12J102-04	Acenaphthene	10/9/2012	0.0952		Yes	N	D U			0.0952	0.0476	ug/L
G4-S-100312	A12J102-04	Fluorene	10/9/2012	0.0952		Yes	N	D U			0.0952	0.0476	ug/L
G4-S-100312	A12J102-04	Carbazole	10/9/2012	0.143		Yes	N	D U			0.143	0.0714	ug/L
G4-S-100312	A12J102-04	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/9/2012	0.238		Yes	N	D U	UJ	10	0.238	0.119	ug/L
G4-S-100312	A12J102-04	N-Nitrosodiphenylamine	10/9/2012	0.238		Yes	N	D U			0.238	0.119	ug/L
G4-S-100312	A12J102-04	Pentachlorophenol	10/9/2012	1.9		Yes	N	D U			1.90	0.952	ug/L
G4-S-100312	A12J102-04	Butylbenzyl phthalate	10/9/2012	14.3		Yes	N	D U			14.3	7.14	ug/L
G4-S-100312	A12J102-04	Phenanthrene	10/9/2012	0.0737		Yes	Y	D J			0.0952	0.0476	ug/L
G4-S-100312	A12J102-04	Diethyl phthalate	10/9/2012	14.3		Yes	N	D U			14.3	7.14	ug/L
G4-S-100312	A12J102-04	Isophorone	10/9/2012	0.238		Yes	N	D U			0.238	0.119	ug/L
G4-S-100312	A12J102-04	Hexachlorocyclopentadiene	10/9/2012	0.476		Yes	N	D U			0.476	0.238	ug/L
G4-S-100312	A12J102-04	4-Chlorophenyl phenyl ether	10/9/2012	0.238		Yes	N	D U			0.238	0.119	ug/L
G4-S-100312	A12J102-04	Hexachloroethane	10/9/2012	0.238		Yes	N	D U	UJ	10	0.238	0.119	ug/L
G4-S-100312	A12J102-04	Benzoic acid	10/9/2012	11.9		Yes	N	D U			11.9	5.95	ug/L
G4-S-100312	A12J102-04	Di-n-butyl phthalate	10/9/2012	14.3		Yes	N	D U			14.3	7.14	ug/L
G4-S-100312	A12J102-04	2-Chloronaphthalene	10/9/2012	0.0952		Yes	N	D U			0.0952	0.0476	ug/L
G4-S-100312	A12J102-04	2,4,5-Trichlorophenol	10/9/2012	0.476		Yes	N	D U			0.476	0.238	ug/L
G4-S-100312	A12J102-04	Nitrobenzene	10/9/2012	0.952		Yes	N	D U			0.952	0.476	ug/L
G4-S-100312	A12J102-04	3-Nitroaniline	10/9/2012	1.9		Yes	N	D U	UJ	10	1.90	0.952	ug/L
G4-S-100312	A12J102-04	1,3-Dinitrobenzene	10/9/2012	2.38		Yes	N	D U			2.38	1.19	ug/L
G4-S-100312	A12J102-04	1,2-Dichlorobenzene	10/9/2012	0.238		Yes	N	D U	UJ	10	0.238	0.119	ug/L
G4-S-100312	A12J102-04	2-Methylphenol (o-Cresol)	10/9/2012	0.238		Yes	N	D U			0.238	0.119	ug/L
G4-S-100312	A12J102-04	2,3,5,6-Tetrachlorophenol	10/9/2012	0.476		Yes	N	D U			0.476	0.238	ug/L

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G4-S-100312	A12J102-04	Acenaphthylene	10/9/2012	0.0952		Yes	N	D U			0.0952	0.0476	ug/L
G4-S-100312	A12J102-04	3,3'-Dichlorobenzidine	10/9/2012	0.952		Yes	N	D U	UJ	10	0.952	0.476	ug/L
G4-S-100312	A12J102-04	2,4,6-Trichlorophenol	10/9/2012	0.476		Yes	N	D U			0.476	0.238	ug/L
G4-S-100312	A12J102-04	2-Methylnaphthalene	10/9/2012	0.19		Yes	N	D U			0.190	0.0952	ug/L
G4-S-100312	A12J102-04	Naphthalene	10/9/2012	0.19		Yes	N	D U			0.190	0.0952	ug/L
G4-S-100312	A12J102-04	1-Methylnaphthalene	10/9/2012	0.19		Yes	N	D U			0.190	0.0952	ug/L
G4-S-100312	A12J102-04	2-Nitrophenol	10/9/2012	0.952		Yes	N	D U			0.952	0.476	ug/L
G4-S-100312	A12J102-04	Aniline	10/9/2012	0.476		Yes	N	D U	UJ	10	0.476	0.238	ug/L
G4-S-100312	A12J102-04	2-Nitroaniline	10/9/2012	1.9		Yes	N	D U			1.90	0.952	ug/L
G4-S-100312	A12J102-04	2-Chlorophenol	10/9/2012	0.476		Yes	N	D U			0.476	0.238	ug/L
G4-S-100312	A12J102-04	Benzidine	10/9/2012	2.38		Yes	N	D U			2.38	1.19	ug/L
G4-S-100312	A12J102-04	2,4-Dinitrotoluene	10/9/2012	0.952		Yes	N	D U			0.952	0.476	ug/L
G4-S-100312	A12J102-04	Phenol	10/9/2012	1.9		Yes	N	D U	UJ	10	1.90	0.952	ug/L
G4-S-100312	A12J102-04	Pyridine	10/9/2012	0.952		Yes	N	D U	UJ	10	0.952	0.476	ug/L
G4-S-100312	A12J102-04	bis(2-Chloroethyl)ether	10/9/2012	0.238		Yes	N	D U			0.238	0.119	ug/L
G4-S-100312	A12J102-04	bis(2-Chloroethoxy)methane	10/9/2012	0.238		Yes	N	D U			0.238	0.119	ug/L
G4-S-100312	A12J102-04	Bis(2-ethylhexyl)phthalate	10/9/2012	10.5		Yes	N	D U			10.5	5.24	ug/L
G4-S-100312	A12J102-04	Di-n-octyl phthalate	10/9/2012	14.3		Yes	N	D U			14.3	7.14	ug/L
G4-S-100312	A12J102-04	Hexachlorobenzene	10/9/2012	0.0952		Yes	N	D U			0.0952	0.0476	ug/L
G4-S-100312	A12J102-04	Anthracene	10/9/2012	0.0952		Yes	N	D U			0.0952	0.0476	ug/L
G4-S-100312	A12J102-04	N-Nitrosodi-N-propylamine	10/9/2012	0.238		Yes	N	D U			0.238	0.119	ug/L
G4-S-100312	A12J102-04	2,4-Dichlorophenol	10/9/2012	0.476		Yes	N	D U			0.476	0.238	ug/L
G4-S-100312	A12J102-04	2,4-Dimethylphenol	10/9/2012	0.476		Yes	N	D U	UJ	10	0.476	0.238	ug/L
G4-S-100312	A12J102-04	Pyrene	10/9/2012	0.0952		Yes	N	D U			0.0952	0.0476	ug/L
G4-S-100312	A12J102-04	Dimethyl phthalate	10/9/2012	14.3		Yes	N	D U			14.3	7.14	ug/L

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G4-S-100312	A12J102-04	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	10/9/2012	0.238	Yes	N	D U			0.238	0.119	ug/L
G4-S-100312	A12J102-04	Dibenzofuran	10/9/2012	0.0952	Yes	N	D U			0.0952	0.0476	ug/L
G4-S-100312	A12J102-04	Benzo(g,h,i)perylene	10/9/2012	0.0952	Yes	N	D U			0.0952	0.0476	ug/L
G4-S-100312	A12J102-04	Indeno(1,2,3-c,d)pyrene	10/9/2012	0.0952	Yes	N	D U			0.0952	0.0476	ug/L
G4-S-100312	A12J102-04	Benzo(b)fluoranthene	10/9/2012	0.143	Yes	N	D U			0.143	0.0714	ug/L
G4-S-100312	A12J102-04	Fluoranthene	10/9/2012	0.0604	Yes	Y	D J			0.0952	0.0476	ug/L
G4-S-100312	A12J102-04	Benzo(k)fluoranthene	10/9/2012	0.143	Yes	N	D U			0.143	0.0714	ug/L
G4-S-100312	A12J102-04	1,2,4-Trichlorobenzene	10/9/2012	0.238	Yes	N	D U			0.238	0.119	ug/L
G4-S-100312	A12J102-04	bis(2-Chloroisopropyl)ether	10/9/2012	0.238	Yes	N	D U			0.238	0.119	ug/L
G4-S-100312	A12J102-04	2,6-Dinitrotoluene	10/9/2012	0.952	Yes	N	D U			0.952	0.476	ug/L
G4-S-100312	A12J102-04	4-Chloro-3-methylphenol	10/9/2012	0.952	Yes	N	D U			0.952	0.476	ug/L
G4-S-100312	A12J102-04	2,3,4,6-Tetrachlorophenol	10/9/2012	0.476	Yes	N	D U			0.476	0.238	ug/L
G4-S-100312	A12J102-04	Benzo(a)anthracene	10/9/2012	0.0952	Yes	N	D U			0.0952	0.0476	ug/L
G4-S-100312	A12J102-04	1,3-Dichlorobenzene	10/9/2012	0.238	Yes	N	D U	UJ	10	0.238	0.119	ug/L
G4-S-100312	A12J102-04	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	10/9/2012	2.38	Yes	N	D U			2.38	1.19	ug/L
G4-S-100312	A12J102-04	Dibenzo(a,h)anthracene	10/9/2012	0.0952	Yes	N	D U			0.0952	0.0476	ug/L
G4-S-100312	A12J102-04	1,2-Dinitrobenzene	10/9/2012	2.38	Yes	N	D U			2.38	1.19	ug/L
G4-S-100312	A12J102-04	4-Chloroaniline	10/9/2012	0.238	Yes	N	D U	UJ	10	0.238	0.119	ug/L
G4-S-100312	A12J102-04	Benzo(a)pyrene	10/9/2012	0.143	Yes	N	D U			0.143	0.0714	ug/L
G4-S-100312	A12J102-04	1,4-Dichlorobenzene	10/9/2012	0.238	Yes	N	D U	UJ	10	0.238	0.119	ug/L
G4-S-100312	A12J102-04	Chrysene	10/9/2012	0.0952	Yes	N	D U			0.0952	0.0476	ug/L
G4-S-100312	A12J102-04	4-Nitroaniline	10/9/2012	1.9	Yes	N	D U	UJ	10	1.90	0.952	ug/L
G4-S-100312	A12J102-04	4-Nitrophenol	10/9/2012	0.952	Yes	N	D U	UJ	10	0.952	0.476	ug/L
G4-S-100312	A12J102-04	1,4-Dinitrobenzene	10/9/2012	2.38	Yes	N	D U			2.38	1.19	ug/L

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G4-S-100312	A12J102-04	Benzyl alcohol	10/9/2012	0.952	Yes	N	D U			0.952	0.476	ug/L
G4-S-100312	A12J102-04	4-Bromophenyl-phenyl ether	10/9/2012	0.238	Yes	N	D U			0.238	0.119	ug/L
G4-S-100312	A12J102-04	bis(2-Ethylhexyl)adipate	10/9/2012	0.714	Yes	N	D U			0.714	0.357	ug/L
G4-S-100312	A12J102-04	Azobenzene	10/9/2012	0.238	Yes	N	D U			0.238	0.119	ug/L
G4-S-100312	A12J102-04	N-Nitrosodimethylamine	10/9/2012	0.238	Yes	N	D U	UJ	10	0.238	0.119	ug/L
G4-S-100312	A12J102-04	2,4-Dinitrophenol	10/9/2012	2.38	Yes	N	D U			2.38	1.19	ug/L
R-2-100312	A12J102-05	2-Chlorophenol	10/9/2012	0.472	Yes	N	D U			0.472	0.236	ug/L
R-2-100312	A12J102-05	Benzo(b)fluoranthene	10/9/2012	0.142	Yes	N	D U			0.142	0.0708	ug/L
R-2-100312	A12J102-05	Nitrobenzene	10/9/2012	0.943	Yes	N	D U			0.943	0.472	ug/L
R-2-100312	A12J102-05	2,4-Dinitrophenol	10/9/2012	2.36	Yes	N	D U			2.36	1.18	ug/L
R-2-100312	A12J102-05	Benzo(a)pyrene	10/9/2012	0.142	Yes	N	D U			0.142	0.0708	ug/L
R-2-100312	A12J102-05	bis(2-Chloroisopropyl)ether	10/9/2012	0.236	Yes	N	D U			0.236	0.118	ug/L
R-2-100312	A12J102-05	Chrysene	10/9/2012	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
R-2-100312	A12J102-05	Acenaphthylene	10/9/2012	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
R-2-100312	A12J102-05	Dibenzo(a,h)anthracene	10/9/2012	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
R-2-100312	A12J102-05	Fluoranthene	10/9/2012	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
R-2-100312	A12J102-05	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	10/9/2012	2.36	Yes	N	D U			2.36	1.18	ug/L
R-2-100312	A12J102-05	Indeno(1,2,3-c,d)pyrene	10/9/2012	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
R-2-100312	A12J102-05	Benzo(g,h,i)perylene	10/9/2012	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
R-2-100312	A12J102-05	Dibenzofuran	10/9/2012	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
R-2-100312	A12J102-05	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	10/9/2012	0.236	Yes	N	D U			0.236	0.118	ug/L
R-2-100312	A12J102-05	Dimethyl phthalate	10/9/2012	14.2	Yes	N	D U			14.2	7.08	ug/L
R-2-100312	A12J102-05	Pyrene	10/9/2012	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
R-2-100312	A12J102-05	2,4-Dinitrotoluene	10/9/2012	0.943	Yes	N	D U			0.943	0.472	ug/L

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-2-100312	A12J102-05	Benzo(k)fluoranthene	10/9/2012	0.142	Yes	N	D U			0.142	0.0708	ug/L
R-2-100312	A12J102-05	N-Nitrosodi-N-propylamine	10/9/2012	0.236	Yes	N	D U			0.236	0.118	ug/L
R-2-100312	A12J102-05	Di-n-butyl phthalate	10/9/2012	14.2	Yes	N	D U			14.2	7.08	ug/L
R-2-100312	A12J102-05	Diethyl phthalate	10/9/2012	14.2	Yes	N	D U			14.2	7.08	ug/L
R-2-100312	A12J102-05	Acenaphthene	10/9/2012	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
R-2-100312	A12J102-05	Isophorone	10/9/2012	0.236	Yes	N	D U			0.236	0.118	ug/L
R-2-100312	A12J102-05	Hexachlorocyclopentadiene	10/9/2012	0.472	Yes	N	D U			0.472	0.236	ug/L
R-2-100312	A12J102-05	4-Chlorophenyl phenyl ether	10/9/2012	0.236	Yes	N	D U			0.236	0.118	ug/L
R-2-100312	A12J102-05	1,2-Dinitrobenzene	10/9/2012	2.36	Yes	N	D U			2.36	1.18	ug/L
R-2-100312	A12J102-05	Benzoic acid	10/9/2012	11.8	Yes	N	D U			11.8	5.90	ug/L
R-2-100312	A12J102-05	Anthracene	10/9/2012	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
R-2-100312	A12J102-05	N-Nitrosodimethylamine	10/9/2012	0.236	Yes	N	D U	UJ	10	0.236	0.118	ug/L
R-2-100312	A12J102-05	Aniline	10/9/2012	0.472	Yes	N	D U	UJ	10	0.472	0.236	ug/L
R-2-100312	A12J102-05	2,6-Dinitrotoluene	10/9/2012	0.943	Yes	N	D U			0.943	0.472	ug/L
R-2-100312	A12J102-05	4-Chloro-3-methylphenol	10/9/2012	0.943	Yes	N	D U			0.943	0.472	ug/L
R-2-100312	A12J102-05	2,3,4,6-Tetrachlorophenol	10/9/2012	0.472	Yes	N	D U			0.472	0.236	ug/L
R-2-100312	A12J102-05	Benzo(a)anthracene	10/9/2012	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
R-2-100312	A12J102-05	1,3-Dichlorobenzene	10/9/2012	0.236	Yes	N	D U	UJ	10	0.236	0.118	ug/L
R-2-100312	A12J102-05	Hexachloroethane	10/9/2012	0.236	Yes	N	D U	UJ	10	0.236	0.118	ug/L
R-2-100312	A12J102-05	2-Chloronaphthalene	10/9/2012	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
R-2-100312	A12J102-05	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/9/2012	0.236	Yes	N	D U	UJ	10	0.236	0.118	ug/L
R-2-100312	A12J102-05	Pentachlorophenol	10/9/2012	1.89	Yes	N	D U			1.89	0.943	ug/L
R-2-100312	A12J102-05	2,4,6-Trichlorophenol	10/9/2012	0.472	Yes	N	D U			0.472	0.236	ug/L
R-2-100312	A12J102-05	2-Nitroaniline	10/9/2012	1.89	Yes	N	D U			1.89	0.943	ug/L
R-2-100312	A12J102-05	2-Nitrophenol	10/9/2012	0.943	Yes	N	D U			0.943	0.472	ug/L

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-2-100312	A12J102-05	1-Methylnaphthalene	10/9/2012	0.189	Yes	N	D U			0.189	0.0943	ug/L
R-2-100312	A12J102-05	2,4-Dichlorophenol	10/9/2012	0.472	Yes	N	D U			0.472	0.236	ug/L
R-2-100312	A12J102-05	2-Methylnaphthalene	10/9/2012	0.189	Yes	N	D U			0.189	0.0943	ug/L
R-2-100312	A12J102-05	N-Nitrosodiphenylamine	10/9/2012	0.236	Yes	N	D U			0.236	0.118	ug/L
R-2-100312	A12J102-05	3,3'-Dichlorobenzidine	10/9/2012	0.943	Yes	N	D U	UJ	10	0.943	0.472	ug/L
R-2-100312	A12J102-05	Benzidine	10/9/2012	2.36	Yes	N	D U			2.36	1.18	ug/L
R-2-100312	A12J102-05	2,3,5,6-Tetrachlorophenol	10/9/2012	0.472	Yes	N	D U			0.472	0.236	ug/L
R-2-100312	A12J102-05	2-Methylphenol (o-Cresol)	10/9/2012	0.236	Yes	N	D U			0.236	0.118	ug/L
R-2-100312	A12J102-05	1,2-Dichlorobenzene	10/9/2012	0.236	Yes	N	D U	UJ	10	0.236	0.118	ug/L
R-2-100312	A12J102-05	2,4,5-Trichlorophenol	10/9/2012	0.472	Yes	N	D U			0.472	0.236	ug/L
R-2-100312	A12J102-05	4-Nitrophenol	10/9/2012	0.943	Yes	N	D U	UJ	10	0.943	0.472	ug/L
R-2-100312	A12J102-05	Naphthalene	10/9/2012	0.189	Yes	N	D U			0.189	0.0943	ug/L
R-2-100312	A12J102-05	1,4-Dichlorobenzene	10/9/2012	0.236	Yes	N	D U	UJ	10	0.236	0.118	ug/L
R-2-100312	A12J102-05	3-Nitroaniline	10/9/2012	1.89	Yes	N	D U	UJ	10	1.89	0.943	ug/L
R-2-100312	A12J102-05	Hexachlorobenzene	10/9/2012	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
R-2-100312	A12J102-05	Di-n-octyl phthalate	10/9/2012	14.2	Yes	N	D U			14.2	7.08	ug/L
R-2-100312	A12J102-05	Bis(2-ethylhexyl)phthalate	10/9/2012	10.4	Yes	N	D U			10.4	5.19	ug/L
R-2-100312	A12J102-05	bis(2-Chloroethoxy)methane	10/9/2012	0.236	Yes	N	D U			0.236	0.118	ug/L
R-2-100312	A12J102-05	bis(2-Chloroethyl)ether	10/9/2012	0.236	Yes	N	D U			0.236	0.118	ug/L
R-2-100312	A12J102-05	Pyridine	10/9/2012	0.943	Yes	N	D U	UJ	10	0.943	0.472	ug/L
R-2-100312	A12J102-05	Carbazole	10/9/2012	0.142	Yes	N	D U			0.142	0.0708	ug/L
R-2-100312	A12J102-05	4-Chloroaniline	10/9/2012	0.236	Yes	N	D U	UJ	10	0.236	0.118	ug/L
R-2-100312	A12J102-05	Fluorene	10/9/2012	0.0943	Yes	N	D U			0.0943	0.0472	ug/L
R-2-100312	A12J102-05	2,4-Dimethylphenol	10/9/2012	0.472	Yes	N	D U	UJ	10	0.472	0.236	ug/L
R-2-100312	A12J102-05	Azobenzene	10/9/2012	0.236	Yes	N	D U			0.236	0.118	ug/L

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
R-2-100312	A12J102-05	bis(2-Ethylhexyl)adipate	10/9/2012	0.708		Yes	N	D U			0.708	0.354	ug/L
R-2-100312	A12J102-05	4-Bromophenyl-phenyl ether	10/9/2012	0.236		Yes	N	D U			0.236	0.118	ug/L
R-2-100312	A12J102-05	Phenanthrene	10/9/2012	0.0943		Yes	N	D U			0.0943	0.0472	ug/L
R-2-100312	A12J102-05	Butylbenzyl phthalate	10/9/2012	14.2		Yes	N	D U			14.2	7.08	ug/L
R-2-100312	A12J102-05	1,2,4-Trichlorobenzene	10/9/2012	0.236		Yes	N	D U			0.236	0.118	ug/L
R-2-100312	A12J102-05	Phenol	10/9/2012	1.89		Yes	N	D U	UJ	10	1.89	0.943	ug/L
R-2-100312	A12J102-05	1,4-Dinitrobenzene	10/9/2012	2.36		Yes	N	D U			2.36	1.18	ug/L
R-2-100312	A12J102-05	4-Nitroaniline	10/9/2012	1.89		Yes	N	D U	UJ	10	1.89	0.943	ug/L
R-2-100312	A12J102-05	1,3-Dinitrobenzene	10/9/2012	2.36		Yes	N	D U			2.36	1.18	ug/L
R-2-100312	A12J102-05	Benzyl alcohol	10/9/2012	0.943		Yes	N	D U			0.943	0.472	ug/L

Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

Anchor Environmental, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101
ATTN: Ms. Cindy Fields

January 29, 2013

SUBJECT: Millennium Bulk Terminals, Data Validation

Dear Ms. Fields,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on December 21, 2012. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 28989:

SDG #	Fraction
A12L086/VV14	Extractable Petroleum Hydrocarbons
A12L107/VV48	Polychlorinated Biphenyls as Congeners
A4908	
A4909	

The data validation was performed under Stage 2B guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review, September 2005
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Ming-Hwa Hwang
Project Manager/Senior Chemist

L:\Anchor\Millennium-Reynolds\28989COV.wpd

Stage 2B EDD

LDC #28989 (Anchor Environmental-Seattle WA /Millennium Bulk Terminals)

LDC	SDG#	DATE REC'D	(3) DATE DUE	EPH (NWTPH -EPH)		PCBs (1668A)																																	
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	A12L086/VV14	12/21/12	01/16/13	0	10	-	-																																
B	A12L107/VV48	12/21/12	01/16/13	0	2	-	-																																
C	A4908	12/21/12	01/16/13	-	-	0	2																																
D	A4909	12/21/12	01/16/13	-	-	0	9																																
Total	A/MH			0	12	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS, MSD, or DUP's.

LDC Report# 28989A8

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 18 through October 24, 2012
LDC Report Date:	January 21, 2013
Matrix:	Soil
Parameters:	Extractable Petroleum Hydrocarbons
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC / Analytical Resources, Inc.
Sample Delivery Group (SDG):	A12L086/VV14

Sample Identification

AQ-FSL-01-0-12
AQ-FSL-01-0-12DL
AQ-FSL-03-1-8.5
AQ-FSL-03-1-8.5DL
AQ-ECA-02-1-5
AQ-ECA-02-1-5DL
AQ-BMP-02-1-15
AQ-BMP-02-1-15DL
AQ-BMP-05-1.5-15.5
AQ-BMP-05-1.5-15.5DL

Introduction

This data review covers 10 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method NWTPH-EPH for Extractable Petroleum Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
AQ-FSL-01-0-12 AQ-FSL-01-0-12DL AQ-FSL-03-1-8.5 AQ-FSL-03-1-8.5DL	Extractable petroleum hydrocarbons	50	14	J (all detects) R (all non-detects)	P
AQ-ECA-02-1-5 AQ-ECA-02-1-5DL	Extractable petroleum hydrocarbons	49	14	J (all detects) R (all non-detects)	P
AQ-BMP-05-1.5-15.5 AQ-BMP-05-1.5-15.5DL	Extractable petroleum hydrocarbons	45	14	J (all detects) R (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 20.0% QC limits with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
12/11/12	C21-C34 Aliphatics	20.7	AQ-FSL-01-0-12 AQ-FSL-03-1-8.5 AQ-ECA-02-1-5 AQ-BMP-02-1-15 AQ-BMP-05-1.5-15.5	J (all detects)	A

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No extractable petroleum hydrocarbon contaminants were found in the method blanks.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
AQ-FSL-01-0-12 AQ-FSL-03-1-8.5 AQ-ECA-02-1-5 AQ-BMP-02-1-15 AQ-BMP-05-1.5-15.5	C16-C21 Aromatics	R	A
AQ-FSL-01-0-12DL AQ-FSL-03-1-8.5DL AQ-ECA-02-1-5DL AQ-BMP-02-1-15DL AQ-BMP-05-1.5-15.5DL	All Extractable petroleum hydrocarbons except C16-C21 Aromatics	R	A

Due to samples were extracted grossly exceeded holding time, data were rejected in five samples.

Due to calibration %D problems, data were qualified as estimated in five samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be rejected (R) are unusable for all purposes. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

XIII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Extractable Petroleum Hydrocarbons- Data Qualification Summary - SDG A12L086/VV14

SDG	Sample	Compound	Flag	A or P	Reason
A12L086/ VV14	AQ-FSL-01-0-12 AQ-FSL-01-0-12DL AQ-FSL-03-1-8.5 AQ-FSL-03-1-8.5DL AQ-ECA-02-1-5 AQ-ECA-02-1-5DL AQ-BMP-05-1.5-15.5 AQ-BMP-05-1.5-15.5DL	Extractable petroleum hydrocarbons	J (all detects) R (all non-detects)	P	Technical holding times
A12L086/ VV14	AQ-FSL-01-0-12 AQ-FSL-03-1-8.5 AQ-ECA-02-1-5 AQ-BMP-02-1-15 AQ-BMP-05-1.5-15.5	C21-C34 Aliphatics	J (all detects)	A	Calibration verification (%D)
A12L086/ VV14	AQ-FSL-01-0-12 AQ-FSL-03-1-8.5 AQ-ECA-02-1-5 AQ-BMP-02-1-15 AQ-BMP-05-1.5-15.5	C16-C21 Aromatics	R	A	Overall assessment
A12L086/ VV14	AQ-FSL-01-0-12DL AQ-FSL-03-1-8.5DL AQ-ECA-02-1-5DL AQ-BMP-02-1-15DL AQ-BMP-05-1.5-15.5DL	All Extractable petroleum hydrocarbons except C16-C21 Aromatics	R	A	Overall assessment

Millennium Bulk Terminals
Extractable Petroleum Hydrocarbons- Laboratory Blank Data Qualification Summary - SDG A12L086/VV14

No Sample Data Qualified in this SDG

LDC #: 28989A8
SDG #: VV14
Laboratory: Analytical Resources, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2B

Date: 1/4/13
Page: 1 of 1
Reviewer: P
2nd Reviewer: ✓

METHOD: GC Extractable Petroleum Hydrocarbons (NWTPH-EPH)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 10/18 – 10/24/12
II	Initial calibration	A	% RSD ≤20
III.	Calibration verification/~~ICV~~	SW	CCV ≤ 20
IV.	Blanks	A	
V	Surrogate recovery	SW	
VI.	Matrix spike/Matrix spike duplicates	N	client specified
VII.	Laboratory control samples	A	LCS/D
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs A	~~SW~~	
X.	System Performance	N	
XI.	Overall assessment of data	SW	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:
SOIL

1	AQ-FSL-01-0-12	11	MB-120712	21		31	
2	AQ-FSL-01-0-12DL	12		22		32	
3	AQ-FSL-03-1-8.5	13		23		33	
4	AQ-FSL-03-1-8.5DL	14		24		34	
5	AQ-ECA-02-1-5	15		25		35	
6	AQ-ECA-02-1-5DL	16		26		36	
7	AQ-BMP-02-1-15	17		27		37	
8	AQ-BMP-02-1-15DL	18		28		38	
9	AQ-BMP-05-1.5-15.5	19		29		39	
10	AQ-BMP-05-1.5-15.5DL	20		30		40	

Notes:

LDC #: 28989Ag

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Reviewer: [illegible]
2nd Reviewer: [illegible]

All circled dates have exceeded the technical holding times.
Y N N/A Were all cooler temperatures within validation criteria?

METHOD: ✓ GC ___ HPLC

Sample ID	Matrix	Preserved	Sampling Date	Extraction date	Analysis date	Total # of Days	Qualifier
1,3	SOIL		10/18/12	12/7/12	12/10 - 12/12/12	~~20~~ 50	J/UJ/P
2,4	SOIL		10/18/12	12/7/12	12/11/12	~~20~~ 50	
5	SOIL		10/19/12	12/7/12	12/10 & 12/12/12	~~19~~ 49	
6	SOIL		10/19/12	12/7/12	12/11/12	~~19~~ 49	
9	SOIL		10/23/12	12/7/12	12/10 & 12/12/12	~~15~~ 45	
10	SOIL		10/23/12	12/7/12	12/11/12	~~15~~ 45	

TECHNICAL HOLDING TIME CRITERIA

VOLATILES:
- Water unpreserved: Aromatic within 7 days, non-aromatic within 14 days of sample collection.
- Water preserved: Both within 14 days of sample collection.
- Soils: Both within 14 days of sample collection.

EXTRACTABLES:
- Water: Extracted within 7 days, analyzed within 40 days.
- Soil: Extracted within 14 days, analyzed within 40 days.

LDC #: 28989A8

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: FT
2nd Reviewer: ✓

METHOD: ✓ GC __ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
What type of continuing calibration calculation was performed? ___%D or ___RPD

Y N N/A Were continuing calibration standards analyzed at the required frequencies?

Y N N/A Did the continuing calibration standards meet the %D / RPD validation criteria of ≤15.0%?

Level IV Only

Y N N/A Were the retention times for all calibrated compounds within their respective acceptance windows?

#	Date	Standard ID	Detector/ Column	Compound	%D / RPD (Limit ≤ 15.0)	RT (limit)	Associated Samples	Qualifications
+	~~12/11/12~~	~~1210A034-cov~~	~~NS~~	~~C21 - C34 Aliphatics~~	~~16.4~~	( )	~~MB - 120712~~	~~J/A det~~
	01:31					( )		
						( )		
						( )		
+	12/11/12	1210A067-cov	NS	↓	20.7	( )	1, 3, 5, 7, 9	↓
						( )		
						( )		
						( )		
						( )		
						( )		
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LDC #: 28989A8

VALIDATION FINDINDS WORKSHEET
Surrogate Recovery

Page: 1 of 1
Reviewer: FT
2nd Reviewer: L

METHOD: ✓ GC ___ HPLC

Are surrogates required by the method? Yes____ or No____.

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were surrogates spiked into all samples and blanks?

Y N N/A Did all surrogate recoveries (%R) meet the QC limits?

#	Sample ID	Detector/ Column	Surrogate Compound	%R (Limits)	Qualifications
	1, 9	NS	H	NR (10 - 143)	* no qual (All Aromatics)
				( )	
				( )	
				( )	
				( )	
				* no qual: professional judgement due to matrix interference	
				( )	
				( )	
				NR - not reported)	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound		
A	Chlorobenzene (CBZ)	G	Octacosane	M	Benzo(e)Pyrene	S	1-Chloro-3-Nitrobenzene	Y	Tetrachloro-m- xylene
B	4-Bromofluorobenzene (BFB)	H	Ortho-Terphenyl	N	Terphenyl-D14	T	3,4-Dinitrotoluene		
C	a,a,a-Trifluorotoluene	I	Fluorobenzene (FBZ)	O	Decachlorobiphenyl (DCB)	U	Tripentyltin		
D	Bromochlorobenene	J	n-Triacontane	P	1-methylnaphthalene	V	Tri-n-propyltin		
E	1,4-Dichlorobutane	K	Hexacosane	Q	Dichlorophenyl Acetic Acid (DCAA)	W	Tributyl Phosphate		
F	1,4-Difluorobenzene (DFB)	L	Bromobenzene	R	4-Nitrophenol	X	Triphenyl Phosphate		

LDC #: 28989AX

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: FT
2nd Reviewer: ✓

METHOD: ✓ **GC** ___ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y/N N/A Was the overall quality and usability of the data acceptable?

#	Compound Name	Finding	Associated Samples	Qualifications
	~~C_{16} - C_{21} Aromatics~~	~~Too high results~~	~~1, 3, 7, 9~~	~~R/A~~ ✓
	~~C_{21} - C_{34} Aromatics~~			
	~~all except above~~	~~diluted~~	~~2, 4, 8, 10~~	~~R/A~~ ✓
	C_{16} - C_{21} Aromatics	lower result	1, 3, ~~8~~ 5, 7, 9	R/A
	All except above	diluted	2, 4, 6, 8, 10	R/A

Comments: _____

Analytical Method WAEPH

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-02-1-15	12-24093-VV14D	C16-C21 Aromatics	12/11/2012	1000000		No	Y		R	22	2600	2600	ug/kg
AQ-BMP-02-1-15	12-24093-VV14D	C12-C16 Aromatics	12/11/2012	8700		Yes	Y				2600	2600	ug/kg
AQ-BMP-02-1-15	12-24093-VV14D	C10-C12 Aromatics	12/11/2012	2600		Yes	N	U			2600	2600	ug/kg
AQ-BMP-02-1-15	12-24093-VV14D	C8-C10 Aromatics	12/11/2012	2600		Yes	N	U			2600	2600	ug/kg
AQ-BMP-02-1-15	12-24093-VV14D	C21-C34 Aromatics	12/11/2012	2400000		Yes	Y				2600	2600	ug/kg
AQ-BMP-02-1-15	12-24093-VV14D	C8-C10 Aliphatics	12/12/2012	2600		Yes	N	U			2600	2600	ug/kg
AQ-BMP-02-1-15	12-24093-VV14D	C10-C12 Aliphatics	12/12/2012	2600		Yes	N	U			2600	2600	ug/kg
AQ-BMP-02-1-15	12-24093-VV14D	C12-C16 Aliphatics	12/12/2012	3600		Yes	Y				2600	2600	ug/kg
AQ-BMP-02-1-15	12-24093-VV14D	C21-C34 Aliphatics	12/12/2012	78000		Yes	Y		J	5	2600	2600	ug/kg
AQ-BMP-02-1-15	12-24093-VV14D	C16-C21 Aliphatics	12/12/2012	23000		Yes	Y				2600	2600	ug/kg
AQ-BMP-02-1-15	12-24093-VV14D	C16-C21 Aromatics	12/11/2012	1400000		Yes	Y				26000	26000	ug/kg
AQ-BMP-02-1-15	12-24093-VV14D	C12-C16 Aromatics	12/11/2012	26000		No	N	U	R	22	26000	26000	ug/kg
AQ-BMP-02-1-15	12-24093-VV14D	C10-C12 Aromatics	12/11/2012	26000		No	N	U	R	22	26000	26000	ug/kg
AQ-BMP-02-1-15	12-24093-VV14D	C8-C10 Aromatics	12/11/2012	26000		No	N	U	R	22	26000	26000	ug/kg
AQ-BMP-02-1-15	12-24093-VV14D	C21-C34 Aromatics	12/11/2012	1900000		No	Y		R	22	26000	26000	ug/kg
AQ-BMP-05-1.5-15.5	12-24094-VV14E	C10-C12 Aromatics	12/11/2012	2800		Yes	N	U	R	1	2800	2800	ug/kg
AQ-BMP-05-1.5-15.5	12-24094-VV14E	C12-C16 Aromatics	12/11/2012	24000		Yes	Y		J	1	2800	2800	ug/kg
AQ-BMP-05-1.5-15.5	12-24094-VV14E	C21-C34 Aromatics	12/11/2012	4800000		Yes	Y		J	1	2800	2800	ug/kg
AQ-BMP-05-1.5-15.5	12-24094-VV14E	C8-C10 Aromatics	12/11/2012	2800		Yes	N	U	R	1	2800	2800	ug/kg
AQ-BMP-05-1.5-15.5	12-24094-VV14E	C16-C21 Aromatics	12/11/2012	3100000		No	Y		R	22	2800	2800	ug/kg
AQ-BMP-05-1.5-15.5	12-24094-VV14E	C21-C34 Aliphatics	12/12/2012	97000		Yes	Y		J		2800	2800	ug/kg
AQ-BMP-05-1.5-15.5	12-24094-VV14E	C16-C21 Aliphatics	12/12/2012	24000		Yes	Y		J	1	2800	2800	ug/kg
AQ-BMP-05-1.5-15.5	12-24094-VV14E	C12-C16 Aliphatics	12/12/2012	3400		Yes	Y		J	1	2800	2800	ug/kg
AQ-BMP-05-1.5-15.5	12-24094-VV14E	C8-C10 Aliphatics	12/12/2012	2800		Yes	N	U	R	1	2800	2800	ug/kg
AQ-BMP-05-1.5-15.5	12-24094-VV14E	C10-C12 Aliphatics	12/12/2012	2800		Yes	N	U	R	1	2800	2800	ug/kg

SDG: VV14

Analytical Method WAEPH

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-05-1.5-15.5	12-24094-VV14ER	C12-C16 Aromatics	12/11/2012	28000		No	N	U	R	22	28000	28000	ug/kg
AQ-BMP-05-1.5-15.5	12-24094-VV14ER	C8-C10 Aromatics	12/11/2012	28000		No	N	U	R	22	28000	28000	ug/kg
AQ-BMP-05-1.5-15.5	12-24094-VV14ER	C21-C34 Aromatics	12/11/2012	3600000		No	Y		R	22	28000	28000	ug/kg
AQ-BMP-05-1.5-15.5	12-24094-VV14ER	C16-C21 Aromatics	12/11/2012	4200000		Yes	Y		J	1	28000	28000	ug/kg
AQ-BMP-05-1.5-15.5	12-24094-VV14ER	C10-C12 Aromatics	12/11/2012	28000		No	N	U	R	22	28000	28000	ug/kg
AQ-ECA-02-1-5	12-24092-VV14C	C12-C16 Aromatics	12/10/2012	4900		Yes	Y		J	1	3000	3000	ug/kg
AQ-ECA-02-1-5	12-24092-VV14C	C21-C34 Aromatics	12/10/2012	1000000		Yes	Y		J	1	3000	3000	ug/kg
AQ-ECA-02-1-5	12-24092-VV14C	C16-C21 Aromatics	12/10/2012	540000		No	Y		R	22	3000	3000	ug/kg
AQ-ECA-02-1-5	12-24092-VV14C	C8-C10 Aromatics	12/10/2012	3000		Yes	N	U	R	1	3000	3000	ug/kg
AQ-ECA-02-1-5	12-24092-VV14C	C10-C12 Aromatics	12/10/2012	3000		Yes	N	U	R	1	3000	3000	ug/kg
AQ-ECA-02-1-5	12-24092-VV14C	C16-C21 Aliphatics	12/12/2012	22000		Yes	Y		J	1	3000	3000	ug/kg
AQ-ECA-02-1-5	12-24092-VV14C	C8-C10 Aliphatics	12/12/2012	3000		Yes	N	U	R	1	3000	3000	ug/kg
AQ-ECA-02-1-5	12-24092-VV14C	C10-C12 Aliphatics	12/12/2012	3000		Yes	N	U	R	1	3000	3000	ug/kg
AQ-ECA-02-1-5	12-24092-VV14C	C12-C16 Aliphatics	12/12/2012	3000		Yes	N	U	R	1	3000	3000	ug/kg
AQ-ECA-02-1-5	12-24092-VV14C	C21-C34 Aliphatics	12/12/2012	46000		Yes	Y		J		3000	3000	ug/kg
AQ-ECA-02-1-5	12-24092-VV14C	C21-C34 Aromatics	12/11/2012	780000		No	Y		R	22	30000	30000	ug/kg
AQ-ECA-02-1-5	12-24092-VV14C	C12-C16 Aromatics	12/11/2012	30000		No	N	U	R	22	30000	30000	ug/kg
AQ-ECA-02-1-5	12-24092-VV14C	C8-C10 Aromatics	12/11/2012	30000		No	N	U	R	22	30000	30000	ug/kg
AQ-ECA-02-1-5	12-24092-VV14C	C10-C12 Aromatics	12/11/2012	30000		No	N	U	R	22	30000	30000	ug/kg
AQ-ECA-02-1-5	12-24092-VV14C	C16-C21 Aromatics	12/11/2012	810000		Yes	Y		J	1	30000	30000	ug/kg
AQ-FSL-01-0-12	12-24090-VV14A	C10-C12 Aromatics	12/10/2012	47000		Yes	Y		J	1	2800	2800	ug/kg
AQ-FSL-01-0-12	12-24090-VV14A	C12-C16 Aromatics	12/10/2012	600000		Yes	Y		J	1	2800	2800	ug/kg
AQ-FSL-01-0-12	12-24090-VV14A	C16-C21 Aromatics	12/10/2012	3700000		No	Y		R	22	2800	2800	ug/kg
AQ-FSL-01-0-12	12-24090-VV14A	C21-C34 Aromatics	12/10/2012	3800000		Yes	Y		J	1	2800	2800	ug/kg
AQ-FSL-01-0-12	12-24090-VV14A	C8-C10 Aromatics	12/10/2012	2800		Yes	N	U	R	1	2800	2800	ug/kg

SDG: VV14

Analytical Method WAEPH

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-01-0-12	12-24090-VV14A	C8-C10 Aliphatics	12/12/2012	2800	Yes	N	U	R	1	2800	2800	ug/kg
AQ-FSL-01-0-12	12-24090-VV14A	C10-C12 Aliphatics	12/12/2012	2900	Yes	Y		J	1	2800	2800	ug/kg
AQ-FSL-01-0-12	12-24090-VV14A	C12-C16 Aliphatics	12/12/2012	140000	Yes	Y		J	1	2800	2800	ug/kg
AQ-FSL-01-0-12	12-24090-VV14A	C16-C21 Aliphatics	12/12/2012	460000	Yes	Y		J	1	2800	2800	ug/kg
AQ-FSL-01-0-12	12-24090-VV14A	C21-C34 Aliphatics	12/12/2012	370000	Yes	Y		J		2800	2800	ug/kg
AQ-FSL-01-0-12	12-24090-VV14AR	C10-C12 Aromatics	12/11/2012	56000	No	N	U	R	22	56000	56000	ug/kg
AQ-FSL-01-0-12	12-24090-VV14AR	C21-C34 Aromatics	12/11/2012	3600000	No	Y		R	22	56000	56000	ug/kg
AQ-FSL-01-0-12	12-24090-VV14AR	C12-C16 Aromatics	12/11/2012	730000	No	Y		R	22	56000	56000	ug/kg
AQ-FSL-01-0-12	12-24090-VV14AR	C8-C10 Aromatics	12/11/2012	56000	No	N	U	R	22	56000	56000	ug/kg
AQ-FSL-01-0-12	12-24090-VV14AR	C16-C21 Aromatics	12/11/2012	3600000	Yes	Y		J	1	56000	56000	ug/kg
AQ-FSL-03-1-8.5	12-24091-VV14B	C8-C10 Aromatics	12/10/2012	2600	Yes	N	U	R	1	2600	2600	ug/kg
AQ-FSL-03-1-8.5	12-24091-VV14B	C10-C12 Aromatics	12/10/2012	18000	Yes	Y		J	1	2600	2600	ug/kg
AQ-FSL-03-1-8.5	12-24091-VV14B	C12-C16 Aromatics	12/10/2012	130000	Yes	Y		J	1	2600	2600	ug/kg
AQ-FSL-03-1-8.5	12-24091-VV14B	C16-C21 Aromatics	12/10/2012	1200000	No	Y		R	22	2600	2600	ug/kg
AQ-FSL-03-1-8.5	12-24091-VV14B	C21-C34 Aromatics	12/10/2012	1600000	Yes	Y		J	1	2600	2600	ug/kg
AQ-FSL-03-1-8.5	12-24091-VV14B	C21-C34 Aliphatics	12/12/2012	140000	Yes	Y		J		2600	2600	ug/kg
AQ-FSL-03-1-8.5	12-24091-VV14B	C8-C10 Aliphatics	12/12/2012	2600	Yes	N	U	R	1	2600	2600	ug/kg
AQ-FSL-03-1-8.5	12-24091-VV14B	C10-C12 Aliphatics	12/12/2012	2600	Yes	N	U	R	1	2600	2600	ug/kg
AQ-FSL-03-1-8.5	12-24091-VV14B	C12-C16 Aliphatics	12/12/2012	4500	Yes	Y		J	1	2600	2600	ug/kg
AQ-FSL-03-1-8.5	12-24091-VV14B	C16-C21 Aliphatics	12/12/2012	24000	Yes	Y		J	1	2600	2600	ug/kg
AQ-FSL-03-1-8.5	12-24091-VV14BR	C12-C16 Aromatics	12/11/2012	130000	No	Y		R	22	52000	52000	ug/kg
AQ-FSL-03-1-8.5	12-24091-VV14BR	C16-C21 Aromatics	12/11/2012	1300000	Yes	Y		J	1	52000	52000	ug/kg
AQ-FSL-03-1-8.5	12-24091-VV14BR	C21-C34 Aromatics	12/11/2012	1300000	No	Y		R	22	52000	52000	ug/kg
AQ-FSL-03-1-8.5	12-24091-VV14BR	C10-C12 Aromatics	12/11/2012	52000	No	N	U	R	22	52000	52000	ug/kg
AQ-FSL-03-1-8.5	12-24091-VV14BR	C8-C10 Aromatics	12/11/2012	52000	No	N	U	R	22	52000	52000	ug/kg

LDC Report# 28989B8

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 17 through October 18, 2012
LDC Report Date:	January 21, 2013
Matrix:	Soil
Parameters:	Extractable Petroleum Hydrocarbons
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC / Analytical Resources, Inc.
Sample Delivery Group (SDG):	A12L107/VV48

Sample Identification

AQ-IFL-03-0-12
AQ-IFL-05-0-14

Introduction

This data review covers 2 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method NWTPH-EPH for Extractable Petroleum Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
AQ-IFL-03-0-12	Extractable petroleum hydrocarbons	52	14	J (all detects) R (all non-detects)	P
AQ-IFL-05-0-14	Extractable petroleum hydrocarbons	51	14	J (all detects) R (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0%.

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 20.0% QC limits.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No extractable petroleum hydrocarbon contaminants were found in the method blanks.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

Due to samples were extracted grossly exceeded holding time, data were rejected in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be rejected (R) are unusable for all purposes. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

XIII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Extractable Petroleum Hydrocarbons- Data Qualification Summary - SDG A12L107/VV48

SDG	Sample	Compound	Flag	A or P	Reason
A12L107/ VV48	AQ-IFL-03-0-12 AQ-IFL-05-0-14	Extractable petroleum hydrocarbons	J (all detects) R (all non-detects)	P	Technical holding times

Millennium Bulk Terminals
Extractable Petroleum Hydrocarbons- Laboratory Blank Data Qualification Summary - SDG A12L107/VV48

No Sample Data Qualified in this SDG

LDC #: 28989B8 **VALIDATION COMPLETENESS WORKSHEET** Date: 1/4/13
SDG #: VV48 Stage 2B Page: 1 of 7
Laboratory: Analytical Resources, Inc. Reviewer: [illegible]
2nd Reviewer:

METHOD: GC Extractable Petroleum Hydrocarbons (NWTPH-EPH)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 10/17 - 10/18/12
II	Initial calibration	A	% RSD ≤ 15 ✓
III.	Calibration verification/~~ICV~~	A	CCV ≤ 15 ✓
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	client specified
VII.	Laboratory control samples	A	LCS/D
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs N	~~SW~~	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

SOIL

1	AQ-IFL-03-0-12	11	MB-120812	21		31	
2	AQ-IFL-05-0-14	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 28989B 8

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Reviewer: CZ
2nd Reviewer: VL

All circled dates have exceeded the technical holding times.
(Y) N N/A Were all cooler temperatures within validation criteria?

METHOD ✓ **GC** __ **HPLC**

Sample ID	Matrix	Preserved	Sampling Date	Extraction date	Analysis date	Total # of Days	Qualifier
1, ~~X~~	SOIL		10/17/12	12/08/12	12/11 + 12/12/12	~~27~~ 52	J/UJ/P
2	↓		10/18/12	12/08/12	↓	~~27~~ 51	J/UJ/P

TECHNICAL HOLDING TIME CRITERIA

VOLATILES: Water unpreserved: Aromatic within 7 days, non-aromatic within 14 days of sample collection.
Water preserved: Both within 14 days of sample collection.
Soils: Both within 14 days of sample collection.

EXTRACTABLES:
Water: Extracted within 7 days, analyzed within 40 days.
Soil: Extracted within 14 days, analyzed within 40 days.

SDG: VV48

Analytical Method WAEPH

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Med Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-IFL-03-0-12	12-24277-VV48A	C8-C10 Aromatics	12/11/2012	14000	Yes	Y		J	1	2400	2400	ug/kg
AQ-IFL-03-0-12	12-24277-VV48A	C10-C12 Aromatics	12/11/2012	2400	Yes	N	U	R	1	2400	2400	ug/kg
AQ-IFL-03-0-12	12-24277-VV48A	C21-C34 Aromatics	12/11/2012	2600000	Yes	Y		J	1	2400	2400	ug/kg
AQ-IFL-03-0-12	12-24277-VV48A	C16-C21 Aromatics	12/11/2012	500000	Yes	Y		J	1	2400	2400	ug/kg
AQ-IFL-03-0-12	12-24277-VV48A	C12-C16 Aromatics	12/11/2012	8900	Yes	Y		J	1	2400	2400	ug/kg
AQ-IFL-03-0-12	12-24277-VV48A	C12-C16 Aliphatics	12/12/2012	2800	Yes	Y		J	1	2400	2400	ug/kg
AQ-IFL-03-0-12	12-24277-VV48A	C16-C21 Aliphatics	12/12/2012	39000	Yes	Y		J	1	2400	2400	ug/kg
AQ-IFL-03-0-12	12-24277-VV48A	C21-C34 Aliphatics	12/12/2012	370000	Yes	Y		J	1	2400	2400	ug/kg
AQ-IFL-03-0-12	12-24277-VV48A	C10-C12 Aliphatics	12/12/2012	2400	Yes	N	U	R	1	2400	2400	ug/kg
AQ-IFL-03-0-12	12-24277-VV48A	C8-C10 Aliphatics	12/12/2012	2400	Yes	N	U	R	1	2400	2400	ug/kg
AQ-IFL-05-0-14	12-24278-VV48B	C16-C21 Aromatics	12/11/2012	300000	Yes	Y		J	1	2300	2300	ug/kg
AQ-IFL-05-0-14	12-24278-VV48B	C21-C34 Aromatics	12/11/2012	1400000	Yes	Y		J	1	2300	2300	ug/kg
AQ-IFL-05-0-14	12-24278-VV48B	C12-C16 Aromatics	12/11/2012	9000	Yes	Y		J	1	2300	2300	ug/kg
AQ-IFL-05-0-14	12-24278-VV48B	C10-C12 Aromatics	12/11/2012	2300	Yes	N	U	R	1	2300	2300	ug/kg
AQ-IFL-05-0-14	12-24278-VV48B	C8-C10 Aromatics	12/11/2012	2300	Yes	N	U	R	1	2300	2300	ug/kg
AQ-IFL-05-0-14	12-24278-VV48B	C12-C16 Aliphatics	12/12/2012	2300	Yes	N	U	R	1	2300	2300	ug/kg
AQ-IFL-05-0-14	12-24278-VV48B	C16-C21 Aliphatics	12/12/2012	25000	Yes	Y		J	1	2300	2300	ug/kg
AQ-IFL-05-0-14	12-24278-VV48B	C21-C34 Aliphatics	12/12/2012	370000	Yes	Y		J	1	2300	2300	ug/kg
AQ-IFL-05-0-14	12-24278-VV48B	C10-C12 Aliphatics	12/12/2012	2300	Yes	N	U	R	1	2300	2300	ug/kg
AQ-IFL-05-0-14	12-24278-VV48B	C8-C10 Aliphatics	12/12/2012	2300	Yes	N	U	R	1	2300	2300	ug/kg

LDC Report# 28989C31

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	November 13, 2012
LDC Report Date:	January 8, 2013
Matrix:	Water
Parameters:	Polychlorinated Biphenyls as Congeners
Validation Level:	Stage 2B
Laboratory:	SGS Analytical Perspectives
Sample Delivery Group (SDG):	A4908

Sample Identification

AQ-SE-FB
AQ-SE-RB

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1668A for Polychlorinated Biphenyl as Congeners.

This review follows USEPA Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of single compounds was performed for the primary (quantitation) column and confirmation column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for unlabeled compounds and less than or equal to 50.0% for labeled compounds.

The ion abundance ratios for all compounds were within method criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyls as congeners contaminants were found in the method blanks.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Ongoing Precision Recovery (OPR)

Ongoing precision recovery samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

All internal standard recoveries (%R) were within QC limits.

X. Target Compound Identification

Raw data were not reviewed for this SDG.

XI. Compound Quantitation and RLs

Raw data were not reviewed for this SDG.

XII. System Performance

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

Sample AQ-SE-RB was identified as a rinsate blank. No polychlorinated biphenyls as congeners contaminants were found with the following exceptions:

Blank ID	Compound	Concentration (pg/L)
AQ-SE-RB	PCB-105 PCB-118	1.4 2.32

Sample AQ-SE-FB was identified as a field blank No polychlorinated biphenyls as congeners contaminants were found.

Millennium Bulk Terminals
Polychlorinated Biphenyls as Congeners - Data Qualification Summary - SDG A4908

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Polychlorinated Biphenyls as Congeners - Laboratory Blank Data Qualification Summary - SDG A4908

No Sample Data Qualified in this SDG

LDC #: 28989C31

SDG #: A4908

Laboratory: SGS Analytical Perspectives

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/7/13

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: HRGC/HRMS Polychlorinated Biphenyl Congeners (EPA Method 1668A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/13/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/	A	% ~~RSD~~ CCV ≤ 30/50
V.	Blanks	A	
VI.	Matrix spike/Matrix spike duplicates	N	QC sample
VII.	Laboratory control samples	A	OPR
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	A	
X.	Target compound identifications	N	
XI.	Compound quantitation/RL/LOQ/LODs	N	
XII.	System performance	N	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	N	
XV.	Field blanks	SW	* FB = 1 RB = 2

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

water

1	AQ-SE-FB	11	MB1 - 10420	21		31	
2	AQ-SE-RB	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 28989C31
SDG #: per cover

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: HRGC/HRMS Polychlorinated Biphenyl Congeners (EPA 1668A)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?

Sample: 2 Field Blank / Trip Blank / Rinsate (circle one)

Compound	Concentration Units (pg/L)
PCB - 105	1.4
PCB - 118	2.32

Sample: _____ Field Blank / Trip Blank / Rinsate (circle one)

Compound	Concentration Units ( )

Sample: _____ Field Blank / Trip Blank / Rinsate (circle one)

Compound	Concentration Units ( )

Millennium Bulk Terminals - LDC# 28989

SDG: A4908

Analytical Method E1668A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-FB	A4908_10420_PC	PCB-167	12/13/2012	1.02	Yes	N	U			10.1	1.02	pg/L
AQ-SE-FB	A4908_10420_PC	PCB-189	12/13/2012	1.13	Yes	N	U			10.1	1.13	pg/L
AQ-SE-FB	A4908_10420_PC	PCB-169	12/13/2012	1.28	Yes	N	U			10.1	1.28	pg/L
AQ-SE-FB	A4908_10420_PC	PCB-156/157	12/13/2012	1.43	Yes	N	C U			20.2	1.43	pg/L
AQ-SE-FB	A4908_10420_PC	PCB-126	12/13/2012	1.1	Yes	N	U			10.1	1.1	pg/L
AQ-SE-FB	A4908_10420_PC	PCB-123	12/13/2012	1.15	Yes	N	U			10.1	1.15	pg/L
AQ-SE-FB	A4908_10420_PC	PCB-118	12/13/2012	1.13	Yes	N	U			10.1	1.13	pg/L
AQ-SE-FB	A4908_10420_PC	PCB-114	12/13/2012	1.04	Yes	N	U			10.1	1.04	pg/L
AQ-SE-FB	A4908_10420_PC	PCB-105	12/13/2012	1.22	Yes	N	U			10.1	1.22	pg/L
AQ-SE-FB	A4908_10420_PC	PCB-081	12/13/2012	1.21	Yes	N	U			10.1	1.21	pg/L
AQ-SE-FB	A4908_10420_PC	PCB-077	12/13/2012	1.17	Yes	N	U			10.1	1.17	pg/L
AQ-SE-RB	A4908_10420_PC	PCB-167	12/13/2012	0.983	Yes	N	U			10.8	0.983	pg/L
AQ-SE-RB	A4908_10420_PC	PCB-156/157	12/13/2012	1.32	Yes	N	C U			21.5	1.32	pg/L
AQ-SE-RB	A4908_10420_PC	PCB-126	12/13/2012	1.32	Yes	N	U			10.8	1.32	pg/L
AQ-SE-RB	A4908_10420_PC	PCB-123	12/13/2012	1.16	Yes	N	U			10.8	1.16	pg/L
AQ-SE-RB	A4908_10420_PC	PCB-118	12/13/2012	2.32	Yes	Y	J			10.8	1.2	pg/L
AQ-SE-RB	A4908_10420_PC	PCB-114	12/13/2012	1.16	Yes	N	U			10.8	1.16	pg/L
AQ-SE-RB	A4908_10420_PC	PCB-105	12/13/2012	1.4	Yes	Y	J			10.8	1.26	pg/L
AQ-SE-RB	A4908_10420_PC	PCB-081	12/13/2012	1.24	Yes	N	U			10.8	1.24	pg/L
AQ-SE-RB	A4908_10420_PC	PCB-077	12/13/2012	1.11	Yes	N	U			10.8	1.11	pg/L
AQ-SE-RB	A4908_10420_PC	PCB-169	12/13/2012	1.14	Yes	N	U			10.8	1.14	pg/L
AQ-SE-RB	A4908_10420_PC	PCB-189	12/13/2012	1.22	Yes	N	U			10.8	1.22	pg/L

Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

Anchor Environmental, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101
ATTN: Ms. Cindy Fields

January 30, 2013

SUBJECT: Revised Millennium Bulk Terminals, Data Validation

Dear Ms. Fields,

Enclosed is the revised data validation report for the fraction listed below. Please replace the previously submitted report with the enclosed revised report.

LDC Project # 28989:

SDG #	**Fraction**
A4909	Polychlorinated Biphenyls as Congeners

Please feel free to contact us if you have any questions.

Sincerely,

Ming-Hwa Hwang
Project Manager/Senior Chemist

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	November 12, 2012
LDC Report Date:	January 29, 2013
Matrix:	Sediment
Parameters:	Polychlorinated Biphenyls as Congeners
Validation Level:	Stage 2B
Laboratory:	SGS Analytical Perspectives
Sample Delivery Group (SDG):	A4909

Sample Identification

AQ-SE-03-10
AQ-SE-04-10
AQ-SE-05-10
AQ-SE-06-10
AQ-SE-07-10
AQ-SE-08-10
AQ-SE-01-10
AQ-SE-02-10
AQ-SE-57-10

Introduction

This data review covers 9 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1668A for Polychlorinated Biphenyl as Congeners.

This review follows USEPA Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of single compounds was performed for the primary (quantitation) column and confirmation column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% for unlabeled compounds and less than or equal to 50.0% for labeled compounds.

The ion abundance ratios for all compounds were within method criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyls as congeners contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB1-10429	12/10/12	PCB-118	0.328 pg/g	All samples in SDGA4909

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Ongoing Precision Recovery (OPR)

Ongoing precision recovery samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

All internal standard recoveries (%R) were within QC limits.

X. Target Compound Identification

Raw data were not reviewed for this SDG.

XI. Compound Quantitation and RLs

All compound quantitations were within validation criteria with the following exceptions:

Sample	Compound	Flag	A or P
AQ-SE-06-10 AQ-SE-08-10	All compounds reported as estimated maximum possible concentration (EMPC)	J (all detects)	A

Raw data were not reviewed for this SDG.

XII. System Performance

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to compound quantitation problems, data were qualified as estimated in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

Samples AQ-SE-07-10 and AQ-SE-57-10 were identified as field duplicates. No polychlorinated biphenyls were detected in any of the samples with the following exceptions:

Compound	Concentration (pg/g)		RPD
	AQ-SE-07-10	AQ-SE-57-10	
PCB-77	1.31	1.79	31
PCB-105	5.83	36.8	145
PCB-114	0.327	2.31	150
PCB-118	12.9	92.1	151
PCB-123	0.364	1.38	117
PCB-156/157	1.69	14.2	157
PCB-167	0.55	4.06	152
PCB-189	0.183	0.576	104
PCB-126	0.0961U	0.124	200

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polychlorinated Biphenyls as Congeners - Data Qualification Summary - SDG A4909

SDG	Sample	Compound	Flag	A or P	Reason
A4909	AQ-SE-06-10 AQ-SE-08-10	All compounds reported as estimated maximum possible concentration (EMPC)	J (all detects)	A	Compound quantitation and RLs (EMPC)

Millennium Bulk Terminals
Polychlorinated Biphenyls as Congeners - Laboratory Blank Data Qualification Summary - SDG A4909

No Sample Data Qualified in this SDG

LDC #: 28989D31

SDG #: A4909

Laboratory: SGS Analytical Perspectives

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/7/12

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: HRGC/HRMS Polychlorinated Biphenyl Congeners (EPA Method 1668A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/12/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	%RSD ≤ 20
IV.	Continuing calibration/ICV	A	CW ≤ 30/50
V.	Blanks	SW	
VI.	Matrix spike/Matrix spike duplicates	N	client specified
VII.	Laboratory control samples	A	OPR
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	A	
X.	Target compound identifications	N	
XI.	Compound quantitation/RL/LOQ/LODs	N	#4, 6, TMPC, Jtet/A
XII.	System performance	N	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	SW	D = 5 + 9
XV.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

Sediments

1	AQ-SE-03-10	11	MB 1 - 10429	21		31	
2	AQ-SE-04-10	12		22		32	
3	AQ-SE-05-10	13		23		33	
4	AQ-SE-06-10	14		24		34	
5	AQ-SE-07-10	15		25		35	
6	AQ-SE-08-10	16		26		36	
7	AQ-SE-01-10	17		27		37	
8	AQ-SE-02-10	18		28		38	
9	AQ-SE-57-10	19		29		39	
10		20		30		40	

Milllennium Bulk Terminals - LDC#28989, RV1

SDG: A4909

Analytical Method E1668A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-01-10	A4909_10429_PC	PCB-156/157	12/14/2012	172		Yes	Y	C			1.84	0.381	pg/g
AQ-SE-01-10	A4909_10429_PC	PCB-077	12/14/2012	87.5		Yes	Y				0.918	0.49	pg/g
AQ-SE-01-10	A4909_10429_PC	PCB-189	12/14/2012	9.24		Yes	Y				0.918	0.207	pg/g
AQ-SE-01-10	A4909_10429_PC	PCB-167	12/14/2012	53.1		Yes	Y				0.918	0.237	pg/g
AQ-SE-01-10	A4909_10429_PC	PCB-126	12/14/2012	3.52		Yes	Y				0.918	0.244	pg/g
AQ-SE-01-10	A4909_10429_PC	PCB-123	12/14/2012	28.2		Yes	Y				0.918	0.0958	pg/g
AQ-SE-01-10	A4909_10429_PC	PCB-118	12/14/2012	1180		Yes	Y				0.918	0.104	pg/g
AQ-SE-01-10	A4909_10429_PC	PCB-114	12/14/2012	33.2		Yes	Y				0.918	0.0975	pg/g
AQ-SE-01-10	A4909_10429_PC	PCB-105	12/14/2012	517		Yes	Y				0.918	0.107	pg/g
AQ-SE-01-10	A4909_10429_PC	PCB-081	12/14/2012	3.43		Yes	Y				0.918	0.546	pg/g
AQ-SE-01-10	A4909_10429_PC	PCB-169	12/14/2012	0.353		Yes	N	U			0.918	0.353	pg/g
AQ-SE-02-10	A4909_10429_PC	PCB-114	12/14/2012	3.15		Yes	Y				0.88	0.0782	pg/g
AQ-SE-02-10	A4909_10429_PC	PCB-123	12/14/2012	2.62		Yes	Y				0.88	0.0757	pg/g
AQ-SE-02-10	A4909_10429_PC	PCB-077	12/14/2012	20.6		Yes	Y				0.88	0.127	pg/g
AQ-SE-02-10	A4909_10429_PC	PCB-105	12/14/2012	50.6		Yes	Y				0.88	0.0875	pg/g
AQ-SE-02-10	A4909_10429_PC	PCB-118	12/14/2012	109		Yes	Y				0.88	0.0795	pg/g
AQ-SE-02-10	A4909_10429_PC	PCB-156/157	12/14/2012	61.9		Yes	Y	C			1.76	0.174	pg/g
AQ-SE-02-10	A4909_10429_PC	PCB-167	12/14/2012	16.3		Yes	Y				0.88	0.0931	pg/g
AQ-SE-02-10	A4909_10429_PC	PCB-169	12/14/2012	0.113		Yes	N	U			0.88	0.113	pg/g
AQ-SE-02-10	A4909_10429_PC	PCB-189	12/14/2012	4.37		Yes	Y				0.88	0.0875	pg/g
AQ-SE-02-10	A4909_10429_PC	PCB-081	12/14/2012	0.735		Yes	Y	J			0.88	0.132	pg/g
AQ-SE-02-10	A4909_10429_PC	PCB-126	12/14/2012	0.495		Yes	Y	J			0.88	0.0987	pg/g
AQ-SE-03-10	A4909_10429_PC	PCB-126	12/14/2012	0.399		Yes	Y	J			0.813	0.104	pg/g
AQ-SE-03-10	A4909_10429_PC	PCB-077	12/14/2012	20.2		Yes	Y				0.813	0.107	pg/g

SDG: A4909

Analytical Method E1668A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-03-10	A4909_10429_PC	PCB-081	12/14/2012	0.806		Yes	Y	J			0.813	0.114	pg/g
AQ-SE-03-10	A4909_10429_PC	PCB-105	12/14/2012	47.5		Yes	Y				0.813	0.119	pg/g
AQ-SE-03-10	A4909_10429_PC	PCB-114	12/14/2012	2.51		Yes	Y				0.813	0.108	pg/g
AQ-SE-03-10	A4909_10429_PC	PCB-123	12/14/2012	3		Yes	Y				0.813	0.114	pg/g
AQ-SE-03-10	A4909_10429_PC	PCB-156/157	12/14/2012	7.38		Yes	Y	C			1.63	0.137	pg/g
AQ-SE-03-10	A4909_10429_PC	PCB-167	12/14/2012	2.78		Yes	Y				0.813	0.0957	pg/g
AQ-SE-03-10	A4909_10429_PC	PCB-169	12/14/2012	0.109		Yes	N	U			0.813	0.109	pg/g
AQ-SE-03-10	A4909_10429_PC	PCB-189	12/14/2012	1.52		Yes	Y				0.813	0.0825	pg/g
AQ-SE-03-10	A4909_10429_PC	PCB-118	12/14/2012	89.5		Yes	Y				0.813	0.115	pg/g
AQ-SE-04-10	A4909_10429_PC	PCB-126	12/14/2012	0.737		Yes	Y	J			0.903	0.154	pg/g
AQ-SE-04-10	A4909_10429_PC	PCB-189	12/14/2012	0.747		Yes	Y	J			0.903	0.0954	pg/g
AQ-SE-04-10	A4909_10429_PC	PCB-169	12/14/2012	0.124		Yes	N	U			0.903	0.124	pg/g
AQ-SE-04-10	A4909_10429_PC	PCB-167	12/14/2012	2.7		Yes	Y				0.903	0.105	pg/g
AQ-SE-04-10	A4909_10429_PC	PCB-156/157	12/14/2012	8.4		Yes	Y	C			1.81	0.143	pg/g
AQ-SE-04-10	A4909_10429_PC	PCB-118	12/14/2012	181		Yes	Y				0.903	0.218	pg/g
AQ-SE-04-10	A4909_10429_PC	PCB-114	12/14/2012	5.02		Yes	Y				0.903	0.218	pg/g
AQ-SE-04-10	A4909_10429_PC	PCB-105	12/14/2012	82.1		Yes	Y				0.903	0.242	pg/g
AQ-SE-04-10	A4909_10429_PC	PCB-077	12/14/2012	39.3		Yes	Y				0.903	0.163	pg/g
AQ-SE-04-10	A4909_10429_PC	PCB-081	12/14/2012	1.15		Yes	Y				0.903	0.155	pg/g
AQ-SE-04-10	A4909_10429_PC	PCB-123	12/14/2012	3.67		Yes	Y				0.903	0.218	pg/g
AQ-SE-05-10	A4909_10429_PC	PCB-126	12/14/2012	1.36		Yes	Y				0.874	0.152	pg/g
AQ-SE-05-10	A4909_10429_PC	PCB-169	12/14/2012	0.162		Yes	N	U			0.874	0.162	pg/g
AQ-SE-05-10	A4909_10429_PC	PCB-156/157	12/14/2012	19.4		Yes	Y	C			1.75	0.185	pg/g
AQ-SE-05-10	A4909_10429_PC	PCB-123	12/14/2012	6.74		Yes	Y				0.874	0.41	pg/g
AQ-SE-05-10	A4909_10429_PC	PCB-114	12/14/2012	8.39		Yes	Y				0.874	0.427	pg/g

SDG: A4909

Analytical Method E1668A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-05-10	A4909_10429_PC	PCB-105	12/14/2012	144		Yes	Y				0.874	0.456	pg/g
AQ-SE-05-10	A4909_10429_PC	PCB-081	12/14/2012	2.04		Yes	Y				0.874	0.193	pg/g
AQ-SE-05-10	A4909_10429_PC	PCB-077	12/14/2012	61.6		Yes	Y				0.874	0.183	pg/g
AQ-SE-05-10	A4909_10429_PC	PCB-189	12/14/2012	2.35		Yes	Y				0.874	0.0974	pg/g
AQ-SE-05-10	A4909_10429_PC	PCB-118	12/14/2012	290		Yes	Y				0.874	0.418	pg/g
AQ-SE-05-10	A4909_10429_PC	PCB-167	12/14/2012	6.02		Yes	Y				0.874	0.125	pg/g
AQ-SE-06-10	A4909_10429_PC	PCB-169	12/14/2012	0.0815		Yes	N	U			0.835	0.0815	pg/g
AQ-SE-06-10	A4909_10429_PC	PCB-077	12/14/2012	2.38		Yes	Y				0.835	0.122	pg/g
AQ-SE-06-10	A4909_10429_PC	PCB-081	12/14/2012	0.131		Yes	N	U			0.835	0.131	pg/g
AQ-SE-06-10	A4909_10429_PC	PCB-105	12/14/2012	14		Yes	Y				0.835	0.126	pg/g
AQ-SE-06-10	A4909_10429_PC	PCB-114	12/14/2012	0.807		Yes	Y	J EMPC	J	23	0.835	0.112	pg/g
AQ-SE-06-10	A4909_10429_PC	PCB-118	12/14/2012	31.5		Yes	Y				0.835	0.113	pg/g
AQ-SE-06-10	A4909_10429_PC	PCB-123	12/14/2012	0.682		Yes	Y	J			0.835	0.111	pg/g
AQ-SE-06-10	A4909_10429_PC	PCB-126	12/14/2012	0.111		Yes	Y	J EMPC	J	23	0.835	0.0995	pg/g
AQ-SE-06-10	A4909_10429_PC	PCB-167	12/14/2012	1.23		Yes	Y				0.835	0.0692	pg/g
AQ-SE-06-10	A4909_10429_PC	PCB-189	12/14/2012	0.224		Yes	Y	J			0.835	0.0964	pg/g
AQ-SE-06-10	A4909_10429_PC	PCB-156/157	12/14/2012	4.13		Yes	Y	C			1.67	0.0941	pg/g
AQ-SE-07-10	A4909_10429_PC	PCB-126	12/14/2012	0.0961		Yes	N	U			0.812	0.0961	pg/g
AQ-SE-07-10	A4909_10429_PC	PCB-081	12/14/2012	0.0882		Yes	N	U			0.812	0.0882	pg/g
AQ-SE-07-10	A4909_10429_PC	PCB-105	12/14/2012	5.83		Yes	Y				0.812	0.0911	pg/g
AQ-SE-07-10	A4909_10429_PC	PCB-114	12/14/2012	0.327		Yes	Y	J			0.812	0.086	pg/g
AQ-SE-07-10	A4909_10429_PC	PCB-123	12/14/2012	0.364		Yes	Y	J			0.812	0.0872	pg/g
AQ-SE-07-10	A4909_10429_PC	PCB-156/157	12/14/2012	1.69		Yes	Y	C			1.62	0.0905	pg/g
AQ-SE-07-10	A4909_10429_PC	PCB-167	12/14/2012	0.55		Yes	Y	J			0.812	0.0627	pg/g
AQ-SE-07-10	A4909_10429_PC	PCB-169	12/14/2012	0.0792		Yes	N	U			0.812	0.0792	pg/g

SDG: A4909

Analytical Method E1668A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-07-10	A4909_10429_PC	PCB-189	12/14/2012	0.183		Yes	Y	J			0.812	0.0427	pg/g
AQ-SE-07-10	A4909_10429_PC	PCB-118	12/14/2012	12.9		Yes	Y				0.812	0.0895	pg/g
AQ-SE-07-10	A4909_10429_PC	PCB-077	12/14/2012	1.31		Yes	Y				0.812	0.0859	pg/g
AQ-SE-08-10	A4909_10429_PC	PCB-123	12/14/2012	0.211		Yes	Y	J			0.842	0.088	pg/g
AQ-SE-08-10	A4909_10429_PC	PCB-189	12/14/2012	0.115		Yes	Y	J EMPC	J	23	0.842	0.0597	pg/g
AQ-SE-08-10	A4909_10429_PC	PCB-169	12/14/2012	0.0682		Yes	N	U			0.842	0.0682	pg/g
AQ-SE-08-10	A4909_10429_PC	PCB-167	12/14/2012	0.356		Yes	Y	J EMPC	J	23	0.842	0.0569	pg/g
AQ-SE-08-10	A4909_10429_PC	PCB-126	12/14/2012	0.0696		Yes	N	U			0.842	0.0696	pg/g
AQ-SE-08-10	A4909_10429_PC	PCB-114	12/14/2012	0.212		Yes	Y	J			0.842	0.0849	pg/g
AQ-SE-08-10	A4909_10429_PC	PCB-105	12/14/2012	4.49		Yes	Y				0.842	0.0948	pg/g
AQ-SE-08-10	A4909_10429_PC	PCB-081	12/14/2012	0.0738		Yes	N	U			0.842	0.0738	pg/g
AQ-SE-08-10	A4909_10429_PC	PCB-077	12/14/2012	1.12		Yes	Y				0.842	0.0705	pg/g
AQ-SE-08-10	A4909_10429_PC	PCB-118	12/14/2012	10.9		Yes	Y				0.842	0.0874	pg/g
AQ-SE-08-10	A4909_10429_PC	PCB-156/157	12/14/2012	1.25		Yes	Y	J C			1.68	0.0824	pg/g
AQ-SE-57-10	A4909_10429_PC	PCB-081	12/14/2012	0.0853		Yes	N	U			0.808	0.0853	pg/g
AQ-SE-57-10	A4909_10429_PC	PCB-169	12/14/2012	0.101		Yes	N	U			0.808	0.101	pg/g
AQ-SE-57-10	A4909_10429_PC	PCB-167	12/14/2012	4.06		Yes	Y				0.808	0.0837	pg/g
AQ-SE-57-10	A4909_10429_PC	PCB-156/157	12/14/2012	14.2		Yes	Y	C			1.62	0.123	pg/g
AQ-SE-57-10	A4909_10429_PC	PCB-126	12/14/2012	0.124		Yes	Y	J			0.808	0.0784	pg/g
AQ-SE-57-10	A4909_10429_PC	PCB-123	12/14/2012	1.38		Yes	Y				0.808	0.0791	pg/g
AQ-SE-57-10	A4909_10429_PC	PCB-118	12/14/2012	92.1		Yes	Y				0.808	0.0798	pg/g
AQ-SE-57-10	A4909_10429_PC	PCB-105	12/14/2012	36.8		Yes	Y				0.808	0.0825	pg/g
AQ-SE-57-10	A4909_10429_PC	PCB-077	12/14/2012	1.79		Yes	Y				0.808	0.0812	pg/g
AQ-SE-57-10	A4909_10429_PC	PCB-189	12/14/2012	0.576		Yes	Y	J			0.808	0.0635	pg/g
AQ-SE-57-10	A4909_10429_PC	PCB-114	12/14/2012	2.31		Yes	Y				0.808	0.0801	pg/g

SDG: A4909

Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

Anchor Environmental, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101
ATTN: Ms. Cindy Fields

February 7, 2013

SUBJECT: Millennium Bulk Terminals, Data Validation

Dear Ms. Fields,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on January 16, 2013. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 29076:

SDG #	Fraction
A12J044 A12J067 A12J175 A12J576 A12J671 A12K226 A12K308	Volatiles, Semivolatiles, Polynuclear Aromatic Hydrocarbons, Polychlorinated Biphenyls, Metals, Wet Chemistry, Total Petroleum Hydrocarbons as Extractable

The data validation was performed under Stage 2B guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Ming-Hwa Hwang
Project Manager/Senior Chemist

L:\Anchor\Millennium-Reynolds\29076COV.wpd

Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

Anchor Environmental, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101
ATTN: Ms. Cindy Fields

February 25, 2013

SUBJECT: Revised Millennium Bulk Terminals, Data Validation

Dear Ms. Fields,

Enclosed is the revised data validation report for the fractions listed below. Please replace the previously submitted report with the enclosed revised report.

LDC Project # 29076:

SDG #	**Fraction**
A12J576	Semivolatiles, Wet Chemistry

Please feel free to contact us if you have any questions.

Sincerely,

Ming-Hwa Hwang
Project Manager/Senior Chemist

L:\Anchor\Millennium-Reynolds\29076RV1.wpd

Stage 2B EDD

LDC #29076 (Anchor Environmental-Seattle WA /Millennium Bulk Terminals)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		SVOA (8270D)		PAH (8270D-SIM)		PCB (8082A)		Metals (6020)		TCLP Metals (6020)		Be (6010C)		Metals		Diss Metals		DRO NWTPH-Dx SGC															
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	A12J044	01/16/13	02/06/13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	0	6	0	-	-														
B	A12J067	01/16/13	02/06/13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	0	14	0	-	-														
C	A12J175	01/16/13	02/06/13	2	0	2	0	3	0	4	0	-	-	-	-	-	-	9	0	9	0	2	0														
D	A12J576	01/16/13	02/06/13	0	8	0	1	0	6	0	1	0	7	0	1	0	7	-	-	-	-	-	-														
E	A12J671	01/16/13	02/06/13	0	2	0	4	0	5	0	4	0	9	0	1	0	4	-	-	-	-	0	1														
F	A12K226	01/16/13	02/06/13	-	-	-	-	1	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-														
G	A12K308	01/16/13	02/06/13	-	-	2	9	-	-	-	-	2	9	-	-	-	-	-	-	-	-	-	-														
Total	A/MH			2	10	4	14	4	33	4	5	2	25	0	2	0	11	29	0	29	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	177

Stage 2B EDD

LDC #29076 (Anchor Environmental-Seattle WA /Millennium Bulk Terminals)

LDC	SDG#	DATE REC'D	(3) DATE DUE	Alk (2320B)		Cl,SO4 (300.0)		T.CN- (335.4)		Diss CN- (335.4)		WAD CN- (4500)		D.WAD CN- (4500)		Free CN- (D4282)		D. Free CN- (D4282)		F (4500-F-C)		Diss F (4500-F-C)		Phos-phorous (4500)		Totals Solids (2540G)		TDS (2540C)		TOC (5310B)		TSS (2540D)					
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	A12J044	01/16/13	02/06/13	6	0	6	0	6	0	6	0	6	0	6	0	6	0	6	0	6	0	6	0	6	0	-	-	6	0	-	-	6	0				
B	A12J067	01/16/13	02/06/13	14	0	14	0	15	0	14	0	14	0	14	0	14	0	14	0	14	0	14	0	14	0	-	-	14	0	-	-	14	0				
C	A12J175	01/16/13	02/06/13	9	0	9	0	9	0	9	0	9	0	9	0	9	0	9	0	9	0	9	0	9	0	-	-	9	0	-	-	9	0				
D	A12J576	01/16/13	02/06/13	-	-	-	-	0	7	-	-	0	7	-	-	-	-	-	-	0	7	-	-	-	-	-	-	-	-	0	7	-	-				
E	A12J671	01/16/13	02/06/13	-	-	-	-	0	6	-	-	0	6	-	-	-	-	-	-	0	6	-	-	-	-	0	3	-	-	0	6	-	-				
G	A12K308	01/16/13	02/06/13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	9	-	-	2	9	-	-				
Total	A/MH			29	0	29	0	30	13	29	0	29	13	29	0	29	0	29	0	29	13	29	0	29	0	2	12	29	0	2	22	29	0	0	0	0	455

Shaded cells indicate Stage 4 validation (all other cells are Stage 2B validation). These sample counts do not include MS, MSD, or DUP's.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 1, 2012
LDC Report Date:	January 22, 2013
Matrix:	Water
Parameters:	Metals
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J044

Sample Identification

W1-100112
W2-100112
W3-100112
W4-100112
W6-100112
W7-100112
W2-100112DUP
W4-100112MS
W1-100112F
W2-100112F
W3-100112F
W4-100112F
W6-100112F
W7-100112F
W2-100112FDUP
W4-100112FMS

Samples appended with "F" were analyzed for dissolved metals

Introduction

This data review covers 16 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Methods 200.7 and 200.8 for Metals. The metals analyzed were Aluminum, Arsenic, Calcium, Chromium, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Sodium, and Silicon.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this method.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Metals - Data Qualification Summary - SDG A12J044

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Metals - Laboratory Blank Data Qualification Summary - SDG A12J044

No Sample Data Qualified in this SDG

LDC #: 29076A4

SDG #: A12J044

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/21/13

Page: 1 of 1

Reviewer: CL

2nd Reviewer: W

METHOD: Metals (EPA Method 200.7/200.8)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/1/12
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	A	MS
VII.	Duplicate Sample Analysis	A	Dup
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	~~A~~ N	Not reviewed
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	Not performed
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	W1-100112	11	W1-100112F	21		31	
2	W2-100112	12	W2-100112F	22		32	
3	W3-100112	13	W3-100112F	23		33	
4	W4-100112	14	W4-100112F	24		34	
5	W6-100112	15	W6-100112F	25		35	
6	W7-100112	16	W7-100112F	26		36	
7	W2-100112DUP	17	W2-100112FDUP	27		37	
8	W4-100112MS	18	W4-100112FMS	28		38	
9		19		29		39	
10		20		30		40	

Notes: Samples appended with "F" were analyzed for dissolved metals

LDC #: 29076A4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer: ✓

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-6,11-16		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
QC 7,8		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
↓ 17,18		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
Analysis Method		
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
ICP ~~-MS~~		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti

Comments: Mercury by CVAA if performed

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 1, 2012
LDC Report Date:	January 23, 2013
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J044

Sample Identification

W1-100112
W2-100112
W3-100112
W4-100112
W6-100112
W7-100112
W1-100112MS
W1-100112DUP
W2-100112MS
W2-100112DUP
W3-100112DUP
W4-100112MS
W4-100112DUP
W6-100112DUP
W7-100112MS
W7-100112DUP

Introduction

This data review covers 16 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2320B for Alkalinity, EPA Method 300.0 for Chloride and Sulfate, EPA Method 335.4 for Total Cyanide and Dissolved Cyanide, Standard Method 4500-CN-I-E for Weak Acid Dissociable Cyanide and Dissolved Weak Acid Dissociable Cyanide, ASTM D4282 for Free Cyanide and Dissolved Free Cyanide, Standard Method 4500-F-C for Fluoride and Dissolved Fluoride, Standard Method 4500-P-B for Phosphorus, Standard Method 2540C for Total Dissolved Solids, and Standard Method 2540D for Total Suspended Solids.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
W1-100112MS (All samples in SDG A12J044)	Dissolved free cyanide	123 (80-120)	J (all detects)	A

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS %R problems, data were qualified as estimated in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A12J044

SDG	Sample	Analyte	Flag	A or P	Reason
A12J044	W1-100112 W2-100112 W3-100112 W4-100112 W6-100112 W7-100112	Dissolved free cyanide	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A12J044

No Sample Data Qualified in this SDG

LDC #: 29076A6

SDG #: A12J044

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/21/13

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: (Analyte) Alkalinity (SM2320B), Chloride, Sulfate (EPA Method 300.0), Total Cyanide, Dissolved Cyande (EPA Method 335.4), WAD Cyanide, Dissolved WAD Cyanide (~~EPA SW846 Method 9013M~~/SM4500–CN-I-E), Free Cyanide, Dissolved Free Cyanide (ASTM D4282), Fluoride, Dissolved Fluoride (SM4500-F-C), Phosphours (SM4500-P-B) TDS (SM2540C), TSS (SM2540D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/1/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	SW	MS
VI.	Duplicates	A	Dup
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	W1-100112	11	W3-100112DUP	21		31	
2	W2-100112	12	W4-100112MS	22		32	
3	W3-100112	13	W4-100112DUP	23		33	
4	W4-100112	14	W6-100112DUP	24		34	
5	W6-100112	15	W7-100112MS	25		35	
6	W7-100112	16	W7-100112DUP	26		36	
7	W1-100112MS	17		27		37	
8	W1-100112DUP	18		28		38	
9	W2-100112MS	19		29		39	
10	W2-100112DUP	20		30		40	

Notes:

LDC #: 29076A4

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Parameter
1-6	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Diss F WAD CN Free CN Diss CN Diss WAD CN Diss Free CN
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 TSS P
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
QC: 7	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Diss F Free CN Diss CN Diss WAD CN Diss Free CN P
8	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Free CN Diss CN Diss WAD CN Diss Free CN P
9	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Diss F
10	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
11	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
12	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
13	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
14	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Diss F
15	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Diss F
16	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 TSS
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

WC.wpd

LDC #: 29026A6

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of ~~75-125~~ 80-120 (85-115% for Method 300.0)? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
		7	W	Diss. Free CN	123	All	J det/A

Comments:

Millennium Bulk Terminals - LDC# 29076

SDG: A12J044

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W1-100112	A12J044-01	Cyanide, free	10/2/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
W1-100112	A12J044-01	Cyanide, free	10/2/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
W2-100112	A12J044-02	Cyanide, free	10/2/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
W2-100112	A12J044-02	Cyanide, free	10/2/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
W3-100112	A12J044-03	Cyanide, free	10/2/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
W3-100112	A12J044-03	Cyanide, free	10/2/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
W4-100112	A12J044-04	Cyanide, free	10/2/2012	0.0049	Yes	Y	J			0.00500	0.00200	mg/L
W4-100112	A12J044-04	Cyanide, free	10/2/2012	0.0037	Yes	Y	J	J	8	0.00500	0.00200	mg/L
W6-100112	A12J044-05	Cyanide, free	10/2/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
W6-100112	A12J044-05	Cyanide, free	10/2/2012	0.0046	Yes	Y	J			0.00500	0.00200	mg/L
W7-100112	A12J044-06	Cyanide, free	10/2/2012	0.005	Yes	Y		J	8	0.00500	0.00200	mg/L
W7-100112	A12J044-06	Cyanide, free	10/2/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W1-100112	A12J044-01	Silicon	10/5/2012	21.6	Yes	Y				0.100	0.0500	mg/L
W1-100112	A12J044-01	Silicon	10/5/2012	21.1	Yes	Y				0.100	0.0500	mg/L
W2-100112	A12J044-02	Silicon	10/5/2012	19.7	Yes	Y				0.100	0.0500	mg/L
W2-100112	A12J044-02	Silicon	10/5/2012	19.1	Yes	Y				0.100	0.0500	mg/L
W3-100112	A12J044-03	Silicon	10/5/2012	19	Yes	Y				0.100	0.0500	mg/L
W3-100112	A12J044-03	Silicon	10/5/2012	18.7	Yes	Y				0.100	0.0500	mg/L
W4-100112	A12J044-04	Silicon	10/5/2012	19.1	Yes	Y				0.100	0.0500	mg/L
W4-100112	A12J044-04	Silicon	10/5/2012	18.8	Yes	Y				0.100	0.0500	mg/L
W6-100112	A12J044-05	Silicon	10/5/2012	19.7	Yes	Y				0.100	0.0500	mg/L
W6-100112	A12J044-05	Silicon	10/5/2012	19.2	Yes	Y				0.100	0.0500	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W7-100112	A12J044-06	Silicon	10/5/2012	22	Yes	Y				0.100	0.0500	mg/L
W7-100112	A12J044-06	Silicon	10/5/2012	20.6	Yes	Y				0.100	0.0500	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W1-100112	A12J044-01	Magnesium	10/8/2012	8240	Yes	Y				50.0	25.0	ug/L
W1-100112	A12J044-01	Aluminum	10/8/2012	38.8	Yes	Y	J			50.0	25.0	ug/L
W1-100112	A12J044-01	Calcium	10/8/2012	16500	Yes	Y				100	50.0	ug/L
W1-100112	A12J044-01	Iron	10/8/2012	8100	Yes	Y				50.0	25.0	ug/L
W1-100112	A12J044-01	Manganese	10/8/2012	822	Yes	Y				1.00	0.500	ug/L
W1-100112	A12J044-01	Potassium	10/8/2012	1880	Yes	Y				100	50.0	ug/L
W1-100112	A12J044-01	Sodium	10/8/2012	11.1	Yes	Y				0.100	0.0500	mg/L
W1-100112	A12J044-01	Manganese	10/8/2012	808	Yes	Y				1.00	0.500	ug/L
W1-100112	A12J044-01	Magnesium	10/8/2012	8070	Yes	Y				50.0	25.0	ug/L
W1-100112	A12J044-01	Sodium	10/8/2012	10900	Yes	Y				100	50.0	ug/L
W1-100112	A12J044-01	Calcium	10/8/2012	16400	Yes	Y				100	50.0	ug/L
W1-100112	A12J044-01	Potassium	10/8/2012	1850	Yes	Y				100	50.0	ug/L
W1-100112	A12J044-01	Aluminum	10/8/2012	50	Yes	N	U			50.0	25.0	ug/L
W1-100112	A12J044-01	Iron	10/8/2012	1810	Yes	Y				50.0	25.0	ug/L
W2-100112	A12J044-02	Manganese	10/8/2012	407	Yes	Y				1.00	0.500	ug/L
W2-100112	A12J044-02	Sodium	10/8/2012	11.9	Yes	Y				0.100	0.0500	mg/L
W2-100112	A12J044-02	Potassium	10/8/2012	2340	Yes	Y				100	50.0	ug/L
W2-100112	A12J044-02	Calcium	10/8/2012	18800	Yes	Y				100	50.0	ug/L
W2-100112	A12J044-02	Aluminum	10/8/2012	50	Yes	N	U			50.0	25.0	ug/L
W2-100112	A12J044-02	Magnesium	10/8/2012	8620	Yes	Y				50.0	25.0	ug/L
W2-100112	A12J044-02	Iron	10/8/2012	1860	Yes	Y				50.0	25.0	ug/L

SDG: A12J044

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W2-100112	A12J044-02	Aluminum	10/8/2012	50	Yes	N	U			50.0	25.0	ug/L
W2-100112	A12J044-02	Potassium	10/8/2012	2260	Yes	Y				100	50.0	ug/L
W2-100112	A12J044-02	Magnesium	10/8/2012	8430	Yes	Y				50.0	25.0	ug/L
W2-100112	A12J044-02	Calcium	10/8/2012	18300	Yes	Y				100	50.0	ug/L
W2-100112	A12J044-02	Sodium	10/8/2012	11600	Yes	Y				100	50.0	ug/L
W2-100112	A12J044-02	Manganese	10/8/2012	393	Yes	Y				1.00	0.500	ug/L
W2-100112	A12J044-02	Iron	10/8/2012	439	Yes	Y				50.0	25.0	ug/L
W3-100112	A12J044-03	Calcium	10/8/2012	19800	Yes	Y				100	50.0	ug/L
W3-100112	A12J044-03	Magnesium	10/8/2012	8810	Yes	Y				50.0	25.0	ug/L
W3-100112	A12J044-03	Manganese	10/8/2012	471	Yes	Y				1.00	0.500	ug/L
W3-100112	A12J044-03	Iron	10/8/2012	2230	Yes	Y				50.0	25.0	ug/L
W3-100112	A12J044-03	Aluminum	10/8/2012	95.1	Yes	Y				50.0	25.0	ug/L
W3-100112	A12J044-03	Potassium	10/8/2012	2400	Yes	Y				100	50.0	ug/L
W3-100112	A12J044-03	Sodium	10/8/2012	12.8	Yes	Y				0.100	0.0500	mg/L
W3-100112	A12J044-03	Aluminum	10/8/2012	50	Yes	N	U			50.0	25.0	ug/L
W3-100112	A12J044-03	Manganese	10/8/2012	447	Yes	Y				1.00	0.500	ug/L
W3-100112	A12J044-03	Potassium	10/8/2012	2400	Yes	Y				100	50.0	ug/L
W3-100112	A12J044-03	Magnesium	10/8/2012	8850	Yes	Y				50.0	25.0	ug/L
W3-100112	A12J044-03	Iron	10/8/2012	419	Yes	Y				50.0	25.0	ug/L
W3-100112	A12J044-03	Sodium	10/8/2012	12900	Yes	Y				100	50.0	ug/L
W3-100112	A12J044-03	Calcium	10/8/2012	19800	Yes	Y				100	50.0	ug/L
W4-100112	A12J044-04	Magnesium	10/8/2012	9200	Yes	Y				50.0	25.0	ug/L
W4-100112	A12J044-04	Calcium	10/8/2012	20800	Yes	Y				100	50.0	ug/L
W4-100112	A12J044-04	Manganese	10/8/2012	828	Yes	Y				1.00	0.500	ug/L
W4-100112	A12J044-04	Iron	10/8/2012	1690	Yes	Y				50.0	25.0	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W4-100112	A12J044-04	Potassium	10/8/2012	2620		Yes	Y				100	50.0	ug/L
W4-100112	A12J044-04	Aluminum	10/8/2012	45.1		Yes	Y	J			50.0	25.0	ug/L
W4-100112	A12J044-04	Sodium	10/8/2012	18.2		Yes	Y				0.100	0.0500	mg/L
W4-100112	A12J044-04	Magnesium	10/8/2012	9150		Yes	Y				50.0	25.0	ug/L
W4-100112	A12J044-04	Potassium	10/8/2012	2550		Yes	Y				100	50.0	ug/L
W4-100112	A12J044-04	Calcium	10/8/2012	20500		Yes	Y				100	50.0	ug/L
W4-100112	A12J044-04	Manganese	10/8/2012	283		Yes	Y				1.00	0.500	ug/L
W4-100112	A12J044-04	Sodium	10/8/2012	17700		Yes	Y				100	50.0	ug/L
W4-100112	A12J044-04	Iron	10/8/2012	353		Yes	Y				50.0	25.0	ug/L
W4-100112	A12J044-04	Aluminum	10/8/2012	50		Yes	N	U			50.0	25.0	ug/L
W6-100112	A12J044-05	Potassium	10/8/2012	1570		Yes	Y				100	50.0	ug/L
W6-100112	A12J044-05	Iron	10/8/2012	2470		Yes	Y				50.0	25.0	ug/L
W6-100112	A12J044-05	Magnesium	10/8/2012	9080		Yes	Y				50.0	25.0	ug/L
W6-100112	A12J044-05	Manganese	10/8/2012	315		Yes	Y				1.00	0.500	ug/L
W6-100112	A12J044-05	Calcium	10/8/2012	23100		Yes	Y				100	50.0	ug/L
W6-100112	A12J044-05	Sodium	10/8/2012	12.1		Yes	Y				0.100	0.0500	mg/L
W6-100112	A12J044-05	Aluminum	10/8/2012	50		Yes	N	U			50.0	25.0	ug/L
W6-100112	A12J044-05	Aluminum	10/8/2012	50		Yes	N	U			50.0	25.0	ug/L
W6-100112	A12J044-05	Calcium	10/8/2012	22400		Yes	Y				100	50.0	ug/L
W6-100112	A12J044-05	Magnesium	10/8/2012	8780		Yes	Y				50.0	25.0	ug/L
W6-100112	A12J044-05	Manganese	10/8/2012	248		Yes	Y				1.00	0.500	ug/L
W6-100112	A12J044-05	Potassium	10/8/2012	1490		Yes	Y				100	50.0	ug/L
W6-100112	A12J044-05	Sodium	10/8/2012	11800		Yes	Y				100	50.0	ug/L
W6-100112	A12J044-05	Iron	10/8/2012	328		Yes	Y				50.0	25.0	ug/L
W7-100112	A12J044-06	Iron	10/8/2012	9830		Yes	Y				50.0	25.0	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W7-100112	A12J044-06	Sodium	10/8/2012	11		Yes	Y				0.100	0.0500	mg/L
W7-100112	A12J044-06	Potassium	10/8/2012	1920		Yes	Y				100	50.0	ug/L
W7-100112	A12J044-06	Aluminum	10/8/2012	62.2		Yes	Y				50.0	25.0	ug/L
W7-100112	A12J044-06	Manganese	10/8/2012	851		Yes	Y				1.00	0.500	ug/L
W7-100112	A12J044-06	Magnesium	10/8/2012	8190		Yes	Y				50.0	25.0	ug/L
W7-100112	A12J044-06	Calcium	10/8/2012	16600		Yes	Y				100	50.0	ug/L
W7-100112	A12J044-06	Manganese	10/8/2012	797		Yes	Y				1.00	0.500	ug/L
W7-100112	A12J044-06	Aluminum	10/8/2012	50		Yes	N	U			50.0	25.0	ug/L
W7-100112	A12J044-06	Potassium	10/8/2012	1830		Yes	Y				100	50.0	ug/L
W7-100112	A12J044-06	Sodium	10/8/2012	10700		Yes	Y				100	50.0	ug/L
W7-100112	A12J044-06	Magnesium	10/8/2012	7940		Yes	Y				50.0	25.0	ug/L
W7-100112	A12J044-06	Iron	10/8/2012	2720		Yes	Y				50.0	25.0	ug/L
W7-100112	A12J044-06	Calcium	10/8/2012	16000		Yes	Y				100	50.0	ug/L

Analytical Method E300.0

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W1-100112	A12J044-01	Sulfate	10/3/2012	3.4		Yes	Y				1.00	1.00	mg/L
W1-100112	A12J044-01	Chloride (total)	10/3/2012	6.47		Yes	Y				1.00	1.00	mg/L
W2-100112	A12J044-02	Chloride (total)	10/3/2012	8.14		Yes	Y				1.00	1.00	mg/L
W2-100112	A12J044-02	Sulfate	10/3/2012	3		Yes	Y				1.00	1.00	mg/L
W3-100112	A12J044-03	Chloride (total)	10/3/2012	8.35		Yes	Y				1.00	1.00	mg/L
W3-100112	A12J044-03	Sulfate	10/3/2012	3.12		Yes	Y				1.00	1.00	mg/L
W4-100112	A12J044-04	Chloride (total)	10/3/2012	8.66		Yes	Y				1.00	1.00	mg/L
W4-100112	A12J044-04	Sulfate	10/3/2012	2.88		Yes	Y				1.00	1.00	mg/L
W6-100112	A12J044-05	Sulfate	10/3/2012	1.64		Yes	Y				1.00	1.00	mg/L
W6-100112	A12J044-05	Chloride (total)	10/3/2012	13.6		Yes	Y				1.00	1.00	mg/L

Analytical Method E300.0

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W7-100112	A12J044-06RE1	Sulfate	10/5/2012	3.45	Yes	Y				1.00	1.00	mg/L
W7-100112	A12J044-06RE1	Chloride (total)	10/5/2012	6.41	Yes	Y				1.00	1.00	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W1-100112	A12J044-01	Cyanide, total	10/3/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
W1-100112	A12J044-01	Cyanide, total	10/3/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
W2-100112	A12J044-02	Cyanide, total	10/3/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
W2-100112	A12J044-02	Cyanide, total	10/3/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
W3-100112	A12J044-03	Cyanide, total	10/3/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
W3-100112	A12J044-03	Cyanide, total	10/3/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
W4-100112	A12J044-04	Cyanide, total	10/3/2012	0.0052	Yes	Y				0.00500	0.00500	mg/L
W4-100112	A12J044-04	Cyanide, total	10/3/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
W6-100112	A12J044-05	Cyanide, total	10/3/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
W6-100112	A12J044-05	Cyanide, total	10/3/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
W7-100112	A12J044-06	Cyanide, total	10/3/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
W7-100112	A12J044-06	Cyanide, total	10/3/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W1-100112	A12J044-01	Alkalinity, total as calcium carbonate (CaCO3)	10/9/2012	83.4	Yes	Y				1.00	1.00	mg/L
W2-100112	A12J044-02	Alkalinity, total as calcium carbonate (CaCO3)	10/9/2012	89.4	Yes	Y				1.00	1.00	mg/L
W3-100112	A12J044-03	Alkalinity, total as calcium carbonate (CaCO3)	10/9/2012	94.8	Yes	Y				1.00	1.00	mg/L
W4-100112	A12J044-04	Alkalinity, total as calcium carbonate (CaCO3)	10/9/2012	112	Yes	Y				1.00	1.00	mg/L
W6-100112	A12J044-05	Alkalinity, total as calcium carbonate (CaCO3)	10/9/2012	96.6	Yes	Y				1.00	1.00	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W7-100112	A12J044-06	Alkalinity, total as calcium carbonate (CaCO3)	10/9/2012	80.6		Yes	Y				1.00	1.00	mg/L

Analytical Method SM2540C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W1-100112	A12J044-01	Total dissolved solids	10/8/2012	139		Yes	Y				10.0	10.0	mg/L
W2-100112	A12J044-02	Total dissolved solids	10/8/2012	129		Yes	Y				10.0	10.0	mg/L
W3-100112	A12J044-03	Total dissolved solids	10/8/2012	149		Yes	Y				10.0	10.0	mg/L
W4-100112	A12J044-04	Total dissolved solids	10/8/2012	173		Yes	Y				10.0	10.0	mg/L
W6-100112	A12J044-05	Total dissolved solids	10/8/2012	162		Yes	Y				10.0	10.0	mg/L
W7-100112	A12J044-06	Total dissolved solids	10/8/2012	133		Yes	Y				10.0	10.0	mg/L

Analytical Method SM2540D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W1-100112	A12J044-01	Total suspended solids	10/3/2012	10		Yes	Y				5.00	5.00	mg/L
W2-100112	A12J044-02	Total suspended solids	10/2/2012	5		Yes	N	U			5.00	5.00	mg/L
W3-100112	A12J044-03	Total suspended solids	10/2/2012	5		Yes	N	U			5.00	5.00	mg/L
W4-100112	A12J044-04	Total suspended solids	10/2/2012	5		Yes	N	U			5.00	5.00	mg/L
W6-100112	A12J044-05	Total suspended solids	10/3/2012	5		Yes	N	U			5.00	5.00	mg/L
W7-100112	A12J044-06	Total suspended solids	10/3/2012	13		Yes	Y				5.00	5.00	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W1-100112	A12J044-01	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
W1-100112	A12J044-01	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
W2-100112	A12J044-02	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
W2-100112	A12J044-02	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
W3-100112	A12J044-03	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.0052		Yes	Y				0.00500	0.00500	mg/L
W3-100112	A12J044-03	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W4-100112	A12J044-04	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.0054		Yes	Y				0.00500	0.00500	mg/L
W4-100112	A12J044-04	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.0091		Yes	Y				0.00500	0.00500	mg/L
W6-100112	A12J044-05	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
W6-100112	A12J044-05	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
W7-100112	A12J044-06	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.0071		Yes	Y				0.00500	0.00500	mg/L
W7-100112	A12J044-06	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W1-100112	A12J044-01	Fluoride	10/3/2012	0.156		Yes	Y				0.100	0.100	mg/L
W1-100112	A12J044-01	Fluoride	10/4/2012	0.158		Yes	Y				0.100	0.100	mg/L
W2-100112	A12J044-02	Fluoride	10/3/2012	0.235		Yes	Y				0.100	0.100	mg/L
W2-100112	A12J044-02	Fluoride	10/4/2012	0.173		Yes	Y				0.100	0.100	mg/L
W3-100112	A12J044-03	Fluoride	10/3/2012	0.183		Yes	Y				0.100	0.100	mg/L
W3-100112	A12J044-03	Fluoride	10/4/2012	0.238		Yes	Y				0.100	0.100	mg/L
W4-100112	A12J044-04	Fluoride	10/3/2012	0.696		Yes	Y				0.100	0.100	mg/L
W4-100112	A12J044-04	Fluoride	10/4/2012	0.647		Yes	Y				0.100	0.100	mg/L
W6-100112	A12J044-05	Fluoride	10/3/2012	0.185		Yes	Y				0.100	0.100	mg/L
W6-100112	A12J044-05	Fluoride	10/4/2012	0.18		Yes	Y				0.100	0.100	mg/L
W7-100112	A12J044-06	Fluoride	10/3/2012	0.147		Yes	Y				0.100	0.100	mg/L
W7-100112	A12J044-06	Fluoride	10/4/2012	0.146		Yes	Y				0.100	0.100	mg/L

Analytical Method SM4500P

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W1-100112	A12J044-01	Phosphorus	10/4/2012	0.178		Yes	Y				0.100	0.0100	mg/L
W2-100112	A12J044-02	Phosphorus	10/4/2012	0.068		Yes	Y	J			0.100	0.0100	mg/L
W3-100112	A12J044-03	Phosphorus	10/4/2012	0.044		Yes	Y	J			0.100	0.0100	mg/L

SDG: A12J044

Analytical Method SM4500P

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W4-100112	A12J044-04	Phosphorus	10/4/2012	0.066	Yes	Y	J			0.100	0.0100	mg/L
W6-100112	A12J044-05	Phosphorus	10/4/2012	0.056	Yes	Y	J			0.100	0.0100	mg/L
W7-100112	A12J044-06	Phosphorus	10/4/2012	0.206	Yes	Y				0.100	0.0100	mg/L

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Millennium Bulk Terminals

Collection Date: October 2, 2012

LDC Report Date: January 31, 2013

Matrix: Water

Parameters: Metals

Validation Level: Stage 2B

Laboratory: APEX Laboratories, LLC

Sample Delivery Group (SDG): A12J067

Sample Identification

W5-100212
W9-100212
W59-100212
W10-100212
RLSW-4-100212
G6-S-100212
G6-D-100212
PZ-1-100212
PZ-2-100212
PZ-3-100212
PZ-4-100212
PZ-5-100212
PZ-6-100212
PZ-7-100212
W5-100212F
W9-100212F
W59-100212F
W10-100212F
RLSW-4-100212F
G6-S-100212F
G6-D-100212F
PZ-1-100212F
PZ-2-100212F
PZ-3-100212F
PZ-4-100212F
PZ-5-100212F
PZ-6-100212F
PZ-7-100212F
W9-100212DUP
W10-100212MS
PZ-3-100212MS
W9-100212FDUP
W10-100212FMS
PZ-7-100212FMS

Samples appended with "F" were analyzed for dissolved metals

Introduction

This data review covers 34 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Methods 200.7 and 200.8 for Metals. The metals analyzed were Aluminum, Arsenic, Calcium, Chromium, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Sodium, and Silicon.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this method.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

Samples W9-100212 and W59-100212 and samples W9-100212F and W59-100212F were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration		RPD
	W9-100212	W59-100212	
Silicon	4.72 mg/L	4.57 mg/L	3
Aluminum	206 ug/L	139 ug/L	39
Arsenic	1.08 ug/L	1.20 ug/L	11
Calcium	14900 ug/L	14700 ug/L	1
Copper	1.16 ug/L	1.00U ug/L	200
Iron	422 ug/L	343 ug/L	21
Magnesium	4540 ug/L	4460 ug/L	2
Manganese	17.7 ug/L	13.2 ug/L	29
Nickel	0.633 ug/L	0.533 ug/L	17

Analyte	Concentration		RPD
	W9-100212	W59-100212	
Potassium	1150 ug/L	1140 ug/L	1
Sodium	8.23 mg/L	8.05 mg/L	2

Analyte	Concentration		RPD
	W9-100212F	W59-100212F	
Silicon	4.66 mg/L	4.63 mg/L	1
Arsenic	0.922 ug/L	1.11 ug/L	19
Calcium	13600 ug/L	13600 ug/L	0
Copper	1.43 ug/L	3.39 ug/L	81
Iron	159 ug/L	163 ug/L	2
Magnesium	4180 ug/L	4180 ug/L	0
Manganese	2.44 ug/L	2.51 ug/L	3
Potassium	976 ug/L	974 ug/L	0
Sodium	7650 ug/L	7640 ug/L	0

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Metals - Data Qualification Summary - SDG A12J067

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Metals - Laboratory Blank Data Qualification Summary - SDG A12J067

No Sample Data Qualified in this SDG

LDC #: 29076B4

SDG #: A12J067

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/21/13

Page: 1 of 1

Reviewer: 9

2nd Reviewer: W

METHOD: Metals (EPA Method 200.7/200.8)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/2/10
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	A	MS(31:Na, 34:Na 74x)
VII.	Duplicate Sample Analysis	A	Dup
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	SW	(2,3),(16,17)
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

water

1	W5-100212	11	PZ-4-100212	21	G6-~~S~~-100212F	31	PZ-3-100212MS
2	W9-100212	12	PZ-5-100212	22	PZ-1-100212F	32	W9-100212FDUP
3	W59-100212	13	PZ-6-100212	23	PZ-2-100212F	33	W10-100212FMS
4	W10-100212	14	PZ-7-100212	24	PZ-3-100212F	34	PZ-7-100212FMS
5	RLSW-4-100212	15	W5-100212F	25	PZ-4-100212F	35	
6	G6-S-100212	16	W9-100212F	26	PZ-5-100212F	36	
7	G6-~~S~~-100212	17	W59-100212F	27	PZ-6-100212F	37	
8	PZ-1-100212	18	W10-100212F	28	PZ-7-100212F	38	
9	PZ-2-100212	19	RLSW-4--100212F	29	W9-100212DUP	39	
10	PZ-3-100212	20	G6-S-100212F	30	W10-100212MS	40	

Notes: Samples appended with "F" were analyzed for dissolved metals

LDC #: 29076B4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: CR
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-28		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
QC 29,30		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
31,~~32~~		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
32,33		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
34		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
~~35~~		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,

Comments: Mercury by CVAA if performed

LDC#: 29076B4

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 2
Reviewer:
2nd Reviewer:

METHOD: Metals (EPA Method 6010B/7000)

Analyte	Concentration (~~mg/L~~ ug/L)		RPD
	2	3	
Silicon mg/L	4.72	4.57	3
Aluminum	206	139	39
Arsenic	1.08	1.20	11
Calcium	14900	14700	1
Copper	1.16	1.00U	200
Iron	422	343	21
Magnesium	4540	4460	2
Manganese	17.7	13.2	29
Nickel	0.633	0.533	17
Potassium	1150	1140	1
Sodium mg/L	8.23	8.05	2

LDC#: 29076B4

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer:
2nd Reviewer:

METHOD: Metals (EPA Method 6010B/7000)

Analyte	Concentration (mg/L)		RPD
	16	17	
Silicon	4.66	4.63	1
Arsenic	0.922	1.11	19
Calcium	13600	13600	0
Copper	1.43	3.39	81
Iron	159	163	2
Magnesium	4180	4180	0
Manganese	2.44	2.51	3
Potassium	976	974	0
Sodium	7650	7640	0

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\29076B4.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Millennium Bulk Terminals

Collection Date: October 2, 2012

LDC Report Date: January 22, 2013

Matrix: Water

Parameters: Wet Chemistry

Validation Level: Stage 2B

Laboratory: APEX Laboratories, LLC

Sample Delivery Group (SDG): A12J067

Sample Identification

W5-100212
W9-100212
W59-100212
W10-100212
RLSW-4-100212
G6-S-100212
G6-D-100212
PZ-1-100212
PZ-2-100212
PZ-3-100212
PZ-3-100212RE
PZ-4-100212
PZ-5-100212
PZ-6-100212
PZ-7-100212
W5-100212MS
W5-100212DUP
PZ-3-100212MS
PZ-3-100212DUP
PZ-7-100212MS
PZ-7-100212DUP
RLSW-4-100212DUP

Introduction

This data review covers 22 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2320B for Alkalinity, EPA Method 300.0 for Chloride and Sulfate, EPA Method 335.4 for Total Cyanide and Dissolved Cyanide, Standard Method 4500-CN-I-E for Weak Acid Dissociable Cyanide and Dissolved Weak Acid Dissociable Cyanide, ASTM D4282 for Free Cyanide and Dissolved Free Cyanide, Standard Method 4500-F-C for Fluoride and Dissolved Fluoride, Standard Method 4500-P-B for Phosphorus, Standard Method 2540C for Total Dissolved Solids, and Standard Method 2540D for Total Suspended Solids.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
ICB/CCB	Dissolved cyanide	6.40 ug/L	PZ-2-100212 PZ-3-100212 PZ-4-100212 PZ-5-100212 PZ-6-100212

Sample concentrations were compared to concentrations detected in the blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
PZ-7-100212MS (RLSW-4-100212 G6-S-100212 PZ-1-100212 PZ-3-100212 PZ-6-100212 PZ-7-100212)	Chloride	72 (80-120)	J (all detects) UJ (all non-detects)	A

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
PZ-7-100212MS (PZ-7-100212)	Dissolved weak acid dissociable cyanide	1 (80-120)	J (all detects) R (all non-detects)	A
PZ-7-100212MS (PZ-7-100212)	Free cyanide Dissolved free cyanide	63 (80-120) 57 (80-120)	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Analyte	RPD (Limits)	Flag	A or P
PZ-7-100212DUP (PZ-7-100212)	Total suspended solids	60 (≤20)	J (all detects) UJ (all non-detects)	A

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
PZ-3-100212	Total cyanide	R	A

Due to MS %R and Duplicate RPD problems, data were qualified as estimated in six samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be rejected (R) are unusable for all purposes. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples W9-100212 and W59-100212 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD
	W9-100212	W59-100212	
Chloride	7.42	7.51	1
Sulfate	9.97	9.75	2
Fluoride	0.188	0.133	34
Dissolved fluoride	0.107	0.108	1
Phosphorus	0.0540	0.0400	30
Total suspended solids	22.0	5.00U	200
Total dissolved solids	56.0	50.0	11
Total alkalinity	50.4	48.8	3

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A12J067

SDG	Sample	Analyte	Flag	A or P	Reason
A12J067	RLSW-4-100212 G6-S-100212 PZ-1-100212 PZ-3-100212 PZ-6-100212 PZ-7-100212	Chloride	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)
A12J067	PZ-7-100212	Dissolved weak acid dissociable cyanide	J (all detects) R (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)
A12J067	PZ-7-100212	Free cyanide Dissolved free cyanide	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)
A12J067	PZ-7-100212	Total suspended solids	J (all detects) UJ (all non-detects)	A	Duplicate sample analysis (RPD)
A12J067	PZ-3-100212	Total cyanide	R	A	Overall assessment

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A12J067

No Sample Data Qualified in this SDG

LDC #: 29076B6

SDG #: A12J067

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/21/13

Page: 1 of 1

Reviewer: 02

2nd Reviewer: ✓

METHOD: (Analyte) Alkalinity (SM2320B), Chloride, Sulfate (EPA Method 300.0), Total Cyanide, Dissolved Cyande (EPA Method 335.4), WAD Cyanide, Dissolved WAD Cyanide (~~EPA SW846 Method 9013M~~/SM4500–CN-I-E), Free Cyanide, Dissolved Free Cyanide (ASTM D4282), Fluoride, Dissolved Fluoride (SM4500-F-C), Phosphours (SM4500-P-B) TDS (SM2540C), TSS (SM2540D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/2/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	SW	
V	Matrix Spike/Matrix Spike Duplicates	SW	MS
VI.	Duplicates	SW	Dup ~~(17-[illegible])~~ TSS 02
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	SW	
X.	Field duplicates	SW	(2,3)
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	W5-100212	11	PZ-3-100212RE	21	PZ-7-100212DUP	31	
2	W9-100212	12	PZ-4-100212	22	(A5) DUP	32	
3	W59-100212	13	PZ-5-100212	23		33	
4	W10-100212	14	PZ-6-100212	24		34	
5	RLSW-4-100212	15	PZ-7-100212	25		35	
6	G6-S-100212	16	W5-100212MS	26		36	
7	~~G6-S-100212~~ G6-D-100212	17	W5-100212DUP	27		37	
8	PZ-1-100212	18	PZ-3-100212MS	28		38	
9	PZ-2-100212	19	PZ-3-100212DUP	29		39	
10	PZ-3-100212	20	PZ-7-100212MS	30		40	

Notes:

LDC #: 29076836

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer: ✓

All circled methods are applicable to each sample.

Sample ID	Parameter	
~~1-6,8,10,12-15~~	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	Diss F, WAD CN, Free CN, Diss CN, Diss WAD CN, Diss Free CN, TSS
1-10,12-15	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
11	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
QC:16	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	Diss F, Free CN, Diss CN, Diss Free CN
17	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	Diss F, Free CN, Diss CN, Diss Free CN, TSS
18	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	Diss F, WAD CN
19	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	WAD CN
20	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	Diss WAD CN, Free CN, Diss WAD CN, Diss Free CN, TSS
21	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	Diss WAD CN, Free CN, Free, Diss WAD CN, Diss Free CN, TSS
22	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	

Comments:

WC.wpd

LDC #: 29076B6

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See Cover

Conc. units: mg/L **Associated Samples:** 9, 10, 12-14

Analyte	Blank ID	Blank ID	Blank Action Limit											
	PB	ICB/CCB (ug/L)		No Qualifiers										
Dissolved CN		6.40	0.032											

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 29076B36

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method see cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of ~~75-125~~ 80-120 (85-115% for Method 300.0)? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
		20	W	Cl	72	5,6,8,10,14,15	J/UJ/A
				Diss.WADCN	1	15	J/R/A
				Free CN	63	15*	J/UJ/A
				Diss. Free CN	57	15*	↓

Comments: 18: Diss F >4x

* 2nd client MS in batch within limits

LDC #: 29076B6

VALIDATION FINDINGS WORKSHEET
Duplicate Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method see cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a duplicate sample analyzed for each matrix in this SDG?

Y N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for water and ≤ 35% for soil samples (≤ 10% for Method 300.0)? If no, see qualification below. A control limit of ±CRDL (±2X CRDL for soil) was used for samples that were ≤5X the CRDL, including when only one of the duplicate sample values were ≤5X the CRDL. If field blanks were used for laboratory duplicates, see overall assessment.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Duplicate ID	Matrix	Analyte	RPD (Limits)	Associated Samples	Qualifications
		21	W	TSS	60 (≤20)	15*	J/UJ/A

Comments: 17: TSS ok by difference

*2nd Client MS in batch

DUP.6

LDC #: 29026B6

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: CR
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See each

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

(Y) N N/A Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Finding	Associated Samples	Qualifications
		10	Total CN (dilution not necessary)		R/A

Comments:

LDC# 29076B6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer:
2nd Reviewer:

Inorganics: Method See Cover

Analyte	Concentration (mg/L)		RPD
	2	3	
Chloride	7.42	7.51	1
Sulfate	9.97	9.75	2
Fluoride	0.188	0.133	34
Dissolved Fluoride	0.107	0.108	1
Phosphorus	0.0540	0.0400	30
Total Suspended Solids	22.0	5.00U	200
Total Dissolved Solids	56.0	50.0	11
Total Alkalinity	50.4	48.8	3

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\29076B6.wpd

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G6-D-100212	A12J067-07	Cyanide, free	10/3/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
G6-D-100212	A12J067-07	Cyanide, free	10/3/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
G6-S-100212	A12J067-06	Cyanide, free	10/3/2012	0.0026		Yes	Y	J			0.00500	0.00200	mg/L
G6-S-100212	A12J067-06	Cyanide, free	10/3/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
PZ-1-100212	A12J067-08	Cyanide, free	10/3/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
PZ-1-100212	A12J067-08	Cyanide, free	10/3/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
PZ-2-100212	A12J067-09	Cyanide, free	10/3/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
PZ-2-100212	A12J067-09	Cyanide, free	10/3/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
PZ-3-100212	A12J067-10	Cyanide, free	10/3/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
PZ-3-100212	A12J067-10	Cyanide, free	10/3/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
PZ-4-100212	A12J067-11	Cyanide, free	10/3/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
PZ-4-100212	A12J067-11	Cyanide, free	10/3/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
PZ-5-100212	A12J067-12	Cyanide, free	10/3/2012	0.0061		Yes	Y				0.00500	0.00200	mg/L
PZ-5-100212	A12J067-12	Cyanide, free	10/3/2012	0.0061		Yes	Y				0.00500	0.00200	mg/L
PZ-6-100212	A12J067-13	Cyanide, free	10/3/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
PZ-6-100212	A12J067-13RE1	Cyanide, free	10/3/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
PZ-7-100212	A12J067-14	Cyanide, free	10/3/2012	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
PZ-7-100212	A12J067-14	Cyanide, free	10/3/2012	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
RLSW-4-100212	A12J067-05	Cyanide, free	10/3/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
RLSW-4-100212	A12J067-05	Cyanide, free	10/3/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
W10-100212	A12J067-04	Cyanide, free	10/3/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
W10-100212	A12J067-04	Cyanide, free	10/3/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
W5-100212	A12J067-01	Cyanide, free	10/3/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
W5-100212	A12J067-01	Cyanide, free	10/3/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
W59-100212	A12J067-03	Cyanide, free	10/3/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W59-100212	A12J067-03	Cyanide, free	10/3/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
W9-100212	A12J067-02	Cyanide, free	10/3/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
W9-100212	A12J067-02	Cyanide, free	10/3/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G6-D-100212	A12J067-07	Silicon	10/5/2012	31.4		Yes	Y				0.100	0.0500	mg/L
G6-D-100212	A12J067-07	Silicon	10/12/2012	33.1		Yes	Y				0.100	0.0500	mg/L
G6-S-100212	A12J067-06	Silicon	10/5/2012	18.8		Yes	Y				0.100	0.0500	mg/L
G6-S-100212	A12J067-06	Silicon	10/12/2012	18.3		Yes	Y				0.100	0.0500	mg/L
PZ-1-100212	A12J067-08	Silicon	10/5/2012	9.34		Yes	Y	D			1.00	0.500	mg/L
PZ-1-100212	A12J067-08	Silicon	10/12/2012	10		Yes	Y	D			4.50	2.25	mg/L
PZ-2-100212	A12J067-09	Silicon	10/5/2012	9.31		Yes	Y	D			1.00	0.500	mg/L
PZ-2-100212	A12J067-09	Silicon	10/12/2012	9.86		Yes	Y	D			4.50	2.25	mg/L
PZ-3-100212	A12J067-10	Silicon	10/5/2012	13.4		Yes	Y				0.100	0.0500	mg/L
PZ-3-100212	A12J067-10	Silicon	10/12/2012	13.3		Yes	Y				0.100	0.0500	mg/L
PZ-4-100212	A12J067-11	Silicon	10/5/2012	14.5		Yes	Y	D			1.00	0.500	mg/L
PZ-4-100212	A12J067-11	Silicon	10/12/2012	16		Yes	Y	D			4.50	2.25	mg/L
PZ-5-100212	A12J067-12	Silicon	10/5/2012	20.9		Yes	Y	D			1.00	0.500	mg/L
PZ-5-100212	A12J067-12	Silicon	10/12/2012	20.7		Yes	Y	D			4.50	2.25	mg/L
PZ-6-100212	A12J067-13	Silicon	10/5/2012	35.1		Yes	Y	D			1.00	0.500	mg/L
PZ-6-100212	A12J067-13	Silicon	10/12/2012	33.9		Yes	Y	D			1.00	0.500	mg/L
PZ-7-100212	A12J067-14	Silicon	10/5/2012	35.4		Yes	Y	D			1.00	0.500	mg/L
PZ-7-100212	A12J067-14	Silicon	10/12/2012	36		Yes	Y	D			1.00	0.500	mg/L
RLSW-4-100212	A12J067-05	Silicon	10/5/2012	20.1		Yes	Y				0.100	0.0500	mg/L
RLSW-4-100212	A12J067-05	Silicon	10/12/2012	22.2		Yes	Y				0.100	0.0500	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W10-100212	A12J067-04	Silicon	10/5/2012	5.32		Yes	Y				0.100	0.0500	mg/L
W10-100212	A12J067-04	Silicon	10/12/2012	4.76		Yes	Y				0.100	0.0500	mg/L
W5-100212	A12J067-01	Silicon	10/5/2012	4.48		Yes	Y				0.100	0.0500	mg/L
W5-100212	A12J067-01	Silicon	10/12/2012	4.58		Yes	Y				0.100	0.0500	mg/L
W59-100212	A12J067-03	Silicon	10/5/2012	4.57		Yes	Y				0.100	0.0500	mg/L
W59-100212	A12J067-03	Silicon	10/12/2012	4.63		Yes	Y				0.100	0.0500	mg/L
W9-100212	A12J067-02	Silicon	10/5/2012	4.72		Yes	Y				0.100	0.0500	mg/L
W9-100212	A12J067-02	Silicon	10/12/2012	4.66		Yes	Y				0.100	0.0500	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G6-D-100212	A12J067-07	Aluminum	10/8/2012	250		Yes	N	D U			250	125	ug/L
G6-D-100212	A12J067-07	Magnesium	10/8/2012	109000		Yes	Y	D			250	125	ug/L
G6-D-100212	A12J067-07	Iron	10/8/2012	41900		Yes	Y	D			250	125	ug/L
G6-D-100212	A12J067-07	Nickel	10/8/2012	4.67		Yes	Y	D J			10.0	2.50	ug/L
G6-D-100212	A12J067-07	Potassium	10/8/2012	4600		Yes	Y	D			500	250	ug/L
G6-D-100212	A12J067-07	Arsenic	10/8/2012	3.56		Yes	Y	D J			10.0	2.50	ug/L
G6-D-100212	A12J067-07	Chromium	10/8/2012	10		Yes	N	D U			10.0	2.50	ug/L
G6-D-100212	A12J067-07	Copper	10/8/2012	20		Yes	N	D U			20.0	5.00	ug/L
G6-D-100212	A12J067-07	Calcium	10/8/2012	148000		Yes	Y	D			500	250	ug/L
G6-D-100212	A12J067-07	Manganese	10/8/2012	4020		Yes	Y	D			5.00	2.50	ug/L
G6-D-100212	A12J067-07	Sodium	10/8/2012	482		Yes	Y	D			2.50	1.25	mg/L
G6-D-100212	A12J067-07	Arsenic	10/16/2012	4		Yes	Y	D J			10.0	2.50	ug/L
G6-D-100212	A12J067-07	Chromium	10/16/2012	10		Yes	N	D U			10.0	2.50	ug/L
G6-D-100212	A12J067-07	Calcium	10/16/2012	153000		Yes	Y	D			500	250	ug/L
G6-D-100212	A12J067-07	Aluminum	10/16/2012	250		Yes	N	D U			250	125	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G6-D-100212	A12J067-07	Iron	10/16/2012	41200	Yes	Y	D			1000	125	ug/L
G6-D-100212	A12J067-07	Magnesium	10/16/2012	98100	Yes	Y	D			250	125	ug/L
G6-D-100212	A12J067-07	Manganese	10/16/2012	4020	Yes	Y	D			5.00	2.50	ug/L
G6-D-100212	A12J067-07	Nickel	10/16/2012	8.17	Yes	Y	D J			10.0	2.50	ug/L
G6-D-100212	A12J067-07	Potassium	10/16/2012	4680	Yes	Y	D			2000	250	ug/L
G6-D-100212	A12J067-07	Sodium	10/16/2012	485000	Yes	Y	D			5000	2500	ug/L
G6-D-100212	A12J067-07	Copper	10/19/2012	10	Yes	N	D U			10.0	5.00	ug/L
G6-S-100212	A12J067-06	Iron	10/8/2012	3130	Yes	Y	D			250	125	ug/L
G6-S-100212	A12J067-06	Arsenic	10/8/2012	56.2	Yes	Y	D			10.0	2.50	ug/L
G6-S-100212	A12J067-06	Manganese	10/8/2012	954	Yes	Y	D			5.00	2.50	ug/L
G6-S-100212	A12J067-06	Copper	10/8/2012	23.6	Yes	Y	D			20.0	5.00	ug/L
G6-S-100212	A12J067-06	Chromium	10/8/2012	4.56	Yes	Y	D J			10.0	2.50	ug/L
G6-S-100212	A12J067-06	Nickel	10/8/2012	8.61	Yes	Y	D J			10.0	2.50	ug/L
G6-S-100212	A12J067-06	Sodium	10/16/2012	694000	Yes	Y	D			2000	1000	ug/L
G6-S-100212	A12J067-06	Manganese	10/16/2012	863	Yes	Y	D			5.00	2.50	ug/L
G6-S-100212	A12J067-06	Aluminum	10/16/2012	318	Yes	Y	D			250	125	ug/L
G6-S-100212	A12J067-06	Iron	10/16/2012	981	Yes	Y	D J			1000	125	ug/L
G6-S-100212	A12J067-06	Magnesium	10/16/2012	5510	Yes	Y	D			250	125	ug/L
G6-S-100212	A12J067-06	Calcium	10/16/2012	18500	Yes	Y	D			500	250	ug/L
G6-S-100212	A12J067-06	Chromium	10/16/2012	2.94	Yes	Y	D J			10.0	2.50	ug/L
G6-S-100212	A12J067-06	Arsenic	10/16/2012	52.7	Yes	Y	D			10.0	2.50	ug/L
G6-S-100212	A12J067-06	Potassium	10/16/2012	6510	Yes	Y	D			2000	250	ug/L
G6-S-100212	A12J067-06	Nickel	10/16/2012	11.8	Yes	Y	D			10.0	2.50	ug/L
G6-S-100212	A12J067-06	Aluminum	10/16/2012	1330	Yes	Y	D			250	125	ug/L
G6-S-100212	A12J067-06	Magnesium	10/16/2012	5660	Yes	Y	D			250	125	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G6-S-100212	A12J067-06	Potassium	10/16/2012	6580	Yes	Y	D			2000	250	ug/L
G6-S-100212	A12J067-06	Calcium	10/16/2012	19300	Yes	Y	D			500	250	ug/L
G6-S-100212	A12J067-06	Sodium	10/16/2012	683	Yes	Y	D			5.00	2.50	mg/L
G6-S-100212	A12J067-06	Copper	10/19/2012	10	Yes	N	D U			10.0	5.00	ug/L
PZ-1-100212	A12J067-08	Aluminum	10/8/2012	743	Yes	Y	D			250	125	ug/L
PZ-1-100212	A12J067-08	Iron	10/8/2012	2000	Yes	Y	D			250	125	ug/L
PZ-1-100212	A12J067-08	Magnesium	10/8/2012	473	Yes	Y	D			250	125	ug/L
PZ-1-100212	A12J067-08	Manganese	10/8/2012	296	Yes	Y	D			5.00	2.50	ug/L
PZ-1-100212	A12J067-08	Nickel	10/8/2012	14.7	Yes	Y	D			10.0	2.50	ug/L
PZ-1-100212	A12J067-08	Potassium	10/8/2012	1460	Yes	Y	D			500	250	ug/L
PZ-1-100212	A12J067-08	Arsenic	10/8/2012	20.6	Yes	Y	D			10.0	2.50	ug/L
PZ-1-100212	A12J067-08	Chromium	10/8/2012	9.83	Yes	Y	D J			10.0	2.50	ug/L
PZ-1-100212	A12J067-08	Calcium	10/8/2012	4470	Yes	Y	D			500	250	ug/L
PZ-1-100212	A12J067-08	Copper	10/8/2012	372	Yes	Y	D			20.0	5.00	ug/L
PZ-1-100212	A12J067-08	Sodium	10/8/2012	804	Yes	Y	D			2.50	1.25	mg/L
PZ-1-100212	A12J067-08	Potassium	10/16/2012	1240	Yes	Y	J			1800	225	ug/L
PZ-1-100212	A12J067-08	Arsenic	10/16/2012	19	Yes	Y				9.00	2.25	ug/L
PZ-1-100212	A12J067-08	Calcium	10/16/2012	4320	Yes	Y				450	225	ug/L
PZ-1-100212	A12J067-08	Aluminum	10/16/2012	664	Yes	Y				225	112	ug/L
PZ-1-100212	A12J067-08	Chromium	10/16/2012	9	Yes	Y	J			9.00	2.25	ug/L
PZ-1-100212	A12J067-08	Manganese	10/16/2012	253	Yes	Y				4.50	2.25	ug/L
PZ-1-100212	A12J067-08	Iron	10/16/2012	1910	Yes	Y				900	112	ug/L
PZ-1-100212	A12J067-08	Magnesium	10/16/2012	409	Yes	Y				225	112	ug/L
PZ-1-100212	A12J067-08	Nickel	10/16/2012	20.6	Yes	Y				9.00	2.25	ug/L
PZ-1-100212	A12J067-08	Sodium	10/16/2012	781000	Yes	Y	D			4500	2250	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-1-100212	A12J067-08	Copper	10/19/2012	242	Yes	Y				9.00	4.50	ug/L
PZ-2-100212	A12J067-09	Chromium	10/8/2012	28.4	Yes	Y	D			20.0	5.00	ug/L
PZ-2-100212	A12J067-09	Copper	10/8/2012	13.6	Yes	Y	D J			40.0	10.0	ug/L
PZ-2-100212	A12J067-09	Calcium	10/8/2012	2300	Yes	Y	D			1000	500	ug/L
PZ-2-100212	A12J067-09	Iron	10/8/2012	8960	Yes	Y	D			500	250	ug/L
PZ-2-100212	A12J067-09	Nickel	10/8/2012	21.8	Yes	Y	D			20.0	5.00	ug/L
PZ-2-100212	A12J067-09	Potassium	10/8/2012	4180	Yes	Y	D			1000	500	ug/L
PZ-2-100212	A12J067-09	Manganese	10/8/2012	113	Yes	Y	D			10.0	5.00	ug/L
PZ-2-100212	A12J067-09	Magnesium	10/8/2012	1050	Yes	Y	D			500	250	ug/L
PZ-2-100212	A12J067-09	Arsenic	10/8/2012	28.6	Yes	Y	D			20.0	5.00	ug/L
PZ-2-100212	A12J067-09	Aluminum	10/8/2012	274	Yes	Y	D J			500	250	ug/L
PZ-2-100212	A12J067-09	Sodium	10/8/2012	2030	Yes	Y	D			5.00	2.50	mg/L
PZ-2-100212	A12J067-09	Chromium	10/16/2012	29.5	Yes	Y	D J			45.0	11.2	ug/L
PZ-2-100212	A12J067-09	Aluminum	10/16/2012	1120	Yes	N	D U			1120	563	ug/L
PZ-2-100212	A12J067-09	Iron	10/16/2012	9910	Yes	Y	D			4500	563	ug/L
PZ-2-100212	A12J067-09	Magnesium	10/16/2012	1160	Yes	Y	D			1120	563	ug/L
PZ-2-100212	A12J067-09	Manganese	10/16/2012	94.8	Yes	Y	D			22.5	11.2	ug/L
PZ-2-100212	A12J067-09	Nickel	10/16/2012	40.2	Yes	Y	D J			45.0	11.2	ug/L
PZ-2-100212	A12J067-09	Calcium	10/16/2012	2260	Yes	Y	D			2250	1120	ug/L
PZ-2-100212	A12J067-09	Potassium	10/16/2012	4110	Yes	Y	D J			9000	1120	ug/L
PZ-2-100212	A12J067-09	Arsenic	10/16/2012	38.5	Yes	Y	D J			45.0	11.2	ug/L
PZ-2-100212	A12J067-09	Sodium	10/16/2012	2330000	Yes	Y	D			22500	11200	ug/L
PZ-2-100212	A12J067-09	Copper	10/19/2012	45	Yes	N	D U			45.0	22.5	ug/L
PZ-3-100212	A12J067-10	Aluminum	10/8/2012	772	Yes	Y	D			250	125	ug/L
PZ-3-100212	A12J067-10	Iron	10/8/2012	1140	Yes	Y	D			250	125	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-3-100212	A12J067-10	Magnesium	10/8/2012	2450	Yes	Y	D			250	125	ug/L
PZ-3-100212	A12J067-10	Manganese	10/8/2012	290	Yes	Y	D			5.00	2.50	ug/L
PZ-3-100212	A12J067-10	Nickel	10/8/2012	5.28	Yes	Y	D J			10.0	2.50	ug/L
PZ-3-100212	A12J067-10	Potassium	10/8/2012	2900	Yes	Y	D			500	250	ug/L
PZ-3-100212	A12J067-10	Arsenic	10/8/2012	14	Yes	Y	D			10.0	2.50	ug/L
PZ-3-100212	A12J067-10	Chromium	10/8/2012	4	Yes	Y	D J			10.0	2.50	ug/L
PZ-3-100212	A12J067-10	Copper	10/8/2012	20	Yes	N	D U			20.0	5.00	ug/L
PZ-3-100212	A12J067-10	Calcium	10/8/2012	6120	Yes	Y	D			500	250	ug/L
PZ-3-100212	A12J067-10	Sodium	10/8/2012	689	Yes	Y	D			2.50	1.25	mg/L
PZ-3-100212	A12J067-10	Aluminum	10/16/2012	177	Yes	Y	D J			250	125	ug/L
PZ-3-100212	A12J067-10	Iron	10/16/2012	641	Yes	Y	D J			1000	125	ug/L
PZ-3-100212	A12J067-10	Magnesium	10/16/2012	2500	Yes	Y	D			250	125	ug/L
PZ-3-100212	A12J067-10	Manganese	10/16/2012	296	Yes	Y	D			5.00	2.50	ug/L
PZ-3-100212	A12J067-10	Nickel	10/16/2012	9.67	Yes	Y	D J			10.0	2.50	ug/L
PZ-3-100212	A12J067-10	Potassium	10/16/2012	3030	Yes	Y	D			2000	250	ug/L
PZ-3-100212	A12J067-10	Arsenic	10/16/2012	15.1	Yes	Y	D			10.0	2.50	ug/L
PZ-3-100212	A12J067-10	Chromium	10/16/2012	3.67	Yes	Y	D J			10.0	2.50	ug/L
PZ-3-100212	A12J067-10	Calcium	10/16/2012	6900	Yes	Y	D			500	250	ug/L
PZ-3-100212	A12J067-10	Sodium	10/16/2012	718000	Yes	Y	D			5000	2500	ug/L
PZ-3-100212	A12J067-10	Copper	10/19/2012	10	Yes	N	D U			10.0	5.00	ug/L
PZ-4-100212	A12J067-11	Nickel	10/8/2012	44	Yes	Y	D			40.0	10.0	ug/L
PZ-4-100212	A12J067-11	Aluminum	10/8/2012	680	Yes	Y	D J			1000	500	ug/L
PZ-4-100212	A12J067-11	Iron	10/8/2012	33000	Yes	Y	D			1000	500	ug/L
PZ-4-100212	A12J067-11	Magnesium	10/8/2012	2220	Yes	Y	D			1000	500	ug/L
PZ-4-100212	A12J067-11	Manganese	10/8/2012	93.3	Yes	Y	D			20.0	10.0	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-4-100212	A12J067-11	Potassium	10/8/2012	5990		Yes	Y	D			2000	1000	ug/L
PZ-4-100212	A12J067-11	Chromium	10/8/2012	162		Yes	Y	D			40.0	10.0	ug/L
PZ-4-100212	A12J067-11	Copper	10/8/2012	93.8		Yes	Y	D			80.0	20.0	ug/L
PZ-4-100212	A12J067-11	Calcium	10/8/2012	4260		Yes	Y	D			2000	1000	ug/L
PZ-4-100212	A12J067-11	Arsenic	10/8/2012	89.8		Yes	Y	D			40.0	10.0	ug/L
PZ-4-100212	A12J067-11	Sodium	10/8/2012	4020		Yes	Y	D			10.0	5.00	mg/L
PZ-4-100212	A12J067-11	Nickel	10/16/2012	74.5		Yes	Y	D			45.0	11.2	ug/L
PZ-4-100212	A12J067-11	Aluminum	10/16/2012	602		Yes	Y	D J			1120	563	ug/L
PZ-4-100212	A12J067-11	Iron	10/16/2012	31000		Yes	Y	D			4500	563	ug/L
PZ-4-100212	A12J067-11	Magnesium	10/16/2012	2180		Yes	Y	D			1120	563	ug/L
PZ-4-100212	A12J067-11	Manganese	10/16/2012	80.8		Yes	Y	D			22.5	11.2	ug/L
PZ-4-100212	A12J067-11	Chromium	10/16/2012	138		Yes	Y	D			45.0	11.2	ug/L
PZ-4-100212	A12J067-11	Potassium	10/16/2012	5280		Yes	Y	D J			9000	1120	ug/L
PZ-4-100212	A12J067-11	Arsenic	10/16/2012	98.2		Yes	Y	D			45.0	11.2	ug/L
PZ-4-100212	A12J067-11	Calcium	10/16/2012	4460		Yes	Y	D			2250	1120	ug/L
PZ-4-100212	A12J067-11	Sodium	10/16/2012	4170000		Yes	Y	D			22500	11200	ug/L
PZ-4-100212	A12J067-11	Copper	10/19/2012	100		Yes	Y	D			45.0	22.5	ug/L
PZ-5-100212	A12J067-12	Sodium	10/8/2012	6590		Yes	Y	D			25.0	12.5	mg/L
PZ-5-100212	A12J067-12	Copper	10/9/2012	50		Yes	N	D U			50.0	25.0	ug/L
PZ-5-100212	A12J067-12	Chromium	10/9/2012	116		Yes	Y	D			50.0	12.5	ug/L
PZ-5-100212	A12J067-12	Arsenic	10/9/2012	182		Yes	Y	D			50.0	12.5	ug/L
PZ-5-100212	A12J067-12	Nickel	10/9/2012	110		Yes	Y	D			50.0	12.5	ug/L
PZ-5-100212	A12J067-12	Manganese	10/9/2012	31.1		Yes	Y	D			25.0	12.5	ug/L
PZ-5-100212	A12J067-12	Iron	10/9/2012	88300		Yes	Y	D			2500	625	ug/L
PZ-5-100212	A12J067-12	Arsenic	10/16/2012	200		Yes	Y	D			90.0	22.5	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-5-100212	A12J067-12	Iron	10/16/2012	86600		Yes	Y	D			9000	1120	ug/L
PZ-5-100212	A12J067-12	Magnesium	10/16/2012	2250		Yes	N	D U			2250	1120	ug/L
PZ-5-100212	A12J067-12	Manganese	10/16/2012	45		Yes	N	D U			45.0	22.5	ug/L
PZ-5-100212	A12J067-12	Potassium	10/16/2012	10700		Yes	Y	D J			18000	2250	ug/L
PZ-5-100212	A12J067-12	Aluminum	10/16/2012	2250		Yes	N	D U			2250	1120	ug/L
PZ-5-100212	A12J067-12	Chromium	10/16/2012	118		Yes	Y	D			90.0	22.5	ug/L
PZ-5-100212	A12J067-12	Calcium	10/16/2012	4500		Yes	N	D U			4500	2250	ug/L
PZ-5-100212	A12J067-12	Nickel	10/16/2012	156		Yes	Y	D			90.0	22.5	ug/L
PZ-5-100212	A12J067-12	Sodium	10/16/2012	6540000		Yes	Y	D			45000	22500	ug/L
PZ-5-100212	A12J067-12	Calcium	10/16/2012	1410		Yes	Y	D J			2000	1000	ug/L
PZ-5-100212	A12J067-12	Potassium	10/16/2012	10800		Yes	Y	D			8000	1000	ug/L
PZ-5-100212	A12J067-12	Aluminum	10/16/2012	1000		Yes	N	D U			1000	500	ug/L
PZ-5-100212	A12J067-12	Magnesium	10/16/2012	1000		Yes	N	D U			1000	500	ug/L
PZ-5-100212	A12J067-12	Copper	10/19/2012	90		Yes	N	D U			90.0	45.0	ug/L
PZ-6-100212	A12J067-13	Sodium	10/8/2012	807		Yes	Y	D			2.50	1.25	mg/L
PZ-6-100212	A12J067-13	Potassium	10/8/2012	1650		Yes	Y	D			500	250	ug/L
PZ-6-100212	A12J067-13	Arsenic	10/8/2012	13.7		Yes	Y	D			10.0	2.50	ug/L
PZ-6-100212	A12J067-13	Chromium	10/8/2012	26.7		Yes	Y	D			10.0	2.50	ug/L
PZ-6-100212	A12J067-13	Calcium	10/8/2012	5450		Yes	Y	D			500	250	ug/L
PZ-6-100212	A12J067-13	Manganese	10/8/2012	381		Yes	Y	D			5.00	2.50	ug/L
PZ-6-100212	A12J067-13	Magnesium	10/8/2012	1780		Yes	Y	D			250	125	ug/L
PZ-6-100212	A12J067-13	Iron	10/8/2012	4880		Yes	Y	D			250	125	ug/L
PZ-6-100212	A12J067-13	Aluminum	10/8/2012	3550		Yes	Y	D			250	125	ug/L
PZ-6-100212	A12J067-13	Copper	10/8/2012	9		Yes	Y	D J			20.0	5.00	ug/L
PZ-6-100212	A12J067-13	Nickel	10/8/2012	7.83		Yes	Y	D J			10.0	2.50	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-6-100212	A12J067-13	Arsenic	10/16/2012	13		Yes	Y	D			10.0	2.50	ug/L
PZ-6-100212	A12J067-13	Chromium	10/16/2012	25.7		Yes	Y	D			10.0	2.50	ug/L
PZ-6-100212	A12J067-13	Potassium	10/16/2012	1070		Yes	Y	D J			2000	250	ug/L
PZ-6-100212	A12J067-13	Nickel	10/16/2012	11.8		Yes	Y	D			10.0	2.50	ug/L
PZ-6-100212	A12J067-13	Magnesium	10/16/2012	1370		Yes	Y	D			250	125	ug/L
PZ-6-100212	A12J067-13	Iron	10/16/2012	2640		Yes	Y	D			1000	125	ug/L
PZ-6-100212	A12J067-13	Aluminum	10/16/2012	977		Yes	Y	D			250	125	ug/L
PZ-6-100212	A12J067-13	Manganese	10/16/2012	441		Yes	Y	D			5.00	2.50	ug/L
PZ-6-100212	A12J067-13	Calcium	10/16/2012	5530		Yes	Y	D			500	250	ug/L
PZ-6-100212	A12J067-13	Sodium	10/16/2012	895000		Yes	Y	D			5000	2500	ug/L
PZ-6-100212	A12J067-13	Copper	10/19/2012	10		Yes	N	D U			10.0	5.00	ug/L
PZ-7-100212	A12J067-14	Aluminum	10/8/2012	1770		Yes	Y	D			250	125	ug/L
PZ-7-100212	A12J067-14	Calcium	10/8/2012	29000		Yes	Y	D			500	250	ug/L
PZ-7-100212	A12J067-14	Copper	10/8/2012	5.28		Yes	Y	D J			20.0	5.00	ug/L
PZ-7-100212	A12J067-14	Chromium	10/8/2012	24.2		Yes	Y	D			10.0	2.50	ug/L
PZ-7-100212	A12J067-14	Arsenic	10/8/2012	9.5		Yes	Y	D J			10.0	2.50	ug/L
PZ-7-100212	A12J067-14	Potassium	10/8/2012	2440		Yes	Y	D			500	250	ug/L
PZ-7-100212	A12J067-14	Magnesium	10/8/2012	12100		Yes	Y	D			250	125	ug/L
PZ-7-100212	A12J067-14	Iron	10/8/2012	19500		Yes	Y	D			250	125	ug/L
PZ-7-100212	A12J067-14	Nickel	10/8/2012	9.5		Yes	Y	D J			10.0	2.50	ug/L
PZ-7-100212	A12J067-14	Manganese	10/8/2012	665		Yes	Y	D			5.00	2.50	ug/L
PZ-7-100212	A12J067-14	Sodium	10/8/2012	547		Yes	Y	D			2.50	1.25	mg/L
PZ-7-100212	A12J067-14	Arsenic	10/16/2012	9.89		Yes	Y	D J			10.0	2.50	ug/L
PZ-7-100212	A12J067-14	Aluminum	10/16/2012	188		Yes	Y	D J			250	125	ug/L
PZ-7-100212	A12J067-14	Iron	10/16/2012	15400		Yes	Y	D			1000	125	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-7-100212	A12J067-14	Magnesium	10/16/2012	9930	Yes	Y	D			250	125	ug/L
PZ-7-100212	A12J067-14	Manganese	10/16/2012	588	Yes	Y	D			5.00	2.50	ug/L
PZ-7-100212	A12J067-14	Potassium	10/16/2012	2220	Yes	Y	D			2000	250	ug/L
PZ-7-100212	A12J067-14	Chromium	10/16/2012	18.9	Yes	Y	D			10.0	2.50	ug/L
PZ-7-100212	A12J067-14	Calcium	10/16/2012	29300	Yes	Y	D			500	250	ug/L
PZ-7-100212	A12J067-14	Nickel	10/16/2012	11.3	Yes	Y	D			10.0	2.50	ug/L
PZ-7-100212	A12J067-14	Sodium	10/16/2012	528000	Yes	Y	D			2000	1000	ug/L
PZ-7-100212	A12J067-14	Copper	10/19/2012	10	Yes	N	D U			10.0	5.00	ug/L
RLSW-4-100212	A12J067-05	Manganese	10/8/2012	1160	Yes	Y	D			5.00	2.50	ug/L
RLSW-4-100212	A12J067-05	Chromium	10/8/2012	6.72	Yes	Y	D J			10.0	2.50	ug/L
RLSW-4-100212	A12J067-05	Copper	10/8/2012	20	Yes	N	D U			20.0	5.00	ug/L
RLSW-4-100212	A12J067-05	Iron	10/8/2012	2880	Yes	Y	D			250	125	ug/L
RLSW-4-100212	A12J067-05	Arsenic	10/8/2012	9.5	Yes	Y	D J			10.0	2.50	ug/L
RLSW-4-100212	A12J067-05	Nickel	10/8/2012	4.28	Yes	Y	D J			10.0	2.50	ug/L
RLSW-4-100212	A12J067-05	Magnesium	10/16/2012	9070	Yes	Y	D			250	125	ug/L
RLSW-4-100212	A12J067-05	Calcium	10/16/2012	21700	Yes	Y	D			500	250	ug/L
RLSW-4-100212	A12J067-05	Chromium	10/16/2012	6.5	Yes	Y	D J			10.0	2.50	ug/L
RLSW-4-100212	A12J067-05	Arsenic	10/16/2012	8.56	Yes	Y	D J			10.0	2.50	ug/L
RLSW-4-100212	A12J067-05	Potassium	10/16/2012	6880	Yes	Y	D			500	250	ug/L
RLSW-4-100212	A12J067-05	Manganese	10/16/2012	1170	Yes	Y	D			5.00	2.50	ug/L
RLSW-4-100212	A12J067-05	Iron	10/16/2012	2660	Yes	Y	D			250	125	ug/L
RLSW-4-100212	A12J067-05	Aluminum	10/16/2012	405	Yes	Y	D			250	125	ug/L
RLSW-4-100212	A12J067-05	Nickel	10/16/2012	8.11	Yes	Y	D J			10.0	2.50	ug/L
RLSW-4-100212	A12J067-05	Sodium	10/16/2012	777000	Yes	Y	D			2000	1000	ug/L
RLSW-4-100212	A12J067-05	Potassium	10/16/2012	7480	Yes	Y	D			2000	250	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-4-100212	A12J067-05	Magnesium	10/16/2012	8650		Yes	Y	D			250	125	ug/L
RLSW-4-100212	A12J067-05	Aluminum	10/16/2012	546		Yes	Y	D			250	125	ug/L
RLSW-4-100212	A12J067-05	Calcium	10/16/2012	23600		Yes	Y	D			500	250	ug/L
RLSW-4-100212	A12J067-05	Sodium	10/16/2012	766		Yes	Y	D			5.00	2.50	mg/L
RLSW-4-100212	A12J067-05	Copper	10/19/2012	10		Yes	N	D U			10.0	5.00	ug/L
W10-100212	A12J067-04	Iron	10/8/2012	1090		Yes	Y				50.0	25.0	ug/L
W10-100212	A12J067-04	Calcium	10/8/2012	15200		Yes	Y				100	50.0	ug/L
W10-100212	A12J067-04	Sodium	10/8/2012	9.35		Yes	Y				0.100	0.0500	mg/L
W10-100212	A12J067-04	Potassium	10/8/2012	1240		Yes	Y				100	50.0	ug/L
W10-100212	A12J067-04	Manganese	10/8/2012	43.2		Yes	Y				1.00	0.500	ug/L
W10-100212	A12J067-04	Magnesium	10/8/2012	4770		Yes	Y				50.0	25.0	ug/L
W10-100212	A12J067-04	Aluminum	10/8/2012	752		Yes	Y				50.0	25.0	ug/L
W10-100212	A12J067-04	Potassium	10/16/2012	1000		Yes	Y				100	50.0	ug/L
W10-100212	A12J067-04	Aluminum	10/16/2012	50		Yes	N	U			50.0	25.0	ug/L
W10-100212	A12J067-04	Manganese	10/16/2012	27.1		Yes	Y				1.00	0.500	ug/L
W10-100212	A12J067-04	Magnesium	10/16/2012	4150		Yes	Y				50.0	25.0	ug/L
W10-100212	A12J067-04	Iron	10/16/2012	176		Yes	Y				50.0	25.0	ug/L
W10-100212	A12J067-04	Calcium	10/16/2012	13300		Yes	Y				100	50.0	ug/L
W10-100212	A12J067-04	Sodium	10/16/2012	8570		Yes	Y				100	50.0	ug/L
W5-100212	A12J067-01	Magnesium	10/8/2012	4470		Yes	Y				50.0	25.0	ug/L
W5-100212	A12J067-01	Iron	10/8/2012	221		Yes	Y				50.0	25.0	ug/L
W5-100212	A12J067-01	Manganese	10/8/2012	8.01		Yes	Y				1.00	0.500	ug/L
W5-100212	A12J067-01	Potassium	10/8/2012	1140		Yes	Y				100	50.0	ug/L
W5-100212	A12J067-01	Sodium	10/8/2012	7.88		Yes	Y				0.100	0.0500	mg/L
W5-100212	A12J067-01	Calcium	10/8/2012	14800		Yes	Y				100	50.0	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W5-100212	A12J067-01	Aluminum	10/8/2012	47.4	Yes	Y	J			50.0	25.0	ug/L
W5-100212	A12J067-01	Iron	10/16/2012	156	Yes	Y				50.0	25.0	ug/L
W5-100212	A12J067-01	Aluminum	10/16/2012	50	Yes	N	U			50.0	25.0	ug/L
W5-100212	A12J067-01	Magnesium	10/16/2012	4130	Yes	Y				50.0	25.0	ug/L
W5-100212	A12J067-01	Manganese	10/16/2012	1.81	Yes	Y				1.00	0.500	ug/L
W5-100212	A12J067-01	Potassium	10/16/2012	969	Yes	Y				100	50.0	ug/L
W5-100212	A12J067-01	Sodium	10/16/2012	7380	Yes	Y				100	50.0	ug/L
W5-100212	A12J067-01	Calcium	10/16/2012	13500	Yes	Y				100	50.0	ug/L
W59-100212	A12J067-03	Magnesium	10/8/2012	4460	Yes	Y				50.0	25.0	ug/L
W59-100212	A12J067-03	Manganese	10/8/2012	13.2	Yes	Y				1.00	0.500	ug/L
W59-100212	A12J067-03	Potassium	10/8/2012	1140	Yes	Y				100	50.0	ug/L
W59-100212	A12J067-03	Iron	10/8/2012	343	Yes	Y				50.0	25.0	ug/L
W59-100212	A12J067-03	Aluminum	10/8/2012	139	Yes	Y				50.0	25.0	ug/L
W59-100212	A12J067-03	Sodium	10/8/2012	8.05	Yes	Y				0.100	0.0500	mg/L
W59-100212	A12J067-03	Calcium	10/8/2012	14700	Yes	Y				100	50.0	ug/L
W59-100212	A12J067-03	Aluminum	10/16/2012	50	Yes	N	U			50.0	25.0	ug/L
W59-100212	A12J067-03	Iron	10/16/2012	163	Yes	Y				50.0	25.0	ug/L
W59-100212	A12J067-03	Magnesium	10/16/2012	4180	Yes	Y				50.0	25.0	ug/L
W59-100212	A12J067-03	Manganese	10/16/2012	2.51	Yes	Y				1.00	0.500	ug/L
W59-100212	A12J067-03	Potassium	10/16/2012	974	Yes	Y				100	50.0	ug/L
W59-100212	A12J067-03	Calcium	10/16/2012	13600	Yes	Y				100	50.0	ug/L
W59-100212	A12J067-03	Sodium	10/16/2012	7640	Yes	Y				100	50.0	ug/L
W9-100212	A12J067-02	Sodium	10/8/2012	8.23	Yes	Y				0.100	0.0500	mg/L
W9-100212	A12J067-02	Iron	10/8/2012	422	Yes	Y				50.0	25.0	ug/L
W9-100212	A12J067-02	Magnesium	10/8/2012	4540	Yes	Y				50.0	25.0	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W9-100212	A12J067-02	Manganese	10/8/2012	17.7	Yes	Y				1.00	0.500	ug/L
W9-100212	A12J067-02	Potassium	10/8/2012	1150	Yes	Y				100	50.0	ug/L
W9-100212	A12J067-02	Calcium	10/8/2012	14900	Yes	Y				100	50.0	ug/L
W9-100212	A12J067-02	Aluminum	10/8/2012	206	Yes	Y				50.0	25.0	ug/L
W9-100212	A12J067-02	Iron	10/16/2012	159	Yes	Y				50.0	25.0	ug/L
W9-100212	A12J067-02	Manganese	10/16/2012	2.44	Yes	Y				1.00	0.500	ug/L
W9-100212	A12J067-02	Potassium	10/16/2012	976	Yes	Y				100	50.0	ug/L
W9-100212	A12J067-02	Calcium	10/16/2012	13600	Yes	Y				100	50.0	ug/L
W9-100212	A12J067-02	Magnesium	10/16/2012	4180	Yes	Y				50.0	25.0	ug/L
W9-100212	A12J067-02	Sodium	10/16/2012	7650	Yes	Y				100	50.0	ug/L
W9-100212	A12J067-02	Aluminum	10/16/2012	50	Yes	N	U			50.0	25.0	ug/L

Analytical Method E300.0

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G6-D-100212	A12J067-07	Chloride (total)	10/4/2012	56	Yes	Y	D			10.0	10.0	mg/L
G6-D-100212	A12J067-07	Sulfate	10/4/2012	44.8	Yes	Y	D			10.0	10.0	mg/L
G6-S-100212	A12J067-06	Sulfate	10/4/2012	50.6	Yes	Y	D			10.0	10.0	mg/L
G6-S-100212	A12J067-06RE1	Chloride (total)	10/5/2012	5.76	Yes	Y		J	8	1.00	1.00	mg/L
PZ-1-100212	A12J067-08	Sulfate	10/4/2012	86.9	Yes	Y	D			20.0	20.0	mg/L
PZ-1-100212	A12J067-08RE1	Chloride (total)	10/5/2012	12.4	Yes	Y	D	J	8	5.00	5.00	mg/L
PZ-2-100212	A12J067-09	Chloride (total)	10/4/2012	31.7	Yes	Y	D			20.0	20.0	mg/L
PZ-2-100212	A12J067-09	Sulfate	10/4/2012	67.9	Yes	Y	D			20.0	20.0	mg/L
PZ-3-100212	A12J067-10RE1	Sulfate	10/5/2012	1	Yes	N	U			1.00	1.00	mg/L
PZ-3-100212	A12J067-10RE1	Chloride (total)	10/5/2012	18.9	Yes	Y		J	8	1.00	1.00	mg/L
PZ-4-100212	A12J067-11	Sulfate	10/4/2012	104	Yes	Y	D			20.0	20.0	mg/L
PZ-4-100212	A12J067-11	Chloride (total)	10/4/2012	107	Yes	Y	D			20.0	20.0	mg/L

Analytical Method E300.0

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-5-100212	A12J067-12	Sulfate	10/4/2012	406	Yes	Y	D			20.0	20.0	mg/L
PZ-5-100212	A12J067-12	Chloride (total)	10/4/2012	54.8	Yes	Y	D			20.0	20.0	mg/L
PZ-6-100212	A12J067-13RE1	Sulfate	10/5/2012	36.1	Yes	Y				1.00	1.00	mg/L
PZ-6-100212	A12J067-13RE1	Chloride (total)	10/5/2012	15.2	Yes	Y		J	8	1.00	1.00	mg/L
PZ-7-100212	A12J067-14RE1	Chloride (total)	10/5/2012	16.2	Yes	Y		J	8	1.00	1.00	mg/L
PZ-7-100212	A12J067-14RE1	Sulfate	10/5/2012	1.1	Yes	Y				1.00	1.00	mg/L
RLSW-4-100212	A12J067-05RE1	Sulfate	10/5/2012	14.6	Yes	Y				1.00	1.00	mg/L
RLSW-4-100212	A12J067-05RE1	Chloride (total)	10/5/2012	6.64	Yes	Y		J	8	1.00	1.00	mg/L
W10-100212	A12J067-04	Chloride (total)	10/4/2012	9.64	Yes	Y				1.00	1.00	mg/L
W10-100212	A12J067-04	Sulfate	10/4/2012	10	Yes	Y				1.00	1.00	mg/L
W5-100212	A12J067-01	Sulfate	10/3/2012	9.8	Yes	Y				1.00	1.00	mg/L
W5-100212	A12J067-01	Chloride (total)	10/3/2012	7.08	Yes	Y				1.00	1.00	mg/L
W59-100212	A12J067-03	Sulfate	10/4/2012	9.75	Yes	Y				1.00	1.00	mg/L
W59-100212	A12J067-03	Chloride (total)	10/4/2012	7.51	Yes	Y				1.00	1.00	mg/L
W9-100212	A12J067-02	Chloride (total)	10/3/2012	7.42	Yes	Y				1.00	1.00	mg/L
W9-100212	A12J067-02	Sulfate	10/3/2012	9.97	Yes	Y				1.00	1.00	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G6-D-100212	A12J067-07	Cyanide, total	10/8/2012	0.145	Yes	Y	D			0.0100	0.0100	mg/L
G6-D-100212	A12J067-07RE1	Cyanide, total	10/3/2012	0.189	Yes	Y	D			0.0100	0.0100	mg/L
G6-S-100212	A12J067-06	Cyanide, total	10/3/2012	0.109	Yes	Y				0.00500	0.00500	mg/L
G6-S-100212	A12J067-06	Cyanide, total	10/8/2012	0.108	Yes	Y				0.00500	0.00500	mg/L
PZ-1-100212	A12J067-08	Cyanide, total	10/8/2012	7.72	Yes	Y	D			0.200	0.200	mg/L
PZ-1-100212	A12J067-08RE1	Cyanide, total	10/3/2012	7.95	Yes	Y	D			0.400	0.400	mg/L
PZ-2-100212	A12J067-09	Cyanide, total	10/3/2012	26.4	Yes	Y	D			0.400	0.400	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-2-100212	A12J067-09	Cyanide, total	10/8/2012	32.6		Yes	Y	D			0.400	0.400	mg/L
PZ-3-100212	A12J067-10	Cyanide, total	10/3/2012	0.126		No	Y	D	R	22	0.0250	0.0250	mg/L
PZ-3-100212	A12J067-10	Cyanide, total	10/8/2012	0.138		Yes	Y				0.00500	0.00500	mg/L
PZ-3-100212	A12J067-10RE1	Cyanide, total	10/3/2012	0.142		Yes	Y				0.00500	0.00500	mg/L
PZ-4-100212	A12J067-11	Cyanide, total	10/8/2012	97.3		Yes	Y	D			1.60	1.60	mg/L
PZ-4-100212	A12J067-11RE1	Cyanide, total	10/3/2012	106		Yes	Y	D			1.60	1.60	mg/L
PZ-5-100212	A12J067-12	Cyanide, total	10/8/2012	267		Yes	Y	D			3.20	3.20	mg/L
PZ-5-100212	A12J067-12RE1	Cyanide, total	10/3/2012	297		Yes	Y	D			3.20	3.20	mg/L
PZ-6-100212	A12J067-13	Cyanide, total	10/8/2012	0.812		Yes	Y	D			0.0100	0.0100	mg/L
PZ-6-100212	A12J067-13RE2	Cyanide, total	10/3/2012	0.62		Yes	Y	D			0.0200	0.0200	mg/L
PZ-7-100212	A12J067-14RE1	Cyanide, total	10/3/2012	0.0909		Yes	Y				0.00500	0.00500	mg/L
PZ-7-100212	A12J067-14RE2	Cyanide, total	10/8/2012	0.0609		Yes	Y				0.00500	0.00500	mg/L
RLSW-4-100212	A12J067-05	Cyanide, total	10/3/2012	0.131		Yes	Y				0.00500	0.00500	mg/L
RLSW-4-100212	A12J067-05	Cyanide, total	10/8/2012	0.126		Yes	Y				0.00500	0.00500	mg/L
W10-100212	A12J067-04	Cyanide, total	10/3/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
W10-100212	A12J067-04	Cyanide, total	10/8/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
W5-100212	A12J067-01	Cyanide, total	10/3/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
W5-100212	A12J067-01	Cyanide, total	10/8/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
W59-100212	A12J067-03	Cyanide, total	10/3/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
W59-100212	A12J067-03	Cyanide, total	10/8/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
W9-100212	A12J067-02	Cyanide, total	10/3/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
W9-100212	A12J067-02	Cyanide, total	10/8/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G6-D-100212	A12J067-07	Alkalinity, total as calcium carbonate (CaCO3)	10/15/2012	1800		Yes	Y				1.00	1.00	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G6-S-100212	A12J067-06	Alkalinity, total as calcium carbonate (CaCO3)	10/15/2012	1330	Yes	Y				1.00	1.00	mg/L
PZ-1-100212	A12J067-08	Alkalinity, total as calcium carbonate (CaCO3)	10/15/2012	1150	Yes	Y				1.00	1.00	mg/L
PZ-2-100212	A12J067-09	Alkalinity, total as calcium carbonate (CaCO3)	10/15/2012	3760	Yes	Y				1.00	1.00	mg/L
PZ-3-100212	A12J067-10	Alkalinity, total as calcium carbonate (CaCO3)	10/15/2012	1260	Yes	Y				1.00	1.00	mg/L
PZ-4-100212	A12J067-11	Alkalinity, total as calcium carbonate (CaCO3)	10/15/2012	6280	Yes	Y				1.00	1.00	mg/L
PZ-5-100212	A12J067-12	Alkalinity, total as calcium carbonate (CaCO3)	10/15/2012	9430	Yes	Y				1.00	1.00	mg/L
PZ-6-100212	A12J067-13	Alkalinity, total as calcium carbonate (CaCO3)	10/15/2012	1510	Yes	Y				1.00	1.00	mg/L
PZ-7-100212	A12J067-14	Alkalinity, total as calcium carbonate (CaCO3)	10/15/2012	1390	Yes	Y				1.00	1.00	mg/L
RLSW-4-100212	A12J067-05	Alkalinity, total as calcium carbonate (CaCO3)	10/15/2012	1570	Yes	Y				1.00	1.00	mg/L
W10-100212	A12J067-04	Alkalinity, total as calcium carbonate (CaCO3)	10/9/2012	51.2	Yes	Y				1.00	1.00	mg/L
W5-100212	A12J067-01	Alkalinity, total as calcium carbonate (CaCO3)	10/9/2012	45.2	Yes	Y				1.00	1.00	mg/L
W59-100212	A12J067-03	Alkalinity, total as calcium carbonate (CaCO3)	10/9/2012	48.8	Yes	Y				1.00	1.00	mg/L
W9-100212	A12J067-02	Alkalinity, total as calcium carbonate (CaCO3)	10/9/2012	50.4	Yes	Y				1.00	1.00	mg/L

Analytical Method SM2540C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G6-D-100212	A12J067-07	Total dissolved solids	10/8/2012	2090	Yes	Y				10.0	10.0	mg/L
G6-S-100212	A12J067-06	Total dissolved solids	10/5/2012	1780	Yes	Y				10.0	10.0	mg/L
PZ-1-100212	A12J067-08	Total dissolved solids	10/6/2012	2090	Yes	Y				10.0	10.0	mg/L
PZ-2-100212	A12J067-09	Total dissolved solids	10/5/2012	5580	Yes	Y				10.0	10.0	mg/L
PZ-3-100212	A12J067-10	Total dissolved solids	10/8/2012	1700	Yes	Y				10.0	10.0	mg/L

Analytical Method SM2540C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
PZ-4-100212	A12J067-11	Total dissolved solids	10/8/2012	10600	Yes	Y				10.0	10.0	mg/L
PZ-5-100212	A12J067-12	Total dissolved solids	10/8/2012	16100	Yes	Y				10.0	10.0	mg/L
PZ-6-100212	A12J067-13	Total dissolved solids	10/5/2012	2120	Yes	Y				10.0	10.0	mg/L
PZ-7-100212	A12J067-14	Total dissolved solids	10/5/2012	1780	Yes	Y				23.8	23.8	mg/L
RLSW-4-100212	A12J067-05	Total dissolved solids	10/5/2012	2000	Yes	Y				10.0	10.0	mg/L
W10-100212	A12J067-04	Total dissolved solids	10/5/2012	84	Yes	Y				10.0	10.0	mg/L
W5-100212	A12J067-01	Total dissolved solids	10/5/2012	71	Yes	Y				10.0	10.0	mg/L
W59-100212	A12J067-03	Total dissolved solids	10/5/2012	50	Yes	Y				10.0	10.0	mg/L
W9-100212	A12J067-02	Total dissolved solids	10/6/2012	56	Yes	Y				10.0	10.0	mg/L

Analytical Method SM2540D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G6-D-100212	A12J067-07	Total suspended solids	10/4/2012	41	Yes	Y				5.00	5.00	mg/L
G6-S-100212	A12J067-06	Total suspended solids	10/4/2012	20	Yes	Y				5.00	5.00	mg/L
PZ-1-100212	A12J067-08	Total suspended solids	10/4/2012	5	Yes	N	U			5.00	5.00	mg/L
PZ-2-100212	A12J067-09	Total suspended solids	10/4/2012	7	Yes	Y				5.00	5.00	mg/L
PZ-3-100212	A12J067-10	Total suspended solids	10/4/2012	5	Yes	Y				4.99	4.99	mg/L
PZ-4-100212	A12J067-11	Total suspended solids	10/4/2012	10	Yes	Y				5.00	5.00	mg/L
PZ-5-100212	A12J067-12	Total suspended solids	10/4/2012	15	Yes	Y				5.00	5.00	mg/L
PZ-6-100212	A12J067-13	Total suspended solids	10/4/2012	42	Yes	Y				5.00	5.00	mg/L
PZ-7-100212	A12J067-14	Total suspended solids	10/4/2012	1160	Yes	Y		J	9	11.9	11.9	mg/L
RLSW-4-100212	A12J067-05	Total suspended solids	10/4/2012	7	Yes	Y				5.00	5.00	mg/L
W10-100212	A12J067-04	Total suspended solids	10/4/2012	193	Yes	Y				5.00	5.00	mg/L
W5-100212	A12J067-01	Total suspended solids	10/4/2012	7	Yes	Y				5.00	5.00	mg/L
W59-100212	A12J067-03	Total suspended solids	10/4/2012	5	Yes	N	U			5.00	5.00	mg/L
W9-100212	A12J067-02	Total suspended solids	10/4/2012	22	Yes	Y				5.00	5.00	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G6-D-100212	A12J067-07	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.0184		Yes	Y	D			0.0100	0.0100	mg/L
G6-D-100212	A12J067-07RE1	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.0218		Yes	Y	D			0.0100	0.0100	mg/L
G6-S-100212	A12J067-06	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.0215		Yes	Y				0.00500	0.00500	mg/L
G6-S-100212	A12J067-06	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.0168		Yes	Y				0.00500	0.00500	mg/L
PZ-1-100212	A12J067-08	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.0963		Yes	Y				0.00500	0.00500	mg/L
PZ-1-100212	A12J067-08	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.0549		Yes	Y				0.00500	0.00500	mg/L
PZ-2-100212	A12J067-09	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.123		Yes	Y	D			0.0100	0.0100	mg/L
PZ-2-100212	A12J067-09RE1	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.027		Yes	Y	D			0.0100	0.0100	mg/L
PZ-3-100212	A12J067-10	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.0159		Yes	Y				0.00500	0.00500	mg/L
PZ-3-100212	A12J067-10RE1	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.0136		Yes	Y				0.00500	0.00500	mg/L
PZ-4-100212	A12J067-11	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.354		Yes	Y	D			0.0200	0.0200	mg/L
PZ-4-100212	A12J067-11RE1	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.182		Yes	Y	D			0.0200	0.0200	mg/L
PZ-5-100212	A12J067-12RE1	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.0234		Yes	Y	D			0.0100	0.0100	mg/L
PZ-5-100212	A12J067-12RE1	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.122		Yes	Y	D			0.0100	0.0100	mg/L
PZ-6-100212	A12J067-13	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.0218		Yes	Y				0.00500	0.00500	mg/L
PZ-6-100212	A12J067-13	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.0269		Yes	Y				0.00500	0.00500	mg/L
PZ-7-100212	A12J067-14	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.014		Yes	Y				0.00500	0.00500	mg/L
PZ-7-100212	A12J067-14	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.0093		Yes	Y		J	8	0.00500	0.00500	mg/L
RLSW-4-100212	A12J067-05	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.0197		Yes	Y				0.00500	0.00500	mg/L
RLSW-4-100212	A12J067-05	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.016		Yes	Y				0.00500	0.00500	mg/L
W10-100212	A12J067-04	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.0055		Yes	Y				0.00500	0.00500	mg/L
W10-100212	A12J067-04	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
W5-100212	A12J067-01	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
W5-100212	A12J067-01	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
W59-100212	A12J067-03	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W59-100212	A12J067-03	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
W9-100212	A12J067-02	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
W9-100212	A12J067-02	Cyanide, Weak acid dissociable (WAD)	10/4/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G6-D-100212	A12J067-07	Fluoride	10/8/2012	1.77	Yes	Y				0.100	0.100	mg/L
G6-D-100212	A12J067-07	Fluoride	10/10/2012	1.03	Yes	Y				0.100	0.100	mg/L
G6-S-100212	A12J067-06	Fluoride	10/8/2012	86.4	Yes	Y	D			2.50	2.50	mg/L
G6-S-100212	A12J067-06	Fluoride	10/10/2012	84.4	Yes	Y	D			2.50	2.50	mg/L
PZ-1-100212	A12J067-08	Fluoride	10/8/2012	239	Yes	Y	D			2.50	2.50	mg/L
PZ-1-100212	A12J067-08	Fluoride	10/10/2012	222	Yes	Y	D			2.50	2.50	mg/L
PZ-2-100212	A12J067-09	Fluoride	10/8/2012	496	Yes	Y	D			5.00	5.00	mg/L
PZ-2-100212	A12J067-09	Fluoride	10/10/2012	471	Yes	Y	D			2.50	2.50	mg/L
PZ-3-100212	A12J067-10	Fluoride	10/8/2012	125	Yes	Y	D			2.50	2.50	mg/L
PZ-3-100212	A12J067-10	Fluoride	10/10/2012	118	Yes	Y	D			2.50	2.50	mg/L
PZ-4-100212	A12J067-11	Fluoride	10/8/2012	1220	Yes	Y	D			10.0	10.0	mg/L
PZ-4-100212	A12J067-11	Fluoride	10/10/2012	1030	Yes	Y	D			25.0	25.0	mg/L
PZ-5-100212	A12J067-12	Fluoride	10/8/2012	2180	Yes	Y	D			20.0	20.0	mg/L
PZ-5-100212	A12J067-12	Fluoride	10/10/2012	2090	Yes	Y	D			25.0	25.0	mg/L
PZ-6-100212	A12J067-13	Fluoride	10/8/2012	76.3	Yes	Y	D			2.50	2.50	mg/L
PZ-6-100212	A12J067-13	Fluoride	10/10/2012	70.8	Yes	Y	D			25.0	25.0	mg/L
PZ-7-100212	A12J067-14	Fluoride	10/8/2012	20.8	Yes	Y	D			0.500	0.500	mg/L
PZ-7-100212	A12J067-14	Fluoride	10/10/2012	19.9	Yes	Y	D			2.50	2.50	mg/L
RLSW-4-100212	A12J067-05	Fluoride	10/8/2012	101	Yes	Y	D			2.50	2.50	mg/L
RLSW-4-100212	A12J067-05	Fluoride	10/10/2012	94.6	Yes	Y	D			2.50	2.50	mg/L

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
W10-100212	A12J067-04	Fluoride	10/8/2012	0.152	Yes	Y				0.100	0.100	mg/L
W10-100212	A12J067-04	Fluoride	10/10/2012	0.108	Yes	Y				0.100	0.100	mg/L
W5-100212	A12J067-01	Fluoride	10/8/2012	0.127	Yes	Y				0.100	0.100	mg/L
W5-100212	A12J067-01	Fluoride	10/10/2012	0.1	Yes	N	U			0.100	0.100	mg/L
W59-100212	A12J067-03	Fluoride	10/8/2012	0.133	Yes	Y				0.100	0.100	mg/L
W59-100212	A12J067-03	Fluoride	10/10/2012	0.107	Yes	Y				0.100	0.100	mg/L
W9-100212	A12J067-02	Fluoride	10/8/2012	0.188	Yes	Y				0.100	0.100	mg/L
W9-100212	A12J067-02	Fluoride	10/10/2012	0.109	Yes	Y				0.100	0.100	mg/L

Analytical Method SM4500P

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G6-D-100212	A12J067-07	Phosphorus	10/4/2012	0.116	Yes	Y				0.100	0.0100	mg/L
G6-S-100212	A12J067-06	Phosphorus	10/4/2012	8.81	Yes	Y	D			0.500	0.0500	mg/L
PZ-1-100212	A12J067-08	Phosphorus	10/4/2012	9.92	Yes	Y	D			1.00	0.100	mg/L
PZ-2-100212	A12J067-09	Phosphorus	10/4/2012	7.72	Yes	Y	D			1.00	0.100	mg/L
PZ-3-100212	A12J067-10	Phosphorus	10/4/2012	3.15	Yes	Y	D			0.200	0.0200	mg/L
PZ-4-100212	A12J067-11	Phosphorus	10/4/2012	39.2	Yes	Y	D			2.50	0.250	mg/L
PZ-5-100212	A12J067-12	Phosphorus	10/4/2012	22.5	Yes	Y	D			2.50	0.250	mg/L
PZ-6-100212	A12J067-13	Phosphorus	10/4/2012	7.9	Yes	Y	D			0.833	0.0833	mg/L
PZ-7-100212	A12J067-14RE1	Phosphorus	10/4/2012	6.28	Yes	Y	D			0.833	0.0833	mg/L
RLSW-4-100212	A12J067-05	Phosphorus	10/4/2012	5.65	Yes	Y	D			2.50	0.250	mg/L
W10-100212	A12J067-04	Phosphorus	10/4/2012	0.074	Yes	Y	J			0.100	0.0100	mg/L
W5-100212	A12J067-01	Phosphorus	10/4/2012	0.038	Yes	Y	J			0.100	0.0100	mg/L
W59-100212	A12J067-03	Phosphorus	10/4/2012	0.04	Yes	Y	J			0.100	0.0100	mg/L
W9-100212	A12J067-02	Phosphorus	10/4/2012	0.054	Yes	Y	J			0.100	0.0100	mg/L

LDC Report# 29076C1

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 5, 2012
LDC Report Date:	January 24, 2013
Matrix:	Water
Parameters:	Volatiles
Validation Level:	Stage 2B
Laboratory:	Apex Laboratories, LLC
Sample Delivery Group (SDG):	A12J175

Sample Identification

RLSW-3-100512
RB-01-100512
RLSW-3-100512DUP

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
10/6/12	Acetone Bromomethane 2-Hexanone Carbon disulfide	56.9 26.8 21.7 20.1	RLSW-3-100512 RB-01-100512 RLSW-3-100512DUP 1210191-MB	J (all detects) J (all detects) J (all detects) J (all detects)	A
10/6/12	Chloroethane	57.9	RLSW-3-100512 RB-01-100512 RLSW-3-100512DUP 1210191-MB	J (all detects) UJ (all non-detects)	A
10/6/12	Tetrachloroethene	22.8	RB-01-100512 RLSW-3-100512DUP 1210191-MB	J (all detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
6/14/12	2-Butanone	33.2	RLSW-3-100512 RB-01-100512 RLSW-3-100512DUP 1210191-MB	J (all detects) UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
1210191-MB	10/6/12	Tetrachloroethene	1.31 ug/L	RB-01-100512

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID	Compound	%R (Limits)	Associated Samples	Flag	A or P
1210191-LCS	Acetone Bromomethane	149 (60-140) 141 (60-140)	RLSW-3-100512 RB-01-100512 1210191-MB	J (all detects) J (all detects)	P
1210191-LCS	Chloroethane	48 (60-140)	RLSW-3-100512 RB-01-100512 1210191-MB	J (all detects) UJ (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

All tentatively identified compounds were within validation criteria.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to calibration %D and LCS %R problems, data were qualified as estimated in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

Sample RB-01-100512 was identified as a rinsate blank. No volatile contaminants were found with the following exceptions:

Blank ID	Compound	Concentration
RB-01-100512	Methylene chloride	5.86 ug/L

Millennium Bulk Terminals
Volatiles - Data Qualification Summary - SDG A12J175

SDG	Sample	Compound	Flag	A or P	Reason
A12J175	RLSW-3-100512 RB-01-100512	Acetone Bromomethane 2-Hexanone Carbon disulfide	J (all detects) J (all detects) J (all detects) J (all detects)	A	Continuing calibration (%D)
A12J175	RLSW-3-100512 RB-01-100512	Chloroethane	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
A12J175	RB-01-100512	Tetrachloroethene	J (all detects)	A	Continuing calibration (%D)
A12J175	RLSW-3-100512 RB-01-100512	2-Butanone	J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D)
A12J175	RLSW-3-100512 RB-01-100512	Acetone Bromomethane	J (all detects) J (all detects)	P	Laboratory control samples (%R)
A12J175	RLSW-3-100512 RB-01-100512	Chloroethane	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)

Millennium Bulk Terminals
Volatiles - Laboratory Blank Data Qualification Summary - SDG A12J175

No Sample Data Qualified in this SDG

LDC #: 29076C1

SDG #: A12J175

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/22/13

Page: 1 of 1

Reviewer: EP

2nd Reviewer: OL

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/5/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 15/30, r²
IV.	Continuing calibration/ICV	SW	ICV ≤ 30, CCV ≤ 20
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates /DUP	N / A	client specified
VIII.	Laboratory control samples	SW	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	RB = 2

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	RLSW-3-100512	11	1210191	21		31	
2	RB-01-100512	12	1210202	22		32	
3	RLSW-3-100512DUP	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 29076c1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: FT
2nd Reviewer: OR

METHOD: GC/MS VOA (EPA SW 846 Method 8260)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ≤~~25~~20%D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤~~25.0~~20%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
-	6/14/12	ICV-GCMS3	M	33.2		1210191-MB, 1→3	J/UJ/A
+	10/6/12	C2100608-CCV	F	56.9		1210191-MB, 1→3	J/Adet
+			B	26.8			
-			D	57.9			UJ/A
+			Z	21.7			J/Adet
+			AA	22.8		1210191-MB, 2 3	
+			G	20.1		1210191-MB, 1→3	J/A det

CONCAL_8260B.1S

LDC #: 29076C1

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: FT
2nd Reviewer: OZ

METHOD: GC/MS VOA (EPA SW 846 Method 8260)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a method blank associated with every sample in this SDG?
Y N N/A Was a method blank analyzed at least once every 12 hours for each matrix and concentration?
Y N N/A Was there contamination in the method blanks? If yes, please see the qualifications below.

Blank analysis date: 10/06/12
Conc. units: ug/L
Associated Samples: ~~A1~~ 2 (ND)

Compound	Blank ID	Sample Identification								
	121019I-MB									
AA	1-3									

Blank analysis date:
Conc. units:
Associated Samples:

Compound	Blank ID	Sample Identification								

All results were qualified using the criteria stated below except those circled.

Note: Common contaminants such as Methylene chloride, Acetone, 2-Butanone, Carbon disulfide and TICs that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 29076C1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Reviewer: FT
2nd Reviewer: GR

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Was a LCS required?
Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		1210191-LCS	F	149 (60-140)	( )	( )	1210191-MB,	J/Pdet
			B	141 ( )	( )	( )	1, 2	↓
			D	48 ( )	( )	( )	↓	J/UJ/P
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		

LDC #: 29076c1

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?

Sample: 2 Field Blank / Trip Blank / Rinsate / Other RB (circle one)

Compound	Concentration Units (ug/L)
E	5.86

Sample: _____ Field Blank / Trip Blank / Rinsate / Other_____ (circle one)

Compound	Concentration Units ( )

Sample: _____ Field Blank / Trip Blank / Rinsate / Other_____ (circle one)

Compound	Concentration Units ( )

LDC Report# 29076C2a

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 5, 2012
LDC Report Date:	January 24, 2013
Matrix:	Water
Parameters:	Semivolatiles
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J175

Sample Identification

RLSW-3-100512
RB-01-100512

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270D for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
10/9/12	Carbazole 2-Nitroaniline 3-Nitroaniline 2,4-Dinitrophenol 4,6-Dinitro-2-methylphenol	20.8 23.4 30.1 27.6 26.2	1210238-MB	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A
10/10/12	2,4-Dichlorophenol 4-Nitroaniline Benzoic acid	21.7 49.2 23.6	RLSW-3-100512 RB-01-100512	J (all detects) J (all detects) J (all detects)	A
10/10/12	3,3'-Dichlorobenzidine	31.8	RLSW-3-100512 RB-01-100512	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
1210238-MB	10/9/12	Naphthalene	0.0236 ug/L	RB-01-100512

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
RB-01-100512	Naphthalene	0.0717 ug/L	0.0717U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
1210238-LCS/D (All samples in SDG A12J175)	4-Nitrophenol	34 (60-140)	36 (60-140)	-	J (all detects)	P
	Phenol	32 (60-140)	32 (60-140)	-	UJ (all non-detects)	
	N-Nitrosodimethylamine	45 (60-140)	44 (60-140)	-		
	Hexachlorobutadiene	59 (60-140)	54 (60-140)	-		
	Hexachloroethane	58 (60-140)	53 (60-140)	-		
	1,2-Dichlorobenzene	59 (60-140)	56 (60-140)	-		
	1,3-Dichlorobenzene	55 (60-140)	51 (60-140)	-		
	1,4-Dichlorobenzene	57 (60-140)	52 (60-140)	-		
	Aniline	58 (60-140)	49 (60-140)	-		
	4-Chloroaniline	42 (60-140)	36 (60-140)	-		
	Pyridine	50 (60-140)	55 (60-140)	-		
	4-Nitroaniline	-	59 (60-140)	-		
	3-Nitroaniline	-	50 (60-140)	-		
	2,4-Dimethylphenol	-	50 (60-140)	-		
	3,3'-Dichlorobenzidine	-	27 (60-140)	-		

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to calibration %D and LCS %R problems, data were qualified as estimated in two samples.

Due to method blank contamination problems, data were qualified as not detected in one sample.

The quality control criteria reviewed were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

Sample RB-01-100512 was identified as a rinsate blank. No semivolatile contaminants were found with the following exceptions:

Blank ID	Compound	Concentration (ug/L)
RB-01-100512	2-Methylnaphthalene	0.0207
	Naphthalene	0.0717
	Bis(2-ethylhexyl)phthalate	0.690
	Di-n-butylphthalate	0.309
	Benzoic acid	1.22

Millennium Bulk Terminals
Semivolatiles - Data Qualification Summary - SDG A12J175

SDG	Sample	Compound	Flag	A or P	Reason
A12J175	RLSW-3-100512 RB-01-100512	2,4-Dichlorophenol 4-Nitroaniline Benzoic acid	J (all detects) J (all detects) J (all detects)	A	Continuing calibration (%D)
A12J175	RLSW-3-100512 RB-01-100512	3,3'-Dichlorobenzidine	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
A12J175	RLSW-3-100512 RB-01-100512	4-Nitrophenol Phenol N-Nitrosodimethylamine Hexachlorobutadiene Hexachloroethane 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Aniline 4-Chloroaniline Pyridine 4-Nitroaniline 3-Nitroaniline 2,4-Dimethylphenol 3,3'-Dichlorobenzidine	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)

Millennium Bulk Terminals
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG A12J175

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
A12J175	RB-01-100512	Naphthalene	0.0717U ug/L	A

LDC #: 29076C2a **VALIDATION COMPLETENESS WORKSHEET** Date: 1/22/13
SDG #: A12J175 Stage 2B Page: 1 of 1
Laboratory: APEX Laboratories, LLC Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/5/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20, r²
IV.	Continuing calibration/ICV	SW	ICV ≤ 30 CCV ≤ 20
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	SW	LCS IN
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	RB = 2

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

1	RLSW-3-100512	11	1210238-MB	21		31	
2	RB-01-100512	12	1210349-MB	22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1- Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 29076C2e

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: FT
2nd Reviewer: OR

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ≤20 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤20.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
+	10/09/12	E10091212-CCV	WW	20.8		1210238-MB	J/A det
+			BBB	23.4		↓	↓
+			FF	30.1		↓	↓
+			HH	27.6		↓	↓
+			PP	26.2		↓	↓
+	10/10/12	E10101204-CCV	Q	21.7		1, 2	J/A det
−			BBB	31.8		↓	J/UJ/A
+			OO	49.2		↓	J/A det
+			PPP	23.6		↓	J/A det

CONCAL.2S

LDC #: 29076C29

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: FT
2nd Reviewer: OR

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a method blank analyzed for each matrix?
Y N N/A Was a method blank analyzed for each concentration preparation level?
Y N N/A Was a method blank associated with every sample?
Y N N/A Was the blank contaminated? If yes, please see qualification below.

Blank extraction date: 10/09/12 **Blank analysis date:** 10/09/12
Conc. units: ug/L Associated Samples: ~~AE1~~ #2

Compound	Blank ID	Sample Identification								
	1210238-MB			2	4					
S	0.0236			0.0717	~~0.03854~~					

Blank extraction date:_____ **Blank analysis date:**_____
Conc. units:_____ Associated Samples:_____

Compound	Blank ID	Sample Identification								

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 29076C2a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FT
2nd Reviewer: OR

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Was a LCS required?
Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		1210238-LCS/D	II	34 (60-140)	36 (60-140)	( )	all	J/UJ/P
			A	32 ( )	32 ( )	( )		
			OOO	45 ( )	44 ( )	( )		
			U	59 ( )	54 ( )	( )		
			K	58 ( )	53 ( )	( )		
			F	59 ( )	56 ( )	( )		
			D	55 ( )	51 ( )	( )		
			E	57 ( )	52 ( )	( )		
			NNN	58 ( )	49 ( )	( )		
			T	42 ( )	36 ( )	( )		
			RRR	50 ( )	55 ( )	( )		
			OO	( )	~~58~~ 59 ( )	( )		
			FF	( )	50 ( )	( )		
			O	( )	50 ( )	( )		
			BBB	( )	27 ( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

LDC #: 29076C2a
SDG #: A12J175

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer:
2nd reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds identified in the field blanks?

Sample: 2 (RB) Field Blank / Trip Blank / Rinsate (circle one)

Compound	Concentration Units (ug/L)
W	0.0207
S	0.0717
EE	0.690
XX	0.309
PPP	1.22

Sample: _____ Field Blank / Trip Blank / Rinsate (circle one)

Compound	Concentration Units ( )

Sample: _____ Field Blank / Trip Blank / Rinsate (circle one)

Compound	Concentration Units ( )

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October, 5, 2012
LDC Report Date:	January 25, 2013
Matrix:	Water
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J175

Sample Identification

SSA4-MW-01-100512
SSA7-MW-01-100512
SSA7-MW-51-100512

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
1210364 LCS/D (All samples in SDG A12J175)	1-Methylnaphthalene 2-Methylnaphthalene Naphthalene	57 (60-140) 57 (60-140) 58 (60-140)	51 (60-140) 50 (60-140) 51 (60-140)	- - -	J (all detects) UJ (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to LCS %R problems, data were qualified as estimated in three samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples SSA7-MW-01-100512 and SSA7-MW-51-100512 were identified as field duplicates. No polynuclear aromatic hydrocarbons were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	SSA7-MW-01-100512	SSA7-MW-51-100512	
2-Methylnaphthalene	0.0246	0.0280	13
Naphthalene	0.0549	0.0762U	200
Phenanthrene	0.0232	0.0381U	200

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A12J175

SDG	Sample	Compound	Flag	A or P	Reason
A12J175	SSA4-MW-01-100512 SSA7-MW-01-100512 SSA7-MW-51-100512	1-Methylnaphthalene 2-Methylnaphthalene Naphthalene	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A12J175

No Sample Data Qualified in this SDG

LDC #: 29076C2b **VALIDATION COMPLETENESS WORKSHEET** Date: 1/23/13
SDG #: A12J175 Stage 2B Page: 1 of 1
Laboratory: APEX Laboratories, LLC Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/5/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV ≤ 30 CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	SW	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 2, 3
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	SSA4-MW-01-100512	11	1210364	21		31	
2	SSA7-MW-01-100512	12		22		32	
3	SSA7-MW-51-100512	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1- Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 29076C26

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of ___
Reviewer: FT
2nd Reviewer: CR

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?
Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		1210364 LCS/D	TTT	57 (60-140)	51 (60-140)	( )	All	J/W/P
			W	57 (60-140)	50 (↓)	( )	↓	↓
			S	58 (↓)	51 (↓)	( )	↓	↓
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		

LDC#: 29076C25

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC/MS SVOA (EPA SW 846 Method 8270D)

Y N NA Were field duplicate pairs identified in this SDG?

Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD
	2	3	
VV	0.0246	0.0280	13
S	0.0549	0.0762U	200
UU	0.0232	0.0381U	~~40~~ 20

V:\FIELD DUPLICATES\templates\29076C2b.wpd

LDC Report# 29076C3b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 5, 2012
LDC Report Date:	January 25, 2013
Matrix:	Water
Parameters:	Polychlorinated Biphenyls
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J175

Sample Identification

SSA7-MW-01-100512
RLSW-3-100512
SSA7-MW-51-100512
RB-01-100512

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082A for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

Raw data were not reviewed for this SDG.

XIII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XV. Field Duplicates

Samples SSA7-MW-01-100512 and SSA7-MW-51-100512 were identified as field duplicates. No polychlorinated biphenyls were detected in any of the samples.

XVI. Field Blanks

Sample RB-01-100512 was identified as a rinsate blank. No polychlorinated biphenyl contaminants were found.

Millennium Bulk Terminals
Polychlorinated Biphenyls - Data Qualification Summary - SDG A12J175

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG A12J175

No Sample Data Qualified in this SDG

LDC #: 29076C3b

SDG #: A12J175

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/23/13

Page: 1 of 1

Reviewer: EZ

2nd Reviewer: SL

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/5/12
II.	GC/ECD Instrument Performance Check	NA	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	A	LCS ID
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	N	
XIII.	Compound quantitation/RL/LOQ/LODs	N	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	ND	D = 1 & 3
XVI.	Field blanks	ND	RB = 4

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	SSA-MW-01-100512	11	1210281	21		31	
2	RLSW-3-100512	12		22		32	
3	SSA7-MW-51-100512	13		23		33	
4	RB-01-100512	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Millennium Bulk Terminals

Collection Date: October 5, 2012

LDC Report Date: January 22, 2013

Matrix: Water

Parameters: Metals

Validation Level: Stage 2B

Laboratory: APEX Laboratories, LLC

Sample Delivery Group (SDG): A12J175

Sample Identification

G4-D-100512
G7-D-100512
SSA4-MW-01-100512
SSA6-MW-01-100512
SSA7-MW-01-100512
RLSW-2-100512
RLSW-3-100512
SSA7-MW-51-100512
RB-01-100512
G4-D-100512F
G7-D-100512F
SSA4-MW-01-100512F
SSA6-MW-01-100512F
SSA7-MW-01-100512F
RLSW-2-100512F
RLSW-3-100512F
SSA7-MW-51-100512F
RB-01-100512F
G7-D-100512DUP
SSA6-MW-01-100512MS
G7-D-100512FDUP
SSA6-MW-01-100512FMS

Samples appended with "F" were analyzed for dissolved metals

Introduction

This data review covers 22 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Methods 200.7 and 200.8 for Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Beryllium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Silicon, and Zinc.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
ICB/CCB	Chromium	0.550 ug/L	RLSW-2-100512 RLSW-3-100512
ICB/CCB	Manganese	0.520 ug/L	RB-01-100512 G4-D-100512F G7-D-100512F SSA4-MW-01-100512F SSA6-MW-01-100512F SSA7-MW-01-100512F SSA7-MW-51-100512F

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
RLSW-2-100512	Chromium	1.47 ug/L	1.47U ug/L
RLSW-3-100512	Chromium	1.98 ug/L	1.98U ug/L

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this method.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to method blank contamination problems, data were qualified as not detected in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

Samples SSA7-MW-01-100512 and SSA7-MW-51-100512 and samples SSA7-MW-01-100512F and SSA7-MW-51-100512F were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration		RPD
	SSA7-MW-01-100512	SSA7-MW-51-100512	
Silicon	22.6 mg/L	22.9 mg/L	1
Aluminum	70.7 ug/L	67.4 ug/L	5
Arsenic	4.11 ug/L	3.92 ug/L	5
Calcium	38900 ug/L	38700 ug/L	1
Iron	19200 ug/L	19200 ug/L	0
Magnesium	15700 ug/L	15600 ug/L	1
Manganese	4410 ug/L	4440 ug/L	1
Nickel	3.31 ug/L	3.41 ug/L	3
Potassium	3520 ug/L	3510 ug/L	0
Sodium	224 mg/L	227 mg/L	1

Analyte	Concentration		RPD
	SSA7-MW-01-100512F	SSA7-MW-51-100512F	
Silicon	22.9 mg/L	23.0 mg/L	0
Aluminum	66.3 ug/L	66.9 ug/L	1
Arsenic	3.99 ug/L	3.96 ug/L	1
Calcium	38300 ug/L	38200 ug/L	0
Iron	18900 ug/L	19200 ug/L	2
Magnesium	15700 ug/L	15800 ug/L	1

Analyte	Concentration		RPD
	SSA7-MW-01-100512F	SSA7-MW-51-100512F	
Manganese	4370 ug/L	4380 ug/L	0
Nickel	3.43 ug/L	3.29 ug/L	4
Potassium	3550 ug/L	3540 ug/L	0
Sodium	221000 ug/L	222000 ug/L	0

XV. Field Blanks

Samples RB-01-100512 and RB-01-100512F were identified as rinsate blanks. No metal contaminants were found with the following exceptions:

Blank ID	Analyte	Concentration (ug/L)
RB-01-100512	Zinc	4.42
RB-01-100512F	Arsenic Chromium	0.511 0.578

Millennium Bulk Terminals
Metals - Data Qualification Summary - SDG A12J175

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Metals - Laboratory Blank Data Qualification Summary - SDG A12J175

SDG	Sample	Analyte	Modified Final Concentration	A or P
A12J175	RLSW-2-100512	Chromium	1.47U ug/L	A
A12J175	RLSW-3-100512	Chromium	1.98U ug/L	A

LDC #: 29076C4

SDG #: A12J175

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/21/13

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: Metals (EPA Method 200.7/200.8)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/5/12
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	A	MS(20:Ca,Mn, 21:Mn >4x)
VII.	Duplicate Sample Analysis	A	Dup
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	SW	(5,8), (14,17)
XV	Field Blanks	SW	RB= 9, 18

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	G4-D-100512	11	G7-D-100512F	21	G7-D-100512FDUP	31	
2	G7-D-100512	12	SSA4-MW-01-100512F	22	SSA6-MW-01-100512FMS	32	
3	SSA4-MW-01-100512	13	SSA6-MW-01-100512F	23		33	
4	SSA6-MW-01-100512	14	SSA7-MW-01-100512F	24		34	
5	SSA7-MW-01-100512	15	RLSW-2-100512F	25		35	
6	RLSW-2-100512	16	RLSW-3-100512F	26		36	
7	RLSW-3-100512	17	SSA7-MW-51-100512F	27		37	
8	SSA7-MW-51-100512	18	RB-01-100512F	28		38	
9	RB-01-100512	19	G7-D-100512DUP	29		39	
10	G4-D-100512F	20	SSA6-MW-01-100512MS	30		40	

Notes: Samples appended with "F" were analyzed for dissolved metals

LDC #: 29076C4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: CR
2nd reviewer: ✓

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-6,8,10,15,17		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
7,9,16,18		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Analysis Method
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti

Comments: Mercury by CVAA if performed

LDC #: 29076C4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000) Soil preparation factor applied: 1.11x x 2xdil

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: 6, 7

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	6	7							
Cr			0.550	6.105	1.47	1.98							

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: 9-14, 17

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level (5x)	No Qualifiers								
Mn			0.520	14.43									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 29076C4

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer:
2nd Reviewer:

METHOD: Metals (EPA Method 6010B/7000)

Analyte	Concentration (~~mg~~ ug/L)		RPD
	5	8	
Silicon (mg/L)	22.6	22.9	1
Aluminum	70.7	67.4	5
Arsenic	4.11	3.92	5
Calcium	38900	38700	1
Iron	19200	19200	0
Magnesium	15700	15600	1
Manganese	4410	4440	1
Nickel	3.31	3.41	3
Potassium	3520	3510	0
Sodium (mg/L)	224	227	1

LDC#: 29076C4

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer:
2nd Reviewer:

METHOD: Metals (EPA Method 6010B/7000)

Analyte	Concentration (~~mg~~ µg/L)		RPD
	14	17	
Silicon (mg/L)	22.9	23.0	0
Aluminum	66.3	66.9	1
Arsenic	3.99	3.96	1
Calcium	38300	38200	0
Iron	18900	19200	2
Magnesium	15700	15800	1
Manganese	4370	4380	0
Nickel	3.43	3.29	4
Potassium	3550	3540	0
Sodium	221000	222000	0

LDC #: 29076C4

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: CL
2nd reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target analytes detected in the field blanks?

Sample: 9 Field Blank / Trip Blank / Rinsate / Other RB (circle one)

Analyte	Concentration Units ( )
Zn	4.42 ug/L

Sample: 18 Field Blank / Trip Blank / Rinsate / Other RB (circle one)

Analyte	Concentration Units ug/L
As	0.511
Cr	0.578

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Millennium Bulk Terminals

Collection Date: October 5, 2012

LDC Report Date: January 22, 2013

Matrix: Water

Parameters: Wet Chemistry

Validation Level: Stage 2B

Laboratory: APEX Laboratories, LLC

Sample Delivery Group (SDG): A12J175

Sample Identification

G4-D-100512
G7-D-100512
SSA4-MW-01-100512
SSA6-MW-01-100512
SSA7-MW-01-100512
RLSW-2-100512
RLSW-3-100512
SSA7-MW-51-100512
RB-01-100512
G4-D-100512MS
G4-D-100512DUP
G7-D-100512MS
G7-D-100512DUP
SSA4-MW-01-100512MS
SSA4-MW-01-100512DUP
SSA6-MW-01-100512MS
SSA6-MW-01-100512DUP
RLSW-2-100512MS
RLSW-2-100512DUP
RLSW-3-100512MS
SSA7-MW-51-100512MS
SSA7-MW-51-100512DUP
RB-01-100512MS
RB-01-100512DUP
RLSW-3-100512DUP

Introduction

This data review covers 25 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2320B for Alkalinity, EPA Method 300.0 for Chloride and Sulfate, EPA Method 335.4 for Total Cyanide and Dissolved Cyanide, Standard Method 4500-CN-I-E for Weak Acid Dissociable Cyanide and Dissolved Weak Acid Dissociable Cyanide, ASTM D4282 for Free Cyanide and Dissolved Free Cyanide, Standard Method 4500-F-C for Fluoride and Dissolved Fluoride, Standard Method 4500-P-B for Phosphorus, Standard Method 2540C for Total Dissolved Solids, and Standard Method 2540D for Total Suspended Solids.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
G7-D-100512MS (G7-D-100512)	Chloride	78 (80-120)	J (all detects) UJ (all non-detects)	A

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Analyte	RPD (Limits)	Flag	A or P
G7-D-100512DUP (G4-D-100512 G7-D-100512 SSA4-MW-01-100512 RLSW-2-100512)	Sulfate	24 (≤20)	J (all detects) UJ (all non-detects)	A

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS %R and Duplicate RPD problems, data were qualified as estimated in four samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples SSA7-MW-01-100512 and SSA7-MW-51-100512 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD
	SSA7-MW-01-100512	SSA7-MW-51-100512	
Chloride	9.85	9.96	1
Fluoride	12.9	12.6	2
Dissolved fluoride	12.6	12.3	2
Total cyanide	0.0793	0.0734	8
Weak acid dissociable cyanide	0.0121	0.0112	8
Dissolved cyanide	0.0800	0.0800	0
Dissolved weak acid dissociable cyanide	0.0105	0.0114	8

Analyte	Concentration (mg/L)		RPD
	SSA7-MW-01-100512	SSA7-MW-51-100512	
Phosphorus	1.51	1.51	0
Total suspended solids	32.0	43.0	29
Total dissolved solids	831	839	1
Total alkalinity	640	640	3

XI. Field Blanks

Sample RB-01-100512 was identified as a rinsate blank. No contaminant concentrations were found with the following exceptions:

Blank ID	Analyte	Concentration (mg/L)
RB-01-100512	Phosphorus	0.0120

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A12J175

SDG	Sample	Analyte	Flag	A or P	Reason
A12J175	G7-D-100512	Chloride	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)
A12J175	G4-D-100512 G7-D-100512 SSA4-MW-01-100512 RLSW-2-100512	Sulfate	J (all detects) UJ (all non-detects)	A	Duplicate sample analysis (RPD)

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A12J175

No Sample Data Qualified in this SDG

LDC #: 29076C6

SDG #: A12J175

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/21/13

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: (Analyte) Alkalinity (SM2320B), Chloride, Sulfate (EPA Method 300.0), Total Cyanide, Dissolved Cyande (EPA Method 335.4), WAD Cyanide, Dissolved WAD Cyanide (~~EPA SW846 Method 9013M~~/SM4500–CN-I-E), Free Cyanide, Dissolved Free Cyanide (ASTM D4282), Fluoride, Dissolved Fluoride (SM4500-F-C), Phosphours (SM4500-P-B) TDS (SM2540C), TSS (SM2540D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/5/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	SW	MS
VI.	Duplicates	SW	Dup
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	SW	(5, 8)
XI.	Field blanks	SW	RB=9

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	G4-D-100512	11	G4-D-100512DUP	21	SSA7-MW-51-100512MS	31	
2	G7-D-100512	12	G7-D-100512MS	22	SSA7-MW-51-100512DUP	32	
3	SSA4-MW-01-100512	13	G7-D-100512DUP	23	RB-01-100512MS	33	
4	SSA6-MW-01-100512	14	SSA4-MW-01-100512MS	24	RB-01-100512DUP	34	
5	SSA~~4~~7-MW-01-100512	15	SSA4-MW-01-100512DUP	25	(~~6~~ 7) DUP	35	
6	RLSW-2-100512	16	SSA6-MW-01-100512MS	26		36	
7	RLSW-3-100512	17	SSA6-MW-01-100512DUP	27		37	
8	SSA7-MW-51-100512	18	RLSW-2-100512MS	28		38	
9	RB-01-100512	19	RLSW-2-100512DUP	29		39	
10	G4-D-100512MS	20	RLSW-3-100512MS	30		40	

Notes: Hieta

LDC #: 29076C6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Reviewer: CR

2nd reviewer: ✓

All circled methods are applicable to each sample.

Sample ID	Parameter	
1-9	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	Diss F, WAD CN, Free CN, Diss CN, Diss WAD CN, Diss Free CN, P, TSS
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
QC 10	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	Diss CN, Diss Free CN
11	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	Diss CN, Diss Free CN
12	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
13	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
14	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
15	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
16	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	Diss WAD CN
17	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	Diss WAD CN
18	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
19	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
20	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	WAD CN, P
21	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	Diss WAD CN
22	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	Diss WAD CN, TSS
23	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	Diss F, Free CN
24	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	Diss F, Free CN
25	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	WAD CN, ~~F~~, TSS, P
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4	

Comments:

LDC #: 29076C6

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method see cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of ~~75-125 (85~~-115% for Method 300.0)? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken. 80-120

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
		12	W	Cl	78	2*	J/UJ/A
		10	W	Cl	68	None	No Qual (not reported from run)
		12 (RE)	W	Cl	-10	None	↓ ↓

Comments: *2nd Client MS in Batch within limits

LDC #: 29076C6

VALIDATION FINDINGS WORKSHEET
Duplicate Analysis

Page: 1 of ___
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method see cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a duplicate sample analyzed for each matrix in this SDG?

Y N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for water and ≤ 35% for soil samples (≤ 10% for Method 300.0)? If no, see qualification below. A control limit of ±CRDL (±2X CRDL for soil) was used for samples that were ≤5X the CRDL, including when only one of the duplicate sample values were ≤5X the CRDL. If field blanks were used for laboratory duplicates, see overall assessment.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Duplicate ID	Matrix	Analyte	RPD (Limits)	Associated Samples	Qualifications
		11	W	Cl	32 (≤20)		No Qual (not reported from run)
		13	W	Cl	29 (≤20)		↓ ↓
		13	W	SO4	24 (≤20)	1-3,6	J/UJ/A

Comments:

LDC# 29076C6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: a
2nd Reviewer: ✓

Inorganics: Method See Cover

Analyte	Concentration (mg/L)		RPD
	5	8	
Chloride	9.85	9.96	1
Fluoride	12.9	12.6	2
Dissolved Fluoride	12.6	12.3	2
Total Cyanide	0.0793	0.0734	8
Weak Acid Dissociable Cyanide	0.0121	0.0112	8
Dissolved Cyanide	0.0800	0.0800	0
Dissolved Weak Acid Dissociable Cyanide	0.0105	0.0114	8
Phosphorus	1.51	1.51	0
Total Suspended Solids	32.0	43.0	29
Total Dissolved Solids	831	839	1
Total Alkalinity	640	640	3

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LDC #: 29076C6
SDG #: —

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: a
2nd reviewer: ✓

METHOD: Inorganics, EPA Method See cover

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target anlytes detected in the field blanks?

Sample: 9 Field Blank / Trip Blank / Rinsate (circle one) BLK

Analyte	Concentration Units ( )
P	0.0120 mg/L

Sample: _____ Field Blank / Trip Blank / Rinsate (circle one)

Analyte	Concentration Units ( )

LDC Report# 29076C8

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 5, 2012
LDC Report Date:	January 25, 2013
Matrix:	Water
Parameters:	Total Petroleum Hydrocarbons as Extractables
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J175

Sample Identification

SSA6-MW-01-100512
RB-01-100512

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method NWTPH-Dx for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 15.0%.

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 15.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XII. Field Duplicates

No field duplicates were identified in this SDG.

XIII. Field Blanks

Sample RB-01-100512 was identified as a rinsate blank. No total petroleum hydrocarbons as extractable contaminants were found.

Millennium Bulk Terminals
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG A12J175

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG A12J175

No Sample Data Qualified in this SDG

LDC #: 29076C8

SDG #: A12J175

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/22/13

Page: 1 of 1

Reviewer: EJ

2nd Reviewer: DL

METHOD: GC TPH as Extractables (NWTPH-Dx)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/5/12
II	Initial calibration	A	% RSD ≤ ~~20~~ 15
III.	Calibration verification/ICV	A	ICV/CCV ≤ ~~20~~ 15
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	client specified
VII.	Laboratory control samples	A	LCS/P
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	SW	RB = 2

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	SSA6-MW-01-100512	11	1210314	21		31	
2	RB-01-100512	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 29076C8
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: FT
2nd reviewer: SR

METHOD: ✓ GC __ HPLC

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?

(Circle One) Field Blank / Trip Blank / Atmospheric Blank / Ambient Blank Sample: 2 Rinsate / Equipment Rinsate / Equipment Blank / Source Blank / Other RB		(Circle One) Field Blank / Trip Blank / Atmospheric Blank / Ambient Blank Sample: _____ Rinsate / Equipment Rinsate / Equipment Blank / Source Blank / Other ____	
Compound	Concentration (mg/L)	Compound	Concentration ( )
Diesel	0.110		
Oil	0.858		

(Circle One) Field Blank / Trip Blank / Atmospheric Blank / Ambient Blank Sample: _____ Rinsate / Equipment Rinsate / Equipment Blank / Source Blank / Other _____		(Circle One) Field Blank / Trip Blank / Atmospheric Blank / Ambient Blank Sample: _____ Rinsate / Equipment Rinsate / Equipment Blank / Source Blank / Other____	
Compound	Concentration ( )	Compound	Concentration ( )

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G4-D-100512	A12J175-01	Cyanide, free	10/6/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
G4-D-100512	A12J175-01	Cyanide, free	10/6/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
G7-D-100512	A12J175-02	Cyanide, free	10/6/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
G7-D-100512	A12J175-02	Cyanide, free	10/6/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
RB-01-100512	A12J175-09	Cyanide, free	10/6/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
RB-01-100512	A12J175-09	Cyanide, free	10/6/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
RLSW-2-100512	A12J175-06	Cyanide, free	10/6/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
RLSW-2-100512	A12J175-06	Cyanide, free	10/6/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
RLSW-3-100512	A12J175-07	Cyanide, free	10/6/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
RLSW-3-100512	A12J175-07	Cyanide, free	10/6/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
SSA4-MW-01-100512	A12J175-03	Cyanide, free	10/6/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
SSA4-MW-01-100512	A12J175-03	Cyanide, free	10/6/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
SSA6-MW-01-100512	A12J175-04	Cyanide, free	10/6/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
SSA6-MW-01-100512	A12J175-04	Cyanide, free	10/6/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
SSA7-MW-01-100512	A12J175-05	Cyanide, free	10/6/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
SSA7-MW-01-100512	A12J175-05	Cyanide, free	10/6/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
SSA7-MW-51-100512	A12J175-08	Cyanide, free	10/6/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
SSA7-MW-51-100512	A12J175-08	Cyanide, free	10/6/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G4-D-100512	A12J175-01	Silicon	10/12/2012	31.1	Yes	Y				0.100	0.0500	mg/L
G4-D-100512	A12J175-01	Silicon	10/12/2012	33.8	Yes	Y				0.100	0.0500	mg/L
G7-D-100512	A12J175-02	Silicon	10/12/2012	29.1	Yes	Y				0.100	0.0500	mg/L
G7-D-100512	A12J175-02	Silicon	10/12/2012	30.1	Yes	Y				0.100	0.0500	mg/L
RB-01-100512	A12J175-09	Silicon	10/12/2012	0.1	Yes	N	U			0.100	0.0500	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RB-01-100512	A12J175-09	Silicon	10/12/2012	0.1	Yes	N	U			0.100	0.0500	mg/L
RLSW-2-100512	A12J175-06	Silicon	10/12/2012	19.1	Yes	Y				0.100	0.0500	mg/L
RLSW-2-100512	A12J175-06	Silicon	10/12/2012	20.1	Yes	Y				0.100	0.0500	mg/L
RLSW-3-100512	A12J175-07	Silicon	10/12/2012	27.5	Yes	Y				0.100	0.0500	mg/L
RLSW-3-100512	A12J175-07	Silicon	10/12/2012	28.6	Yes	Y				0.100	0.0500	mg/L
SSA4-MW-01-100512	A12J175-03	Silicon	10/12/2012	25.5	Yes	Y				0.100	0.0500	mg/L
SSA4-MW-01-100512	A12J175-03	Silicon	10/12/2012	25.5	Yes	Y				0.100	0.0500	mg/L
SSA6-MW-01-100512	A12J175-04	Silicon	10/12/2012	29.7	Yes	Y				0.100	0.0500	mg/L
SSA6-MW-01-100512	A12J175-04	Silicon	10/12/2012	30.5	Yes	Y				0.100	0.0500	mg/L
SSA7-MW-01-100512	A12J175-05	Silicon	10/12/2012	22.9	Yes	Y				0.100	0.0500	mg/L
SSA7-MW-01-100512	A12J175-05	Silicon	10/12/2012	22.6	Yes	Y				0.100	0.0500	mg/L
SSA7-MW-51-100512	A12J175-08	Silicon	10/12/2012	23	Yes	Y				0.100	0.0500	mg/L
SSA7-MW-51-100512	A12J175-08	Silicon	10/12/2012	22.9	Yes	Y				0.100	0.0500	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G4-D-100512	A12J175-01	Arsenic	10/19/2012	6.71	Yes	Y				2.00	0.500	ug/L
G4-D-100512	A12J175-01	Aluminum	10/19/2012	50	Yes	N	U			50.0	25.0	ug/L
G4-D-100512	A12J175-01	Iron	10/19/2012	39300	Yes	Y				200	25.0	ug/L
G4-D-100512	A12J175-01	Nickel	10/19/2012	3.11	Yes	Y				2.00	0.500	ug/L
G4-D-100512	A12J175-01	Potassium	10/19/2012	4340	Yes	Y				200	50.0	ug/L
G4-D-100512	A12J175-01	Sodium	10/19/2012	39400	Yes	Y				100	50.0	ug/L
G4-D-100512	A12J175-01	Chromium	10/19/2012	4	Yes	N	U			4.00	0.500	ug/L
G4-D-100512	A12J175-01	Copper	10/19/2012	2	Yes	N	U			2.00	1.00	ug/L
G4-D-100512	A12J175-01	Calcium	10/19/2012	129000	Yes	Y	D			500	250	ug/L
G4-D-100512	A12J175-01	Magnesium	10/19/2012	63200	Yes	Y	D			250	125	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G4-D-100512	A12J175-01	Manganese	10/19/2012	2830	Yes	Y	D			5.00	2.50	ug/L
G4-D-100512	A12J175-01	Iron	10/19/2012	41600	Yes	Y				200	25.0	ug/L
G4-D-100512	A12J175-01	Nickel	10/19/2012	4.57	Yes	Y				2.00	0.500	ug/L
G4-D-100512	A12J175-01	Potassium	10/19/2012	4270	Yes	Y				200	50.0	ug/L
G4-D-100512	A12J175-01	Sodium	10/19/2012	38.6	Yes	Y				0.100	0.0500	mg/L
G4-D-100512	A12J175-01	Arsenic	10/19/2012	7.81	Yes	Y				2.00	0.500	ug/L
G4-D-100512	A12J175-01	Chromium	10/19/2012	1.72	Yes	Y	J			4.00	0.500	ug/L
G4-D-100512	A12J175-01	Copper	10/19/2012	3.63	Yes	Y				2.00	1.00	ug/L
G4-D-100512	A12J175-01	Aluminum	10/19/2012	1200	Yes	Y				50.0	25.0	ug/L
G4-D-100512	A12J175-01	Manganese	10/19/2012	2920	Yes	Y	D			10.0	5.00	ug/L
G4-D-100512	A12J175-01	Magnesium	10/19/2012	64000	No	Y	D			500	250	ug/L
G4-D-100512	A12J175-01	Calcium	10/19/2012	134000	No	Y	D			1000	500	ug/L
G7-D-100512	A12J175-02	Magnesium	10/19/2012	44300	Yes	Y				50.0	25.0	ug/L
G7-D-100512	A12J175-02	Aluminum	10/19/2012	50	Yes	N	U			50.0	25.0	ug/L
G7-D-100512	A12J175-02	Copper	10/19/2012	2	Yes	N	U			2.00	1.00	ug/L
G7-D-100512	A12J175-02	Chromium	10/19/2012	0.556	Yes	Y	J			4.00	0.500	ug/L
G7-D-100512	A12J175-02	Nickel	10/19/2012	3.57	Yes	Y				2.00	0.500	ug/L
G7-D-100512	A12J175-02	Iron	10/19/2012	43500	Yes	Y				200	25.0	ug/L
G7-D-100512	A12J175-02	Potassium	10/19/2012	3210	Yes	Y				200	50.0	ug/L
G7-D-100512	A12J175-02	Arsenic	10/19/2012	7.34	Yes	Y				2.00	0.500	ug/L
G7-D-100512	A12J175-02	Manganese	10/19/2012	3510	Yes	Y	D			5.00	2.50	ug/L
G7-D-100512	A12J175-02	Calcium	10/19/2012	96900	Yes	Y	D			500	250	ug/L
G7-D-100512	A12J175-02	Sodium	10/19/2012	122000	Yes	Y	D			500	250	ug/L
G7-D-100512	A12J175-02	Chromium	10/19/2012	0.844	Yes	Y	J			4.00	0.500	ug/L
G7-D-100512	A12J175-02	Iron	10/19/2012	43900	Yes	Y				200	25.0	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G7-D-100512	A12J175-02	Magnesium	10/19/2012	42800		No	Y				50.0	25.0	ug/L
G7-D-100512	A12J175-02	Arsenic	10/19/2012	7.04		Yes	Y				2.00	0.500	ug/L
G7-D-100512	A12J175-02	Nickel	10/19/2012	4.5		Yes	Y				2.00	0.500	ug/L
G7-D-100512	A12J175-02	Potassium	10/19/2012	3140		Yes	Y				200	50.0	ug/L
G7-D-100512	A12J175-02	Aluminum	10/19/2012	571		Yes	Y				50.0	25.0	ug/L
G7-D-100512	A12J175-02	Copper	10/19/2012	2.79		Yes	Y				2.00	1.00	ug/L
G7-D-100512	A12J175-02	Calcium	10/19/2012	97600		No	Y	D			1000	500	ug/L
G7-D-100512	A12J175-02	Sodium	10/19/2012	127		Yes	Y	D			1.00	0.500	mg/L
G7-D-100512	A12J175-02	Manganese	10/19/2012	3480		Yes	Y	D			10.0	5.00	ug/L
RB-01-100512	A12J175-09	Zinc	10/19/2012	4		Yes	N	U			4.00	2.00	ug/L
RB-01-100512	A12J175-09	Thallium	10/19/2012	1		Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Selenium	10/19/2012	2		Yes	N	U			2.00	1.00	ug/L
RB-01-100512	A12J175-09	Sodium	10/19/2012	258		Yes	Y				100	50.0	ug/L
RB-01-100512	A12J175-09	Arsenic	10/19/2012	0.511		Yes	Y	J			2.00	0.500	ug/L
RB-01-100512	A12J175-09	Silver	10/19/2012	1		Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Aluminum	10/19/2012	50		Yes	N	U			50.0	25.0	ug/L
RB-01-100512	A12J175-09	Antimony	10/19/2012	1		Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Calcium	10/19/2012	100		Yes	N	U			100	50.0	ug/L
RB-01-100512	A12J175-09	Copper	10/19/2012	2		Yes	N	U			2.00	1.00	ug/L
RB-01-100512	A12J175-09	Lead	10/19/2012	1		Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Magnesium	10/19/2012	50		Yes	N	U			50.0	25.0	ug/L
RB-01-100512	A12J175-09	Chromium	10/19/2012	0.578		Yes	Y	J			4.00	0.500	ug/L
RB-01-100512	A12J175-09	Manganese	10/19/2012	1		Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Iron	10/19/2012	200		Yes	N	U			200	25.0	ug/L
RB-01-100512	A12J175-09	Cadmium	10/19/2012	1		Yes	N	U			1.00	0.500	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RB-01-100512	A12J175-09	Mercury	10/19/2012	0.08	Yes	N	U			0.0800	0.0400	ug/L
RB-01-100512	A12J175-09	Nickel	10/19/2012	2	Yes	N	U			2.00	0.500	ug/L
RB-01-100512	A12J175-09	Beryllium	10/19/2012	1	Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Potassium	10/19/2012	200	Yes	N	U			200	50.0	ug/L
RB-01-100512	A12J175-09	Cadmium	10/19/2012	1	Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Beryllium	10/19/2012	1	Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Silver	10/19/2012	1	Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Chromium	10/19/2012	4	Yes	N	U			4.00	0.500	ug/L
RB-01-100512	A12J175-09	Arsenic	10/19/2012	2	Yes	N	U			2.00	0.500	ug/L
RB-01-100512	A12J175-09	Antimony	10/19/2012	1	Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Copper	10/19/2012	2	Yes	N	U			2.00	1.00	ug/L
RB-01-100512	A12J175-09	Calcium	10/19/2012	100	No	N	U			100	50.0	ug/L
RB-01-100512	A12J175-09	Lead	10/19/2012	1	Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Potassium	10/19/2012	200	Yes	N	U			200	50.0	ug/L
RB-01-100512	A12J175-09	Selenium	10/19/2012	2	Yes	N	U			2.00	1.00	ug/L
RB-01-100512	A12J175-09	Nickel	10/19/2012	2	Yes	N	U			2.00	0.500	ug/L
RB-01-100512	A12J175-09	Mercury	10/19/2012	0.08	Yes	N	U			0.0800	0.0400	ug/L
RB-01-100512	A12J175-09	Sodium	10/19/2012	0.1	Yes	N	U			0.100	0.0500	mg/L
RB-01-100512	A12J175-09	Iron	10/19/2012	200	Yes	N	U			200	25.0	ug/L
RB-01-100512	A12J175-09	Manganese	10/19/2012	1	Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Thallium	10/19/2012	1	Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Aluminum	10/19/2012	50	Yes	N	U			50.0	25.0	ug/L
RB-01-100512	A12J175-09	Zinc	10/19/2012	4.42	Yes	Y				4.00	2.00	ug/L
RB-01-100512	A12J175-09	Magnesium	10/19/2012	50	No	N	U			50.0	25.0	ug/L
RLSW-2-100512	A12J175-06	Chromium	10/19/2012	1.51	Yes	Y	D J			4.00	1.00	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-2-100512	A12J175-06	Manganese	10/19/2012	164	Yes	Y	D			2.00	1.00	ug/L
RLSW-2-100512	A12J175-06	Iron	10/19/2012	555	Yes	Y	D			100	50.0	ug/L
RLSW-2-100512	A12J175-06	Aluminum	10/19/2012	1310	Yes	Y	D			100	50.0	ug/L
RLSW-2-100512	A12J175-06	Arsenic	10/19/2012	6.11	Yes	Y	D			4.00	1.00	ug/L
RLSW-2-100512	A12J175-06	Calcium	10/19/2012	14400	Yes	Y	D			200	100	ug/L
RLSW-2-100512	A12J175-06	Potassium	10/19/2012	2090	Yes	Y	D			200	100	ug/L
RLSW-2-100512	A12J175-06	Copper	10/19/2012	8.36	Yes	Y	D			4.00	2.00	ug/L
RLSW-2-100512	A12J175-06	Nickel	10/19/2012	9.67	Yes	Y	D			4.00	1.00	ug/L
RLSW-2-100512	A12J175-06	Arsenic	10/19/2012	6.07	Yes	Y	D			4.00	1.00	ug/L
RLSW-2-100512	A12J175-06	Copper	10/19/2012	18.7	Yes	Y	D			4.00	2.00	ug/L
RLSW-2-100512	A12J175-06	Potassium	10/19/2012	1830	Yes	Y	D			200	100	ug/L
RLSW-2-100512	A12J175-06	Nickel	10/19/2012	13.8	Yes	Y	D			4.00	1.00	ug/L
RLSW-2-100512	A12J175-06	Manganese	10/19/2012	219	Yes	Y	D			2.00	1.00	ug/L
RLSW-2-100512	A12J175-06	Iron	10/19/2012	1230	Yes	Y	D			100	50.0	ug/L
RLSW-2-100512	A12J175-06	Aluminum	10/19/2012	2120	Yes	Y	D			100	50.0	ug/L
RLSW-2-100512	A12J175-06	Calcium	10/19/2012	13700	No	Y	D			200	100	ug/L
RLSW-2-100512	A12J175-06	Chromium	10/19/2012	1.47	Yes	N	D J	U	7	4.00	1.00	ug/L
RLSW-2-100512	A12J175-06	Magnesium	10/19/2012	7060	Yes	Y	D			500	250	ug/L
RLSW-2-100512	A12J175-06	Sodium	10/19/2012	445000	Yes	Y	D			2000	500	ug/L
RLSW-2-100512	A12J175-06	Sodium	10/19/2012	374	Yes	Y	D			2.00	0.500	mg/L
RLSW-2-100512	A12J175-06	Magnesium	10/19/2012	6320	No	Y	D			500	250	ug/L
RLSW-3-100512	A12J175-07	Mercury	10/19/2012	0.16	Yes	N	D U			0.160	0.0800	ug/L
RLSW-3-100512	A12J175-07	Antimony	10/19/2012	2	Yes	N	D U			2.00	1.00	ug/L
RLSW-3-100512	A12J175-07	Potassium	10/19/2012	3970	Yes	Y	D			200	100	ug/L
RLSW-3-100512	A12J175-07	Calcium	10/19/2012	70000	No	Y	D			200	100	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-3-100512	A12J175-07	Zinc	10/19/2012	6.82		Yes	Y	D J			8.00	4.00	ug/L
RLSW-3-100512	A12J175-07	Copper	10/19/2012	4		Yes	N	D U			4.00	2.00	ug/L
RLSW-3-100512	A12J175-07	Chromium	10/19/2012	2.07		Yes	Y	D J			4.00	1.00	ug/L
RLSW-3-100512	A12J175-07	Cadmium	10/19/2012	2		Yes	N	D U			2.00	1.00	ug/L
RLSW-3-100512	A12J175-07	Arsenic	10/19/2012	6.04		Yes	Y	D			4.00	1.00	ug/L
RLSW-3-100512	A12J175-07	Selenium	10/19/2012	2.04		Yes	Y	D J			4.00	2.00	ug/L
RLSW-3-100512	A12J175-07	Thallium	10/19/2012	2		Yes	N	D U			2.00	1.00	ug/L
RLSW-3-100512	A12J175-07	Nickel	10/19/2012	4.58		Yes	Y	D			4.00	1.00	ug/L
RLSW-3-100512	A12J175-07	Manganese	10/19/2012	1270		Yes	Y	D			2.00	1.00	ug/L
RLSW-3-100512	A12J175-07	Lead	10/19/2012	2		Yes	N	D U			2.00	1.00	ug/L
RLSW-3-100512	A12J175-07	Iron	10/19/2012	25900		Yes	Y	D			100	50.0	ug/L
RLSW-3-100512	A12J175-07	Aluminum	10/19/2012	188		Yes	Y	D			100	50.0	ug/L
RLSW-3-100512	A12J175-07	Silver	10/19/2012	2		Yes	N	D U			2.00	1.00	ug/L
RLSW-3-100512	A12J175-07	Beryllium	10/19/2012	2		Yes	N	D U			2.00	1.00	ug/L
RLSW-3-100512	A12J175-07	Copper	10/19/2012	4		Yes	N	D U			4.00	2.00	ug/L
RLSW-3-100512	A12J175-07	Nickel	10/19/2012	4.73		Yes	Y	D			4.00	1.00	ug/L
RLSW-3-100512	A12J175-07	Potassium	10/19/2012	4400		Yes	Y	D			200	100	ug/L
RLSW-3-100512	A12J175-07	Selenium	10/19/2012	4		Yes	N	D U			4.00	2.00	ug/L
RLSW-3-100512	A12J175-07	Zinc	10/19/2012	5.31		Yes	Y	D J			8.00	4.00	ug/L
RLSW-3-100512	A12J175-07	Arsenic	10/19/2012	7.64		Yes	Y	D			4.00	1.00	ug/L
RLSW-3-100512	A12J175-07	Antimony	10/19/2012	2		Yes	N	D U			2.00	1.00	ug/L
RLSW-3-100512	A12J175-07	Mercury	10/19/2012	0.16		Yes	N	D U			0.160	0.0800	ug/L
RLSW-3-100512	A12J175-07	Silver	10/19/2012	2		Yes	N	D U			2.00	1.00	ug/L
RLSW-3-100512	A12J175-07	Calcium	10/19/2012	83000		Yes	Y	D			200	100	ug/L
RLSW-3-100512	A12J175-07	Lead	10/19/2012	5.22		Yes	Y	D			2.00	1.00	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-3-100512	A12J175-07	Iron	10/19/2012	37900	Yes	Y	D			100	50.0	ug/L
RLSW-3-100512	A12J175-07	Thallium	10/19/2012	2	Yes	N	D U			2.00	1.00	ug/L
RLSW-3-100512	A12J175-07	Chromium	10/19/2012	1.98	Yes	N	D J	U	7	4.00	1.00	ug/L
RLSW-3-100512	A12J175-07	Cadmium	10/19/2012	2	Yes	N	D U			2.00	1.00	ug/L
RLSW-3-100512	A12J175-07	Manganese	10/19/2012	1340	Yes	Y	D			2.00	1.00	ug/L
RLSW-3-100512	A12J175-07	Beryllium	10/19/2012	2	Yes	N	D U			2.00	1.00	ug/L
RLSW-3-100512	A12J175-07	Aluminum	10/19/2012	254	Yes	Y	D			100	50.0	ug/L
RLSW-3-100512	A12J175-07	Magnesium	10/19/2012	34900	Yes	Y	D			1000	500	ug/L
RLSW-3-100512	A12J175-07	Sodium	10/19/2012	304000	Yes	Y	D			4000	1000	ug/L
RLSW-3-100512	A12J175-07	Sodium	10/19/2012	296	Yes	Y	D			4.00	1.00	mg/L
RLSW-3-100512	A12J175-07	Magnesium	10/19/2012	40600	No	Y	D			1000	500	ug/L
SSA4-MW-01-100512	A12J175-03	Arsenic	10/19/2012	2.27	Yes	Y				2.00	0.500	ug/L
SSA4-MW-01-100512	A12J175-03	Calcium	10/19/2012	38200	Yes	Y				100	50.0	ug/L
SSA4-MW-01-100512	A12J175-03	Copper	10/19/2012	1.21	Yes	Y	J			2.00	1.00	ug/L
SSA4-MW-01-100512	A12J175-03	Chromium	10/19/2012	4	Yes	N	U			4.00	0.500	ug/L
SSA4-MW-01-100512	A12J175-03	Nickel	10/19/2012	6.69	Yes	Y				2.00	0.500	ug/L
SSA4-MW-01-100512	A12J175-03	Aluminum	10/19/2012	119	Yes	Y				50.0	25.0	ug/L
SSA4-MW-01-100512	A12J175-03	Iron	10/19/2012	1970	Yes	Y				200	25.0	ug/L
SSA4-MW-01-100512	A12J175-03	Sodium	10/19/2012	42100	Yes	Y				100	50.0	ug/L
SSA4-MW-01-100512	A12J175-03	Manganese	10/19/2012	1970	Yes	Y				1.00	0.500	ug/L
SSA4-MW-01-100512	A12J175-03	Potassium	10/19/2012	1690	Yes	Y				200	50.0	ug/L
SSA4-MW-01-100512	A12J175-03	Magnesium	10/19/2012	21500	Yes	Y				50.0	25.0	ug/L
SSA4-MW-01-100512	A12J175-03	Nickel	10/19/2012	6.63	Yes	Y				2.00	0.500	ug/L
SSA4-MW-01-100512	A12J175-03	Magnesium	10/19/2012	21200	No	Y				50.0	25.0	ug/L
SSA4-MW-01-100512	A12J175-03	Calcium	10/19/2012	37800	No	Y				100	50.0	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
SSA4-MW-01-100512	A12J175-03	Aluminum	10/19/2012	180	Yes	Y				50.0	25.0	ug/L
SSA4-MW-01-100512	A12J175-03	Manganese	10/19/2012	1950	Yes	Y				1.00	0.500	ug/L
SSA4-MW-01-100512	A12J175-03	Potassium	10/19/2012	1620	Yes	Y				200	50.0	ug/L
SSA4-MW-01-100512	A12J175-03	Sodium	10/19/2012	41.4	Yes	Y				0.100	0.0500	mg/L
SSA4-MW-01-100512	A12J175-03	Arsenic	10/19/2012	2.1	Yes	Y				2.00	0.500	ug/L
SSA4-MW-01-100512	A12J175-03	Chromium	10/19/2012	4	Yes	N	U			4.00	0.500	ug/L
SSA4-MW-01-100512	A12J175-03	Copper	10/19/2012	1.37	Yes	Y	J			2.00	1.00	ug/L
SSA4-MW-01-100512	A12J175-03	Iron	10/19/2012	2110	Yes	Y				200	25.0	ug/L
SSA6-MW-01-100512	A12J175-04	Manganese	10/19/2012	1750	Yes	Y				1.00	0.500	ug/L
SSA6-MW-01-100512	A12J175-04	Aluminum	10/19/2012	50	Yes	N	U			50.0	25.0	ug/L
SSA6-MW-01-100512	A12J175-04	Magnesium	10/19/2012	19800	Yes	Y				50.0	25.0	ug/L
SSA6-MW-01-100512	A12J175-04	Potassium	10/19/2012	2430	Yes	Y				200	50.0	ug/L
SSA6-MW-01-100512	A12J175-04	Nickel	10/19/2012	1.08	Yes	Y	J			2.00	0.500	ug/L
SSA6-MW-01-100512	A12J175-04	Sodium	10/19/2012	32300	Yes	Y				100	50.0	ug/L
SSA6-MW-01-100512	A12J175-04	Arsenic	10/19/2012	9.07	Yes	Y				2.00	0.500	ug/L
SSA6-MW-01-100512	A12J175-04	Chromium	10/19/2012	4	Yes	N	U			4.00	0.500	ug/L
SSA6-MW-01-100512	A12J175-04	Copper	10/19/2012	2	Yes	N	U			2.00	1.00	ug/L
SSA6-MW-01-100512	A12J175-04	Calcium	10/19/2012	35400	Yes	Y				100	50.0	ug/L
SSA6-MW-01-100512	A12J175-04	Iron	10/19/2012	14100	Yes	Y				200	25.0	ug/L
SSA6-MW-01-100512	A12J175-04	Magnesium	10/19/2012	20300	No	Y				50.0	25.0	ug/L
SSA6-MW-01-100512	A12J175-04	Calcium	10/19/2012	36400	No	Y				100	50.0	ug/L
SSA6-MW-01-100512	A12J175-04	Aluminum	10/19/2012	50	Yes	N	U			50.0	25.0	ug/L
SSA6-MW-01-100512	A12J175-04	Iron	10/19/2012	14200	Yes	Y				200	25.0	ug/L
SSA6-MW-01-100512	A12J175-04	Manganese	10/19/2012	1720	Yes	Y				1.00	0.500	ug/L
SSA6-MW-01-100512	A12J175-04	Nickel	10/19/2012	1.09	Yes	Y	J			2.00	0.500	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
SSA6-MW-01-100512	A12J175-04	Potassium	10/19/2012	2430	Yes	Y				200	50.0	ug/L
SSA6-MW-01-100512	A12J175-04	Sodium	10/19/2012	32.6	Yes	Y				0.100	0.0500	mg/L
SSA6-MW-01-100512	A12J175-04	Arsenic	10/19/2012	8.46	Yes	Y				2.00	0.500	ug/L
SSA6-MW-01-100512	A12J175-04	Chromium	10/19/2012	4	Yes	N	U			4.00	0.500	ug/L
SSA6-MW-01-100512	A12J175-04	Copper	10/19/2012	2	Yes	N	U			2.00	1.00	ug/L
SSA7-MW-01-100512	A12J175-05	Potassium	10/19/2012	3550	Yes	Y				200	50.0	ug/L
SSA7-MW-01-100512	A12J175-05	Aluminum	10/19/2012	66.3	Yes	Y				50.0	25.0	ug/L
SSA7-MW-01-100512	A12J175-05	Iron	10/19/2012	18900	Yes	Y				200	25.0	ug/L
SSA7-MW-01-100512	A12J175-05	Nickel	10/19/2012	3.43	Yes	Y				2.00	0.500	ug/L
SSA7-MW-01-100512	A12J175-05	Arsenic	10/19/2012	3.99	Yes	Y				2.00	0.500	ug/L
SSA7-MW-01-100512	A12J175-05	Chromium	10/19/2012	4	Yes	N	U			4.00	0.500	ug/L
SSA7-MW-01-100512	A12J175-05	Copper	10/19/2012	2	Yes	N	U			2.00	1.00	ug/L
SSA7-MW-01-100512	A12J175-05	Calcium	10/19/2012	38300	Yes	Y				100	50.0	ug/L
SSA7-MW-01-100512	A12J175-05	Magnesium	10/19/2012	15700	Yes	Y				50.0	25.0	ug/L
SSA7-MW-01-100512	A12J175-05	Manganese	10/19/2012	4370	Yes	Y	D			10.0	5.00	ug/L
SSA7-MW-01-100512	A12J175-05	Sodium	10/19/2012	221000	Yes	Y	D			1000	500	ug/L
SSA7-MW-01-100512	A12J175-05	Magnesium	10/19/2012	15700	No	Y				50.0	25.0	ug/L
SSA7-MW-01-100512	A12J175-05	Copper	10/19/2012	2	Yes	N	U			2.00	1.00	ug/L
SSA7-MW-01-100512	A12J175-05	Chromium	10/19/2012	4	Yes	N	U			4.00	0.500	ug/L
SSA7-MW-01-100512	A12J175-05	Arsenic	10/19/2012	4.11	Yes	Y				2.00	0.500	ug/L
SSA7-MW-01-100512	A12J175-05	Potassium	10/19/2012	3520	Yes	Y				200	50.0	ug/L
SSA7-MW-01-100512	A12J175-05	Nickel	10/19/2012	3.31	Yes	Y				2.00	0.500	ug/L
SSA7-MW-01-100512	A12J175-05	Iron	10/19/2012	19200	Yes	Y				200	25.0	ug/L
SSA7-MW-01-100512	A12J175-05	Calcium	10/19/2012	38900	No	Y				100	50.0	ug/L
SSA7-MW-01-100512	A12J175-05	Aluminum	10/19/2012	70.7	Yes	Y				50.0	25.0	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
SSA7-MW-01-100512	A12J175-05	Manganese	10/19/2012	4410	Yes	Y	D			10.0	5.00	ug/L
SSA7-MW-01-100512	A12J175-05	Sodium	10/19/2012	224	Yes	Y	D			1.00	0.500	mg/L
SSA7-MW-51-100512	A12J175-08	Copper	10/19/2012	2	Yes	N	U			2.00	1.00	ug/L
SSA7-MW-51-100512	A12J175-08	Aluminum	10/19/2012	66.9	Yes	Y				50.0	25.0	ug/L
SSA7-MW-51-100512	A12J175-08	Calcium	10/19/2012	38200	Yes	Y				100	50.0	ug/L
SSA7-MW-51-100512	A12J175-08	Chromium	10/19/2012	4	Yes	N	U			4.00	0.500	ug/L
SSA7-MW-51-100512	A12J175-08	Arsenic	10/19/2012	3.96	Yes	Y				2.00	0.500	ug/L
SSA7-MW-51-100512	A12J175-08	Potassium	10/19/2012	3540	Yes	Y				200	50.0	ug/L
SSA7-MW-51-100512	A12J175-08	Nickel	10/19/2012	3.29	Yes	Y				2.00	0.500	ug/L
SSA7-MW-51-100512	A12J175-08	Magnesium	10/19/2012	15800	Yes	Y				50.0	25.0	ug/L
SSA7-MW-51-100512	A12J175-08	Iron	10/19/2012	19200	Yes	Y				200	25.0	ug/L
SSA7-MW-51-100512	A12J175-08	Sodium	10/19/2012	222000	Yes	Y	D			1000	500	ug/L
SSA7-MW-51-100512	A12J175-08	Manganese	10/19/2012	4380	Yes	Y	D			10.0	5.00	ug/L
SSA7-MW-51-100512	A12J175-08	Calcium	10/19/2012	38700	No	Y				100	50.0	ug/L
SSA7-MW-51-100512	A12J175-08	Copper	10/19/2012	2	Yes	N	U			2.00	1.00	ug/L
SSA7-MW-51-100512	A12J175-08	Chromium	10/19/2012	4	Yes	N	U			4.00	0.500	ug/L
SSA7-MW-51-100512	A12J175-08	Arsenic	10/19/2012	3.92	Yes	Y				2.00	0.500	ug/L
SSA7-MW-51-100512	A12J175-08	Potassium	10/19/2012	3510	Yes	Y				200	50.0	ug/L
SSA7-MW-51-100512	A12J175-08	Nickel	10/19/2012	3.41	Yes	Y				2.00	0.500	ug/L
SSA7-MW-51-100512	A12J175-08	Aluminum	10/19/2012	67.4	Yes	Y				50.0	25.0	ug/L
SSA7-MW-51-100512	A12J175-08	Magnesium	10/19/2012	15600	No	Y				50.0	25.0	ug/L
SSA7-MW-51-100512	A12J175-08	Iron	10/19/2012	19200	Yes	Y				200	25.0	ug/L
SSA7-MW-51-100512	A12J175-08	Manganese	10/19/2012	4440	Yes	Y	D			10.0	5.00	ug/L
SSA7-MW-51-100512	A12J175-08	Sodium	10/19/2012	227	Yes	Y	D			1.00	0.500	mg/L

Analytical Method E300.0

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G4-D-100512	A12J175-01	Chloride (total)	10/8/2012	1.9	Yes	Y				1.00	1.00	mg/L
G4-D-100512	A12J175-01RE2	Sulfate	10/24/2012	1	Yes	N	U	UJ	9	1.00	1.00	mg/L
G7-D-100512	A12J175-02	Chloride (total)	10/8/2012	11.7	Yes	Y		J	8	1.00	1.00	mg/L
G7-D-100512	A12J175-02RE2	Sulfate	10/24/2012	1	Yes	N	U	UJ	9	1.00	1.00	mg/L
RB-01-100512	A12J175-09	Chloride (total)	10/9/2012	1	Yes	N	U			1.00	1.00	mg/L
RB-01-100512	A12J175-09	Sulfate	10/9/2012	1	Yes	N	U			1.00	1.00	mg/L
RLSW-2-100512	A12J175-06	Chloride (total)	10/9/2012	5.84	Yes	Y				1.00	1.00	mg/L
RLSW-2-100512	A12J175-06RE2	Sulfate	10/24/2012	64.4	Yes	Y	D	J	9	10.0	10.0	mg/L
RLSW-3-100512	A12J175-07	Sulfate	10/9/2012	1	Yes	N	U			1.00	1.00	mg/L
RLSW-3-100512	A12J175-07	Chloride (total)	10/9/2012	25.5	Yes	Y				1.00	1.00	mg/L
SSA4-MW-01-100512	A12J175-03	Chloride (total)	10/9/2012	6.62	Yes	Y				1.00	1.00	mg/L
SSA4-MW-01-100512	A12J175-03RE2	Sulfate	10/24/2012	46.4	Yes	Y	D	J	9	5.00	5.00	mg/L
SSA6-MW-01-100512	A12J175-04	Chloride (total)	10/9/2012	3.76	Yes	Y				1.00	1.00	mg/L
SSA6-MW-01-100512	A12J175-04	Sulfate	10/9/2012	1	Yes	N	U			1.00	1.00	mg/L
SSA7-MW-01-100512	A12J175-05	Sulfate	10/9/2012	1	Yes	N	U			1.00	1.00	mg/L
SSA7-MW-01-100512	A12J175-05	Chloride (total)	10/9/2012	9.85	Yes	Y				1.00	1.00	mg/L
SSA7-MW-51-100512	A12J175-08	Sulfate	10/9/2012	1	Yes	N	U			1.00	1.00	mg/L
SSA7-MW-51-100512	A12J175-08	Chloride (total)	10/9/2012	9.96	Yes	Y				1.00	1.00	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G4-D-100512	A12J175-01	Cyanide, total	10/8/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
G4-D-100512	A12J175-01	Cyanide, total	10/19/2012	0.0074	Yes	Y				0.00500	0.00500	mg/L
G7-D-100512	A12J175-02	Cyanide, total	10/8/2012	0.0185	Yes	Y				0.00500	0.00500	mg/L
G7-D-100512	A12J175-02	Cyanide, total	10/19/2012	0.0136	Yes	Y				0.00500	0.00500	mg/L
RB-01-100512	A12J175-09	Cyanide, total	10/8/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RB-01-100512	A12J175-09RE1	Cyanide, total	10/8/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
RLSW-2-100512	A12J175-06	Cyanide, total	10/8/2012	0.0324	Yes	Y				0.00500	0.00500	mg/L
RLSW-2-100512	A12J175-06	Cyanide, total	10/19/2012	0.0469	Yes	Y				0.00500	0.00500	mg/L
RLSW-3-100512	A12J175-07	Cyanide, total	10/8/2012	0.449	Yes	Y				0.00500	0.00500	mg/L
RLSW-3-100512	A12J175-07	Cyanide, total	10/19/2012	0.39	Yes	Y				0.00500	0.00500	mg/L
SSA4-MW-01-100512	A12J175-03	Cyanide, total	10/8/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
SSA4-MW-01-100512	A12J175-03	Cyanide, total	10/19/2012	0.0149	Yes	Y				0.00500	0.00500	mg/L
SSA6-MW-01-100512	A12J175-04	Cyanide, total	10/8/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
SSA6-MW-01-100512	A12J175-04	Cyanide, total	10/19/2012	0.006	Yes	Y				0.00500	0.00500	mg/L
SSA7-MW-01-100512	A12J175-05	Cyanide, total	10/8/2012	0.0793	Yes	Y				0.00500	0.00500	mg/L
SSA7-MW-01-100512	A12J175-05	Cyanide, total	10/19/2012	0.08	Yes	Y				0.00500	0.00500	mg/L
SSA7-MW-51-100512	A12J175-08	Cyanide, total	10/8/2012	0.0734	Yes	Y				0.00500	0.00500	mg/L
SSA7-MW-51-100512	A12J175-08	Cyanide, total	10/19/2012	0.08	Yes	Y				0.00500	0.00500	mg/L

Analytical Method NWTPHDx

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RB-01-100512	A12J175-09	Diesel Range Hydrocarbons	10/12/2012	0.11	Yes	Y	J			0.187	0.0935	mg/L
RB-01-100512	A12J175-09	Oil	10/12/2012	0.858	Yes	Y				0.374	0.187	mg/L
SSA6-MW-01-100512	A12J175-04	Diesel Range Hydrocarbons	10/12/2012	1.37	Yes	Y				0.187	0.0935	mg/L
SSA6-MW-01-100512	A12J175-04	Oil	10/12/2012	0.38	Yes	Y				0.374	0.187	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G4-D-100512	A12J175-01	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2012	720	Yes	Y				1.00	1.00	mg/L
G7-D-100512	A12J175-02	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2012	760	Yes	Y				1.00	1.00	mg/L
RB-01-100512	A12J175-09	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2012	1	Yes	N	U			1.00	1.00	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-2-100512	A12J175-06	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2012	690	Yes	Y				1.00	1.00	mg/L
RLSW-3-100512	A12J175-07	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2012	1050	Yes	Y				1.00	1.00	mg/L
SSA4-MW-01-100512	A12J175-03	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2012	200	Yes	Y				1.00	1.00	mg/L
SSA6-MW-01-100512	A12J175-04	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2012	235	Yes	Y				1.00	1.00	mg/L
SSA7-MW-01-100512	A12J175-05	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2012	640	Yes	Y				1.00	1.00	mg/L
SSA7-MW-51-100512	A12J175-08	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2012	640	Yes	Y				1.00	1.00	mg/L

Analytical Method SM2540C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G4-D-100512	A12J175-01	Total dissolved solids	10/15/2012	745	Yes	Y				10.0	10.0	mg/L
G7-D-100512	A12J175-02	Total dissolved solids	10/15/2012	806	Yes	Y				10.0	10.0	mg/L
RB-01-100512	A12J175-09	Total dissolved solids	10/15/2012	10	Yes	N	U			10.0	10.0	mg/L
RLSW-2-100512	A12J175-06	Total dissolved solids	10/15/2012	1170	Yes	Y				10.0	10.0	mg/L
RLSW-3-100512	A12J175-07	Total dissolved solids	10/15/2012	1250	Yes	Y				10.0	10.0	mg/L
SSA4-MW-01-100512	A12J175-03	Total dissolved solids	10/15/2012	386	Yes	Y				10.0	10.0	mg/L
SSA6-MW-01-100512	A12J175-04	Total dissolved solids	10/16/2012	346	Yes	Y				10.0	10.0	mg/L
SSA7-MW-01-100512	A12J175-05	Total dissolved solids	10/16/2012	831	Yes	Y				10.0	10.0	mg/L
SSA7-MW-51-100512	A12J175-08	Total dissolved solids	10/15/2012	839	Yes	Y				10.0	10.0	mg/L

Analytical Method SM2540D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G4-D-100512	A12J175-01	Total suspended solids	10/12/2012	134	Yes	Y				5.00	5.00	mg/L
G7-D-100512	A12J175-02	Total suspended solids	10/12/2012	197	Yes	Y				5.00	5.00	mg/L
RB-01-100512	A12J175-09	Total suspended solids	10/12/2012	5	Yes	N	U			5.00	5.00	mg/L
RLSW-2-100512	A12J175-06	Total suspended solids	10/12/2012	5	Yes	N	U			5.00	5.00	mg/L

Analytical Method SM2540D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-3-100512	A12J175-07	Total suspended solids	10/12/2012	120	Yes	Y				5.00	5.00	mg/L
SSA4-MW-01-100512	A12J175-03	Total suspended solids	10/12/2012	103	Yes	Y				5.00	5.00	mg/L
SSA6-MW-01-100512	A12J175-04	Total suspended solids	10/12/2012	25	Yes	Y				5.00	5.00	mg/L
SSA7-MW-01-100512	A12J175-05	Total suspended solids	10/12/2012	32	Yes	Y				5.00	5.00	mg/L
SSA7-MW-51-100512	A12J175-08	Total suspended solids	10/12/2012	43	Yes	Y				5.00	5.00	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G4-D-100512	A12J175-01	Cyanide, Weak acid dissociable (WAD)	10/12/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
G4-D-100512	A12J175-01	Cyanide, Weak acid dissociable (WAD)	10/18/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
G7-D-100512	A12J175-02	Cyanide, Weak acid dissociable (WAD)	10/12/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
G7-D-100512	A12J175-02	Cyanide, Weak acid dissociable (WAD)	10/18/2012	0.0113	Yes	Y				0.00500	0.00500	mg/L
RB-01-100512	A12J175-09	Cyanide, Weak acid dissociable (WAD)	10/12/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
RB-01-100512	A12J175-09	Cyanide, Weak acid dissociable (WAD)	10/18/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
RLSW-2-100512	A12J175-06	Cyanide, Weak acid dissociable (WAD)	10/12/2012	0.007	Yes	Y				0.00500	0.00500	mg/L
RLSW-2-100512	A12J175-06RE2	Cyanide, Weak acid dissociable (WAD)	10/18/2012	0.01	Yes	N	D U			0.0100	0.0100	mg/L
RLSW-3-100512	A12J175-07	Cyanide, Weak acid dissociable (WAD)	10/12/2012	0.0288	Yes	Y				0.00500	0.00500	mg/L
RLSW-3-100512	A12J175-07RE1	Cyanide, Weak acid dissociable (WAD)	10/18/2012	0.0371	Yes	Y				0.00500	0.00500	mg/L
SSA4-MW-01-100512	A12J175-03	Cyanide, Weak acid dissociable (WAD)	10/12/2012	0.0058	Yes	Y				0.00500	0.00500	mg/L
SSA4-MW-01-100512	A12J175-03	Cyanide, Weak acid dissociable (WAD)	10/18/2012	0.0053	Yes	Y				0.00500	0.00500	mg/L
SSA6-MW-01-100512	A12J175-04	Cyanide, Weak acid dissociable (WAD)	10/12/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
SSA6-MW-01-100512	A12J175-04	Cyanide, Weak acid dissociable (WAD)	10/18/2012	0.005	Yes	N	U			0.00500	0.00500	mg/L
SSA7-MW-01-100512	A12J175-05	Cyanide, Weak acid dissociable (WAD)	10/12/2012	0.0105	Yes	Y				0.00500	0.00500	mg/L
SSA7-MW-01-100512	A12J175-05	Cyanide, Weak acid dissociable (WAD)	10/18/2012	0.0121	Yes	Y				0.00500	0.00500	mg/L
SSA7-MW-51-100512	A12J175-08	Cyanide, Weak acid dissociable (WAD)	10/12/2012	0.0114	Yes	Y				0.00500	0.00500	mg/L
SSA7-MW-51-100512	A12J175-08	Cyanide, Weak acid dissociable (WAD)	10/18/2012	0.0112	Yes	Y				0.00500	0.00500	mg/L

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G4-D-100512	A12J175-01	Fluoride	10/8/2012	0.304	Yes	Y				0.100	0.100	mg/L
G4-D-100512	A12J175-01	Fluoride	10/12/2012	0.275	Yes	Y				0.100	0.100	mg/L
G7-D-100512	A12J175-02	Fluoride	10/8/2012	1.07	Yes	Y				0.100	0.100	mg/L
G7-D-100512	A12J175-02	Fluoride	10/12/2012	0.995	Yes	Y				0.100	0.100	mg/L
RB-01-100512	A12J175-09	Fluoride	10/8/2012	0.1	Yes	N	U			0.100	0.100	mg/L
RB-01-100512	A12J175-09	Fluoride	10/12/2012	0.1	Yes	N	U			0.100	0.100	mg/L
RLSW-2-100512	A12J175-06	Fluoride	10/8/2012	82.5	Yes	Y	D			2.50	2.50	mg/L
RLSW-2-100512	A12J175-06	Fluoride	10/12/2012	81.4	Yes	Y	D			0.500	0.500	mg/L
RLSW-3-100512	A12J175-07	Fluoride	10/8/2012	4.76	Yes	Y				0.100	0.100	mg/L
RLSW-3-100512	A12J175-07	Fluoride	10/12/2012	4.48	Yes	Y				0.100	0.100	mg/L
SSA4-MW-01-100512	A12J175-03	Fluoride	10/8/2012	3.93	Yes	Y				0.100	0.100	mg/L
SSA4-MW-01-100512	A12J175-03	Fluoride	10/12/2012	3.77	Yes	Y				0.100	0.100	mg/L
SSA6-MW-01-100512	A12J175-04	Fluoride	10/8/2012	1.5	Yes	Y				0.100	0.100	mg/L
SSA6-MW-01-100512	A12J175-04	Fluoride	10/12/2012	1.39	Yes	Y				0.100	0.100	mg/L
SSA7-MW-01-100512	A12J175-05	Fluoride	10/8/2012	12.9	Yes	Y				0.100	0.100	mg/L
SSA7-MW-01-100512	A12J175-05	Fluoride	10/12/2012	12.6	Yes	Y				0.100	0.100	mg/L
SSA7-MW-51-100512	A12J175-08	Fluoride	10/8/2012	12.6	Yes	Y				0.100	0.100	mg/L
SSA7-MW-51-100512	A12J175-08	Fluoride	10/12/2012	12.3	Yes	Y				0.100	0.100	mg/L

Analytical Method SM4500P

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G4-D-100512	A12J175-01	Phosphorus	10/11/2012	0.48	Yes	Y				0.100	0.0100	mg/L
G7-D-100512	A12J175-02	Phosphorus	10/11/2012	0.794	Yes	Y				0.100	0.0100	mg/L
RB-01-100512	A12J175-09	Phosphorus	10/16/2012	0.012	Yes	Y	J			0.100	0.0100	mg/L
RLSW-2-100512	A12J175-06	Phosphorus	10/11/2012	0.8	Yes	Y				0.100	0.0100	mg/L
RLSW-3-100512	A12J175-07	Phosphorus	10/16/2012	0.456	Yes	Y				0.100	0.0100	mg/L

Analytical Method SM4500P

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
SSA4-MW-01-100512	A12J175-03	Phosphorus	10/11/2012	0.122		Yes	Y				0.100	0.0100	mg/L
SSA6-MW-01-100512	A12J175-04	Phosphorus	10/11/2012	1.86		Yes	Y				0.100	0.0100	mg/L
SSA7-MW-01-100512	A12J175-05	Phosphorus	10/11/2012	1.51		Yes	Y				0.100	0.0100	mg/L
SSA7-MW-51-100512	A12J175-08	Phosphorus	10/16/2012	1.51		Yes	Y				0.100	0.0100	mg/L

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RB-01-100512	A12J175-09	Aroclor 1242	10/11/2012	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RB-01-100512	A12J175-09	Aroclor 1262	10/11/2012	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RB-01-100512	A12J175-09	Aroclor 1016	10/11/2012	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RB-01-100512	A12J175-09	Aroclor 1248	10/11/2012	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RB-01-100512	A12J175-09	Aroclor 1221	10/11/2012	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RB-01-100512	A12J175-09	Aroclor 1268	10/11/2012	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RB-01-100512	A12J175-09	Aroclor 1254	10/11/2012	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RB-01-100512	A12J175-09	Aroclor 1260	10/11/2012	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RB-01-100512	A12J175-09	Aroclor 1232	10/11/2012	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RLSW-3-100512	A12J175-07	Aroclor 1260	10/11/2012	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RLSW-3-100512	A12J175-07	Aroclor 1254	10/11/2012	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RLSW-3-100512	A12J175-07	Aroclor 1268	10/11/2012	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RLSW-3-100512	A12J175-07	Aroclor 1221	10/11/2012	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RLSW-3-100512	A12J175-07	Aroclor 1016	10/11/2012	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RLSW-3-100512	A12J175-07	Aroclor 1232	10/11/2012	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RLSW-3-100512	A12J175-07	Aroclor 1262	10/11/2012	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RLSW-3-100512	A12J175-07	Aroclor 1248	10/11/2012	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RLSW-3-100512	A12J175-07	Aroclor 1242	10/11/2012	0.0189		Yes	N	U			0.0189	0.00943	ug/L
SSA7-MW-01-100512	A12J175-05	Aroclor 1254	10/11/2012	0.0189		Yes	N	U			0.0189	0.00943	ug/L

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
SSA7-MW-01-100512	A12J175-05	Aroclor 1242	10/11/2012	0.0189	Yes	N	U			0.0189	0.00943	ug/L
SSA7-MW-01-100512	A12J175-05	Aroclor 1268	10/11/2012	0.0189	Yes	N	U			0.0189	0.00943	ug/L
SSA7-MW-01-100512	A12J175-05	Aroclor 1260	10/11/2012	0.0189	Yes	N	U			0.0189	0.00943	ug/L
SSA7-MW-01-100512	A12J175-05	Aroclor 1232	10/11/2012	0.0189	Yes	N	U			0.0189	0.00943	ug/L
SSA7-MW-01-100512	A12J175-05	Aroclor 1221	10/11/2012	0.0189	Yes	N	U			0.0189	0.00943	ug/L
SSA7-MW-01-100512	A12J175-05	Aroclor 1262	10/11/2012	0.0189	Yes	N	U			0.0189	0.00943	ug/L
SSA7-MW-01-100512	A12J175-05	Aroclor 1016	10/11/2012	0.0189	Yes	N	U			0.0189	0.00943	ug/L
SSA7-MW-01-100512	A12J175-05	Aroclor 1248	10/11/2012	0.0189	Yes	N	U			0.0189	0.00943	ug/L
SSA7-MW-51-100512	A12J175-08	Aroclor 1260	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
SSA7-MW-51-100512	A12J175-08	Aroclor 1254	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
SSA7-MW-51-100512	A12J175-08	Aroclor 1268	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
SSA7-MW-51-100512	A12J175-08	Aroclor 1221	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
SSA7-MW-51-100512	A12J175-08	Aroclor 1232	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
SSA7-MW-51-100512	A12J175-08	Aroclor 1248	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
SSA7-MW-51-100512	A12J175-08	Aroclor 1016	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
SSA7-MW-51-100512	A12J175-08	Aroclor 1262	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
SSA7-MW-51-100512	A12J175-08	Aroclor 1242	10/11/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RB-01-100512	A12J175-09	Bromochloromethane	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Carbon disulfide	10/6/2012	10	Yes	N	U			10.0	5.00	ug/L
RB-01-100512	A12J175-09	Benzene	10/6/2012	0.25	Yes	N	U			0.250	0.125	ug/L
RB-01-100512	A12J175-09	2-Butanone (MEK)	10/6/2012	10	Yes	N	U	UJ	5	10.0	5.00	ug/L
RB-01-100512	A12J175-09	Dichlorodifluoromethane	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	1,1-Dichloroethene	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RB-01-100512	A12J175-09	1,1-Dichloroethane	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RB-01-100512	A12J175-09	1,1,2-Trichloroethane	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RB-01-100512	A12J175-09	Bromoform (Tribromomethane)	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Trichloroethene (TCE)	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RB-01-100512	A12J175-09	Dichloromethane (Methylene chloride)	10/6/2012	5.86	Yes	Y				5.00	2.50	ug/L
RB-01-100512	A12J175-09	Vinyl chloride	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RB-01-100512	A12J175-09	Chloroethane	10/6/2012	5	Yes	N	U	UJ	5,10	5.00	5.00	ug/L
RB-01-100512	A12J175-09	Dibromomethane	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Bromomethane (Methyl Bromide)	10/6/2012	5	Yes	N	U			5.00	5.00	ug/L
RB-01-100512	A12J175-09	1,1,1-Trichloroethane	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RB-01-100512	A12J175-09	Bromodichloromethane	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	1,2,4-Trimethylbenzene	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Ethylbenzene	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RB-01-100512	A12J175-09	Chloromethane	10/6/2012	5	Yes	N	U			5.00	2.50	ug/L
RB-01-100512	A12J175-09	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/6/2012	5	Yes	N	U			5.00	2.50	ug/L
RB-01-100512	A12J175-09	Naphthalene	10/6/2012	2	Yes	N	U			2.00	1.00	ug/L
RB-01-100512	A12J175-09	o-Xylene	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RB-01-100512	A12J175-09	4-Isopropyltoluene (4-Cymene)	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	1,2-Dichlorobenzene	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RB-01-100512	A12J175-09	Trichlorofluoromethane (Fluorotrichloromethane)	10/6/2012	2	Yes	N	U			2.00	1.00	ug/L
RB-01-100512	A12J175-09	1,2-Dibromo-3-chloropropane	10/6/2012	5	Yes	N	U			5.00	2.50	ug/L
RB-01-100512	A12J175-09	1,2,3-Trichloropropane	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	tert-Butylbenzene	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Isopropylbenzene (Cumene)	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RB-01-100512	A12J175-09	1,2,3-Trichlorobenzene	10/6/2012	2		Yes	N	U			2.00	1.00	ug/L
RB-01-100512	A12J175-09	1,1,2,2-Tetrachloroethane	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RB-01-100512	A12J175-09	2-Chlorotoluene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	1,4-Dichlorobenzene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RB-01-100512	A12J175-09	1,2,4-Trichlorobenzene	10/6/2012	2		Yes	N	U			2.00	1.00	ug/L
RB-01-100512	A12J175-09	Chlorobenzene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RB-01-100512	A12J175-09	Toluene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Bromobenzene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RB-01-100512	A12J175-09	1,3,5-Trimethylbenzene (Mesitylene)	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/6/2012	10		Yes	N	U			10.0	5.00	ug/L
RB-01-100512	A12J175-09	Dibromochloromethane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Ethylene dibromide (1,2-Dibromoethane)	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RB-01-100512	A12J175-09	n-Butylbenzene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	4-Chlorotoluene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Chloroform	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	n-Propylbenzene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RB-01-100512	A12J175-09	1,2-Dichloropropane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	1,3-Dichloropropene, cis-	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Styrene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	1,2-Dichloroethane	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RB-01-100512	A12J175-09	1,3-Dichlorobenzene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RB-01-100512	A12J175-09	1,3-Dichloropropene, trans-	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Acetone	10/6/2012	20		Yes	N	U			20.0	10.0	ug/L
RB-01-100512	A12J175-09	2-Hexanone (Methyl butyl ketone)	10/6/2012	10		Yes	N	U			10.0	5.00	ug/L

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RB-01-100512	A12J175-09	Tetrachloroethene (PCE)	10/6/2012	1		Yes	N	U			1.00	1.00	ug/L
RB-01-100512	A12J175-09	Carbon tetrachloride (Tetrachloromethane)	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RB-01-100512	A12J175-09	2,2-Dichloropropane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	m,p-Xylene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	Methyl tert-butyl ether (MTBE)	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	1,2-Dichloroethene, trans-	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RB-01-100512	A12J175-09	1,2-Dichloroethene, cis-	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RB-01-100512	A12J175-09	1,1,1,2-Tetrachloroethane	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RB-01-100512	A12J175-09	1,3-Dichloropropane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	sec-Butylbenzene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RB-01-100512	A12J175-09	1,1-Dichloropropene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	1,2,4-Trichlorobenzene	10/6/2012	2		Yes	N	U			2.00	1.00	ug/L
RLSW-3-100512	A12J175-07	Dibromochloromethane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	Chlorobenzene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RLSW-3-100512	A12J175-07	sec-Butylbenzene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	1,3-Dichloropropane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	1,2-Dichloroethene, cis-	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RLSW-3-100512	A12J175-07	1,2-Dichloroethene, trans-	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RLSW-3-100512	A12J175-07	Methyl tert-butyl ether (MTBE)	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	1,3-Dichlorobenzene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RLSW-3-100512	A12J175-07	n-Butylbenzene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	Carbon tetrachloride (Tetrachloromethane)	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RLSW-3-100512	A12J175-07	1,1-Dichloropropene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	m,p-Xylene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-3-100512	A12J175-07	Bromobenzene	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RLSW-3-100512	A12J175-07	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/6/2012	10	Yes	N	U			10.0	5.00	ug/L
RLSW-3-100512	A12J175-07	1,2-Dichloroethane	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RLSW-3-100512	A12J175-07	Ethylene dibromide (1,2-Dibromoethane)	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RLSW-3-100512	A12J175-07	4-Chlorotoluene	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	n-Propylbenzene	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RLSW-3-100512	A12J175-07	1,3-Dichloropropene, trans-	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	1,3-Dichloropropene, cis-	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	Styrene	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	Ethylbenzene	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RLSW-3-100512	A12J175-07	Toluene	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	2-Hexanone (Methyl butyl ketone)	10/6/2012	10	Yes	N	U			10.0	5.00	ug/L
RLSW-3-100512	A12J175-07	1,4-Dichlorobenzene	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RLSW-3-100512	A12J175-07	1,2-Dichlorobenzene	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RLSW-3-100512	A12J175-07	1,2-Dichloropropane	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	2-Butanone (MEK)	10/6/2012	10	Yes	N	U	UJ	5	10.0	5.00	ug/L
RLSW-3-100512	A12J175-07	1,1,2-Trichloroethane	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RLSW-3-100512	A12J175-07	Trichloroethene (TCE)	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RLSW-3-100512	A12J175-07	1,1,2,2-Tetrachloroethane	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RLSW-3-100512	A12J175-07	1,2,3-Trichlorobenzene	10/6/2012	2	Yes	N	U			2.00	1.00	ug/L
RLSW-3-100512	A12J175-07	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/6/2012	5	Yes	N	U			5.00	2.50	ug/L
RLSW-3-100512	A12J175-07	Dichlorodifluoromethane	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	2,2-Dichloropropane	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	Naphthalene	10/6/2012	2	Yes	N	U			2.00	1.00	ug/L

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-3-100512	A12J175-07	1,2,4-Trimethylbenzene	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	1,2-Dibromo-3-chloropropane	10/6/2012	5	Yes	N	U			5.00	2.50	ug/L
RLSW-3-100512	A12J175-07	1,2,3-Trichloropropane	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	tert-Butylbenzene	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	Isopropylbenzene (Cumene)	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	4-Isopropyltoluene (4-Cymene)	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	1,3,5-Trimethylbenzene (Mesitylene)	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	o-Xylene	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RLSW-3-100512	A12J175-07	Bromomethane (Methyl Bromide)	10/6/2012	5	Yes	N	U			5.00	5.00	ug/L
RLSW-3-100512	A12J175-07	2-Chlorotoluene	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	1,1,1,2-Tetrachloroethane	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RLSW-3-100512	A12J175-07	Trichlorofluoromethane (Fluorotrichloromethane)	10/6/2012	2	Yes	N	U			2.00	1.00	ug/L
RLSW-3-100512	A12J175-07	Acetone	10/6/2012	20	Yes	N	U			20.0	10.0	ug/L
RLSW-3-100512	A12J175-07	Chloroform	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	1,1,1-Trichloroethane	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RLSW-3-100512	A12J175-07	Chloromethane	10/6/2012	5	Yes	N	U			5.00	2.50	ug/L
RLSW-3-100512	A12J175-07	Dibromomethane	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	Bromochloromethane	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	Bromodichloromethane	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	Benzene	10/6/2012	0.25	Yes	N	U			0.250	0.125	ug/L
RLSW-3-100512	A12J175-07	1,1-Dichloroethane	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RLSW-3-100512	A12J175-07	Chloroethane	10/6/2012	5	Yes	N	U	UJ	5,10	5.00	5.00	ug/L
RLSW-3-100512	A12J175-07	Bromoform (Tribromomethane)	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RLSW-3-100512	A12J175-07	Carbon disulfide	10/6/2012	10	Yes	N	U			10.0	5.00	ug/L
RLSW-3-100512	A12J175-07	Dichloromethane (Methylene chloride)	10/6/2012	5	Yes	N	U			5.00	2.50	ug/L

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-3-100512	A12J175-07	Vinyl chloride	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RLSW-3-100512	A12J175-07	1,1-Dichloroethene	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RLSW-3-100512	A12J175-07RE1	Tetrachloroethene (PCE)	10/8/2012	0.5	Yes	N	U			0.500	0.250	ug/L

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RB-01-100512	A12J175-09RE1	Isophorone	10/10/2012	0.0481	Yes	N	U			0.0481	0.0240	ug/L
RB-01-100512	A12J175-09RE1	Fluorene	10/10/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
RB-01-100512	A12J175-09RE1	N-Nitrosodiphenylamine	10/10/2012	0.0481	Yes	N	U			0.0481	0.0240	ug/L
RB-01-100512	A12J175-09RE1	Butylbenzyl phthalate	10/10/2012	0.962	Yes	N	U			0.962	0.481	ug/L
RB-01-100512	A12J175-09RE1	Phenanthrene	10/10/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
RB-01-100512	A12J175-09RE1	Di-n-butyl phthalate	10/10/2012	0.309	Yes	Y	J			0.385	0.192	ug/L
RB-01-100512	A12J175-09RE1	Diethyl phthalate	10/10/2012	0.0962	Yes	N	U			0.0962	0.0481	ug/L
RB-01-100512	A12J175-09RE1	Acenaphthene	10/10/2012	0.0192	Yes	N	U			0.0192	0.0192	ug/L
RB-01-100512	A12J175-09RE1	Hexachlorocyclopentadiene	10/10/2012	0.0962	Yes	N	U			0.0962	0.0481	ug/L
RB-01-100512	A12J175-09RE1	4-Chlorophenyl phenyl ether	10/10/2012	0.0481	Yes	N	U			0.0481	0.0240	ug/L
RB-01-100512	A12J175-09RE1	Hexachloroethane	10/10/2012	0.0481	Yes	N	U	UJ	10	0.0481	0.0240	ug/L
RB-01-100512	A12J175-09RE1	Benzoic acid	10/10/2012	1.22	Yes	Y	J	J	5	2.40	1.20	ug/L
RB-01-100512	A12J175-09RE1	N-Nitrosodi-N-propylamine	10/10/2012	0.0481	Yes	N	U			0.0481	0.0240	ug/L
RB-01-100512	A12J175-09RE1	N-Nitrosodimethylamine	10/10/2012	0.0481	Yes	N	U	UJ	10	0.0481	0.0240	ug/L
RB-01-100512	A12J175-09RE1	Aniline	10/10/2012	0.0962	Yes	N	U	UJ	10	0.0962	0.0481	ug/L
RB-01-100512	A12J175-09RE1	4-Chloro-3-methylphenol	10/10/2012	0.192	Yes	N	U			0.192	0.0962	ug/L
RB-01-100512	A12J175-09RE1	1,3-Dinitrobenzene	10/10/2012	0.481	Yes	N	U			0.481	0.240	ug/L
RB-01-100512	A12J175-09RE1	2,6-Dinitrotoluene	10/10/2012	0.192	Yes	N	U			0.192	0.0962	ug/L
RB-01-100512	A12J175-09RE1	2-Chloronaphthalene	10/10/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
RB-01-100512	A12J175-09RE1	2,4-Dinitrotoluene	10/10/2012	0.192	Yes	N	U			0.192	0.0962	ug/L

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RB-01-100512	A12J175-09RE1	3-Nitroaniline	10/10/2012	0.385	Yes	N	U	UJ	10	0.385	0.192	ug/L
RB-01-100512	A12J175-09RE1	2,3,4,6-Tetrachlorophenol	10/10/2012	0.0962	Yes	N	U			0.0962	0.0481	ug/L
RB-01-100512	A12J175-09RE1	2,4,5-Trichlorophenol	10/10/2012	0.0962	Yes	N	U			0.0962	0.0481	ug/L
RB-01-100512	A12J175-09RE1	2-Chlorophenol	10/10/2012	0.0962	Yes	N	U			0.0962	0.0481	ug/L
RB-01-100512	A12J175-09RE1	1,2-Dichlorobenzene	10/10/2012	0.0481	Yes	N	U	UJ	10	0.0481	0.0240	ug/L
RB-01-100512	A12J175-09RE1	2-Methylphenol (o-Cresol)	10/10/2012	0.0481	Yes	N	U			0.0481	0.0240	ug/L
RB-01-100512	A12J175-09RE1	2,3,5,6-Tetrachlorophenol	10/10/2012	0.0962	Yes	N	U			0.0962	0.0481	ug/L
RB-01-100512	A12J175-09RE1	Nitrobenzene	10/10/2012	0.192	Yes	N	U			0.192	0.0962	ug/L
RB-01-100512	A12J175-09RE1	3,3'-Dichlorobenzidine	10/10/2012	0.192	Yes	N	U	UJ	5,10	0.192	0.0962	ug/L
RB-01-100512	A12J175-09RE1	Carbazole	10/10/2012	0.0288	Yes	N	U			0.0288	0.0144	ug/L
RB-01-100512	A12J175-09RE1	2-Methylnaphthalene	10/10/2012	0.0207	Yes	Y	J			0.0385	0.0192	ug/L
RB-01-100512	A12J175-09RE1	Naphthalene	10/10/2012	0.0717	Yes	N		U	7	0.0385	0.0192	ug/L
RB-01-100512	A12J175-09RE1	1-Methylnaphthalene	10/10/2012	0.0385	Yes	N	U			0.0385	0.0192	ug/L
RB-01-100512	A12J175-09RE1	2-Nitrophenol	10/10/2012	0.192	Yes	N	U			0.192	0.0962	ug/L
RB-01-100512	A12J175-09RE1	2-Nitroaniline	10/10/2012	0.385	Yes	N	U			0.385	0.192	ug/L
RB-01-100512	A12J175-09RE1	2,4,6-Trichlorophenol	10/10/2012	0.0962	Yes	N	U			0.0962	0.0481	ug/L
RB-01-100512	A12J175-09RE1	Pentachlorophenol	10/10/2012	0.385	Yes	N	U			0.385	0.192	ug/L
RB-01-100512	A12J175-09RE1	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/10/2012	0.0481	Yes	N	U	UJ	10	0.0481	0.0240	ug/L
RB-01-100512	A12J175-09RE1	Benzidine	10/10/2012	0.481	Yes	N	U			0.481	0.240	ug/L
RB-01-100512	A12J175-09RE1	2,4-Dimethylphenol	10/10/2012	0.0962	Yes	N	U	UJ	10	0.0962	0.0481	ug/L
RB-01-100512	A12J175-09RE1	Dimethyl phthalate	10/10/2012	0.0962	Yes	N	U			0.0962	0.0481	ug/L
RB-01-100512	A12J175-09RE1	Di-n-octyl phthalate	10/10/2012	0.481	Yes	N	U			0.481	0.481	ug/L
RB-01-100512	A12J175-09RE1	Bis(2-ethylhexyl)phthalate	10/10/2012	0.69	Yes	Y	J			0.769	0.481	ug/L
RB-01-100512	A12J175-09RE1	bis(2-Chloroethoxy)methane	10/10/2012	0.0481	Yes	N	U			0.0481	0.0240	ug/L
RB-01-100512	A12J175-09RE1	bis(2-Chloroethyl)ether	10/10/2012	0.0481	Yes	N	U			0.0481	0.0240	ug/L

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RB-01-100512	A12J175-09RE1	Pyridine	10/10/2012	0.192	Yes	N	U	UJ	10	0.192	0.0962	ug/L
RB-01-100512	A12J175-09RE1	Phenol	10/10/2012	0.385	Yes	N	U	UJ	10	0.385	0.192	ug/L
RB-01-100512	A12J175-09RE1	Anthracene	10/10/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
RB-01-100512	A12J175-09RE1	1,4-Dichlorobenzene	10/10/2012	0.0481	Yes	N	U	UJ	10	0.0481	0.0240	ug/L
RB-01-100512	A12J175-09RE1	1,2,4-Trichlorobenzene	10/10/2012	0.0481	Yes	N	U			0.0481	0.0240	ug/L
RB-01-100512	A12J175-09RE1	Azobenzene	10/10/2012	0.0481	Yes	N	U			0.0481	0.0240	ug/L
RB-01-100512	A12J175-09RE1	bis(2-Ethylhexyl)adipate	10/10/2012	0.144	Yes	N	U			0.144	0.144	ug/L
RB-01-100512	A12J175-09RE1	4-Bromophenyl-phenyl ether	10/10/2012	0.0481	Yes	N	U			0.0481	0.0240	ug/L
RB-01-100512	A12J175-09RE1	Benzyl alcohol	10/10/2012	0.192	Yes	N	U			0.192	0.0962	ug/L
RB-01-100512	A12J175-09RE1	1,4-Dinitrobenzene	10/10/2012	0.481	Yes	N	U			0.481	0.240	ug/L
RB-01-100512	A12J175-09RE1	4-Nitrophenol	10/10/2012	0.192	Yes	N	U	UJ	10	0.192	0.0962	ug/L
RB-01-100512	A12J175-09RE1	4-Nitroaniline	10/10/2012	0.385	Yes	N	U	UJ	10	0.385	0.192	ug/L
RB-01-100512	A12J175-09RE1	4-Chloroaniline	10/10/2012	0.0481	Yes	N	U	UJ	10	0.0481	0.0240	ug/L
RB-01-100512	A12J175-09RE1	Benzo(k)fluoranthene	10/10/2012	0.0288	Yes	N	U			0.0288	0.0144	ug/L
RB-01-100512	A12J175-09RE1	1,3-Dichlorobenzene	10/10/2012	0.0481	Yes	N	U	UJ	10	0.0481	0.0240	ug/L
RB-01-100512	A12J175-09RE1	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	10/10/2012	0.481	Yes	N	U			0.481	0.240	ug/L
RB-01-100512	A12J175-09RE1	Dibenzo(a,h)anthracene	10/10/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
RB-01-100512	A12J175-09RE1	1,2-Dinitrobenzene	10/10/2012	0.481	Yes	N	U			0.481	0.240	ug/L
RB-01-100512	A12J175-09RE1	2,4-Dinitrophenol	10/10/2012	0.481	Yes	N	U			0.481	0.240	ug/L
RB-01-100512	A12J175-09RE1	Benzo(a)pyrene	10/10/2012	0.0288	Yes	N	U			0.0288	0.0144	ug/L
RB-01-100512	A12J175-09RE1	bis(2-Chloroisopropyl)ether	10/10/2012	0.0481	Yes	N	U			0.0481	0.0240	ug/L
RB-01-100512	A12J175-09RE1	Hexachlorobenzene	10/10/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
RB-01-100512	A12J175-09RE1	Acenaphthylene	10/10/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
RB-01-100512	A12J175-09RE1	Benzo(a)anthracene	10/10/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
RB-01-100512	A12J175-09RE1	Fluoranthene	10/10/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RB-01-100512	A12J175-09RE1	Benzo(b)fluoranthene	10/10/2012	0.0288	Yes	N	U			0.0288	0.0144	ug/L
RB-01-100512	A12J175-09RE1	Indeno(1,2,3-c,d)pyrene	10/10/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
RB-01-100512	A12J175-09RE1	Benzo(g,h,i)perylene	10/10/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
RB-01-100512	A12J175-09RE1	Dibenzofuran	10/10/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
RB-01-100512	A12J175-09RE1	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	10/10/2012	0.0481	Yes	N	U			0.0481	0.0240	ug/L
RB-01-100512	A12J175-09RE1	Pyrene	10/10/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
RB-01-100512	A12J175-09RE1	2,4-Dichlorophenol	10/10/2012	0.0962	Yes	N	U			0.0962	0.0481	ug/L
RB-01-100512	A12J175-09RE1	Chrysene	10/10/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
RLSW-3-100512	A12J175-07RE1	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	10/10/2012	0.0467	Yes	N	U			0.0467	0.0234	ug/L
RLSW-3-100512	A12J175-07RE1	4-Chloro-3-methylphenol	10/10/2012	0.187	Yes	N	U			0.187	0.0935	ug/L
RLSW-3-100512	A12J175-07RE1	Acenaphthylene	10/10/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
RLSW-3-100512	A12J175-07RE1	Acenaphthene	10/10/2012	0.013	Yes	Y	J			0.0187	0.00935	ug/L
RLSW-3-100512	A12J175-07RE1	Isophorone	10/10/2012	0.0256	Yes	Y	J			0.0467	0.0234	ug/L
RLSW-3-100512	A12J175-07RE1	Hexachlorocyclopentadiene	10/10/2012	0.0935	Yes	N	U			0.0935	0.0467	ug/L
RLSW-3-100512	A12J175-07RE1	4-Chlorophenyl phenyl ether	10/10/2012	0.0467	Yes	N	U			0.0467	0.0234	ug/L
RLSW-3-100512	A12J175-07RE1	Hexachloroethane	10/10/2012	0.0467	Yes	N	U	UJ	10	0.0467	0.0234	ug/L
RLSW-3-100512	A12J175-07RE1	Benzoic acid	10/10/2012	1.61	Yes	Y	J	J	5	2.34	1.17	ug/L
RLSW-3-100512	A12J175-07RE1	N-Nitrosodi-N-propylamine	10/10/2012	0.0467	Yes	N	U			0.0467	0.0234	ug/L
RLSW-3-100512	A12J175-07RE1	N-Nitrosodimethylamine	10/10/2012	0.0467	Yes	N	U	UJ	10	0.0467	0.0234	ug/L
RLSW-3-100512	A12J175-07RE1	Di-n-butyl phthalate	10/10/2012	0.277	Yes	Y	J			0.374	0.187	ug/L
RLSW-3-100512	A12J175-07RE1	2,6-Dinitrotoluene	10/10/2012	0.187	Yes	N	U			0.187	0.0935	ug/L
RLSW-3-100512	A12J175-07RE1	Phenanthrene	10/10/2012	0.0295	Yes	Y				0.0187	0.00935	ug/L
RLSW-3-100512	A12J175-07RE1	2,3,4,6-Tetrachlorophenol	10/10/2012	0.0935	Yes	N	U			0.0935	0.0467	ug/L
RLSW-3-100512	A12J175-07RE1	Benzo(a)anthracene	10/10/2012	0.0139	Yes	Y	J			0.0187	0.00935	ug/L

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-3-100512	A12J175-07RE1	1,3-Dichlorobenzene	10/10/2012	0.0467	Yes	N	U	UJ	10	0.0467	0.0234	ug/L
RLSW-3-100512	A12J175-07RE1	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	10/10/2012	0.467	Yes	N	U			0.467	0.234	ug/L
RLSW-3-100512	A12J175-07RE1	Dibenzo(a,h)anthracene	10/10/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
RLSW-3-100512	A12J175-07RE1	1,2-Dinitrobenzene	10/10/2012	0.467	Yes	N	U			0.467	0.234	ug/L
RLSW-3-100512	A12J175-07RE1	2,4-Dinitrophenol	10/10/2012	0.467	Yes	N	U			0.467	0.234	ug/L
RLSW-3-100512	A12J175-07RE1	Benzo(a)pyrene	10/10/2012	0.0163	Yes	Y	J			0.0280	0.0140	ug/L
RLSW-3-100512	A12J175-07RE1	bis(2-Chloroisopropyl)ether	10/10/2012	0.0467	Yes	N	U			0.0467	0.0234	ug/L
RLSW-3-100512	A12J175-07RE1	Chrysene	10/10/2012	0.0357	Yes	Y				0.0187	0.00935	ug/L
RLSW-3-100512	A12J175-07RE1	Aniline	10/10/2012	0.0935	Yes	N	U	UJ	10	0.0935	0.0467	ug/L
RLSW-3-100512	A12J175-07RE1	2-Methylnaphthalene	10/10/2012	0.0239	Yes	Y	J			0.0374	0.0187	ug/L
RLSW-3-100512	A12J175-07RE1	Pyrene	10/10/2012	0.0422	Yes	Y				0.0187	0.00935	ug/L
RLSW-3-100512	A12J175-07RE1	4-Nitroaniline	10/10/2012	0.374	Yes	N	U	UJ	10	0.374	0.187	ug/L
RLSW-3-100512	A12J175-07RE1	1,3-Dinitrobenzene	10/10/2012	0.467	Yes	N	U			0.467	0.234	ug/L
RLSW-3-100512	A12J175-07RE1	3-Nitroaniline	10/10/2012	0.374	Yes	N	U	UJ	10	0.374	0.187	ug/L
RLSW-3-100512	A12J175-07RE1	Nitrobenzene	10/10/2012	0.187	Yes	N	U			0.187	0.0935	ug/L
RLSW-3-100512	A12J175-07RE1	2,4,5-Trichlorophenol	10/10/2012	0.0935	Yes	N	U			0.0935	0.0467	ug/L
RLSW-3-100512	A12J175-07RE1	1,2-Dichlorobenzene	10/10/2012	0.0467	Yes	N	U	UJ	10	0.0467	0.0234	ug/L
RLSW-3-100512	A12J175-07RE1	2,3,5,6-Tetrachlorophenol	10/10/2012	0.0935	Yes	N	U			0.0935	0.0467	ug/L
RLSW-3-100512	A12J175-07RE1	Benzidine	10/10/2012	0.467	Yes	N	U			0.467	0.234	ug/L
RLSW-3-100512	A12J175-07RE1	Diethyl phthalate	10/10/2012	0.0935	Yes	N	U			0.0935	0.0467	ug/L
RLSW-3-100512	A12J175-07RE1	2-Chloronaphthalene	10/10/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
RLSW-3-100512	A12J175-07RE1	2-Methylphenol (o-Cresol)	10/10/2012	0.0467	Yes	N	U			0.0467	0.0234	ug/L
RLSW-3-100512	A12J175-07RE1	1-Methylnaphthalene	10/10/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RLSW-3-100512	A12J175-07RE1	2-Nitrophenol	10/10/2012	0.187	Yes	N	U			0.187	0.0935	ug/L
RLSW-3-100512	A12J175-07RE1	2-Nitroaniline	10/10/2012	0.374	Yes	N	U			0.374	0.187	ug/L

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-3-100512	A12J175-07RE1	2,4,6-Trichlorophenol	10/10/2012	0.0935	Yes	N	U			0.0935	0.0467	ug/L
RLSW-3-100512	A12J175-07RE1	Pentachlorophenol	10/10/2012	0.374	Yes	N	U			0.374	0.187	ug/L
RLSW-3-100512	A12J175-07RE1	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/10/2012	0.0467	Yes	N	U	UJ	10	0.0467	0.0234	ug/L
RLSW-3-100512	A12J175-07RE1	Carbazole	10/10/2012	0.0198	Yes	Y	J			0.0280	0.0140	ug/L
RLSW-3-100512	A12J175-07RE1	Fluorene	10/10/2012	0.0121	Yes	Y	J			0.0187	0.00935	ug/L
RLSW-3-100512	A12J175-07RE1	N-Nitrosodiphenylamine	10/10/2012	0.0467	Yes	N	U			0.0467	0.0234	ug/L
RLSW-3-100512	A12J175-07RE1	Butylbenzyl phthalate	10/10/2012	0.935	Yes	N	U			0.935	0.467	ug/L
RLSW-3-100512	A12J175-07RE1	3,3'-Dichlorobenzidine	10/10/2012	0.187	Yes	N	U	UJ	5,10	0.187	0.0935	ug/L
RLSW-3-100512	A12J175-07RE1	bis(2-Chloroethyl)ether	10/10/2012	0.0467	Yes	N	U			0.0467	0.0234	ug/L
RLSW-3-100512	A12J175-07RE1	4-Chloroaniline	10/10/2012	0.0467	Yes	N	U	UJ	10	0.0467	0.0234	ug/L
RLSW-3-100512	A12J175-07RE1	1,4-Dichlorobenzene	10/10/2012	0.0467	Yes	N	U	UJ	10	0.0467	0.0234	ug/L
RLSW-3-100512	A12J175-07RE1	1,4-Dinitrobenzene	10/10/2012	0.467	Yes	N	U			0.467	0.234	ug/L
RLSW-3-100512	A12J175-07RE1	2,4-Dimethylphenol	10/10/2012	0.0935	Yes	N	U	UJ	10	0.0935	0.0467	ug/L
RLSW-3-100512	A12J175-07RE1	Azobenzene	10/10/2012	0.0467	Yes	N	U			0.0467	0.0467	ug/L
RLSW-3-100512	A12J175-07RE1	bis(2-Ethylhexyl)adipate	10/10/2012	0.14	Yes	N	U			0.140	0.140	ug/L
RLSW-3-100512	A12J175-07RE1	4-Bromophenyl-phenyl ether	10/10/2012	0.0467	Yes	N	U			0.0467	0.0234	ug/L
RLSW-3-100512	A12J175-07RE1	Benzyl alcohol	10/10/2012	0.187	Yes	N	U			0.187	0.0935	ug/L
RLSW-3-100512	A12J175-07RE1	Benzo(k)fluoranthene	10/10/2012	0.028	Yes	N	U			0.0280	0.0140	ug/L
RLSW-3-100512	A12J175-07RE1	2-Chlorophenol	10/10/2012	0.0935	Yes	N	U			0.0935	0.0467	ug/L
RLSW-3-100512	A12J175-07RE1	Pyridine	10/10/2012	0.175	Yes	Y	J	J	10	0.187	0.0935	ug/L
RLSW-3-100512	A12J175-07RE1	bis(2-Chloroethoxy)methane	10/10/2012	0.0467	Yes	N	U			0.0467	0.0234	ug/L
RLSW-3-100512	A12J175-07RE1	Bis(2-ethylhexyl)phthalate	10/10/2012	0.981	Yes	Y				0.748	0.467	ug/L
RLSW-3-100512	A12J175-07RE1	Dimethyl phthalate	10/10/2012	0.0935	Yes	N	U			0.0935	0.0467	ug/L
RLSW-3-100512	A12J175-07RE1	Fluoranthene	10/10/2012	0.0728	Yes	Y				0.0187	0.00935	ug/L
RLSW-3-100512	A12J175-07RE1	Benzo(b)fluoranthene	10/10/2012	0.0434	Yes	Y				0.0280	0.0140	ug/L

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-3-100512	A12J175-07RE1	Indeno(1,2,3-c,d)pyrene	10/10/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
RLSW-3-100512	A12J175-07RE1	Benzo(g,h,i)perylene	10/10/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
RLSW-3-100512	A12J175-07RE1	Phenol	10/10/2012	0.374	Yes	N	U	UJ	10	0.374	0.187	ug/L
RLSW-3-100512	A12J175-07RE1	4-Nitrophenol	10/10/2012	0.187	Yes	N	U	UJ	10	0.187	0.0935	ug/L
RLSW-3-100512	A12J175-07RE1	Di-n-octyl phthalate	10/10/2012	0.467	Yes	N	U			0.467	0.467	ug/L
RLSW-3-100512	A12J175-07RE1	2,4-Dinitrotoluene	10/10/2012	0.187	Yes	N	U			0.187	0.0935	ug/L
RLSW-3-100512	A12J175-07RE1	2,4-Dichlorophenol	10/10/2012	0.0935	Yes	N	U			0.0935	0.0467	ug/L
RLSW-3-100512	A12J175-07RE1	1,2,4-Trichlorobenzene	10/10/2012	0.0467	Yes	N	U			0.0467	0.0234	ug/L
RLSW-3-100512	A12J175-07RE1	Anthracene	10/10/2012	0.0327	Yes	Y				0.0187	0.00935	ug/L
RLSW-3-100512	A12J175-07RE1	Hexachlorobenzene	10/10/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
RLSW-3-100512	A12J175-07RE1	Dibenzofuran	10/10/2012	0.0123	Yes	Y	J			0.0187	0.00935	ug/L
RLSW-3-100512	A12J175-07RE2	Naphthalene	10/12/2012	0.0288	Yes	Y	J			0.0388	0.0194	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
SSA4-MW-01-100512	A12J175-03	Anthracene	10/12/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
SSA4-MW-01-100512	A12J175-03	2-Methylnaphthalene	10/12/2012	0.0748	Yes	N	U	UJ	10	0.0748	0.0374	ug/L
SSA4-MW-01-100512	A12J175-03	Fluorene	10/12/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
SSA4-MW-01-100512	A12J175-03	Dibenzofuran	10/12/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
SSA4-MW-01-100512	A12J175-03	Benzo(g,h,i)perylene	10/12/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
SSA4-MW-01-100512	A12J175-03	Indeno(1,2,3-c,d)pyrene	10/12/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
SSA4-MW-01-100512	A12J175-03	Benzo(b)fluoranthene	10/12/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
SSA4-MW-01-100512	A12J175-03	Fluoranthene	10/12/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
SSA4-MW-01-100512	A12J175-03	Benzo(k)fluoranthene	10/12/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
SSA4-MW-01-100512	A12J175-03	Acenaphthylene	10/12/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
SSA4-MW-01-100512	A12J175-03	Chrysene	10/12/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
SSA4-MW-01-100512	A12J175-03	Benzo(a)pyrene	10/12/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
SSA4-MW-01-100512	A12J175-03	Dibenzo(a,h)anthracene	10/12/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
SSA4-MW-01-100512	A12J175-03	Benzo(a)anthracene	10/12/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
SSA4-MW-01-100512	A12J175-03	Pyrene	10/12/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
SSA4-MW-01-100512	A12J175-03	Phenanthrene	10/12/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
SSA4-MW-01-100512	A12J175-03	1-Methylnaphthalene	10/12/2012	0.0748	Yes	N	U	UJ	10	0.0748	0.0374	ug/L
SSA4-MW-01-100512	A12J175-03	Naphthalene	10/12/2012	0.0748	Yes	N	U	UJ	10	0.0748	0.0374	ug/L
SSA4-MW-01-100512	A12J175-03	Acenaphthene	10/12/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
SSA7-MW-01-100512	A12J175-05	Phenanthrene	10/12/2012	0.0232	Yes	Y	J			0.0385	0.0192	ug/L
SSA7-MW-01-100512	A12J175-05	Chrysene	10/12/2012	0.0385	Yes	N	U			0.0385	0.0192	ug/L
SSA7-MW-01-100512	A12J175-05	Anthracene	10/12/2012	0.0246	Yes	Y	J			0.0385	0.0192	ug/L
SSA7-MW-01-100512	A12J175-05	Pyrene	10/12/2012	0.0385	Yes	N	U			0.0385	0.0192	ug/L
SSA7-MW-01-100512	A12J175-05	Dibenzofuran	10/12/2012	0.0385	Yes	N	U			0.0385	0.0192	ug/L
SSA7-MW-01-100512	A12J175-05	Benzo(g,h,i)perylene	10/12/2012	0.0385	Yes	N	U			0.0385	0.0192	ug/L
SSA7-MW-01-100512	A12J175-05	Indeno(1,2,3-c,d)pyrene	10/12/2012	0.0385	Yes	N	U			0.0385	0.0192	ug/L
SSA7-MW-01-100512	A12J175-05	Benzo(b)fluoranthene	10/12/2012	0.0385	Yes	N	U			0.0385	0.0192	ug/L
SSA7-MW-01-100512	A12J175-05	Fluoranthene	10/12/2012	0.0385	Yes	N	U			0.0385	0.0192	ug/L
SSA7-MW-01-100512	A12J175-05	1-Methylnaphthalene	10/12/2012	0.0769	Yes	N	U	UJ	10	0.0769	0.0385	ug/L
SSA7-MW-01-100512	A12J175-05	Acenaphthylene	10/12/2012	0.0385	Yes	N	U			0.0385	0.0192	ug/L
SSA7-MW-01-100512	A12J175-05	2-Methylnaphthalene	10/12/2012	0.0769	Yes	N	U	UJ	10	0.0769	0.0385	ug/L
SSA7-MW-01-100512	A12J175-05	Benzo(a)pyrene	10/12/2012	0.0385	Yes	N	U			0.0385	0.0192	ug/L
SSA7-MW-01-100512	A12J175-05	Dibenzo(a,h)anthracene	10/12/2012	0.0385	Yes	N	U			0.0385	0.0192	ug/L
SSA7-MW-01-100512	A12J175-05	Benzo(a)anthracene	10/12/2012	0.0385	Yes	N	U			0.0385	0.0192	ug/L
SSA7-MW-01-100512	A12J175-05	Acenaphthene	10/12/2012	0.0385	Yes	N	U			0.0385	0.0192	ug/L
SSA7-MW-01-100512	A12J175-05	Fluorene	10/12/2012	0.0385	Yes	N	U			0.0385	0.0192	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
SSA7-MW-01-100512	A12J175-05	Naphthalene	10/12/2012	0.0549	Yes	Y	J	J	10	0.0769	0.0385	ug/L
SSA7-MW-01-100512	A12J175-05	Benzo(k)fluoranthene	10/12/2012	0.0385	Yes	N	U			0.0385	0.0192	ug/L
SSA7-MW-51-100512	A12J175-08	1-Methylnaphthalene	10/12/2012	0.0762	Yes	N	U	UJ	10	0.0762	0.0381	ug/L
SSA7-MW-51-100512	A12J175-08	Fluoranthene	10/12/2012	0.0381	Yes	N	U			0.0381	0.0190	ug/L
SSA7-MW-51-100512	A12J175-08	Acenaphthene	10/12/2012	0.0381	Yes	N	U			0.0381	0.0190	ug/L
SSA7-MW-51-100512	A12J175-08	Benzo(a)anthracene	10/12/2012	0.0381	Yes	N	U			0.0381	0.0190	ug/L
SSA7-MW-51-100512	A12J175-08	Dibenzo(a,h)anthracene	10/12/2012	0.0381	Yes	N	U			0.0381	0.0190	ug/L
SSA7-MW-51-100512	A12J175-08	Benzo(a)pyrene	10/12/2012	0.0381	Yes	N	U			0.0381	0.0190	ug/L
SSA7-MW-51-100512	A12J175-08	Chrysene	10/12/2012	0.0381	Yes	N	U			0.0381	0.0190	ug/L
SSA7-MW-51-100512	A12J175-08	Phenanthrene	10/12/2012	0.0381	Yes	N	U			0.0381	0.0190	ug/L
SSA7-MW-51-100512	A12J175-08	Benzo(k)fluoranthene	10/12/2012	0.0381	Yes	N	U			0.0381	0.0190	ug/L
SSA7-MW-51-100512	A12J175-08	Pyrene	10/12/2012	0.0381	Yes	N	U			0.0381	0.0190	ug/L
SSA7-MW-51-100512	A12J175-08	Benzo(b)fluoranthene	10/12/2012	0.0381	Yes	N	U			0.0381	0.0190	ug/L
SSA7-MW-51-100512	A12J175-08	Indeno(1,2,3-c,d)pyrene	10/12/2012	0.0381	Yes	N	U			0.0381	0.0190	ug/L
SSA7-MW-51-100512	A12J175-08	Benzo(g,h,i)perylene	10/12/2012	0.0381	Yes	N	U			0.0381	0.0190	ug/L
SSA7-MW-51-100512	A12J175-08	Dibenzofuran	10/12/2012	0.0381	Yes	N	U			0.0381	0.0190	ug/L
SSA7-MW-51-100512	A12J175-08	Anthracene	10/12/2012	0.028	Yes	Y	J			0.0381	0.0190	ug/L
SSA7-MW-51-100512	A12J175-08	2-Methylnaphthalene	10/12/2012	0.0762	Yes	N	U	UJ	10	0.0762	0.0381	ug/L
SSA7-MW-51-100512	A12J175-08	Acenaphthylene	10/12/2012	0.0381	Yes	N	U			0.0381	0.0190	ug/L
SSA7-MW-51-100512	A12J175-08	Naphthalene	10/12/2012	0.0762	Yes	N	U	UJ	10	0.0762	0.0381	ug/L
SSA7-MW-51-100512	A12J175-08	Fluorene	10/12/2012	0.0381	Yes	N	U			0.0381	0.0190	ug/L

LDC Report# 29076D1

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 22, 2012
LDC Report Date:	January 24, 2013
Matrix:	Soil
Parameters:	Volatiles
Validation Level:	Stage 2B
Laboratory:	Apex Laboratories, LLC
Sample Delivery Group (SDG):	A12J576

Sample Identification

AQ-BMD-01-4-5B
AQ-BMD-02-3.5-5.5B
AQ-BMD-03-4-6B
AQ-BMD-04-3-5B
AQ-BMD-05-3-5B
AQ-BMD-06-3.5-5.5B
AQ-BMD-07-1-3B
Trip Blank
AQ-BMD-01-4-5BDUP
AQ-BMD-07-1-3BMS
AQ-BMD-01-4-5BDUPRE

Introduction

This data review covers 11 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
10/23/12	Naphthalene	27.4	AQ-BMD-02-3.5-5.5B AQ-BMD-03-4-6B AQ-BMD-04-3-5B AQ-BMD-05-3-5B AQ-BMD-06-3.5-5.5B AQ-BMD-07-1-3B Trip Blank AQ-BMD-01-4-5BDUP AQ-BMD-07-1-3BMS 1210652-MB	J (all detects)	A

Date	Compound	%D	Associated Samples	Flag	A or P
10/24/12	Acetone	34.1	AQ-BMD-01-4-5B AQ-BMD-01-4-5BDUPRE	J (all detects) UJ (all non-detects)	A
	2-Hexanone	28.9	1210732-MB	J (all detects) UJ (all non-detects)	

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

All tentatively identified compounds were within validation criteria.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to calibration %D problems, data were qualified as estimated in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

Sample "Trip Blank" was identified as a trip blank. No volatile contaminants were found.

Millennium Bulk Terminals
Volatiles - Data Qualification Summary - SDG A12J576

SDG	Sample	Compound	Flag	A or P	Reason
A12J576	AQ-BMD-02-3.5-5.5B AQ-BMD-03-4-6B AQ-BMD-04-3-5B AQ-BMD-05-3-5B AQ-BMD-06-3.5-5.5B AQ-BMD-07-1-3B	Naphthalene	J (all detects)	A	Continuing calibration (%D)
A12J576	AQ-BMD-01-4-5B	Acetone 2-Hexanone	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)

Millennium Bulk Terminals
Volatiles - Laboratory Blank Data Qualification Summary - SDG A12J576

No Sample Data Qualified in this SDG

LDC #: 29076D1
SDG #: A12J576
Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Stage 2B

Date: 1/23/13
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/22/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 15/30, 1 2
IV.	Continuing calibration/ICV	SW	ICV ≤ 30 CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates /DUP	A/A	MS only (A12J576-03 MS/D)
VIII.	Laboratory control samples	A	LC 7
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	TB = 8

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

		SOIL	SOIL					
3	1 +1	2 = G AQ-BMD-01-4-5B	11 1	1210732	21		31	
7	2 -2	AQ-BMD-02-3.5-5.5B	12 -2	1210652	22		32	
12	3 -2	AQ-BMD-03-4-6B	13 1	# 9 RE	23		33	
16	4 +2	AQ-BMD-04-3-5B	14		24		34	
22	5 -2	AQ-BMD-05-3-5B	15		25		35	
27	6 -2	AQ-BMD-06-3.5-5.5B	16		26		36	
30	7 2	AQ-BMD-07-1-3B	17		27		37	
31	8 2	Trip Blank	18		28		38	
	9 2	AQ-BMD-01-4-5BDUP	19		29		39	
	10 7	AQ-BMD-07-1-3BMS	20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	WWW.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 29076D1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: FT
2nd Reviewer: OZ

METHOD: GC/MS VOA (EPA SW 846 Method 8260)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ≤~~25~~ 20 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤~~25.0~~ 20%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
+	10/23/12	C2102306-CCV	MMM	27.4		1210652-MB,	J+/A det
	14:33					2→10	
-	10/24/12	C2102402-CCV	F	34.1		1210732-MB,	J/UJ/A
-	13:12		Z	28.9		1, 13	

LDC Report# 29076D2a_RV1

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 22, 2012
LDC Report Date:	February 25, 2013
Matrix:	Soil
Parameters:	Semivolatiles
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J576

Sample Identification

AQ-BMD-03-2-8
AQ-BMD-03-2-8DUP

Introduction

This data review covers 2 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270D for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
10/29/12	Benzoic acid	32.3	All samples in SDG A12J576	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Compound	RPD (Limits)	Flag	A or P
AQ-BMD-03-2-8DUP (AQ-BMD-03-2-8)	Benzo(b)fluoranthene Chrysene	39 (≤35) 36 (≤35)	J (all detects) J (all detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID	Compound	%R (Limits)	Associated Samples	Flag	A or P
1210829-LCS	3,3'-Dichlorobenzidine	165 (50-150)	All samples in SDG A12J576	J (all detects)	P
1210829-LCS	4-Chloroaniline	47 (50-150)	All samples in SDG A12J576	J (all detects) UJ (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to calibration %D, Duplicate RPD, and LCS %R problems, data were qualified as estimated in one sample.

The quality control criteria reviewed were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Semivolatiles - Data Qualification Summary - SDG A12J576

SDG	Sample	Compound	Flag	A or P	Reason
A12J576	AQ-BMD-03-2-8	Benzoic acid	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
A12J576	AQ-BMD-03-2-8	Benzo(b)fluoranthene Chrysene	J (all detects) J (all detects)	A	Duplicate sample analysis (RPD)
A12J576	AQ-BMD-03-2-8	3,3'-Dichlorobenzidine	J (all detects)	P	Laboratory control samples (%R)
A12J576	AQ-BMD-03-2-8	4-Chloroaniline	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)

Millennium Bulk Terminals
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG A12J576

No Sample Data Qualified in this SDG

LDC #: 29076D2a **VALIDATION COMPLETENESS WORKSHEET** Date: 1/23/13
SDG #: A12J576 Stage 2B Page: 1 of 1
Laboratory: APEX Laboratories, LLC Reviewer: EF
2nd Reviewer: AL

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/22/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20, r^2
IV.	Continuing calibration/ICV	SW	ICV ≤ 30 CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates /DUP	N SW	
VIII.	Laboratory control samples	SW	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: 29

1	AQ-BMD-03-2-8	11	R10829	21		31	
2	AQ-BMD-03-2-8DUP	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1- Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU ~~Benzo(b+k)fluoranthene~~
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 29076 D2a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ≤20 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: <20.0%)	Finding RRF (Limit: >0.05)	Associated Samples	Qualifications
—	10/29/12 10:11	H10291202	PPP	32.3		All	J/UJ/A

CONCAL.2S

LDC#: 29076D2a

VALIDATION FINDINGS WORKSHEET

Laboratory Duplicates

Reviewer:
2nd Reviewer:

METHOD: GC/MS SVOA (EPA SW 846 Method 8270D)

Y N NA Were lab duplicate pairs identified in this SDG?

Y N NA Were target analytes detected in the lab duplicate pairs?

Compound	Concentration (ug/L)		≤35 RPD	
	1	2 Dup		
GGG	26500	17900	39	J/Adet
DDD	20000	13900	36	↓

V:\FIELD DUPLICATES\templates\29076D2a lab dup.wpd

LDC #: 29076D2a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FT
2nd Reviewer: CR

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?

Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		1210829-LCS	BBB	165 (50-152)	( )	( )	All	J/Pdet
			T	47 (✓)	( )	( )	✓	T/uT/P
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 22, 2012
LDC Report Date:	January 31, 2013
Matrix:	Soil
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J576

Sample Identification

AQ-BMD-01-2-5
AQ-BMD-02-1.5-5.5
AQ-BMD-04-1-7
AQ-BMD-05-1-6
AQ-BMD-06-1.5-5.5
AQ-BMD-07-1-3A

Introduction

This data review covers 6 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
1210831	10/29/12	Fluoranthene Phenanthrene Pyrene	5.20 ug/Kg 5.37 ug/Kg 3.92 ug/Kg	All samples in SDG A12J576

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
AQ-BMD-01-2-5 (200X)	Phenanthrene	5360 ug/Kg	5360U ug/Kg
AQ-BMD-07-1-3A (200X)	Phenanthrene	2950 ug/Kg	2950U ug/Kg

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. Surrogate recoveries (%R) were not within QC limits for sample AQ-BMD-04-1-7. Since the sample was diluted out, no data were qualified.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to method blank contamination problems, data were qualified as not detected in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A12J576

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A12J576

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
A12J576	AQ-BMD-01-2-5 (200X)	Phenanthrene	5360U ug/Kg	A
A12J576	AQ-BMD-07-1-3A (200X)	Phenanthrene	2950U ug/Kg	A

LDC #: 29076D2b **VALIDATION COMPLETENESS WORKSHEET** Date: 1/23/13
SDG #: A12J576 Stage 2B Page: 1 of 1
Laboratory: APEX Laboratories, LLC Reviewer: B
2nd Reviewer: JV

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/22/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV ≤ 30 CCV ≤ 20
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: SOIL

1	1	AQ-BMD-01-2-5	11	1210831	21		31	
8	2	AQ-BMD-02-1.5-5.5	12		22		32	
19	3	AQ-BMD-04-1-7	13		23		33	
24	4	AQ-BMD-05-1-6	14		24		34	
28	5	AQ-BMD-06-1.5-5.5	15		25		35	
29	6	AQ-BMD-07-1-3A	16		26		36	
	7		17		27		37	
	8		18		28		38	
	9		19		29		39	
	10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1- Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 29076026

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: FT
2nd Reviewer: CR

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a method blank analyzed for each matrix?
Y N N/A Was a method blank analyzed for each concentration preparation level?
Y N N/A Was a method blank associated with every sample?
Y N N/A Was the blank contaminated? If yes, please see qualification below.

Blank extraction date: 10/29/12 **Blank analysis date:** 10/30/12
Conc. units: ug/kg Associated Samples: All

Compound	Blank ID	Sample Identification								
	1210831	5X	1(200X)	6(200X)						
YY	5.20	26								
UU	5.37	26.85	5360/U	2950/U						
ZZ	3.92	19.6								

Blank extraction date:_____ **Blank analysis date:**_____
Conc. units:_____ Associated Samples:_____

Compound	Blank ID	Sample Identification								

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 29076D2b

VALIDATION FINDINGS WORKSHEET
Surrogate Recovery

Page: 1 of 1
Reviewer: FT
2nd Reviewer: OR

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were percent recoveries (%R) for surrogates within QC limits?
Y N N/A If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?
Y N N/A If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

#	Date	Sample ID	Surrogate	%R (Limits)	Qualifications
		3	TPH	165 (30-120)	no qual 320 x DL
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
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				( )	
				( )	
				( )	
				( )	
				( )	

* QC limits are advisory	QC Limits (Soil)	QC Limits (Water)		QC Limits (Soil)	QC Limits (Water)
S1 (NBZ) = Nitrobenzene-d5	23-120	35-114	S5 (2FP)= 2-Fluorophenol	25-121	21-100
S2 (FBP) = 2-Fluorobiphenyl	30-115	43-116	S6 (TBP) = 2,4,6-Tribromophenol	19-122	10-123
S3 (TPH) = Terphenyl-d14	18-137	33-141	S7 (2CP) = 2-Chlorophenol-d4	20-130*	33-110*
S4 (PHL) = Phenol-d5	24-113	10-94	S8 (DCB) = 1,2-Dichlorobenzene-d4	20-130*	16-110*

LDC Report# 29076D3b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 22, 2012
LDC Report Date:	January 25, 2013
Matrix:	Soil
Parameters:	Polychlorinated Biphenyls
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J576

Sample Identification

AQ-BMD-03-2-8

Introduction

This data review covers one soil sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082A for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

Raw data were not reviewed for this SDG.

XIII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XV. Field Duplicates

No field duplicates were identified in this SDG.

XVI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polychlorinated Biphenyls - Data Qualification Summary - SDG A12J576

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG A12J576

No Sample Data Qualified in this SDG

LDC #: 29076D3b

SDG #: A12J576

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/23/13

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/22/12
II.	GC/ECD Instrument Performance Check	ND	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	A	LCS
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	N	
XIII.	Compound quantitation/RL/LOQ/LODs	N	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

SOIL

1	AQ-BMD-03-2-8	11	121080 1	21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 22, 2012
LDC Report Date:	January 22, 2013
Matrix:	Soil
Parameters:	Metals
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J576

Sample Identification

AQ-BMD-01-4-5B
AQ-BMD-02-1.5-5.5
AQ-BMD-03-2-8
AQ-BMD-04-1-7
AQ-BMD-05-1-6
AQ-BMD-06-1.5-5.5
AQ-BMD-07-1-3A
AQ-BMD-07-1-3A(TCLP)
AQ-BMD-04-1-7MS
AQ-BMD-04-1-7DUP
AQ-BMD-07-1-3AMS
AQ-BMD-07-1-3A(TCLP)MS

Introduction

This data review covers 12 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010C and 6020 for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, and Zinc.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
AQ-BMD-04-1-7MS (AQ-BMD-04-1-7)	Copper	131 (75-125)	J (all detects)	A
AQ-BMD-04-1-7MS (AQ-BMD-04-1-7)	Nickel	63 (75-125)	J (all detects) UJ (all non-detects)	A

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this method.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS %R problems, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Metals - Data Qualification Summary - SDG A12J576

SDG	Sample	Analyte	Flag	A or P	Reason
A12J576	AQ-BMD-04-1-7	Copper	J (all detects)	A	Matrix spike (%R)
A12J576	AQ-BMD-04-1-7	Nickel	J (all detects) UJ (all non-detects)	A	Matrix spike (%R)

Millennium Bulk Terminals
Metals - Laboratory Blank Data Qualification Summary - SDG A12J576

No Sample Data Qualified in this SDG

LDC #: 29076D4

SDG #: A12J576

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/21/13

Page: 1 of 1

Reviewer: a

2nd Reviewer: ✓

METHOD: Metals (EPA SW846 Method 6010C/6020)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 10/22/12
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	SW	MS
VII.	Duplicate Sample Analysis	A	Dup
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Soil

1	AQ-BMD-01-4-5B	11	AQ-BMD-07-1-3AMS	21		31	
2	AQ-BMD-02-1.5-5.5	12	(#8) MS	22		32	
3	AQ-BMD-03-2-8	13		23		33	
4	AQ-BMD-04-1-7	14		24		34	
5	AQ-BMD-05-1-6	15		25		35	
6	AQ-BMD-06-1.5-5.5	16		26		36	
7	AQ-BMD-07-1-3A	17		27		37	
8	AQ-BMD-07-1-3A(TCLP)	18		28		38	
9	AQ-BMD-04-1-7MS	19		29		39	
10	AQ-BMD-04-1-7DUP	20		30		40	

Notes:

LDC #: 29016D4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer: ✓

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-7		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
8		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
QC9-11		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
12		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____

Comments: Mercury by CVAA if performed

LDC #: 29076D4

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: CR
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

Y N N/A Was a post digestion spike analyzed for ICP elements that did not meet the required criteria for matrix spike recovery?

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
		9	S	Cu	131	4 *	Jdet/A
				Ni	63	↓	J/UJ/A

Comments: * 2nd Client MS in batch within limits

MS.4SW

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 22, 2012
LDC Report Date:	February 25, 2013
Matrix:	Soil
Parameters:	Wet Chemistry
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J576

Sample Identification

AQ-BMD-01-2-5
AQ-BMD-02-1.5-5.5
AQ-BMD-03-2-8
AQ-BMD-04-1-7
AQ-BMD-05-1-6
AQ-BMD-06-1.5-5.5
AQ-BMD-07-1-3A
AQ-BMD-01-2-5DUP
AQ-BMD-05-1-6MS
AQ-BMD-05-1-6MSD
AQ-BMD-06-1.5-5.5MS
AQ-BMD-06-1.5-5.5DUP
AQ-BMD-07-1-3AMS

Introduction

This data review covers 13 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 9014 for Total Cyanide, Standard Method 4500-CN-I-E for Weak Acid Dissociable Cyanide, Standard Method 4500-F-C for Fluoride, and PSEP and Standard Method 5310B modified for Total Organic Carbon.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
AQ-BMD-01-2-5 AQ-BMD-02-1.5-5.5 AQ-BMD-03-2-8 AQ-BMD-04-1-7 AQ-BMD-05-1-6 AQ-BMD-06-1.5-5.5 AQ-BMD-07-1-3A AQ-BMD-01-2-5DUP	Total organic carbon	15 days	14 days	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
AQ-BMD-05-1-6MS (AQ-BMD-01-2-5 AQ-BMD-02-1.5-5.5 AQ-BMD-03-2-8 AQ-BMD-04-1-7 AQ-BMD-05-1-6 AQ-BMD-07-1-3A)	Total cyanide	20 (75-125)	J (all detects) R (all non-detects)	A
AQ-BMD-06-1.5-5.5MS (AQ-BMD-06-1.5-5.5)	Total cyanide	16 (75-125)	J (all detects) R (all non-detects)	A

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Analyte	RPD (Limits)	Difference (Limits)	Flag	A or P
AQ-BMD-05-1-6DUP (AQ-BMD-01-2-5 AQ-BMD-02-1.5-5.5 AQ-BMD-03-2-8 AQ-BMD-04-1-7 AQ-BMD-05-1-6 AQ-BMD-07-1-3A)	Total cyanide	23 (≤20)	-	J (all detects) UJ (all non-detects)	A
AQ-BMD-01-2-5DUP (All samples in SDG A12J576)	Total organic carbon	22 (≤20)	-	J (all detects) UJ (all non-detects)	A
AQ-BMD-06-1.5-5.5DUP (AQ-BMD-06-1.5-5.5)	Total cyanide	-	3.699 mg/Kg (≤0.586)	J (all detects) UJ (all non-detects)	A

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to holding time, MS %R, and Duplicate RPD and difference problems, data were qualified as estimated in seven samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A12J576

SDG	Sample	Analyte	Flag	A or P	Reason
A12J576	AQ-BMD-01-2-5 AQ-BMD-02-1.5-5.5 AQ-BMD-03-2-8 AQ-BMD-04-1-7 AQ-BMD-05-1-6 AQ-BMD-06-1.5-5.5 AQ-BMD-07-1-3A	Total organic carbon	J (all detects) UJ (all non-detects)	P	Technical holding times
A12J576	AQ-BMD-01-2-5 AQ-BMD-02-1.5-5.5 AQ-BMD-03-2-8 AQ-BMD-04-1-7 AQ-BMD-05-1-6 AQ-BMD-07-1-3A AQ-BMD-06-1.5-5.5	Total cyanide	J (all detects) R (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)
A12J576	AQ-BMD-01-2-5 AQ-BMD-02-1.5-5.5 AQ-BMD-03-2-8 AQ-BMD-04-1-7 AQ-BMD-05-1-6 AQ-BMD-07-1-3A	Total cyanide	J (all detects) UJ (all non-detects)	A	Duplicate sample analysis (RPD)
A12J576	AQ-BMD-01-2-5 AQ-BMD-02-1.5-5.5 AQ-BMD-03-2-8 AQ-BMD-04-1-7 AQ-BMD-05-1-6 AQ-BMD-06-1.5-5.5 AQ-BMD-07-1-3A	Total organic carbon	J (all detects) UJ (all non-detects)	A	Duplicate sample analysis (RPD)
A12J576	AQ-BMD-06-1.5-5.5	Total cyanide	J (all detects) UJ (all non-detects)	A	Duplicate sample analysis (Difference)

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A12J576

No Sample Data Qualified in this SDG

LDC #: 29076D6

SDG #: A12J576

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/21/13

Page: 1 of 1

Reviewer: CL

2nd Reviewer: V

METHOD: (Analyte) Total Cyanide,(EPA ~~Method 335.4~~ SW846 9014), WAD Cyanide(~~EPA SW846 Method 9013M~~/SM4500–CN-I-E), Fluoride, (SM4500-F-C), Total Organic Carbon (SM5310B) MOD PSEP

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 10/22/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	SW	MS ~~[illegible]~~
VI.	Duplicates	SW	Dup
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Soil

1	AQ-BMD-01-2-5	11	AQ-BMD-06-1.5-5.5MS	21		31	
2	AQ-BMD-02-1.5-5.5	12	AQ-BMD-06-1.5-5.5DUP	22		32	
3	AQ-BMD-03-2-8	13	AQ-BMD-07-1-3AMS	23		33	
4	AQ-BMD-04-1-7	14		24		34	
5	AQ-BMD-05-1-6	15		25		35	
6	AQ-BMD-06-1.5-5.5	16		26		36	
7	AQ-BMD-07-1-3A	17		27		37	
8	AQ-BMD-01-2-5DUP	18		28		38	
9	AQ-BMD-05-1-6MS	19		29		39	
10	AQ-BMD-05-1-6DUP	20		30		40	

Notes:

LDC #: 29076D6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Reviewer: CR
2nd reviewer: ✓

All circled methods are applicable to each sample.

Sample ID	Parameter
1-7	pH TDS Cl (F) NO_3 NO_2 SO_4 O-PO_4 Alk (CN) NH_3 TKN (TOC) Cr6+ ClO_4 (WADCN)
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
QC: 8	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN (TOC) Cr6+ ClO_4
9	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk (CN) NH_3 TKN TOC Cr6+ ClO_4
10	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk (CN) NH_3 TKN TOC Cr6+ ClO_4
11	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk (CN) NH_3 TKN TOC Cr6+ ClO_4
12	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk (CN) NH_3 TKN TOC Cr6+ ClO_4
13	pH TDS Cl (F) NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

LDC #: 29076D6

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page: 1 of 1
Reviewer: CR
2nd reviewer: ✓

All circled dates have exceeded the technical holding time.
Y N N/A Were all samples preserved as applicable to each method ?
Y N N/A Were all cooler temperatures within validation criteria?

Method:		SM5310B					
Parameters:		TOC					
Technical holding time:		14 days					
Sample ID	**Sampling date**	**Analysis date**	**Analysis date**	**Analysis date**	**Analysis date**	**Analysis date**	**Qualifier**
1-7, 8	10/22/12	11/6/12	(15 days)				J/UJ/P

LDC #: 29076D6

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: OZ
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of ~~75-125~~ ~~80-120~~ 75-125 (85-115% for Method 300.0)? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
		9	S	Total CN	20	~~AIT~~ 1-5, 7	J/R/A
		~~12~~ 11	S	Total CN	16	6	J/R/A

Comments: 13: F

MS.6

LDC #: 29076D6

VALIDATION FINDINGS WORKSHEET
Duplicate Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See [illegible]

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a duplicate sample analyzed for each matrix in this SDG?

Y N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for water and ≤ 35% for soil samples (≤ 10% for Method 300.0)? If no, see qualification below. A control limit of ±CRDL (±2X CRDL for soil) was used for samples that were ≤5X the CRDL, including when only one of the duplicate sample values were ≤5X the CRDL. If field blanks were used for laboratory duplicates, see overall assessment.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Duplicate ID	Matrix	Analyte	RPD (Limits)	Associated Samples	Qualifications
		10	S	Total CN	23 (≤20)	1-5, 7	J/UJ/A
		8	S	TOC	22 (≤20)	All	J/UJ/A
					Difference (limits)		
		12	S	Total CN	3.699 mg/kg (≤0.886)	6	J/UJ/A

Comments:

Analytical Method APEXsolids

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-01-2-5	A12J576-04	Total solids	10/25/2012	72.2	Yes	Y				1.00	1.00	pct
AQ-BMD-01-4-5B	A12J576-03	Total solids	10/25/2012	74.1	Yes	Y				1.00	1.00	pct
AQ-BMD-02-1.5-5.5	A12J576-08	Total solids	10/25/2012	75	Yes	Y				1.00	1.00	pct
AQ-BMD-02-3.5-5.5B	A12J576-07	Total solids	10/25/2012	75.2	Yes	Y				1.00	1.00	pct
AQ-BMD-03-2-8	A12J576-13	Total solids	10/25/2012	73.6	Yes	Y				1.00	1.00	pct
AQ-BMD-03-4-6B	A12J576-12	Total solids	10/25/2012	73.1	Yes	Y				1.00	1.00	pct
AQ-BMD-04-1-7	A12J576-19	Total solids	10/25/2012	76.4	Yes	Y				1.00	1.00	pct
AQ-BMD-04-3-5B	A12J576-16	Total solids	10/25/2012	79.4	Yes	Y				1.00	1.00	pct
AQ-BMD-05-1-6	A12J576-24	Total solids	10/25/2012	74.2	Yes	Y				1.00	1.00	pct
AQ-BMD-05-3-5B	A12J576-22	Total solids	10/25/2012	77.3	Yes	Y				1.00	1.00	pct
AQ-BMD-06-1.5-5.5	A12J576-28	Total solids	10/25/2012	74.1	Yes	Y				1.00	1.00	pct
AQ-BMD-06-3.5-5.5B	A12J576-27	Total solids	10/25/2012	77.6	Yes	Y				1.00	1.00	pct
AQ-BMD-07-1-3A	A12J576-29	Total solids	10/25/2012	67.5	Yes	Y				1.00	1.00	pct
AQ-BMD-07-1-3B	A12J576-30	Total solids	10/25/2012	70.1	Yes	Y				1.00	1.00	pct

Analytical Method SM4500CNE

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-01-2-5	A12J576-04RE1	Cyanide, total	10/26/2012	2.85	Yes	Y		J	8,9	0.310	0.310	mg/kg
AQ-BMD-02-1.5-5.5	A12J576-08RE1	Cyanide, total	10/26/2012	2.7	Yes	Y		J	8,9	0.299	0.299	mg/kg
AQ-BMD-03-2-8	A12J576-13RE1	Cyanide, total	10/26/2012	4.42	Yes	Y		J	8,9	0.304	0.304	mg/kg
AQ-BMD-04-1-7	A12J576-19	Cyanide, total	10/26/2012	34.2	Yes	Y	D	J	8,9	3.20	3.20	mg/kg
AQ-BMD-05-1-6	A12J576-24	Cyanide, total	10/26/2012	10.8	Yes	Y	D	J	8,9	1.28	1.28	mg/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Cyanide, total	10/30/2012	4.29	Yes	Y		J	8,9	0.298	0.298	mg/kg
AQ-BMD-07-1-3A	A12J576-29	Cyanide, total	10/26/2012	25.9	Yes	Y	D	J	8,9	3.50	3.50	mg/kg

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-01-2-5	A12J576-04	Cyanide, Weak acid dissociable (WAD)	10/26/2012	0.344		Yes	Y				0.310	0.310	mg/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Cyanide, Weak acid dissociable (WAD)	10/26/2012	0.857		Yes	Y				0.299	0.299	mg/kg
AQ-BMD-03-2-8	A12J576-13	Cyanide, Weak acid dissociable (WAD)	10/26/2012	2.56		Yes	Y				0.304	0.304	mg/kg
AQ-BMD-04-1-7	A12J576-19	Cyanide, Weak acid dissociable (WAD)	10/26/2012	5.89		Yes	Y				0.320	0.320	mg/kg
AQ-BMD-05-1-6	A12J576-24	Cyanide, Weak acid dissociable (WAD)	10/26/2012	7.09		Yes	Y				0.320	0.320	mg/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Cyanide, Weak acid dissociable (WAD)	10/30/2012	3.39		Yes	Y				0.298	0.298	mg/kg
AQ-BMD-07-1-3A	A12J576-29	Cyanide, Weak acid dissociable (WAD)	10/26/2012	8.86		Yes	Y				0.350	0.350	mg/kg

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-01-2-5	A12J576-04	Fluoride	11/1/2012	35700		Yes	Y	D			670	670	mg/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Fluoride	11/1/2012	41500		Yes	Y	D			647	647	mg/kg
AQ-BMD-03-2-8	A12J576-13	Fluoride	11/1/2012	44500		Yes	Y	D			656	656	mg/kg
AQ-BMD-04-1-7	A12J576-19	Fluoride	11/1/2012	31900		Yes	Y	D			605	605	mg/kg
AQ-BMD-05-1-6	A12J576-24	Fluoride	11/1/2012	46000		Yes	Y	D			673	673	mg/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Fluoride	11/1/2012	42500		Yes	Y	D			654	654	mg/kg
AQ-BMD-07-1-3A	A12J576-29	Fluoride	11/1/2012	47000		Yes	Y	D			723	723	mg/kg

Analytical Method SM5310B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-01-2-5	A12J576-04	Total organic carbon	11/6/2012	2200000		Yes	Y		J	1,9	200	100	mg/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Total organic carbon	11/6/2012	310000		Yes	Y		J	1,9	200	100	mg/kg
AQ-BMD-03-2-8	A12J576-13	Total organic carbon	11/6/2012	480000		Yes	Y		J	1,9	200	100	mg/kg
AQ-BMD-04-1-7	A12J576-19	Total organic carbon	11/6/2012	330000		Yes	Y		J	1,9	200	100	mg/kg
AQ-BMD-05-1-6	A12J576-24	Total organic carbon	11/6/2012	790000		Yes	Y		J	1,9	200	100	mg/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Total organic carbon	11/6/2012	2900000		Yes	Y		J	1,9	200	100	mg/kg
AQ-BMD-07-1-3A	A12J576-29	Total organic carbon	11/6/2012	4300000		Yes	Y		J	1,9	200	100	mg/kg

Analytical Method SW6010C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-01-2-5	A12J576-04	Beryllium	11/1/2012	8.58	Yes	Y	D			5.61	2.80	mg/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Beryllium	11/1/2012	12.6	Yes	Y	D			5.49	2.74	mg/kg
AQ-BMD-03-2-8	A12J576-13	Beryllium	11/1/2012	10.5	Yes	Y	D			5.78	2.89	mg/kg
AQ-BMD-04-1-7	A12J576-19	Beryllium	11/1/2012	8.9	Yes	Y	D			5.30	2.65	mg/kg
AQ-BMD-05-1-6	A12J576-24	Beryllium	11/1/2012	11	Yes	Y	D			5.52	2.76	mg/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Beryllium	11/1/2012	11.3	Yes	Y	D			5.82	2.91	mg/kg
AQ-BMD-07-1-3A	A12J576-29	Beryllium	11/1/2012	15.3	Yes	Y	D			6.41	3.21	mg/kg

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-01-2-5	A12J576-04	Chromium	11/1/2012	15.2	Yes	Y	D			2.80	1.40	mg/kg
AQ-BMD-01-2-5	A12J576-04	Selenium	11/1/2012	2.8	Yes	N	D U			2.80	1.40	mg/kg
AQ-BMD-01-2-5	A12J576-04	Copper	11/1/2012	134	Yes	Y	D			2.80	1.40	mg/kg
AQ-BMD-01-2-5	A12J576-04	Cadmium	11/1/2012	1.4	Yes	N	D U			1.40	0.701	mg/kg
AQ-BMD-01-2-5	A12J576-04	Arsenic	11/1/2012	3.71	Yes	Y	D			2.80	0.701	mg/kg
AQ-BMD-01-2-5	A12J576-04	Antimony	11/1/2012	1.4	Yes	N	D J U			1.40	0.701	mg/kg
AQ-BMD-01-2-5	A12J576-04	Thallium	11/1/2012	1.4	Yes	N	D U			1.40	0.701	mg/kg
AQ-BMD-01-2-5	A12J576-04	Silver	11/1/2012	1.4	Yes	N	D U			1.40	0.701	mg/kg
AQ-BMD-01-2-5	A12J576-04	Nickel	11/1/2012	121	Yes	Y	D			2.80	1.40	mg/kg
AQ-BMD-01-2-5	A12J576-04	Mercury	11/1/2012	0.112	Yes	N	D U			0.112	0.0561	mg/kg
AQ-BMD-01-2-5	A12J576-04	Lead	11/1/2012	11.3	Yes	Y	D			1.40	0.701	mg/kg
AQ-BMD-01-2-5	A12J576-04	Zinc	11/1/2012	30.2	Yes	Y	D			5.61	2.80	mg/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Mercury	11/1/2012	0.11	Yes	N	D U			0.110	0.0549	mg/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Cadmium	11/1/2012	1.37	Yes	N	D U			1.37	0.686	mg/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Silver	11/1/2012	1.37	Yes	N	D U			1.37	0.686	mg/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Thallium	11/1/2012	1.37	Yes	N	D U			1.37	0.686	mg/kg

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-02-1.5-5.5	A12J576-08	Antimony	11/1/2012	0.864	Yes	Y	D J			1.37	0.686	mg/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Arsenic	11/1/2012	4.09	Yes	Y	D			2.74	0.686	mg/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Copper	11/1/2012	257	Yes	Y	D			2.74	1.37	mg/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Selenium	11/1/2012	2.74	Yes	N	D U			2.74	1.37	mg/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Zinc	11/1/2012	36.1	Yes	Y	D			5.49	2.74	mg/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Nickel	11/1/2012	250	Yes	Y	D			2.74	1.37	mg/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Lead	11/1/2012	15.7	Yes	Y	D			1.37	0.686	mg/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Chromium	11/1/2012	21	Yes	Y	D			2.74	1.37	mg/kg
AQ-BMD-03-2-8	A12J576-13	Cadmium	11/1/2012	1.45	Yes	N	D U			1.45	0.723	mg/kg
AQ-BMD-03-2-8	A12J576-13	Lead	11/1/2012	13.6	Yes	Y	D			1.45	0.723	mg/kg
AQ-BMD-03-2-8	A12J576-13	Mercury	11/1/2012	0.0707	Yes	Y	D J			0.116	0.0578	mg/kg
AQ-BMD-03-2-8	A12J576-13	Nickel	11/1/2012	170	Yes	Y	D			2.89	1.45	mg/kg
AQ-BMD-03-2-8	A12J576-13	Arsenic	11/1/2012	3.63	Yes	Y	D			2.89	0.723	mg/kg
AQ-BMD-03-2-8	A12J576-13	Chromium	11/1/2012	22.1	Yes	Y	D			2.89	1.45	mg/kg
AQ-BMD-03-2-8	A12J576-13	Copper	11/1/2012	143	Yes	Y	D			2.89	1.45	mg/kg
AQ-BMD-03-2-8	A12J576-13	Zinc	11/1/2012	39.2	Yes	Y	D			5.78	2.89	mg/kg
AQ-BMD-03-2-8	A12J576-13	Selenium	11/1/2012	2.89	Yes	N	D U			2.89	1.45	mg/kg
AQ-BMD-03-2-8	A12J576-13	Silver	11/1/2012	1.45	Yes	N	D U			1.45	0.723	mg/kg
AQ-BMD-03-2-8	A12J576-13	Thallium	11/1/2012	1.45	Yes	N	D U			1.45	0.723	mg/kg
AQ-BMD-03-2-8	A12J576-13	Antimony	11/1/2012	1.45	Yes	N	D U			1.45	0.723	mg/kg
AQ-BMD-04-1-7	A12J576-19	Antimony	11/1/2012	1.32	Yes	N	D U			1.32	0.662	mg/kg
AQ-BMD-04-1-7	A12J576-19	Copper	11/1/2012	140	Yes	Y	D	J	8	2.65	1.32	mg/kg
AQ-BMD-04-1-7	A12J576-19	Zinc	11/1/2012	21.6	Yes	Y	D			5.30	2.65	mg/kg
AQ-BMD-04-1-7	A12J576-19	Chromium	11/1/2012	11.9	Yes	Y	D			2.65	1.32	mg/kg
AQ-BMD-04-1-7	A12J576-19	Arsenic	11/1/2012	2.29	Yes	Y	D J			2.65	0.662	mg/kg

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-04-1-7	A12J576-19	Thallium	11/1/2012	1.32	Yes	N	D U			1.32	0.662	mg/kg
AQ-BMD-04-1-7	A12J576-19	Silver	11/1/2012	1.32	Yes	N	D U			1.32	0.662	mg/kg
AQ-BMD-04-1-7	A12J576-19	Nickel	11/1/2012	143	Yes	Y	D	J	8	2.65	1.32	mg/kg
AQ-BMD-04-1-7	A12J576-19	Lead	11/1/2012	10.3	Yes	Y	D			1.32	0.662	mg/kg
AQ-BMD-04-1-7	A12J576-19	Mercury	11/1/2012	0.106	Yes	N	D U			0.106	0.0530	mg/kg
AQ-BMD-04-1-7	A12J576-19	Selenium	11/1/2012	2.65	Yes	N	D U			2.65	1.32	mg/kg
AQ-BMD-04-1-7	A12J576-19	Cadmium	11/1/2012	1.32	Yes	N	D U			1.32	0.662	mg/kg
AQ-BMD-05-1-6	A12J576-24	Antimony	11/1/2012	1.38	Yes	N	D U			1.38	0.690	mg/kg
AQ-BMD-05-1-6	A12J576-24	Thallium	11/1/2012	1.38	Yes	N	D U			1.38	0.690	mg/kg
AQ-BMD-05-1-6	A12J576-24	Lead	11/1/2012	11.7	Yes	Y	D			1.38	0.690	mg/kg
AQ-BMD-05-1-6	A12J576-24	Mercury	11/1/2012	0.11	Yes	N	D U			0.110	0.0552	mg/kg
AQ-BMD-05-1-6	A12J576-24	Nickel	11/1/2012	135	Yes	Y	D			2.76	1.38	mg/kg
AQ-BMD-05-1-6	A12J576-24	Cadmium	11/1/2012	1.38	Yes	N	D U			1.38	0.690	mg/kg
AQ-BMD-05-1-6	A12J576-24	Chromium	11/1/2012	16.6	Yes	Y	D			2.76	1.38	mg/kg
AQ-BMD-05-1-6	A12J576-24	Copper	11/1/2012	135	Yes	Y	D			2.76	1.38	mg/kg
AQ-BMD-05-1-6	A12J576-24	Zinc	11/1/2012	19.8	Yes	Y	D			5.52	2.76	mg/kg
AQ-BMD-05-1-6	A12J576-24	Selenium	11/1/2012	2.76	Yes	N	D U			2.76	1.38	mg/kg
AQ-BMD-05-1-6	A12J576-24	Arsenic	11/1/2012	2.79	Yes	Y	D			2.76	0.690	mg/kg
AQ-BMD-05-1-6	A12J576-24	Silver	11/1/2012	1.38	Yes	N	D U			1.38	0.690	mg/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Selenium	11/1/2012	2.91	Yes	N	D U			2.91	1.45	mg/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Thallium	11/1/2012	1.45	Yes	N	D U			1.45	0.727	mg/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Silver	11/1/2012	1.45	Yes	N	D U			1.45	0.727	mg/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Nickel	11/1/2012	202	Yes	Y	D			2.91	1.45	mg/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Mercury	11/1/2012	0.116	Yes	N	D U			0.116	0.0582	mg/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Lead	11/1/2012	14.5	Yes	Y	D			1.45	0.727	mg/kg

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-06-1.5-5.5	A12J576-28	Copper	11/1/2012	171	Yes	Y	D			2.91	1.45	mg/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Arsenic	11/1/2012	3.3	Yes	Y	D			2.91	0.727	mg/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Zinc	11/1/2012	23.6	Yes	Y	D			5.82	2.91	mg/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Chromium	11/1/2012	18.7	Yes	Y	D			2.91	1.45	mg/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Antimony	11/1/2012	1.45	Yes	N	D U			1.45	0.727	mg/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Cadmium	11/1/2012	1.45	Yes	N	D U			1.45	0.727	mg/kg
AQ-BMD-07-1-3A	A12J576-29	Thallium	11/1/2012	1.6	Yes	N	D U			1.60	0.802	mg/kg
AQ-BMD-07-1-3A	A12J576-29	Cadmium	11/1/2012	1.6	Yes	N	D U			1.60	0.802	mg/kg
AQ-BMD-07-1-3A	A12J576-29	Barium	11/1/2012	136	Yes	Y	D			1.60	0.802	mg/kg
AQ-BMD-07-1-3A	A12J576-29	Silver	11/1/2012	1.6	Yes	N	D U			1.60	0.802	mg/kg
AQ-BMD-07-1-3A	A12J576-29	Antimony	11/1/2012	0.962	Yes	Y	D J			1.60	0.802	mg/kg
AQ-BMD-07-1-3A	A12J576-29	Arsenic	11/1/2012	5.95	Yes	Y	D			3.21	0.802	mg/kg
AQ-BMD-07-1-3A	A12J576-29	Lead	11/1/2012	17.6	Yes	Y	D			1.60	0.802	mg/kg
AQ-BMD-07-1-3A	A12J576-29	Mercury	11/1/2012	0.07	Yes	Y	D J			0.128	0.0641	mg/kg
AQ-BMD-07-1-3A	A12J576-29	Nickel	11/1/2012	362	Yes	Y	D			3.21	1.60	mg/kg
AQ-BMD-07-1-3A	A12J576-29	Chromium	11/1/2012	24.4	Yes	Y	D			3.21	1.60	mg/kg
AQ-BMD-07-1-3A	A12J576-29	Copper	11/1/2012	244	Yes	Y	D			3.21	1.60	mg/kg
AQ-BMD-07-1-3A	A12J576-29	Zinc	11/1/2012	43.6	Yes	Y	D			6.41	3.21	mg/kg
AQ-BMD-07-1-3A	A12J576-29	Selenium	11/1/2012	3.21	Yes	N	D U			3.21	1.60	mg/kg
AQ-BMD-07-1-3A	A12J576-29	Chromium	11/20/2012	0.1	Yes	N	D U			0.100	0.0500	mg/L
AQ-BMD-07-1-3A	A12J576-29	Cadmium	11/20/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-BMD-07-1-3A	A12J576-29	Barium	11/20/2012	0.5	Yes	N	D U			0.500	0.250	mg/L
AQ-BMD-07-1-3A	A12J576-29	Arsenic	11/20/2012	0.1	Yes	N	D U			0.100	0.0500	mg/L
AQ-BMD-07-1-3A	A12J576-29	Silver	11/20/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-BMD-07-1-3A	A12J576-29	Mercury	11/20/2012	0.004	Yes	N	D U			0.00400	0.00250	mg/L

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-07-1-3A	A12J576-29	Lead	11/20/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-BMD-07-1-3A	A12J576-29	Selenium	11/20/2012	0.1	Yes	N	D U			0.100	0.0500	mg/L

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-03-2-8	A12J576-13	Aroclor 1242	10/29/2012	49.3	Yes	N	D U			49.3	24.7	ug/kg
AQ-BMD-03-2-8	A12J576-13	Aroclor 1232	10/29/2012	49.3	Yes	N	D U			49.3	24.7	ug/kg
AQ-BMD-03-2-8	A12J576-13	Aroclor 1221	10/29/2012	49.3	Yes	N	D U			49.3	24.7	ug/kg
AQ-BMD-03-2-8	A12J576-13	Aroclor 1262	10/29/2012	49.3	Yes	N	D U			49.3	24.7	ug/kg
AQ-BMD-03-2-8	A12J576-13	Aroclor 1260	10/29/2012	69.4	Yes	Y	D			49.3	24.7	ug/kg
AQ-BMD-03-2-8	A12J576-13	Aroclor 1254	10/29/2012	162	Yes	Y	D			49.3	24.7	ug/kg
AQ-BMD-03-2-8	A12J576-13	Aroclor 1268	10/29/2012	49.3	Yes	N	D U			49.3	24.7	ug/kg
AQ-BMD-03-2-8	A12J576-13	Aroclor 1248	10/29/2012	172	Yes	Y	D			49.3	24.7	ug/kg
AQ-BMD-03-2-8	A12J576-13	Aroclor 1016	10/29/2012	49.3	Yes	N	D U			49.3	24.7	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-01-4-5B	A12J576-03	Carbon disulfide	10/23/2012	897	Yes	N	D U			897	449	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Trichlorofluoromethane (Fluorotrichloromethane)	10/24/2012	179	Yes	N	D U			179	89.7	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	1,2,4-Trimethylbenzene	10/24/2012	89.7	Yes	N	D U			89.7	44.9	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	4-Isopropyltoluene (4-Cymene)	10/24/2012	89.7	Yes	N	D U			89.7	44.9	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Isopropylbenzene (Cumene)	10/24/2012	89.7	Yes	N	D U			89.7	44.9	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	tert-Butylbenzene	10/24/2012	89.7	Yes	N	D U			89.7	44.9	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	1,2,3-Trichloropropane	10/24/2012	89.7	Yes	N	D U			89.7	44.9	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	1,2-Dibromo-3-chloropropane	10/24/2012	449	Yes	N	D U			449	224	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Bromobenzene	10/24/2012	44.9	Yes	N	D U			44.9	24.5	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	1,1-Dichloropropene	10/24/2012	89.7	Yes	N	D U			89.7	44.9	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-01-4-5B	A12J576-03RE1	Carbon tetrachloride (Tetrachloromethane)	10/24/2012	44.9	Yes	N	D U			44.9	22.4	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	1,3-Dichlorobenzene	10/24/2012	44.9	Yes	N	D U			44.9	22.4	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	m,p-Xylene	10/24/2012	89.7	Yes	N	D U			89.7	44.9	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Methyl tert-butyl ether (MTBE)	10/24/2012	89.7	Yes	N	D U			89.7	53.6	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	1,2-Dichloroethene, trans-	10/24/2012	44.9	Yes	N	D U			44.9	22.4	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	1,2-Dichloroethene, cis-	10/24/2012	44.9	Yes	N	D U			44.9	22.4	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	1,2-Dichlorobenzene	10/24/2012	44.9	Yes	N	D U			44.9	22.4	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	sec-Butylbenzene	10/24/2012	89.7	Yes	N	D U			89.7	44.9	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	1,2-Dichloropropane	10/24/2012	44.9	Yes	N	D U			44.9	22.4	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Dibromochloromethane	10/24/2012	179	Yes	N	D U			179	89.7	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	1,2,4-Trichlorobenzene	10/24/2012	449	Yes	N	D U			449	224	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	2-Hexanone (Methyl butyl ketone)	10/24/2012	897	Yes	N	D U	UJ	5	897	449	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Toluene	10/24/2012	89.7	Yes	N	D U			89.7	44.9	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	1,3-Dichloropropane	10/24/2012	44.9	Yes	N	D U			44.9	22.4	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	1,3,5-Trimethylbenzene (Mesitylene)	10/24/2012	89.7	Yes	N	D U			89.7	44.9	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/24/2012	897	Yes	N	D U			897	449	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	1,2-Dichloroethane	10/24/2012	44.9	Yes	N	D U			44.9	22.4	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Ethylene dibromide (1,2-Dibromoethane)	10/24/2012	44.9	Yes	N	D U			44.9	27.2	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	1,4-Dichlorobenzene	10/24/2012	44.9	Yes	N	D U			44.9	22.4	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	4-Chlorotoluene	10/24/2012	89.7	Yes	N	D U			89.7	44.9	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	n-Butylbenzene	10/24/2012	89.7	Yes	N	D U			89.7	44.9	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	n-Propylbenzene	10/24/2012	44.9	Yes	N	D U			44.9	22.4	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	1,3-Dichloropropene, trans-	10/24/2012	89.7	Yes	N	D U			89.7	44.9	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	1,3-Dichloropropene, cis-	10/24/2012	89.7	Yes	N	D U			89.7	44.9	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-01-4-5B	A12J576-03RE1	Styrene	10/24/2012	89.7	Yes	N	D U			89.7	44.9	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Ethylbenzene	10/24/2012	44.9	Yes	N	D U			44.9	22.4	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Chlorobenzene	10/24/2012	44.9	Yes	N	D U			44.9	23.3	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	1,2,3-Trichlorobenzene	10/24/2012	897	Yes	N	D U			897	449	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	2-Chlorotoluene	10/24/2012	89.7	Yes	N	D U			89.7	44.9	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	o-Xylene	10/24/2012	44.9	Yes	N	D U			44.9	22.4	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Tetrachloroethene (PCE)	10/24/2012	44.9	Yes	N	D U			44.9	22.4	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/24/2012	179	Yes	N	D U			179	89.7	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	2,2-Dichloropropane	10/24/2012	89.7	Yes	N	D U			89.7	44.9	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	1,1,2,2-Tetrachloroethane	10/24/2012	44.9	Yes	N	D U			44.9	22.4	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Trichloroethene (TCE)	10/24/2012	44.9	Yes	N	D U			44.9	32.5	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	1,1,2-Trichloroethane	10/24/2012	44.9	Yes	N	D U			44.9	22.4	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	2-Butanone (MEK)	10/24/2012	897	Yes	N	D U			897	449	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Dichlorodifluoromethane	10/24/2012	179	Yes	N	D U			179	89.7	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	1,1-Dichloroethene	10/24/2012	44.9	Yes	N	D U			44.9	24.0	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	1,1-Dichloroethane	10/24/2012	44.9	Yes	N	D U			44.9	26.6	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Bromodichloromethane	10/24/2012	44.9	Yes	N	D U			44.9	22.4	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Benzene	10/24/2012	22.4	Yes	N	D U			22.4	12.6	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Naphthalene	10/24/2012	198	Yes	Y	D			179	89.7	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Bromoform (Tribromomethane)	10/24/2012	89.7	Yes	N	D U			89.7	44.9	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	1,1,1,2-Tetrachloroethane	10/24/2012	44.9	Yes	N	D U			44.9	22.4	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Chloroform	10/24/2012	89.7	Yes	N	D U			89.7	44.9	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	1,1,1-Trichloroethane	10/24/2012	44.9	Yes	N	D U			44.9	22.4	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Bromomethane (Methyl Bromide)	10/24/2012	897	Yes	N	D U			897	897	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Chloromethane	10/24/2012	449	Yes	N	D U			449	224	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-01-4-5B	A12J576-03RE1	Dichloromethane (Methylene chloride)	10/24/2012	449	Yes	N	D U			449	224	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Bromochloromethane	10/24/2012	44.9	Yes	N	D U			44.9	22.4	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Chloroethane	10/24/2012	897	Yes	N	D U			897	449	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Vinyl chloride	10/24/2012	44.9	Yes	N	D U			44.9	32.6	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Dibromomethane	10/24/2012	89.7	Yes	N	D U			89.7	44.9	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Acetone	10/24/2012	1790	Yes	N	D U	UJ	5	1790	897	ug/kg
AQ-BMD-01-4-5B	A12J576-03RE1	Carbon disulfide	10/24/2012	897	Yes	N	D U			897	449	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	1,1-Dichloroethene	10/23/2012	47.1	Yes	N	D U			47.1	25.2	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	1,1-Dichloroethane	10/23/2012	47.1	Yes	N	D U			47.1	27.9	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Bromodichloromethane	10/23/2012	47.1	Yes	N	D U			47.1	23.5	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Bromoform (Tribromomethane)	10/23/2012	94.2	Yes	N	D U			94.2	47.1	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Carbon disulfide	10/23/2012	942	Yes	N	D U			942	471	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Vinyl chloride	10/23/2012	47.1	Yes	N	D U			47.1	34.2	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Trichlorofluoromethane (Fluorotrichloromethane)	10/23/2012	188	Yes	N	D U			188	94.2	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Chloroethane	10/23/2012	942	Yes	N	D U			942	471	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Naphthalene	10/23/2012	188	Yes	N	D U			188	94.2	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Dichloromethane (Methylene chloride)	10/23/2012	471	Yes	N	D U			471	235	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Dichlorodifluoromethane	10/23/2012	188	Yes	N	D U			188	94.2	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	1,2-Dichloropropane	10/23/2012	47.1	Yes	N	D U			47.1	23.5	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	2-Butanone (MEK)	10/23/2012	942	Yes	N	D U			942	471	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	1,1,2-Trichloroethane	10/23/2012	47.1	Yes	N	D U			47.1	23.5	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Trichloroethene (TCE)	10/23/2012	47.1	Yes	N	D U			47.1	34.1	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	1,1,2,2-Tetrachloroethane	10/23/2012	47.1	Yes	N	D U			47.1	23.5	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/23/2012	188	Yes	N	D U			188	94.2	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-02-3.5-5.5B	A12J576-07	o-Xylene	10/23/2012	47.1	Yes	N	D U			47.1	23.5	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Bromochloromethane	10/23/2012	47.1	Yes	N	D U			47.1	23.5	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	1,2-Dichloroethane	10/23/2012	47.1	Yes	N	D U			47.1	23.5	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	1,2,3-Trichlorobenzene	10/23/2012	942	Yes	N	D U			942	471	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Styrene	10/23/2012	94.2	Yes	N	D U			94.2	47.1	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Chlorobenzene	10/23/2012	47.1	Yes	N	D U			47.1	24.5	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Toluene	10/23/2012	94.2	Yes	N	D U			94.2	47.1	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Bromobenzene	10/23/2012	47.1	Yes	N	D U			47.1	25.7	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/23/2012	942	Yes	N	D U			942	471	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Ethylene dibromide (1,2-Dibromoethane)	10/23/2012	47.1	Yes	N	D U			47.1	28.5	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	1,4-Dichlorobenzene	10/23/2012	47.1	Yes	N	D U			47.1	23.5	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	4-Chlorotoluene	10/23/2012	94.2	Yes	N	D U			94.2	47.1	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	n-Butylbenzene	10/23/2012	94.2	Yes	N	D U			94.2	47.1	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	n-Propylbenzene	10/23/2012	47.1	Yes	N	D U			47.1	23.5	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	1,2,4-Trichlorobenzene	10/23/2012	471	Yes	N	D U			471	235	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	1,3-Dichloropropene, cis-	10/23/2012	94.2	Yes	N	D U			94.2	47.1	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	1,2,3-Trichloropropane	10/23/2012	94.2	Yes	N	D U			94.2	47.1	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Ethylbenzene	10/23/2012	47.1	Yes	N	D U			47.1	23.5	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	4-Isopropyltoluene (4-Cymene)	10/23/2012	94.2	Yes	N	D U			94.2	47.1	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Isopropylbenzene (Cumene)	10/23/2012	94.2	Yes	N	D U			94.2	47.1	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	tert-Butylbenzene	10/23/2012	94.2	Yes	N	D U			94.2	47.1	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Dibromomethane	10/23/2012	94.2	Yes	N	D U			94.2	47.1	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	1,2-Dibromo-3-chloropropane	10/23/2012	471	Yes	N	D U			471	235	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	1,3,5-Trimethylbenzene (Mesitylene)	10/23/2012	94.2	Yes	N	D U			94.2	47.1	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-02-3.5-5.5B	A12J576-07	1,2,4-Trimethylbenzene	10/23/2012	94.2	Yes	N	D U			94.2	47.1	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	1,2-Dichlorobenzene	10/23/2012	47.1	Yes	N	D U			47.1	23.5	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	2-Chlorotoluene	10/23/2012	94.2	Yes	N	D U			94.2	47.1	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	1,3-Dichloropropene, trans-	10/23/2012	94.2	Yes	N	D U			94.2	47.1	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	1,1-Dichloropropene	10/23/2012	94.2	Yes	N	D U			94.2	47.1	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Tetrachloroethene (PCE)	10/23/2012	47.1	Yes	N	D U			47.1	23.5	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	sec-Butylbenzene	10/23/2012	94.2	Yes	N	D U			94.2	47.1	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	1,3-Dichloropropane	10/23/2012	47.1	Yes	N	D U			47.1	23.5	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	1,2-Dichloroethene, cis-	10/23/2012	47.1	Yes	N	D U			47.1	23.5	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	1,2-Dichloroethene, trans-	10/23/2012	47.1	Yes	N	D U			47.1	23.5	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Methyl tert-butyl ether (MTBE)	10/23/2012	94.2	Yes	N	D U			94.2	56.2	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	m,p-Xylene	10/23/2012	94.2	Yes	N	D U			94.2	47.1	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Dibromochloromethane	10/23/2012	188	Yes	N	D U			188	94.2	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Carbon tetrachloride (Tetrachloromethane)	10/23/2012	47.1	Yes	N	D U			47.1	23.5	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Bromomethane (Methyl Bromide)	10/23/2012	942	Yes	N	D U			942	942	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	2-Hexanone (Methyl butyl ketone)	10/23/2012	942	Yes	N	D U			942	471	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	2,2-Dichloropropane	10/23/2012	94.2	Yes	N	D U			94.2	47.1	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	1,1,1,2-Tetrachloroethane	10/23/2012	47.1	Yes	N	D U			47.1	23.5	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Acetone	10/23/2012	1880	Yes	N	D U			1880	942	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Chloroform	10/23/2012	94.2	Yes	N	D U			94.2	47.1	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Benzene	10/23/2012	23.5	Yes	N	D U			23.5	13.2	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	1,1,1-Trichloroethane	10/23/2012	47.1	Yes	N	D U			47.1	23.5	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	Chloromethane	10/23/2012	471	Yes	N	D U			471	235	ug/kg
AQ-BMD-02-3.5-5.5B	A12J576-07	1,3-Dichlorobenzene	10/23/2012	47.1	Yes	N	D U			47.1	23.5	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-03-4-6B	A12J576-12	Trichlorofluoromethane (Fluorotrichloromethane)	10/23/2012	185	Yes	N	D U			185	92.4	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Bromobenzene	10/23/2012	46.2	Yes	N	D U			46.2	25.2	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Dichlorodifluoromethane	10/23/2012	185	Yes	N	D U			185	92.4	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Acetone	10/23/2012	1850	Yes	N	D U			1850	924	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Chloroform	10/23/2012	92.4	Yes	N	D U			92.4	46.2	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Benzene	10/23/2012	23.1	Yes	N	D U			23.1	12.9	ug/kg
AQ-BMD-03-4-6B	A12J576-12	2-Butanone (MEK)	10/23/2012	924	Yes	N	D U			924	462	ug/kg
AQ-BMD-03-4-6B	A12J576-12	4-Isopropyltoluene (4-Cymene)	10/23/2012	92.4	Yes	N	D U			92.4	46.2	ug/kg
AQ-BMD-03-4-6B	A12J576-12	1,1,2-Trichloroethane	10/23/2012	46.2	Yes	N	D U			46.2	23.1	ug/kg
AQ-BMD-03-4-6B	A12J576-12	1,1-Dichloroethane	10/23/2012	46.2	Yes	N	D U			46.2	27.4	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Tetrachloroethene (PCE)	10/23/2012	46.2	Yes	N	D U			46.2	23.1	ug/kg
AQ-BMD-03-4-6B	A12J576-12	1,1,1,2-Tetrachloroethane	10/23/2012	46.2	Yes	N	D U			46.2	23.1	ug/kg
AQ-BMD-03-4-6B	A12J576-12	1,2,4-Trichlorobenzene	10/23/2012	462	Yes	N	D U			462	231	ug/kg
AQ-BMD-03-4-6B	A12J576-12	1,1-Dichloroethene	10/23/2012	46.2	Yes	N	D U			46.2	24.8	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Toluene	10/23/2012	92.4	Yes	N	D U			92.4	46.2	ug/kg
AQ-BMD-03-4-6B	A12J576-12	sec-Butylbenzene	10/23/2012	92.4	Yes	N	D U			92.4	46.2	ug/kg
AQ-BMD-03-4-6B	A12J576-12	m,p-Xylene	10/23/2012	92.4	Yes	N	D U			92.4	46.2	ug/kg
AQ-BMD-03-4-6B	A12J576-12	2,2-Dichloropropane	10/23/2012	92.4	Yes	N	D U			92.4	46.2	ug/kg
AQ-BMD-03-4-6B	A12J576-12	1,1,1-Trichloroethane	10/23/2012	46.2	Yes	N	D U			46.2	23.1	ug/kg
AQ-BMD-03-4-6B	A12J576-12	2-Hexanone (Methyl butyl ketone)	10/23/2012	924	Yes	N	D U			924	462	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Bromomethane (Methyl Bromide)	10/23/2012	924	Yes	N	D U			924	924	ug/kg
AQ-BMD-03-4-6B	A12J576-12	1,1-Dichloropropene	10/23/2012	92.4	Yes	N	D U			92.4	46.2	ug/kg
AQ-BMD-03-4-6B	A12J576-12	1,2-Dichloropropane	10/23/2012	46.2	Yes	N	D U			46.2	23.1	ug/kg
AQ-BMD-03-4-6B	A12J576-12	1,3-Dichlorobenzene	10/23/2012	46.2	Yes	N	D U			46.2	23.1	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Chlorobenzene	10/23/2012	46.2	Yes	N	D U			46.2	24.0	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-03-4-6B	A12J576-12	Methyl tert-butyl ether (MTBE)	10/23/2012	92.4	Yes	N	D U			92.4	55.2	ug/kg
AQ-BMD-03-4-6B	A12J576-12	1,2-Dichloroethene, trans-	10/23/2012	46.2	Yes	N	D U			46.2	23.1	ug/kg
AQ-BMD-03-4-6B	A12J576-12	1,2-Dichloroethene, cis-	10/23/2012	46.2	Yes	N	D U			46.2	23.1	ug/kg
AQ-BMD-03-4-6B	A12J576-12	1,3-Dichloropropane	10/23/2012	46.2	Yes	N	D U			46.2	23.1	ug/kg
AQ-BMD-03-4-6B	A12J576-12	1,1,2,2-Tetrachloroethane	10/23/2012	46.2	Yes	N	D U			46.2	23.1	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Trichloroethene (TCE)	10/23/2012	46.2	Yes	N	D U			46.2	33.5	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Carbon tetrachloride (Tetrachloromethane)	10/23/2012	46.2	Yes	N	D U			46.2	23.1	ug/kg
AQ-BMD-03-4-6B	A12J576-12	1,2,4-Trimethylbenzene	10/23/2012	92.4	Yes	N	D U			92.4	46.2	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Dibromochloromethane	10/23/2012	185	Yes	N	D U			185	92.4	ug/kg
AQ-BMD-03-4-6B	A12J576-12	1,3-Dichloropropene, cis-	10/23/2012	92.4	Yes	N	D U			92.4	46.2	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Styrene	10/23/2012	92.4	Yes	N	D U			92.4	46.2	ug/kg
AQ-BMD-03-4-6B	A12J576-12	1,2,3-Trichlorobenzene	10/23/2012	924	Yes	N	D U			924	462	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/23/2012	185	Yes	N	D U			185	92.4	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Naphthalene	10/23/2012	185	Yes	N	D U			185	92.4	ug/kg
AQ-BMD-03-4-6B	A12J576-12	o-Xylene	10/23/2012	46.2	Yes	N	D U			46.2	23.1	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Dichloromethane (Methylene chloride)	10/23/2012	462	Yes	N	D U			462	231	ug/kg
AQ-BMD-03-4-6B	A12J576-12	1,2-Dichlorobenzene	10/23/2012	46.2	Yes	N	D U			46.2	23.1	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Vinyl chloride	10/23/2012	46.2	Yes	N	D U			46.2	33.6	ug/kg
AQ-BMD-03-4-6B	A12J576-12	1,2-Dibromo-3-chloropropane	10/23/2012	462	Yes	N	D U			462	231	ug/kg
AQ-BMD-03-4-6B	A12J576-12	1,2,3-Trichloropropane	10/23/2012	92.4	Yes	N	D U			92.4	46.2	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Ethylbenzene	10/23/2012	46.2	Yes	N	D U			46.2	23.1	ug/kg
AQ-BMD-03-4-6B	A12J576-12	tert-Butylbenzene	10/23/2012	92.4	Yes	N	D U			92.4	46.2	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Isopropylbenzene (Cumene)	10/23/2012	92.4	Yes	N	D U			92.4	46.2	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Carbon disulfide	10/23/2012	924	Yes	N	D U			924	462	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-03-4-6B	A12J576-12	Bromoform (Tribromomethane)	10/23/2012	92.4	Yes	N	D U			92.4	46.2	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Bromodichloromethane	10/23/2012	46.2	Yes	N	D U			46.2	23.1	ug/kg
AQ-BMD-03-4-6B	A12J576-12	2-Chlorotoluene	10/23/2012	92.4	Yes	N	D U			92.4	46.2	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Chloroethane	10/23/2012	924	Yes	N	D U			924	462	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/23/2012	924	Yes	N	D U			924	462	ug/kg
AQ-BMD-03-4-6B	A12J576-12	1,2-Dichloroethane	10/23/2012	46.2	Yes	N	D U			46.2	23.1	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Bromochloromethane	10/23/2012	46.2	Yes	N	D U			46.2	23.1	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Ethylene dibromide (1,2-Dibromoethane)	10/23/2012	46.2	Yes	N	D U			46.2	28.0	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Dibromomethane	10/23/2012	92.4	Yes	N	D U			92.4	46.2	ug/kg
AQ-BMD-03-4-6B	A12J576-12	Chloromethane	10/23/2012	462	Yes	N	D U			462	231	ug/kg
AQ-BMD-03-4-6B	A12J576-12	n-Propylbenzene	10/23/2012	46.2	Yes	N	D U			46.2	23.1	ug/kg
AQ-BMD-03-4-6B	A12J576-12	1,3,5-Trimethylbenzene (Mesitylene)	10/23/2012	92.4	Yes	N	D U			92.4	46.2	ug/kg
AQ-BMD-03-4-6B	A12J576-12	1,4-Dichlorobenzene	10/23/2012	46.2	Yes	N	D U			46.2	23.1	ug/kg
AQ-BMD-03-4-6B	A12J576-12	1,3-Dichloropropene, trans-	10/23/2012	92.4	Yes	N	D U			92.4	46.2	ug/kg
AQ-BMD-03-4-6B	A12J576-12	4-Chlorotoluene	10/23/2012	92.4	Yes	N	D U			92.4	46.2	ug/kg
AQ-BMD-03-4-6B	A12J576-12	n-Butylbenzene	10/23/2012	92.4	Yes	N	D U			92.4	46.2	ug/kg
AQ-BMD-04-3-5B	A12J576-16	sec-Butylbenzene	10/23/2012	98.1	Yes	N	D U			98.1	49.0	ug/kg
AQ-BMD-04-3-5B	A12J576-16	1,2-Dichloroethene, trans-	10/23/2012	49	Yes	N	D U			49.0	24.5	ug/kg
AQ-BMD-04-3-5B	A12J576-16	1,3-Dichloropropane	10/23/2012	49	Yes	N	D U			49.0	24.5	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Tetrachloroethene (PCE)	10/23/2012	49	Yes	N	D U			49.0	24.5	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Dibromochloromethane	10/23/2012	196	Yes	N	D U			196	98.1	ug/kg
AQ-BMD-04-3-5B	A12J576-16	1,2,4-Trichlorobenzene	10/23/2012	490	Yes	N	D U			490	245	ug/kg
AQ-BMD-04-3-5B	A12J576-16	1,2-Dichloroethene, cis-	10/23/2012	49	Yes	N	D U			49.0	24.5	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Chlorobenzene	10/23/2012	49	Yes	N	D U			49.0	25.5	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-04-3-5B	A12J576-16	Toluene	10/23/2012	98.1	Yes	N	D U			98.1	49.0	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Bromobenzene	10/23/2012	49	Yes	N	D U			49.0	26.8	ug/kg
AQ-BMD-04-3-5B	A12J576-16	1,3,5-Trimethylbenzene (Mesitylene)	10/23/2012	98.1	Yes	N	D U			98.1	49.0	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/23/2012	981	Yes	N	D U			981	490	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Ethylene dibromide (1,2-Dibromoethane)	10/23/2012	49	Yes	N	D U			49.0	29.7	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Methyl tert-butyl ether (MTBE)	10/23/2012	98.1	Yes	N	D U			98.1	58.5	ug/kg
AQ-BMD-04-3-5B	A12J576-16	n-Butylbenzene	10/23/2012	98.1	Yes	N	D U			98.1	49.0	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Carbon disulfide	10/23/2012	981	Yes	N	D U			981	490	ug/kg
AQ-BMD-04-3-5B	A12J576-16	n-Propylbenzene	10/23/2012	49	Yes	N	D U			49.0	24.5	ug/kg
AQ-BMD-04-3-5B	A12J576-16	4-Chlorotoluene	10/23/2012	98.1	Yes	N	D U			98.1	49.0	ug/kg
AQ-BMD-04-3-5B	A12J576-16	o-Xylene	10/23/2012	49	Yes	N	D U			49.0	24.5	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Trichlorofluoromethane (Fluorotrichloromethane)	10/23/2012	196	Yes	N	D U			196	98.1	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Dichlorodifluoromethane	10/23/2012	196	Yes	N	D U			196	98.1	ug/kg
AQ-BMD-04-3-5B	A12J576-16	1,2-Dichloropropane	10/23/2012	49	Yes	N	D U			49.0	24.5	ug/kg
AQ-BMD-04-3-5B	A12J576-16	2-Butanone (MEK)	10/23/2012	981	Yes	N	D U			981	490	ug/kg
AQ-BMD-04-3-5B	A12J576-16	1,1,2-Trichloroethane	10/23/2012	49	Yes	N	D U			49.0	24.5	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Trichloroethene (TCE)	10/23/2012	49	Yes	N	D U			49.0	35.5	ug/kg
AQ-BMD-04-3-5B	A12J576-16	1,1,2,2-Tetrachloroethane	10/23/2012	49	Yes	N	D U			49.0	24.5	ug/kg
AQ-BMD-04-3-5B	A12J576-16	1,2,3-Trichlorobenzene	10/23/2012	981	Yes	N	D U			981	490	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Vinyl chloride	10/23/2012	49	Yes	N	D U			49.0	35.6	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Naphthalene	10/23/2012	267	Yes	Y	D	J	5	196	98.1	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Bromodichloromethane	10/23/2012	49	Yes	N	D U			49.0	24.5	ug/kg
AQ-BMD-04-3-5B	A12J576-16	2-Chlorotoluene	10/23/2012	98.1	Yes	N	D U			98.1	49.0	ug/kg
AQ-BMD-04-3-5B	A12J576-16	1,2-Dichlorobenzene	10/23/2012	49	Yes	N	D U			49.0	24.5	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-04-3-5B	A12J576-16	1,2,4-Trimethylbenzene	10/23/2012	98.1		Yes	N	D U			98.1	49.0	ug/kg
AQ-BMD-04-3-5B	A12J576-16	1,2-Dibromo-3-chloropropane	10/23/2012	490		Yes	N	D U			490	245	ug/kg
AQ-BMD-04-3-5B	A12J576-16	1,2,3-Trichloropropane	10/23/2012	98.1		Yes	N	D U			98.1	49.0	ug/kg
AQ-BMD-04-3-5B	A12J576-16	tert-Butylbenzene	10/23/2012	98.1		Yes	N	D U			98.1	49.0	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Isopropylbenzene (Cumene)	10/23/2012	98.1		Yes	N	D U			98.1	49.0	ug/kg
AQ-BMD-04-3-5B	A12J576-16	4-Isopropyltoluene (4-Cymene)	10/23/2012	98.1		Yes	N	D U			98.1	49.0	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/23/2012	196		Yes	N	D U			196	98.1	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Bromomethane (Methyl Bromide)	10/23/2012	981		Yes	N	D U			981	981	ug/kg
AQ-BMD-04-3-5B	A12J576-16	1,3-Dichlorobenzene	10/23/2012	49		Yes	N	D U			49.0	24.5	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Carbon tetrachloride (Tetrachloromethane)	10/23/2012	49		Yes	N	D U			49.0	24.5	ug/kg
AQ-BMD-04-3-5B	A12J576-16	1,1-Dichloropropene	10/23/2012	98.1		Yes	N	D U			98.1	49.0	ug/kg
AQ-BMD-04-3-5B	A12J576-16	2-Hexanone (Methyl butyl ketone)	10/23/2012	981		Yes	N	D U			981	490	ug/kg
AQ-BMD-04-3-5B	A12J576-16	2,2-Dichloropropane	10/23/2012	98.1		Yes	N	D U			98.1	49.0	ug/kg
AQ-BMD-04-3-5B	A12J576-16	1,1,1,2-Tetrachloroethane	10/23/2012	49		Yes	N	D U			49.0	24.5	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Acetone	10/23/2012	1960		Yes	N	D U			1960	981	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Chloroform	10/23/2012	98.1		Yes	N	D U			98.1	49.0	ug/kg
AQ-BMD-04-3-5B	A12J576-16	1,1-Dichloroethene	10/23/2012	49		Yes	N	D U			49.0	26.3	ug/kg
AQ-BMD-04-3-5B	A12J576-16	1,1,1-Trichloroethane	10/23/2012	49		Yes	N	D U			49.0	24.5	ug/kg
AQ-BMD-04-3-5B	A12J576-16	1,1-Dichloroethane	10/23/2012	49		Yes	N	D U			49.0	29.0	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Chloromethane	10/23/2012	490		Yes	N	D U			490	245	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Dibromomethane	10/23/2012	98.1		Yes	N	D U			98.1	49.0	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Bromochloromethane	10/23/2012	49		Yes	N	D U			49.0	24.5	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Chloroethane	10/23/2012	981		Yes	N	D U			981	490	ug/kg
AQ-BMD-04-3-5B	A12J576-16	1,3-Dichloropropene, trans-	10/23/2012	98.1		Yes	N	D U			98.1	49.0	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-04-3-5B	A12J576-16	Dichloromethane (Methylene chloride)	10/23/2012	490	Yes	N	D U			490	245	ug/kg
AQ-BMD-04-3-5B	A12J576-16	1,4-Dichlorobenzene	10/23/2012	49	Yes	N	D U			49.0	24.5	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Bromoform (Tribromomethane)	10/23/2012	98.1	Yes	N	D U			98.1	49.0	ug/kg
AQ-BMD-04-3-5B	A12J576-16	m,p-Xylene	10/23/2012	98.1	Yes	N	D U			98.1	49.0	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Benzene	10/23/2012	24.5	Yes	N	D U			24.5	13.7	ug/kg
AQ-BMD-04-3-5B	A12J576-16	1,3-Dichloropropene, cis-	10/23/2012	98.1	Yes	N	D U			98.1	49.0	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Styrene	10/23/2012	98.1	Yes	N	D U			98.1	49.0	ug/kg
AQ-BMD-04-3-5B	A12J576-16	Ethylbenzene	10/23/2012	49	Yes	N	D U			49.0	24.5	ug/kg
AQ-BMD-04-3-5B	A12J576-16	1,2-Dichloroethane	10/23/2012	49	Yes	N	D U			49.0	24.5	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Dibromomethane	10/23/2012	114	Yes	N	D U			114	56.9	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Chloromethane	10/23/2012	569	Yes	N	D U			569	285	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Bromomethane (Methyl Bromide)	10/23/2012	1140	Yes	N	D U			1140	1140	ug/kg
AQ-BMD-05-3-5B	A12J576-22	1,1,1-Trichloroethane	10/23/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Benzene	10/23/2012	28.5	Yes	N	D U			28.5	15.9	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Chloroform	10/23/2012	114	Yes	N	D U			114	56.9	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Acetone	10/23/2012	2280	Yes	N	D U			2280	1140	ug/kg
AQ-BMD-05-3-5B	A12J576-22	1,1,1,2-Tetrachloroethane	10/23/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Bromochloromethane	10/23/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg
AQ-BMD-05-3-5B	A12J576-22	2-Hexanone (Methyl butyl ketone)	10/23/2012	1140	Yes	N	D U			1140	569	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Carbon disulfide	10/23/2012	1140	Yes	N	D U			1140	569	ug/kg
AQ-BMD-05-3-5B	A12J576-22	1,1-Dichloropropene	10/23/2012	114	Yes	N	D U			114	56.9	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Carbon tetrachloride (Tetrachloromethane)	10/23/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg
AQ-BMD-05-3-5B	A12J576-22	1,3-Dichlorobenzene	10/23/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg
AQ-BMD-05-3-5B	A12J576-22	m,p-Xylene	10/23/2012	114	Yes	N	D U			114	56.9	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Methyl tert-butyl ether (MTBE)	10/23/2012	114	Yes	N	D U			114	68.0	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-05-3-5B	A12J576-22	2,2-Dichloropropane	10/23/2012	114	Yes	N	D U			114	56.9	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Trichlorofluoromethane (Fluorotrichloromethane)	10/23/2012	228	Yes	N	D U			228	114	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/23/2012	228	Yes	N	D U			228	114	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Naphthalene	10/23/2012	228	Yes	N	D U			228	171	ug/kg
AQ-BMD-05-3-5B	A12J576-22	1,1,2,2-Tetrachloroethane	10/23/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Trichloroethene (TCE)	10/23/2012	56.9	Yes	N	D U			56.9	41.2	ug/kg
AQ-BMD-05-3-5B	A12J576-22	1,1,2-Trichloroethane	10/23/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg
AQ-BMD-05-3-5B	A12J576-22	2-Butanone (MEK)	10/23/2012	1140	Yes	N	D U			1140	569	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Vinyl chloride	10/23/2012	56.9	Yes	N	D U			56.9	41.3	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Dichlorodifluoromethane	10/23/2012	228	Yes	N	D U			228	114	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Chloroethane	10/23/2012	1140	Yes	N	D U			1140	569	ug/kg
AQ-BMD-05-3-5B	A12J576-22	1,1-Dichloroethene	10/23/2012	56.9	Yes	N	D U			56.9	30.5	ug/kg
AQ-BMD-05-3-5B	A12J576-22	1,1-Dichloroethane	10/23/2012	56.9	Yes	N	D U			56.9	33.7	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Bromodichloromethane	10/23/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Bromoform (Tribromomethane)	10/23/2012	114	Yes	N	D U			114	56.9	ug/kg
AQ-BMD-05-3-5B	A12J576-22	1,3-Dichloropropane	10/23/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Dichloromethane (Methylene chloride)	10/23/2012	569	Yes	N	D U			569	285	ug/kg
AQ-BMD-05-3-5B	A12J576-22	1,2,3-Trichlorobenzene	10/23/2012	1140	Yes	N	D U			1140	569	ug/kg
AQ-BMD-05-3-5B	A12J576-22	1,2-Dichloropropane	10/23/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg
AQ-BMD-05-3-5B	A12J576-22	tert-Butylbenzene	10/23/2012	114	Yes	N	D U			114	56.9	ug/kg
AQ-BMD-05-3-5B	A12J576-22	4-Chlorotoluene	10/23/2012	114	Yes	N	D U			114	56.9	ug/kg
AQ-BMD-05-3-5B	A12J576-22	n-Butylbenzene	10/23/2012	114	Yes	N	D U			114	56.9	ug/kg
AQ-BMD-05-3-5B	A12J576-22	n-Propylbenzene	10/23/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg
AQ-BMD-05-3-5B	A12J576-22	1,3-Dichloropropene, trans-	10/23/2012	114	Yes	N	D U			114	56.9	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-05-3-5B	A12J576-22	1,3-Dichloropropene, cis-	10/23/2012	114	Yes	N	D U			114	56.9	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Styrene	10/23/2012	114	Yes	N	D U			114	56.9	ug/kg
AQ-BMD-05-3-5B	A12J576-22	1,2-Dichloroethene, trans-	10/23/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Isopropylbenzene (Cumene)	10/23/2012	114	Yes	N	D U			114	56.9	ug/kg
AQ-BMD-05-3-5B	A12J576-22	1,2-Dichloroethane	10/23/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg
AQ-BMD-05-3-5B	A12J576-22	1,2,3-Trichloropropane	10/23/2012	114	Yes	N	D U			114	56.9	ug/kg
AQ-BMD-05-3-5B	A12J576-22	1,2-Dibromo-3-chloropropane	10/23/2012	569	Yes	N	D U			569	285	ug/kg
AQ-BMD-05-3-5B	A12J576-22	1,2,4-Trimethylbenzene	10/23/2012	114	Yes	N	D U			114	56.9	ug/kg
AQ-BMD-05-3-5B	A12J576-22	1,2-Dichlorobenzene	10/23/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg
AQ-BMD-05-3-5B	A12J576-22	2-Chlorotoluene	10/23/2012	114	Yes	N	D U			114	56.9	ug/kg
AQ-BMD-05-3-5B	A12J576-22	o-Xylene	10/23/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg
AQ-BMD-05-3-5B	A12J576-22	4-Isopropyltoluene (4-Cymene)	10/23/2012	114	Yes	N	D U			114	56.9	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Ethylbenzene	10/23/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/23/2012	1140	Yes	N	D U			1140	569	ug/kg
AQ-BMD-05-3-5B	A12J576-22	sec-Butylbenzene	10/23/2012	114	Yes	N	D U			114	56.9	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Tetrachloroethene (PCE)	10/23/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Dibromochloromethane	10/23/2012	228	Yes	N	D U			228	114	ug/kg
AQ-BMD-05-3-5B	A12J576-22	1,2,4-Trichlorobenzene	10/23/2012	569	Yes	N	D U			569	285	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Chlorobenzene	10/23/2012	56.9	Yes	N	D U			56.9	29.6	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Toluene	10/23/2012	114	Yes	N	D U			114	56.9	ug/kg
AQ-BMD-05-3-5B	A12J576-22	1,4-Dichlorobenzene	10/23/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg
AQ-BMD-05-3-5B	A12J576-22	1,3,5-Trimethylbenzene (Mesitylene)	10/23/2012	114	Yes	N	D U			114	56.9	ug/kg
AQ-BMD-05-3-5B	A12J576-22	Ethylene dibromide (1,2-Dibromoethane)	10/23/2012	56.9	Yes	N	D U			56.9	34.5	ug/kg
AQ-BMD-05-3-5B	A12J576-22	1,2-Dichloroethene, cis-	10/23/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-05-3-5B	A12J576-22	Bromobenzene	10/23/2012	56.9	Yes	N	D U			56.9	31.1	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	1,2,4-Trimethylbenzene	10/23/2012	94.6	Yes	N	D U			94.6	47.3	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	1,2-Dibromo-3-chloropropane	10/23/2012	473	Yes	N	D U			473	236	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	1,2,3-Trichloropropane	10/23/2012	94.6	Yes	N	D U			94.6	47.3	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	4-Isopropyltoluene (4-Cymene)	10/23/2012	94.6	Yes	N	D U			94.6	47.3	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Isopropylbenzene (Cumene)	10/23/2012	94.6	Yes	N	D U			94.6	47.3	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	tert-Butylbenzene	10/23/2012	94.6	Yes	N	D U			94.6	47.3	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	1,2,3-Trichlorobenzene	10/23/2012	946	Yes	N	D U			946	473	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Bromobenzene	10/23/2012	47.3	Yes	N	D U			47.3	25.8	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	1,1-Dichloropropene	10/23/2012	94.6	Yes	N	D U			94.6	47.3	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Naphthalene	10/23/2012	189	Yes	N	D U			189	94.6	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	1,3-Dichlorobenzene	10/23/2012	47.3	Yes	N	D U			47.3	23.6	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	m,p-Xylene	10/23/2012	94.6	Yes	N	D U			94.6	47.3	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Methyl tert-butyl ether (MTBE)	10/23/2012	94.6	Yes	N	D U			94.6	56.5	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	1,2-Dichloroethene, trans-	10/23/2012	47.3	Yes	N	D U			47.3	23.6	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	1,2-Dichloroethene, cis-	10/23/2012	47.3	Yes	N	D U			47.3	23.6	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	1,3-Dichloropropane	10/23/2012	47.3	Yes	N	D U			47.3	23.6	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	sec-Butylbenzene	10/23/2012	94.6	Yes	N	D U			94.6	47.3	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Tetrachloroethene (PCE)	10/23/2012	47.3	Yes	N	D U			47.3	23.6	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Dibromochloromethane	10/23/2012	189	Yes	N	D U			189	94.6	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	1,2,4-Trichlorobenzene	10/23/2012	473	Yes	N	D U			473	236	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	1,2-Dichlorobenzene	10/23/2012	47.3	Yes	N	D U			47.3	23.6	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Toluene	10/23/2012	94.6	Yes	N	D U			94.6	47.3	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	2-Hexanone (Methyl butyl ketone)	10/23/2012	946	Yes	N	D U			946	473	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	1,3,5-Trimethylbenzene (Mesitylene)	10/23/2012	94.6	Yes	N	D U			94.6	47.3	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-06-3.5-5.5B	A12J576-27	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/23/2012	946	Yes	N	D U			946	473	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	1,2-Dichloroethane	10/23/2012	47.3	Yes	N	D U			47.3	23.6	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Ethylene dibromide (1,2-Dibromoethane)	10/23/2012	47.3	Yes	N	D U			47.3	28.7	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	1,4-Dichlorobenzene	10/23/2012	47.3	Yes	N	D U			47.3	23.6	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	4-Chlorotoluene	10/23/2012	94.6	Yes	N	D U			94.6	47.3	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	n-Butylbenzene	10/23/2012	94.6	Yes	N	D U			94.6	47.3	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	n-Propylbenzene	10/23/2012	47.3	Yes	N	D U			47.3	23.6	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	1,3-Dichloropropene, trans-	10/23/2012	94.6	Yes	N	D U			94.6	47.3	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	1,3-Dichloropropene, cis-	10/23/2012	94.6	Yes	N	D U			94.6	47.3	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Styrene	10/23/2012	94.6	Yes	N	D U			94.6	47.3	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Ethylbenzene	10/23/2012	47.3	Yes	N	D U			47.3	23.6	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Chlorobenzene	10/23/2012	47.3	Yes	N	D U			47.3	24.6	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Bromoform (Tribromomethane)	10/23/2012	94.6	Yes	N	D U			94.6	47.3	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	2-Chlorotoluene	10/23/2012	94.6	Yes	N	D U			94.6	47.3	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	o-Xylene	10/23/2012	47.3	Yes	N	D U			47.3	23.6	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/23/2012	189	Yes	N	D U			189	94.6	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	1,1,2,2-Tetrachloroethane	10/23/2012	47.3	Yes	N	D U			47.3	23.6	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Trichloroethene (TCE)	10/23/2012	47.3	Yes	N	D U			47.3	34.2	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	1,1,2-Trichloroethane	10/23/2012	47.3	Yes	N	D U			47.3	23.6	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	2-Butanone (MEK)	10/23/2012	946	Yes	N	D U			946	473	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	1,2-Dichloropropane	10/23/2012	47.3	Yes	N	D U			47.3	23.6	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Dichlorodifluoromethane	10/23/2012	189	Yes	N	D U			189	94.6	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Trichlorofluoromethane (Fluorotrichloromethane)	10/23/2012	189	Yes	N	D U			189	94.6	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-06-3.5-5.5B	A12J576-27	1,1-Dichloroethene	10/23/2012	47.3	Yes	N	D U			47.3	25.3	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	1,1-Dichloroethane	10/23/2012	47.3	Yes	N	D U			47.3	28.0	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Carbon tetrachloride (Tetrachloromethane)	10/23/2012	47.3	Yes	N	D U			47.3	23.6	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Bromodichloromethane	10/23/2012	47.3	Yes	N	D U			47.3	23.6	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Dibromomethane	10/23/2012	94.6	Yes	N	D U			94.6	47.3	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	1,1,1,2-Tetrachloroethane	10/23/2012	47.3	Yes	N	D U			47.3	23.6	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Acetone	10/23/2012	1890	Yes	N	D U			1890	946	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Chloroform	10/23/2012	94.6	Yes	N	D U			94.6	47.3	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Benzene	10/23/2012	23.6	Yes	N	D U			23.6	13.2	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	1,1,1-Trichloroethane	10/23/2012	47.3	Yes	N	D U			47.3	23.6	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Chloromethane	10/23/2012	473	Yes	N	D U			473	236	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	2,2-Dichloropropane	10/23/2012	94.6	Yes	N	D U			94.6	47.3	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Bromochloromethane	10/23/2012	47.3	Yes	N	D U			47.3	23.6	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Chloroethane	10/23/2012	946	Yes	N	D U			946	473	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Vinyl chloride	10/23/2012	47.3	Yes	N	D U			47.3	34.3	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Dichloromethane (Methylene chloride)	10/23/2012	473	Yes	N	D U			473	236	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Carbon disulfide	10/23/2012	946	Yes	N	D U			946	473	ug/kg
AQ-BMD-06-3.5-5.5B	A12J576-27	Bromomethane (Methyl Bromide)	10/23/2012	946	Yes	N	D U			946	946	ug/kg
AQ-BMD-07-1-3B	A12J576-30	1,1-Dichloropropene	10/23/2012	107	Yes	N	D U			107	53.4	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Bromomethane (Methyl Bromide)	10/23/2012	1070	Yes	N	D U			1070	1070	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Carbon disulfide	10/23/2012	1070	Yes	N	D U			1070	534	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Dichloromethane (Methylene chloride)	10/23/2012	534	Yes	N	D U			534	267	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Vinyl chloride	10/23/2012	53.4	Yes	N	D U			53.4	38.8	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Chloroethane	10/23/2012	1070	Yes	N	D U			1070	534	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Bromochloromethane	10/23/2012	53.4	Yes	N	D U			53.4	26.7	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-07-1-3B	A12J576-30	Dibromomethane	10/23/2012	107	Yes	N	D U			107	53.4	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Chloromethane	10/23/2012	534	Yes	N	D U			534	267	ug/kg
AQ-BMD-07-1-3B	A12J576-30	1,1,1-Trichloroethane	10/23/2012	53.4	Yes	N	D U			53.4	26.7	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Benzene	10/23/2012	26.7	Yes	N	D U			26.7	15.0	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Chloroform	10/23/2012	107	Yes	N	D U			107	53.4	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Acetone	10/23/2012	2140	Yes	N	D U			2140	1070	ug/kg
AQ-BMD-07-1-3B	A12J576-30	1,1,1,2-Tetrachloroethane	10/23/2012	53.4	Yes	N	D U			53.4	26.7	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Bromoform (Tribromomethane)	10/23/2012	107	Yes	N	D U			107	53.4	ug/kg
AQ-BMD-07-1-3B	A12J576-30	2-Hexanone (Methyl butyl ketone)	10/23/2012	1070	Yes	N	D U			1070	534	ug/kg
AQ-BMD-07-1-3B	A12J576-30	2-Butanone (MEK)	10/23/2012	1070	Yes	N	D U			1070	534	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Carbon tetrachloride (Tetrachloromethane)	10/23/2012	53.4	Yes	N	D U			53.4	26.7	ug/kg
AQ-BMD-07-1-3B	A12J576-30	1,3-Dichlorobenzene	10/23/2012	53.4	Yes	N	D U			53.4	26.7	ug/kg
AQ-BMD-07-1-3B	A12J576-30	2,2-Dichloropropane	10/23/2012	107	Yes	N	D U			107	53.4	ug/kg
AQ-BMD-07-1-3B	A12J576-30	1,1,2,2-Tetrachloroethane	10/23/2012	53.4	Yes	N	D U			53.4	26.7	ug/kg
AQ-BMD-07-1-3B	A12J576-30	4-Isopropyltoluene (4-Cymene)	10/23/2012	107	Yes	N	D U			107	53.4	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Isopropylbenzene (Cumene)	10/23/2012	107	Yes	N	D U			107	53.4	ug/kg
AQ-BMD-07-1-3B	A12J576-30	tert-Butylbenzene	10/23/2012	107	Yes	N	D U			107	53.4	ug/kg
AQ-BMD-07-1-3B	A12J576-30	1,2,3-Trichloropropane	10/23/2012	107	Yes	N	D U			107	53.4	ug/kg
AQ-BMD-07-1-3B	A12J576-30	1,2-Dibromo-3-chloropropane	10/23/2012	534	Yes	N	D U			534	267	ug/kg
AQ-BMD-07-1-3B	A12J576-30	1,2-Dichlorobenzene	10/23/2012	53.4	Yes	N	D U			53.4	26.7	ug/kg
AQ-BMD-07-1-3B	A12J576-30	o-Xylene	10/23/2012	53.4	Yes	N	D U			53.4	26.7	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Naphthalene	10/23/2012	214	Yes	N	D U			214	107	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Dichlorodifluoromethane	10/23/2012	214	Yes	N	D U			214	107	ug/kg
AQ-BMD-07-1-3B	A12J576-30	1,2,3-Trichlorobenzene	10/23/2012	1070	Yes	N	D U			1070	534	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Bromodichloromethane	10/23/2012	53.4	Yes	N	D U			53.4	26.7	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-07-1-3B	A12J576-30	Trichloroethene (TCE)	10/23/2012	53.4	Yes	N	D U			53.4	38.7	ug/kg
AQ-BMD-07-1-3B	A12J576-30	1,1,2-Trichloroethane	10/23/2012	53.4	Yes	N	D U			53.4	26.7	ug/kg
AQ-BMD-07-1-3B	A12J576-30	2-Chlorotoluene	10/23/2012	107	Yes	N	D U			107	53.4	ug/kg
AQ-BMD-07-1-3B	A12J576-30	1,2-Dichloropropane	10/23/2012	53.4	Yes	N	D U			53.4	26.7	ug/kg
AQ-BMD-07-1-3B	A12J576-30	m,p-Xylene	10/23/2012	107	Yes	N	D U			107	53.4	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Trichlorofluoromethane (Fluorotrichloromethane)	10/23/2012	214	Yes	N	D U			214	107	ug/kg
AQ-BMD-07-1-3B	A12J576-30	1,1-Dichloroethene	10/23/2012	53.4	Yes	N	D U			53.4	28.6	ug/kg
AQ-BMD-07-1-3B	A12J576-30	1,1-Dichloroethane	10/23/2012	53.4	Yes	N	D U			53.4	31.6	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/23/2012	214	Yes	N	D U			214	107	ug/kg
AQ-BMD-07-1-3B	A12J576-30	1,3-Dichloropropene, cis-	10/23/2012	107	Yes	N	D U			107	53.4	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Methyl tert-butyl ether (MTBE)	10/23/2012	107	Yes	N	D U			107	63.8	ug/kg
AQ-BMD-07-1-3B	A12J576-30	1,2,4-Trimethylbenzene	10/23/2012	107	Yes	N	D U			107	53.4	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Styrene	10/23/2012	107	Yes	N	D U			107	53.4	ug/kg
AQ-BMD-07-1-3B	A12J576-30	1,3-Dichloropropene, trans-	10/23/2012	107	Yes	N	D U			107	53.4	ug/kg
AQ-BMD-07-1-3B	A12J576-30	n-Propylbenzene	10/23/2012	53.4	Yes	N	D U			53.4	26.7	ug/kg
AQ-BMD-07-1-3B	A12J576-30	n-Butylbenzene	10/23/2012	107	Yes	N	D U			107	53.4	ug/kg
AQ-BMD-07-1-3B	A12J576-30	4-Chlorotoluene	10/23/2012	107	Yes	N	D U			107	53.4	ug/kg
AQ-BMD-07-1-3B	A12J576-30	1,4-Dichlorobenzene	10/23/2012	53.4	Yes	N	D U			53.4	26.7	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Ethylene dibromide (1,2-Dibromoethane)	10/23/2012	53.4	Yes	N	D U			53.4	32.4	ug/kg
AQ-BMD-07-1-3B	A12J576-30	1,2-Dichloroethane	10/23/2012	53.4	Yes	N	D U			53.4	26.7	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/23/2012	1070	Yes	N	D U			1070	534	ug/kg
AQ-BMD-07-1-3B	A12J576-30	1,3-Dichloropropane	10/23/2012	53.4	Yes	N	D U			53.4	26.7	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Ethylbenzene	10/23/2012	53.4	Yes	N	D U			53.4	26.7	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-07-1-3B	A12J576-30	1,3,5-Trimethylbenzene (Mesitylene)	10/23/2012	107	Yes	N	D U			107	53.4	ug/kg
AQ-BMD-07-1-3B	A12J576-30	1,2-Dichloroethene, trans-	10/23/2012	53.4	Yes	N	D U			53.4	26.7	ug/kg
AQ-BMD-07-1-3B	A12J576-30	1,2-Dichloroethene, cis-	10/23/2012	53.4	Yes	N	D U			53.4	26.7	ug/kg
AQ-BMD-07-1-3B	A12J576-30	sec-Butylbenzene	10/23/2012	107	Yes	N	D U			107	53.4	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Tetrachloroethene (PCE)	10/23/2012	53.4	Yes	N	D U			53.4	26.7	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Dibromochloromethane	10/23/2012	214	Yes	N	D U			214	107	ug/kg
AQ-BMD-07-1-3B	A12J576-30	1,2,4-Trichlorobenzene	10/23/2012	534	Yes	N	D U			534	267	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Chlorobenzene	10/23/2012	53.4	Yes	N	D U			53.4	27.8	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Toluene	10/23/2012	107	Yes	N	D U			107	53.4	ug/kg
AQ-BMD-07-1-3B	A12J576-30	Bromobenzene	10/23/2012	53.4	Yes	N	D U			53.4	29.2	ug/kg
TRIP_BLANK_20121022	A12J576-31	4-Isopropyltoluene (4-Cymene)	10/23/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121022	A12J576-31	Isopropylbenzene (Cumene)	10/23/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121022	A12J576-31	Dichloromethane (Methylene chloride)	10/23/2012	250	Yes	N	D U			250	125	ug/kg
TRIP_BLANK_20121022	A12J576-31	Carbon tetrachloride (Tetrachloromethane)	10/23/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121022	A12J576-31	1,1,1-Trichloroethane	10/23/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121022	A12J576-31	Chloroethane	10/23/2012	500	Yes	N	D U			500	250	ug/kg
TRIP_BLANK_20121022	A12J576-31	Bromochloromethane	10/23/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121022	A12J576-31	Dibromomethane	10/23/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121022	A12J576-31	Chloromethane	10/23/2012	250	Yes	N	D U			250	125	ug/kg
TRIP_BLANK_20121022	A12J576-31	Bromomethane (Methyl Bromide)	10/23/2012	500	Yes	N	D U			500	500	ug/kg
TRIP_BLANK_20121022	A12J576-31	Vinyl chloride	10/23/2012	25	Yes	N	D U			25.0	18.2	ug/kg
TRIP_BLANK_20121022	A12J576-31	Benzene	10/23/2012	12.5	Yes	N	D U			12.5	7.00	ug/kg
TRIP_BLANK_20121022	A12J576-31	Chloroform	10/23/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121022	A12J576-31	Acetone	10/23/2012	1000	Yes	N	D U			1000	500	ug/kg
TRIP_BLANK_20121022	A12J576-31	1,1,1,2-Tetrachloroethane	10/23/2012	25	Yes	N	D U			25.0	12.5	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
TRIP_BLANK_20121022	A12J576-31	2,2-Dichloropropane	10/23/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121022	A12J576-31	1,1-Dichloropropene	10/23/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121022	A12J576-31	1,3-Dichlorobenzene	10/23/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121022	A12J576-31	Carbon disulfide	10/23/2012	500	Yes	N	D U			500	250	ug/kg
TRIP_BLANK_20121022	A12J576-31	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/23/2012	100	Yes	N	D U			100	50.0	ug/kg
TRIP_BLANK_20121022	A12J576-31	2-Hexanone (Methyl butyl ketone)	10/23/2012	500	Yes	N	D U			500	250	ug/kg
TRIP_BLANK_20121022	A12J576-31	m,p-Xylene	10/23/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121022	A12J576-31	tert-Butylbenzene	10/23/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121022	A12J576-31	1,2,3-Trichloropropane	10/23/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121022	A12J576-31	1,2-Dibromo-3-chloropropane	10/23/2012	250	Yes	N	D U			250	125	ug/kg
TRIP_BLANK_20121022	A12J576-31	1,2,4-Trimethylbenzene	10/23/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121022	A12J576-31	1,2-Dichlorobenzene	10/23/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121022	A12J576-31	2-Chlorotoluene	10/23/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121022	A12J576-31	o-Xylene	10/23/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121022	A12J576-31	Naphthalene	10/23/2012	100	Yes	N	D U			100	50.0	ug/kg
TRIP_BLANK_20121022	A12J576-31	1,1,2,2-Tetrachloroethane	10/23/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121022	A12J576-31	1,2,3-Trichlorobenzene	10/23/2012	500	Yes	N	D U			500	250	ug/kg
TRIP_BLANK_20121022	A12J576-31	Bromoform (Tribromomethane)	10/23/2012	50	Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121022	A12J576-31	Trichloroethene (TCE)	10/23/2012	25	Yes	N	D U			25.0	18.1	ug/kg
TRIP_BLANK_20121022	A12J576-31	1,1,2-Trichloroethane	10/23/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121022	A12J576-31	2-Butanone (MEK)	10/23/2012	500	Yes	N	D U			500	250	ug/kg
TRIP_BLANK_20121022	A12J576-31	1,2-Dichloropropane	10/23/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121022	A12J576-31	Dichlorodifluoromethane	10/23/2012	100	Yes	N	D U			100	50.0	ug/kg
TRIP_BLANK_20121022	A12J576-31	Trichlorofluoromethane (Fluorotrichloromethane)	10/23/2012	100	Yes	N	D U			100	50.0	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
TRIP_BLANK_20121022	A12J576-31	1,1-Dichloroethene	10/23/2012	25		Yes	N	D U			25.0	13.4	ug/kg
TRIP_BLANK_20121022	A12J576-31	1,1-Dichloroethane	10/23/2012	25		Yes	N	D U			25.0	14.8	ug/kg
TRIP_BLANK_20121022	A12J576-31	Bromodichloromethane	10/23/2012	25		Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121022	A12J576-31	1,3-Dichloropropane	10/23/2012	25		Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121022	A12J576-31	n-Butylbenzene	10/23/2012	50		Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121022	A12J576-31	Methyl tert-butyl ether (MTBE)	10/23/2012	50		Yes	N	D U			50.0	29.8	ug/kg
TRIP_BLANK_20121022	A12J576-31	Ethylbenzene	10/23/2012	25		Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121022	A12J576-31	Styrene	10/23/2012	50		Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121022	A12J576-31	1,3-Dichloropropene, cis-	10/23/2012	50		Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121022	A12J576-31	1,2-Dichloroethene, trans-	10/23/2012	25		Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121022	A12J576-31	n-Propylbenzene	10/23/2012	25		Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121022	A12J576-31	4-Chlorotoluene	10/23/2012	50		Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121022	A12J576-31	1,4-Dichlorobenzene	10/23/2012	25		Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121022	A12J576-31	Ethylene dibromide (1,2-Dibromoethane)	10/23/2012	25		Yes	N	D U			25.0	15.2	ug/kg
TRIP_BLANK_20121022	A12J576-31	1,2-Dichloroethane	10/23/2012	25		Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121022	A12J576-31	sec-Butylbenzene	10/23/2012	50		Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121022	A12J576-31	1,3,5-Trimethylbenzene (Mesitylene)	10/23/2012	50		Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121022	A12J576-31	Bromobenzene	10/23/2012	25		Yes	N	D U			25.0	13.6	ug/kg
TRIP_BLANK_20121022	A12J576-31	Toluene	10/23/2012	50		Yes	N	D U			50.0	25.0	ug/kg
TRIP_BLANK_20121022	A12J576-31	Chlorobenzene	10/23/2012	25		Yes	N	D U			25.0	13.0	ug/kg
TRIP_BLANK_20121022	A12J576-31	1,2,4-Trichlorobenzene	10/23/2012	250		Yes	N	D U			250	125	ug/kg
TRIP_BLANK_20121022	A12J576-31	Dibromochloromethane	10/23/2012	100		Yes	N	D U			100	50.0	ug/kg
TRIP_BLANK_20121022	A12J576-31	Tetrachloroethene (PCE)	10/23/2012	25		Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121022	A12J576-31	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/23/2012	500		Yes	N	D U			500	250	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
TRIP_BLANK_20121022	A12J576-31	1,2-Dichloroethene, cis-	10/23/2012	25	Yes	N	D U			25.0	12.5	ug/kg
TRIP_BLANK_20121022	A12J576-31	1,3-Dichloropropene, trans-	10/23/2012	50	Yes	N	D U			50.0	25.0	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-03-2-8	A12J576-13	Hexachloroethane	10/29/2012	2610	Yes	N	D U			2610	1300	ug/kg
AQ-BMD-03-2-8	A12J576-13	N-Nitrosodi-N-propylamine	10/29/2012	2610	Yes	N	D U			2610	1300	ug/kg
AQ-BMD-03-2-8	A12J576-13	Phenanthrene	10/29/2012	19300	Yes	Y	D			1040	521	ug/kg
AQ-BMD-03-2-8	A12J576-13	Di-n-butyl phthalate	10/29/2012	5210	Yes	N	D U			5210	2610	ug/kg
AQ-BMD-03-2-8	A12J576-13	Diethyl phthalate	10/29/2012	5210	Yes	N	D U			5210	2610	ug/kg
AQ-BMD-03-2-8	A12J576-13	Acenaphthene	10/29/2012	1040	Yes	N	D U			1040	521	ug/kg
AQ-BMD-03-2-8	A12J576-13	Isophorone	10/29/2012	2610	Yes	N	D U			2610	1300	ug/kg
AQ-BMD-03-2-8	A12J576-13	Hexachlorocyclopentadiene	10/29/2012	5210	Yes	N	D U			5210	2610	ug/kg
AQ-BMD-03-2-8	A12J576-13	Benzo(b)fluoranthene	10/29/2012	26500	Yes	Y	D	J	9	1560	782	ug/kg
AQ-BMD-03-2-8	A12J576-13	Fluorene	10/29/2012	1040	Yes	N	D U			1040	521	ug/kg
AQ-BMD-03-2-8	A12J576-13	N-Nitrosodimethylamine	10/29/2012	2610	Yes	N	D U			2610	1300	ug/kg
AQ-BMD-03-2-8	A12J576-13	Aniline	10/29/2012	5210	Yes	N	D U			5210	2610	ug/kg
AQ-BMD-03-2-8	A12J576-13	2,6-Dinitrotoluene	10/29/2012	10400	Yes	N	D U			10400	5210	ug/kg
AQ-BMD-03-2-8	A12J576-13	4-Chloro-3-methylphenol	10/29/2012	10400	Yes	N	D U			10400	5210	ug/kg
AQ-BMD-03-2-8	A12J576-13	2,3,4,6-Tetrachlorophenol	10/29/2012	5210	Yes	N	D U			5210	2610	ug/kg
AQ-BMD-03-2-8	A12J576-13	2,4,5-Trichlorophenol	10/29/2012	5210	Yes	N	D U			5210	2610	ug/kg
AQ-BMD-03-2-8	A12J576-13	4-Chlorophenyl phenyl ether	10/29/2012	2610	Yes	N	D U			2610	1300	ug/kg
AQ-BMD-03-2-8	A12J576-13	2-Nitrophenol	10/29/2012	10400	Yes	N	D U			10400	5210	ug/kg
AQ-BMD-03-2-8	A12J576-13	2-Chlorophenol	10/29/2012	5210	Yes	N	D U			5210	2610	ug/kg
AQ-BMD-03-2-8	A12J576-13	1,2-Dichlorobenzene	10/29/2012	2610	Yes	N	D U			2610	1300	ug/kg
AQ-BMD-03-2-8	A12J576-13	2-Methylphenol (o-Cresol)	10/29/2012	2610	Yes	N	D U			2610	1300	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-03-2-8	A12J576-13	3,3'-Dichlorobenzidine	10/29/2012	10400	Yes	N	D U			10400	5210	ug/kg
AQ-BMD-03-2-8	A12J576-13	2-Chloronaphthalene	10/29/2012	1040	Yes	N	D U			1040	521	ug/kg
AQ-BMD-03-2-8	A12J576-13	2-Methylnaphthalene	10/29/2012	2090	Yes	N	D U			2090	1040	ug/kg
AQ-BMD-03-2-8	A12J576-13	Butylbenzyl phthalate	10/29/2012	20900	Yes	N	D U			20900	10400	ug/kg
AQ-BMD-03-2-8	A12J576-13	1-Methylnaphthalene	10/29/2012	2090	Yes	N	D U			2090	1040	ug/kg
AQ-BMD-03-2-8	A12J576-13	N-Nitrosodiphenylamine	10/29/2012	2610	Yes	N	D U			2610	1300	ug/kg
AQ-BMD-03-2-8	A12J576-13	2-Nitroaniline	10/29/2012	20900	Yes	N	D U			20900	10400	ug/kg
AQ-BMD-03-2-8	A12J576-13	2,4,6-Trichlorophenol	10/29/2012	5210	Yes	N	D U			5210	2610	ug/kg
AQ-BMD-03-2-8	A12J576-13	Pentachlorophenol	10/29/2012	20900	Yes	N	D U			20900	10400	ug/kg
AQ-BMD-03-2-8	A12J576-13	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/29/2012	2610	Yes	N	D U			2610	1300	ug/kg
AQ-BMD-03-2-8	A12J576-13	Carbazole	10/29/2012	2360	Yes	Y	D			1560	782	ug/kg
AQ-BMD-03-2-8	A12J576-13	Dibenzo(a,h)anthracene	10/29/2012	2110	Yes	Y	D			1040	521	ug/kg
AQ-BMD-03-2-8	A12J576-13	Naphthalene	10/29/2012	2090	Yes	N	D U			2090	1040	ug/kg
AQ-BMD-03-2-8	A12J576-13	4-Chloroaniline	10/29/2012	2610	Yes	N	D U			2610	1300	ug/kg
AQ-BMD-03-2-8	A12J576-13	Anthracene	10/29/2012	3020	Yes	Y	D			1040	521	ug/kg
AQ-BMD-03-2-8	A12J576-13	Hexachlorobenzene	10/29/2012	1040	Yes	N	D U			1040	521	ug/kg
AQ-BMD-03-2-8	A12J576-13	Di-n-octyl phthalate	10/29/2012	20900	Yes	N	D U			20900	10400	ug/kg
AQ-BMD-03-2-8	A12J576-13	Bis(2-ethylhexyl)phthalate	10/29/2012	20900	Yes	N	D U			20900	10400	ug/kg
AQ-BMD-03-2-8	A12J576-13	bis(2-Chloroethoxy)methane	10/29/2012	2610	Yes	N	D U			2610	1300	ug/kg
AQ-BMD-03-2-8	A12J576-13	1,3-Dichlorobenzene	10/29/2012	2610	Yes	N	D U			2610	1300	ug/kg
AQ-BMD-03-2-8	A12J576-13	Phenol	10/29/2012	2090	Yes	N	D U			2090	1040	ug/kg
AQ-BMD-03-2-8	A12J576-13	2,4-Dinitrotoluene	10/29/2012	10400	Yes	N	D U			10400	5210	ug/kg
AQ-BMD-03-2-8	A12J576-13	1,4-Dichlorobenzene	10/29/2012	2610	Yes	N	D U			2610	1300	ug/kg
AQ-BMD-03-2-8	A12J576-13	2,4-Dimethylphenol	10/29/2012	5210	Yes	N	D U			5210	2610	ug/kg
AQ-BMD-03-2-8	A12J576-13	4-Bromophenyl-phenyl ether	10/29/2012	2610	Yes	N	D U			2610	1300	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-03-2-8	A12J576-13	Benzyl alcohol	10/29/2012	5210	Yes	N	D U			5210	2610	ug/kg
AQ-BMD-03-2-8	A12J576-13	4-Nitrophenol	10/29/2012	10400	Yes	N	D U			10400	5210	ug/kg
AQ-BMD-03-2-8	A12J576-13	4-Nitroaniline	10/29/2012	20900	Yes	N	D U			20900	10400	ug/kg
AQ-BMD-03-2-8	A12J576-13	bis(2-Chloroethyl)ether	10/29/2012	2610	Yes	N	D U			2610	1300	ug/kg
AQ-BMD-03-2-8	A12J576-13	Indeno(1,2,3-c,d)pyrene	10/29/2012	8500	Yes	Y	D			1040	521	ug/kg
AQ-BMD-03-2-8	A12J576-13	2,4-Dinitrophenol	10/29/2012	26100	Yes	N	D U			26100	13000	ug/kg
AQ-BMD-03-2-8	A12J576-13	Benzo(a)pyrene	10/29/2012	7340	Yes	Y	D			1560	782	ug/kg
AQ-BMD-03-2-8	A12J576-13	bis(2-Chloroisopropyl)ether	10/29/2012	2610	Yes	N	D U			2610	1300	ug/kg
AQ-BMD-03-2-8	A12J576-13	Benzoic acid	10/29/2012	130000	Yes	N	D U	UJ	5	130000	65200	ug/kg
AQ-BMD-03-2-8	A12J576-13	Acenaphthylene	10/29/2012	1040	Yes	N	D U			1040	521	ug/kg
AQ-BMD-03-2-8	A12J576-13	Benzo(k)fluoranthene	10/29/2012	6630	Yes	Y	D			1560	782	ug/kg
AQ-BMD-03-2-8	A12J576-13	1,2,4-Trichlorobenzene	10/29/2012	2610	Yes	N	D U			2610	1300	ug/kg
AQ-BMD-03-2-8	A12J576-13	Chrysene	10/29/2012	20000	Yes	Y	D	J	9	1040	521	ug/kg
AQ-BMD-03-2-8	A12J576-13	2,4-Dichlorophenol	10/29/2012	5210	Yes	N	D U			5210	2610	ug/kg
AQ-BMD-03-2-8	A12J576-13	Benzo(g,h,i)perylene	10/29/2012	9140	Yes	Y	D			1040	521	ug/kg
AQ-BMD-03-2-8	A12J576-13	Dibenzofuran	10/29/2012	1040	Yes	N	D U			1040	521	ug/kg
AQ-BMD-03-2-8	A12J576-13	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	10/29/2012	2610	Yes	N	D U			2610	1300	ug/kg
AQ-BMD-03-2-8	A12J576-13	Dimethyl phthalate	10/29/2012	5210	Yes	N	D U			5210	2610	ug/kg
AQ-BMD-03-2-8	A12J576-13	Pyrene	10/29/2012	31100	Yes	Y	D			1040	521	ug/kg
AQ-BMD-03-2-8	A12J576-13	Benzo(a)anthracene	10/29/2012	9260	Yes	Y	D			1040	521	ug/kg
AQ-BMD-03-2-8	A12J576-13	Fluoranthene	10/29/2012	35100	Yes	Y	D			1040	521	ug/kg
AQ-BMD-03-2-8	A12J576-13	3-Nitroaniline	10/29/2012	20900	Yes	N	D U			20900	10400	ug/kg
AQ-BMD-03-2-8	A12J576-13	Nitrobenzene	10/29/2012	10400	Yes	N	D U			10400	5210	ug/kg
AQ-BMD-03-2-8	A12J576-13	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	10/29/2012	26100	Yes	N	D U			26100	13000	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-01-2-5	A12J576-04	Acenaphthene	10/30/2012	1020	Yes	N	D U			1020	511	ug/kg
AQ-BMD-01-2-5	A12J576-04	Pyrene	10/30/2012	6490	Yes	Y	D			1020	511	ug/kg
AQ-BMD-01-2-5	A12J576-04	Dibenzofuran	10/30/2012	1020	Yes	N	D U			1020	511	ug/kg
AQ-BMD-01-2-5	A12J576-04	Benzo(g,h,i)perylene	10/30/2012	1790	Yes	Y	D			1020	511	ug/kg
AQ-BMD-01-2-5	A12J576-04	Indeno(1,2,3-c,d)pyrene	10/30/2012	2070	Yes	Y	D			1020	511	ug/kg
AQ-BMD-01-2-5	A12J576-04	Fluoranthene	10/30/2012	7050	Yes	Y	D			1020	511	ug/kg
AQ-BMD-01-2-5	A12J576-04	Acenaphthylene	10/30/2012	1020	Yes	N	D U			1020	511	ug/kg
AQ-BMD-01-2-5	A12J576-04	Benzo(b,k)fluoranthene	10/30/2012	9720	Yes	Y	D			2040	1020	ug/kg
AQ-BMD-01-2-5	A12J576-04	Anthracene	10/30/2012	1070	Yes	Y	D			1020	511	ug/kg
AQ-BMD-01-2-5	A12J576-04	Benzo(a)anthracene	10/30/2012	1890	Yes	Y	D			1020	511	ug/kg
AQ-BMD-01-2-5	A12J576-04	Chrysene	10/30/2012	5430	Yes	Y	D			1020	511	ug/kg
AQ-BMD-01-2-5	A12J576-04	Phenanthrene	10/30/2012	5360	Yes	N	D	U	7	1020	511	ug/kg
AQ-BMD-01-2-5	A12J576-04	Fluorene	10/30/2012	1020	Yes	N	D U			1020	511	ug/kg
AQ-BMD-01-2-5	A12J576-04	1-Methylnaphthalene	10/30/2012	2040	Yes	N	D U			2040	1020	ug/kg
AQ-BMD-01-2-5	A12J576-04	Naphthalene	10/30/2012	2040	Yes	N	D U			2040	1020	ug/kg
AQ-BMD-01-2-5	A12J576-04	2-Methylnaphthalene	10/30/2012	2040	Yes	N	D U			2040	1020	ug/kg
AQ-BMD-01-2-5	A12J576-04	Benzo(a)pyrene	10/30/2012	1670	Yes	Y	D			1020	511	ug/kg
AQ-BMD-01-2-5	A12J576-04	Dibenzo(a,h)anthracene	10/30/2012	529	Yes	Y	D J			1020	511	ug/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Pyrene	10/30/2012	21600	Yes	Y	D			989	494	ug/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Anthracene	10/30/2012	1950	Yes	Y	D			989	494	ug/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Benzo(b,k)fluoranthene	10/30/2012	57200	Yes	Y	D			1980	989	ug/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Dibenzofuran	10/30/2012	989	Yes	N	D U			989	494	ug/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Benzo(g,h,i)perylene	10/30/2012	13700	Yes	Y	D			989	494	ug/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Indeno(1,2,3-c,d)pyrene	10/30/2012	14200	Yes	Y	D			989	494	ug/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Fluoranthene	10/30/2012	21900	Yes	Y	D			989	494	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-02-1.5-5.5	A12J576-08	Acenaphthylene	10/30/2012	989	Yes	N	D U			989	494	ug/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Chrysene	10/30/2012	35200	Yes	Y	D			989	494	ug/kg
AQ-BMD-02-1.5-5.5	A12J576-08	1-Methylnaphthalene	10/30/2012	1980	Yes	N	D U			1980	989	ug/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Benzo(a)pyrene	10/30/2012	8810	Yes	Y	D			989	494	ug/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Naphthalene	10/30/2012	1980	Yes	N	D U			1980	989	ug/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Fluorene	10/30/2012	989	Yes	N	D U			989	494	ug/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Phenanthrene	10/30/2012	8880	Yes	Y	D			989	494	ug/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Acenaphthene	10/30/2012	989	Yes	N	D U			989	494	ug/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Benzo(a)anthracene	10/30/2012	9870	Yes	Y	D			989	494	ug/kg
AQ-BMD-02-1.5-5.5	A12J576-08	Dibenzo(a,h)anthracene	10/30/2012	3910	Yes	Y	D			989	494	ug/kg
AQ-BMD-02-1.5-5.5	A12J576-08	2-Methylnaphthalene	10/30/2012	1980	Yes	N	D U			1980	989	ug/kg
AQ-BMD-04-1-7	A12J576-19	Benzo(b,k)fluoranthene	10/30/2012	62300	Yes	Y	D			5070	2540	ug/kg
AQ-BMD-04-1-7	A12J576-19	Acenaphthylene	10/30/2012	2540	Yes	N	D U			2540	1270	ug/kg
AQ-BMD-04-1-7	A12J576-19	Pyrene	10/30/2012	299000	Yes	Y	D			2540	1270	ug/kg
AQ-BMD-04-1-7	A12J576-19	Dibenzofuran	10/30/2012	8090	Yes	Y	D			2540	1270	ug/kg
AQ-BMD-04-1-7	A12J576-19	Anthracene	10/30/2012	98400	Yes	Y	D			2540	1270	ug/kg
AQ-BMD-04-1-7	A12J576-19	Benzo(g,h,i)perylene	10/30/2012	2720	Yes	Y	D			2540	1270	ug/kg
AQ-BMD-04-1-7	A12J576-19	Indeno(1,2,3-c,d)pyrene	10/30/2012	3220	Yes	Y	D			2540	1270	ug/kg
AQ-BMD-04-1-7	A12J576-19	Fluoranthene	10/30/2012	411000	Yes	Y	D			2540	1270	ug/kg
AQ-BMD-04-1-7	A12J576-19	Chrysene	10/30/2012	104000	Yes	Y	D			2540	1270	ug/kg
AQ-BMD-04-1-7	A12J576-19	Benzo(a)pyrene	10/30/2012	7730	Yes	Y	D			2540	1270	ug/kg
AQ-BMD-04-1-7	A12J576-19	Dibenzo(a,h)anthracene	10/30/2012	2540	Yes	N	D U			2540	1270	ug/kg
AQ-BMD-04-1-7	A12J576-19	1-Methylnaphthalene	10/30/2012	5070	Yes	N	D U			5070	2540	ug/kg
AQ-BMD-04-1-7	A12J576-19	Acenaphthene	10/30/2012	3560	Yes	Y	D			2540	1270	ug/kg
AQ-BMD-04-1-7	A12J576-19	2-Methylnaphthalene	10/30/2012	5070	Yes	N	D U			5070	2540	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-04-1-7	A12J576-19	Naphthalene	10/30/2012	5070	Yes	N	D U			5070	2540	ug/kg
AQ-BMD-04-1-7	A12J576-19	Phenanthrene	10/30/2012	370000	Yes	Y	D			2540	1270	ug/kg
AQ-BMD-04-1-7	A12J576-19	Benzo(a)anthracene	10/30/2012	42200	Yes	Y	D			2540	1270	ug/kg
AQ-BMD-04-1-7	A12J576-19	Fluorene	10/30/2012	2540	Yes	N	D U			2540	1270	ug/kg
AQ-BMD-05-1-6	A12J576-24	Acenaphthene	10/30/2012	1040	Yes	N	D U			1040	518	ug/kg
AQ-BMD-05-1-6	A12J576-24	Benzo(b,k)fluoranthene	10/30/2012	23600	Yes	Y	D			2070	1040	ug/kg
AQ-BMD-05-1-6	A12J576-24	2-Methylnaphthalene	10/30/2012	2070	Yes	N	D U			2070	1040	ug/kg
AQ-BMD-05-1-6	A12J576-24	Naphthalene	10/30/2012	2070	Yes	N	D U			2070	1040	ug/kg
AQ-BMD-05-1-6	A12J576-24	1-Methylnaphthalene	10/30/2012	2070	Yes	N	D U			2070	1040	ug/kg
AQ-BMD-05-1-6	A12J576-24	Phenanthrene	10/30/2012	40800	Yes	Y	D			1040	518	ug/kg
AQ-BMD-05-1-6	A12J576-24	Chrysene	10/30/2012	25800	Yes	Y	D			1040	518	ug/kg
AQ-BMD-05-1-6	A12J576-24	Acenaphthylene	10/30/2012	1040	Yes	N	D U			1040	518	ug/kg
AQ-BMD-05-1-6	A12J576-24	Benzo(a)anthracene	10/30/2012	7520	Yes	Y	D			1040	518	ug/kg
AQ-BMD-05-1-6	A12J576-24	Fluorene	10/30/2012	1040	Yes	N	D U			1040	518	ug/kg
AQ-BMD-05-1-6	A12J576-24	Dibenzo(a,h)anthracene	10/30/2012	639	Yes	Y	D J			1040	518	ug/kg
AQ-BMD-05-1-6	A12J576-24	Fluoranthene	10/30/2012	56700	Yes	Y	D			1040	518	ug/kg
AQ-BMD-05-1-6	A12J576-24	Anthracene	10/30/2012	4600	Yes	Y	D			1040	518	ug/kg
AQ-BMD-05-1-6	A12J576-24	Pyrene	10/30/2012	38200	Yes	Y	D			1040	518	ug/kg
AQ-BMD-05-1-6	A12J576-24	Dibenzofuran	10/30/2012	796	Yes	Y	D J			1040	518	ug/kg
AQ-BMD-05-1-6	A12J576-24	Benzo(g,h,i)perylene	10/30/2012	1660	Yes	Y	D			1040	518	ug/kg
AQ-BMD-05-1-6	A12J576-24	Indeno(1,2,3-c,d)pyrene	10/30/2012	2000	Yes	Y	D			1040	518	ug/kg
AQ-BMD-05-1-6	A12J576-24	Benzo(a)pyrene	10/30/2012	1510	Yes	Y	D			1040	518	ug/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Acenaphthene	10/30/2012	1060	Yes	N	D U			1060	532	ug/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Benzo(b,k)fluoranthene	10/30/2012	37200	Yes	Y	D			2130	1060	ug/kg
AQ-BMD-06-1.5-5.5	A12J576-28	2-Methylnaphthalene	10/30/2012	2130	Yes	N	D U			2130	1060	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-06-1.5-5.5	A12J576-28	Naphthalene	10/30/2012	2130	Yes	N	D U			2130	1060	ug/kg
AQ-BMD-06-1.5-5.5	A12J576-28	1-Methylnaphthalene	10/30/2012	2130	Yes	N	D U			2130	1060	ug/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Fluorene	10/30/2012	1060	Yes	N	D U			1060	532	ug/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Phenanthrene	10/30/2012	12300	Yes	Y	D			1060	532	ug/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Indeno(1,2,3-c,d)pyrene	10/30/2012	3690	Yes	Y	D			1060	532	ug/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Pyrene	10/30/2012	18200	Yes	Y	D			1060	532	ug/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Dibenzofuran	10/30/2012	1060	Yes	N	D U			1060	532	ug/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Benzo(a)anthracene	10/30/2012	7280	Yes	Y	D			1060	532	ug/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Anthracene	10/30/2012	2400	Yes	Y	D			1060	532	ug/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Benzo(g,h,i)perylene	10/30/2012	3010	Yes	Y	D			1060	532	ug/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Fluoranthene	10/30/2012	21800	Yes	Y	D			1060	532	ug/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Acenaphthylene	10/30/2012	1060	Yes	N	D U			1060	532	ug/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Chrysene	10/30/2012	26300	Yes	Y	D			1060	532	ug/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Benzo(a)pyrene	10/30/2012	1770	Yes	Y	D			1060	532	ug/kg
AQ-BMD-06-1.5-5.5	A12J576-28	Dibenzo(a,h)anthracene	10/30/2012	1330	Yes	Y	D			1060	532	ug/kg
AQ-BMD-07-1-3A	A12J576-29	Benzo(a)anthracene	10/30/2012	3230	Yes	Y	D			1090	543	ug/kg
AQ-BMD-07-1-3A	A12J576-29	Acenaphthene	10/30/2012	1090	Yes	N	D U			1090	543	ug/kg
AQ-BMD-07-1-3A	A12J576-29	Phenanthrene	10/30/2012	2950	Yes	N	D	U	7	1090	543	ug/kg
AQ-BMD-07-1-3A	A12J576-29	Fluorene	10/30/2012	1090	Yes	N	D U			1090	543	ug/kg
AQ-BMD-07-1-3A	A12J576-29	1-Methylnaphthalene	10/30/2012	2170	Yes	N	D U			2170	1090	ug/kg
AQ-BMD-07-1-3A	A12J576-29	Naphthalene	10/30/2012	2170	Yes	N	D U			2170	1090	ug/kg
AQ-BMD-07-1-3A	A12J576-29	2-Methylnaphthalene	10/30/2012	2170	Yes	N	D U			2170	1090	ug/kg
AQ-BMD-07-1-3A	A12J576-29	Anthracene	10/30/2012	682	Yes	Y	D J			1090	543	ug/kg
AQ-BMD-07-1-3A	A12J576-29	Chrysene	10/30/2012	8640	Yes	Y	D			1090	543	ug/kg
AQ-BMD-07-1-3A	A12J576-29	Benzo(b,k)fluoranthene	10/30/2012	22100	Yes	Y	D			2170	1090	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-07-1-3A	A12J576-29	Acenaphthylene	10/30/2012	1090	Yes	N	D U			1090	543	ug/kg
AQ-BMD-07-1-3A	A12J576-29	Fluoranthene	10/30/2012	8330	Yes	Y	D			1090	543	ug/kg
AQ-BMD-07-1-3A	A12J576-29	Indeno(1,2,3-c,d)pyrene	10/30/2012	7050	Yes	Y	D			1090	543	ug/kg
AQ-BMD-07-1-3A	A12J576-29	Benzo(g,h,i)perylene	10/30/2012	6070	Yes	Y	D			1090	543	ug/kg
AQ-BMD-07-1-3A	A12J576-29	Dibenzofuran	10/30/2012	1090	Yes	N	D U			1090	543	ug/kg
AQ-BMD-07-1-3A	A12J576-29	Pyrene	10/30/2012	8370	Yes	Y	D			1090	543	ug/kg
AQ-BMD-07-1-3A	A12J576-29	Dibenzo(a,h)anthracene	10/30/2012	1910	Yes	Y	D			1090	543	ug/kg
AQ-BMD-07-1-3A	A12J576-29	Benzo(a)pyrene	10/30/2012	2760	Yes	Y	D			1090	543	ug/kg

LDC Report# 29076E1

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 24, 2012
LDC Report Date:	January 24, 2013
Matrix:	Soil
Parameters:	Volatiles
Validation Level:	Stage 2B
Laboratory:	Apex Laboratories, LLC
Sample Delivery Group (SDG):	A12J671

Sample Identification

AQ-BMP-02-11-13B
AQ-WMP-02-6-8
AQ-WMP-02-6-8MS

Introduction

This data review covers 3 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
11/2/12 (9:08)	Acetone Bromoform 2-Butanone 1,2-Dibromo-3-chloropropane Dichlorodifluoromethane 2-Hexanone 4-Methyl-2-pentanone 1,1,1,2-Tetrachloroethane 1,2,3-Trichloropropane	23.7 28.3 31.5 32.8 28.1 28.2 31.7 22.1 23.7	AQ-WMP-02-6-8 AQ-WMP-02-6-8MS 1211028-MB	J (all detects) UJ (all non-detects)	A
11/2/12 (9:08)	Carbon disulfide	32.8	AQ-WMP-02-6-8 AQ-WMP-02-6-8MS 1211028-MB	J (all detects)	A

Date	Compound	%D	Associated Samples	Flag	A or P
11/2/12 (15:54)	Acetone	23.5	AQ-BMP-02-11-13B	J (all detects)	A
	Bromoform	35.0	1211065-MB	UJ (all non-detects)	
	2-Butanone	30.5			
	1,2-Dibromo-3-chloropropane	32.3			
	Dibromochloromethane	20.2			
	1,2-Dibromoethane	23.6			
	Dichlorodifluoromethane	32.9			
	1,3-Dichloropropane	26.3			
	Hexachlorobutadiene	22.1			
	2-Hexanone	29.0			
	4-Methyl-2-pentanone	35.2			
	1,1,1,2-Tetrachloroethane	23.2			
	1,1,2-Trichloroethane	24.0			
	1,2,3-Trichloropropane	29.0			
	o-Xylene	22.0			

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	RPD (Limits)	Flag	A or P
AQ-WMP-02-6-8MS (AQ-WMP-02-6-8)	Trichloroethene	173 (50-150)	-	J (all detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

All tentatively identified compounds were within validation criteria.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to calibration %D problems, data were qualified as estimated in two samples.

No data were qualified due to high MS %R; the associated results were non-detected.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Volatiles - Data Qualification Summary - SDG A12J671

SDG	Sample	Compound	Flag	A or P	Reason
A12J671	AQ-WMP-02-6-8	Acetone Bromoform 2-Butanone 1,2-Dibromo-3-chloropropane Dichlorodifluoromethane 2-Hexanone 4-Methyl-2-pentanone 1,1,1,2-Tetrachloroethane 1,2,3-Trichloropropane	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
A12J671	AQ-WMP-02-6-8	Carbon disulfide	J (all detects)	A	Continuing calibration (%D)
A12J671	AQ-BMP-02-11-13B	Acetone Bromoform 2-Butanone 1,2-Dibromo-3-chloropropane Dibromochloromethane 1,2-Dibromoethane Dichlorodifluoromethane 1,3-Dichloropropane Hexachlorobutadiene 2-Hexanone 4-Methyl-2-pentanone 1,1,1,2-Tetrachloroethane 1,1,2-Trichloroethane 1,2,3-Trichloropropane o-Xylene	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
A12J671	AQ-WMP-02-6-8	Trichloroethene	J (all detects)	A	Matrix spike (%R)

Millennium Bulk Terminals
Volatiles - Laboratory Blank Data Qualification Summary - SDG A12J671

No Sample Data Qualified in this SDG

LDC #: 29076E1

SDG #: A12J671

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/23/13

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/24/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 15/30
IV.	Continuing calibration/ICV	SW	ICV ≤ 30 CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	MS only
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: SOIL

8	1 ~~+~~ 1	AQ-BMP-02-11-13B	~~11~~ 1	1211065	21		31	
29	~~2~~ 2	AQ-WMP-02-6-8	~~12~~	1211028	22		32	
	3 2	AQ-WMP-02-6-8MS	13	~~1211007~~	23		33	
	4		14		24		34	
	5		15		25		35	
	6		16		26		36	
	7		17		27		37	
	8		18		28		38	
	9		19		29		39	
	10		20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropene	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 29076E /

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ≤~~25~~ 20 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤~~25.0~~ 20%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
-	~~10/4~~	D2110203-CCV	F	23.7		1211028-MB,	J/UJ/A
-	11/02/12		X	28.3		2, 3	
-	09:08		M	31.5			
+			G	32.8			J/A det
-			MM	32.8			J/UJ/A
-			JJ	28.1			
-			Z	28.2			
-			Y	31.7			
-			UU	22.1			
-			XX	23.7			
-	11/02/12	D2110219-CCV	F	23.5		1211065-MB,	J/UJ/A
-	15:52		X	35.0		1	
-			M	30.5			
-			MM	32.3			
-			T	20.2			
-			TT	23.6			
-			JJ	32.9			
-			SS	26.3			
-			LLL	22.1			
-			Z	29.0			
-			Y	35.2			
-			UU	23.2			
-			U	24.0			
-			XX	29.0			
-			SSS	22.0			

LDC #: 29076E1

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: FT
2nd Reviewer: CR

METHOD : GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?
Y N N/A Was a MS/MSD analyzed every 20 samples of each matrix?
Y N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	3	S	173 (50-150)	( )	( )	292	J/Adet
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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			( )	( )	( )		

LDC Report# 29076E2a

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 24 through October 25, 2012
LDC Report Date:	January 24, 2013
Matrix:	Soil
Parameters:	Semivolatiles
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J671

Sample Identification

AQ-WMP-04-2-8
AQ-SO-OF3-0-10
AQ-SO-OF5-0-10
AQ-SO-OF5D-0-10
AQ-SO-OF3-0-10DUP
AQ-SO-OF5D-0-10MS

Introduction

This data review covers 6 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270D for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
11/2/12	Carbazole	22.3	AQ-SO-OF3-0-10 AQ-SO-OF5D-0-10 AQ-SO-OF3-0-10DUP AQ-SO-OF5D-0-10MS 1211057-MB	J (all detects)	A
11/2/12	3,3'-Dichlorobenzidine	27.5	All samples in SDG A12J671	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	%R (Limits)	Flag	A or P
AQ-SO-OF5D-0-10MS (AQ-SO-OF5D-0-10)	2,4-Dinitrophenol 4-Chloroaniline Benzoic acid	5 (50-150) 27 (50-150) 46 (50-150)	J (all detects) UJ (all non-detects)	A

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID	Compound	%R (Limits)	Associated Samples	Flag	A or P
1211057-LCS	4-Chloroaniline Benzoic acid	46 (50-150) 45 (50-150)	All samples in SDG A12J671	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to calibration %D, MS %R, and LCS %R problems, data were qualified as estimated in four samples.

The quality control criteria reviewed were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Semivolatiles - Data Qualification Summary - SDG A12J671

SDG	Sample	Compound	Flag	A or P	Reason
A12J671	AQ-SO-OF3-0-10 AQ-SO-OF5D-0-10	Carbazole	J (all detects)	A	Continuing calibration (%D)
A12J671	AQ-WMP-04-2-8 AQ-SO-OF3-0-10 AQ-SO-OF5-0-10 AQ-SO-OF5D-0-10	3,3'-Dichlorobenzidine	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
A12J671	AQ-SO-OF5D-0-10	2,4-Dinitrophenol 4-Chloroaniline Benzoic acid	J (all detects) UJ (all non-detects)	A	Matrix spike (%R)
A12J671	AQ-WMP-04-2-8 AQ-SO-OF3-0-10 AQ-SO-OF5-0-10 AQ-SO-OF5D-0-10	4-Chloroaniline Benzoic acid	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)

Millennium Bulk Terminals
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG A12J671

No Sample Data Qualified in this SDG

LDC #: 29076E2a

SDG #: A12J671

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/23/13

Page: 1 of 1

Reviewer: FT

2nd Reviewer: OC

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/24 – 10/27/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20, r²
IV.	Continuing calibration/ICV	SW	ICV ≤ 30 CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates /MMP	SW/A	MS only
VIII.	Laboratory control samples	SW	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

SOIL

24	1	AQ-WMP-04-2-8	11	1211057	21		31	
36	2	AQ-SO-OF3-0-10	12		22		32	
38	3	AQ-SO-OF5-0-10	13		23		33	
40	4	AQ-SO-OF5D-0-10	14		24		34	
	5	AQ-SO-OF3-0-10DUP	15		25		35	
	6	AQ-SO-OF5D-0-10MS	16		26		36	
	7		17		27		37	
	8		18		28		38	
	9		19		29		39	
	10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1- Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 29076E 2a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ≤20 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤20.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
+	11/02/12	E11021202-	~~E11021~~W W	22.3	→	1211057-MB, 2, 4-6	J/A det
-	12:52	ccv	BBB	27.5	→	All	J/UJ/A

CONCAL.2S

LDC #: 29076E2a

VALIDATION FINDINGS WORKSHEET
Surrogate Recovery

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Were percent recoveries (%R) for surrogates within QC limits?

Y N ~~N/A~~ If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?

Y N (N/A) If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

#	Date	Sample ID	Surrogate	%R (Limits)	Qualifications
		1	2FP	26 (35-120)	no qual
				( )	
				( )	
		4	FBP	29 (45-120)	no qual
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
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				( )	
				( )	
				( )	
				( )	

* QC limits are advisory	QC Limits (Soil)	QC Limits (Water)
S1 (NBZ) = Nitrobenzene-d5	23-120	35-114
S2 (FBP) = 2-Fluorobiphenyl	30-115	43-116
S3 (TPH) = Terphenyl-d14	18-137	33-141
S4 (PHL) = Phenol-d5	24-113	10-94

	QC Limits (Soil)	QC Limits (Water)
S5 (2FP)= 2-Fluorophenol	25-121	21-100
S6 (TBP) = 2,4,6-Tribromophenol	19-122	10-123
S7 (2CP) = 2-Chlorophenol-d4	20-130*	33-110*
S8 (DCB) = 1,2-Dichlorobenzene-d4	20-130*	16-110*

LDC #: 29076 E2C

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: ____ FT __
2nd Reviewer: CR

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

Y N N/A Was a MS/MSD analyzed every 20 samples of each matrix?

Y N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits) 50-150	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		6	HH	5 (45-130)	( )	( )	4	J/UJ/A
			T	27 (30-150)	( )	( )	↓	↓
			PPP	46 (50-150)	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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LDC #: 29076E2a

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?
Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		1211057-LCS	T	46 (50-150)	( )	( )	All	J/UJ/P
			PPP	45 (50-150)	( )	( )	↓	↓
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 24, 2012
LDC Report Date:	February 7, 2013
Matrix:	Soil
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J671

Sample Identification

AQ-BMP-02-1-15
AQ-BMP-01-2-16
AQ-WMP-03-2-6
AQ-WMP-02-2-8
AQ-WMP-01-2.5-7.5
AQ-BMP-02-1-15DUP
AQ-WMP-03-2-6DUP
AQ-WMP-01-2.5-7.5MS
AQ-WMP-01-2.5-7.5REMS

Introduction

This data review covers 9 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
1211061-MB	11/2/12	Fluoranthene Phenanthrene Pyrene	5.84 ug/Kg 4.44 ug/Kg 4.81 ug/Kg	AQ-BMP-02-1-15 AQ-BMP-01-2-16 AQ-WMP-02-2-8

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
AQ-WMP-02-2-8	2-Fluorobiphenyl	42 (45-120)	All TCL compounds	J (all detects) UJ (all non-detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	%R (Limits)	Flag	A or P
AQ-WMP-01-2.5-7.5MS (AQ-WMP-01-2.5-7.5)	Naphthalene	45 (50-150)	J (all detects) UJ (all non-detects)	A

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Analyte	RPD (Limits)	Difference (Limits)	Flag	A or P
AQ-BMP-02-1-15DUP (AQ-BMP-02-1-15)	Acenaphthene Anthracene Dibenzofuran Fluorene	47 (≤35) 71 (≤35)	- - 1130 ug/Kg (≤1062) 3890 ug/Kg (≤1062)	J (all detects) J (all detects) J (all detects) J (all detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to surrogate %R, MS %R, and Duplicate RPD and difference problems, data were qualified as estimated in three samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A12J671

SDG	Sample	Compound	Flag	A or P	Reason
A12J671	AQ-WMP-02-2-8	All TCL compounds	J (all detects) UJ (all non-detects)	P	Surrogate spikes (%R)
A12J671	AQ-WMP-01-2.5-7.5	Naphthalene	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)
A12J671	AQ-BMP-02-1-15	Acenaphthene Anthracene	J (all detects) J (all detects)	A	Duplicate sample analysis (RPD)
A12J671	AQ-BMP-02-1-15	Dibenzofuran Fluorene	J (all detects) J (all detects)	A	Duplicate sample analysis (Difference)

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A12J671

No Sample Data Qualified in this SDG

LDC #: 29076E2b

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/23/13

SDG #: A12J671

Page: 1 of 1

Laboratory: APEX Laboratories, LLC

Reviewer: PP

2nd Reviewer: [illegible]

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/24/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV ≤ 30 CCV ≤ 20
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates /DMP	SW/SW	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: SOIL

1 1	AQ-BMP-02-1-15	11	1211061	21		31	
2 1	AQ-BMP-01-2-16	12	1211195	22		32	
3 2	AQ-WMP-03-2-6	13		23		33	
4 1	AQ-WMP-02-2-8	14		24		34	
5 2	AQ-WMP-01-2.5-7.5	15		25		35	
6 1	AQ-BMP-02-1-15DUP	16		26		36	
7 2	AQ-WMP-03-2-6DUP	17		27		37	
8 1	AQ-WMP-01-2.5-7.5MS	18		28		38	
9 2	#8 RE	19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1- Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 29076 Eth

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: FT
2nd Reviewer: 9

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a method blank analyzed for each matrix?
Y N N/A Was a method blank analyzed for each concentration preparation level?
Y N N/A Was a method blank associated with every sample?
Y N N/A Was the blank contaminated? If yes, please see qualification below.

Blank extraction date: 11/2/12 **Blank analysis date:** 11/2/12
Conc. units: ug/kg Associated Samples: 1, 2, 4 7 5X

Compound	Blank ID	Sample Identification								
	121106I-MB	5X								
YY	5.84	29.2								
UU	4.44	22.2								
ZZ	4.81	24.05								

Blank extraction date:_____ **Blank analysis date:**_____
Conc. units:_____ Associated Samples:_____

Compound	Blank ID	Sample Identification								

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 29076E2b

VALIDATION FINDINGS WORKSHEET
Surrogate Recovery

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were percent recoveries (%R) for surrogates within QC limits?
Y N N/A If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?
Y N N/A If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

#	Date	Sample ID	Surrogate	%R (Limits)	Qualifications
		1	TPH	135 (30-120)	no qual 100X DL
				( )	
		2	↓	138 (↓)	↓ 50X DL
				( )	
		4	FBP	42 (45-120)	J/UJ/P all TCL
				( )	
				( )	
				( )	
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* QC limits are advisory	QC Limits (Soil)	QC Limits (Water)
S1 (NBZ) = Nitrobenzene-d5	23-120	35-114
S2 (FBP) = 2-Fluorobiphenyl	30-115	43-116
S3 (TPH) = Terphenyl-d14	18-137	33-141
S4 (PHL) = Phenol-d5	24-113	10-94

	QC Limits (Soil)	QC Limits (Water)
S5 (2FP)= 2-Fluorophenol	25-121	21-100
S6 (TBP) = 2,4,6-Tribromophenol	19-122	10-123
S7 (2CP) = 2-Chlorophenol-d4	20-130*	33-110*
S8 (DCB) = 1,2-Dichlorobenzene-d4	20-130*	16-110*

SUR.2S

LDC #: 29076E2b

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: FT
2nd Reviewer: OR

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

Y N N/A Was a MS/MSD analyzed every 20 samples of each matrix?

Y N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		8	3	45 (50-152)	( )	( )	5	J/UJ/R
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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LDC#: 29076E2b

VALIDATION FINDINGS WORKSHEET
Laboratory Duplicates

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC MS PAH (EPA SW 846 Method 8270D-SIM)

Y N NA Were lab duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the lab duplicate pairs?

Compound	Concentration (ug/Kg)		RPD (≤35%)	Difference ~~(ug/L)~~	Limits (ug/L)	Qualifications (Parent Only)
	1	6				
GG	4690	7550	47	~~47~~		J/Adot
VV	22800	47800	71	~~71~~		
~~CCC~~	~~82600~~	~~118000~~	~~35~~	~~>35~~		
JJ	1340	2470		1130	≤1062	
NN	2040	5930		3890	≤1062	

V:\FIELD DUPLICATES\29076E2b LAB DUP.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 24 through October 25, 2012
LDC Report Date:	January 25, 2013
Matrix:	Soil
Parameters:	Polychlorinated Biphenyls
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J671

Sample Identification

AQ-WMP-04-2-8
AQ-SO-OF3-0-10
AQ-SO-OF5-0-10
AQ-SO-OF5D-0-10
AQ-WMP-04-2-8DUP
AQ-SO-OF5D-0-10MS

Introduction

This data review covers 6 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082A for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

Raw data were not reviewed for this SDG.

XIII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XV. Field Duplicates

No field duplicates were identified in this SDG.

XVI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polychlorinated Biphenyls - Data Qualification Summary - SDG A12J671

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG A12J671

No Sample Data Qualified in this SDG

LDC #: 29076E3b

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/23/13

SDG #: A12J671

Page: 1 of 1

Laboratory: APEX Laboratories, LLC

Reviewer: EZ

2nd Reviewer: GV

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/24 – 10/25/12
II.	GC/ECD Instrument Performance Check	ND	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates /DUP	A / A	MS only
VIII.	Laboratory control samples	A	LCS
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	N	
XIII.	Compound quantitation/RL/LOQ/LODs	N	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil

1 +	AQ-WMP-04-2-8	11 –	121106 O	21		31	
2 +	AQ-SO-OF3-0-10	12		22		32	
3 +	AQ-SO-OF5-0-10	13		23		33	
4 +	AQ-SO-OF5D-0-10	14		24		34	
5	AQ-WMP-04-2-8DUP	15		25		35	
6	AQ-SO-OF5D-0-10MS	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 24 through October 25, 2012
LDC Report Date:	January 22, 2013
Matrix:	Soil
Parameters:	Metals
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J671

Sample Identification

AQ-BMP-02-1-15
AQ-BMP-01-2-16
AQ-WMP-03-2-6
AQ-WMP-04-2-8
AQ-WMP-02-2-8
AQ-WMP-01-2.5-7.5
AQ-SO-OF3-0-10
AQ-SO-OF5-0-10
AQ-SO-OF5D-0-10
AQ-WMP-03-2-6(TCLP)
AQ-WMP-03-2-6(TCLP)MS
AQ-WMP-04-2-8MS
AQ-WMP-04-2-8DUP
AQ-SO-OF5D-0-10MS

Introduction

This data review covers 14 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010C and 6020 for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, and Zinc.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this method.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Metals - Data Qualification Summary - SDG A12J671

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Metals - Laboratory Blank Data Qualification Summary - SDG A12J671

No Sample Data Qualified in this SDG

LDC #: 29076E4
SDG #: A12J671
Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET
Stage 2B

Date: 1/21/13
Page: 1 of 1
Reviewer: [signature]
2nd Reviewer: [signature]

METHOD: Metals (EPA SW846 Method 6010C/6020)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/24-25/12
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	A	MS
VII.	Duplicate Sample Analysis	A	Dup
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates N	~~SW~~	~~(8,9)~~ [initials]
XV	Field Blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Soil

1	AQ-BMP-02-1-15	11	AQ-WMP-03-2-6MS (TCLP)	21		31	
2	AQ-BMP-01-2-16	12	AQ-WMP-04-2-8MS	22		32	
3	AQ-WMP-03-2-6	13	AQ-WMP-04-2-8DUP	23		33	
4	AQ-WMP-04-2-8	14	AQ-SO-OF5D-0-10MS	24		34	
5	AQ-WMP-02-2-8	15		25		35	
6	AQ-WMP-01-2.5-7.5	16		26		36	
7	AQ-SO-OF3-0-10	17		27		37	
8	AQ-SO-OF5-0-10	18		28		38	
9	AQ-SO-OF5D-0-10	19		29		39	
10	AQ-WMP-03-2-6(TCLP)	20		30		40	

Notes:

LDC #: 29076E4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: CR
2nd reviewer: V

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-6		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
7-9		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
1,2,5,6		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
10		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
AC-11		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
12-14		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
14		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____

Comments: Mercury by CVAA if performed

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 24 through October 25, 2012
LDC Report Date:	January 23, 2013
Matrix:	Soil
Parameters:	Wet Chemistry
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J671

Sample Identification

AQ-BMP-02-1-15
AQ-BMP-01-2-16
AQ-WMP-03-2-6
AQ-WMP-04-2-8
AQ-WMP-02-2-8
AQ-WMP-01-2.5-7.5
AQ-SO-OF3-0-10
AQ-SO-OF5-0-10
AQ-SO-OF5D-0-10
AQ-BMP-02-1-15MS
AQ-BMP-02-1-15DUP
AQ-WMP-01-2.5-7.5DUP
AQ-SO-OF5D-0-10DUP

Introduction

This data review covers 13 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 9014 for Total Cyanide, Standard Method 4500-CN-I-E for Weak Acid Dissociable Cyanide, Standard Method 4500-F-C for Fluoride, PSEP 1986 for Total Solids, and PSEP and Standard Method 5310B modified for Total Organic Carbon.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Analyte	RPD (Limits)	Difference (Limits)	Flag	A or P
AQ-BMB-06-1.5-5.5DUP (AQ-BMP-02-1-15 AQ-BMP-01-2-16 AQ-WMP-03-2-6 AQ-WMP-04-2-8 AQ-WMP-02-2-8 AQ-WMP-01-2.5-7.5)	Total cyanide	-	3.699 mg/Kg (≤0.586)	J (all detects) UJ (all non-detects)	A
AQ-WMP-01-2.5-7.5DUP (AQ-BMP-02-1-15 AQ-BMP-01-2-16 AQ-WMP-03-2-6 AQ-WMP-04-2-8 AQ-WMP-02-2-8 AQ-WMP-01-2.5-7.5)	Total organic carbon	28 (≤20)	-	J (all detects) UJ (all non-detects)	A

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to Duplicate difference and RPD problems, data were qualified as estimated in six samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A12J671

SDG	Sample	Analyte	Flag	A or P	Reason
A12J671	AQ-BMP-02-1-15 AQ-BMP-01-2-16 AQ-WMP-03-2-6 AQ-WMP-04-2-8 AQ-WMP-02-2-8 AQ-WMP-01-2.5-7.5	Total cyanide	J (all detects) UJ (all non-detects)	A	Duplicate sample analysis (Difference)
A12J671	AQ-BMP-02-1-15 AQ-BMP-01-2-16 AQ-WMP-03-2-6 AQ-WMP-04-2-8 AQ-WMP-02-2-8 AQ-WMP-01-2.5-7.5	Total organic carbon	J (all detects) UJ (all non-detects)	A	Duplicate sample analysis (RPD)

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A12J671

No Sample Data Qualified in this SDG

LDC #: 29076E6 **VALIDATION COMPLETENESS WORKSHEET** Date: 1/21/13

SDG #: A12J671 Stage 2B Page: 1 of 1

Laboratory: APEX Laboratories, LLC Reviewer: a

2nd Reviewer: ✓

METHOD: (Analyte) Total Cyanide, ~~(EPA Method 335.4)~~ EPA SW846 9014, WAD Cyanide ~~(EPA SW846 Method 9013M~~/SM4500-CN-I-E), Fluoride, (SM4500-F-C), ~~Total Solids (PSEP 1986)~~ SJAY, Total Organic Carbon (SM5310B) PSEP MOD

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/24-25/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	A	MS (10:F >4x)
VI.	Duplicates	SW	Dup
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates N	SW	(8, 9) a
XI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: soil

1	AQ-BMP-02-1-15	11	AQ-BMP-02-1-15DUP	21		31	
2	AQ-BMP-01-2-16	12	AQ-WMP-01-2.5-7.5DUP	22		32	
3	AQ-WMP-03-2-6	13	AQ-SO-OF5D-0-10DUP	23		33	
4	AQ-WMP-04-2-8	14		24		34	
5	AQ-WMP-02-2-8	15		25		35	
6	AQ-WMP-01-2.5-7.5	16		26		36	
7	AQ-SO-OF3-0-10	17		27		37	
8	AQ-SO-OF5-0-10	18		28		38	
9	AQ-SO-OF5D-0-10	19		29		39	
10	AQ-BMP-02-1-15MS	20		30		40	

Notes:

LDC #: 29076E6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Reviewer: CR

2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Parameter
1-6	pH TDS Cl (F) NO_3 NO_2 SO_4 O-PO_4 Alk (CN) NH_3 TKN (TOC) Cr6+ ClO_4 (WADCN)
7-9	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 (TS)
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
PC 10	pH TDS Cl (F) NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
11	pH TDS Cl (F) NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
12	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN (TOC) Cr6+ ClO_4
13	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 (TS)
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

LDC #: 0907666

VALIDATION FINDINGS WORKSHEET
Duplicate Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a duplicate sample analyzed for each matrix in this SDG?

Y N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for water and ≤ 35% for soil samples (≤ 10% for Method 300.0)? If no, see qualification below. A control limit of ±CRDL (±2X CRDL for soil) was used for samples that were ≤5X the CRDL, including when only one of the duplicate sample values were ≤5X the CRDL. If field blanks were used for laboratory duplicates, see overall assessment.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Duplicate ID	Matrix	Analyte	Difference ~~RPD~~ (Limits)	Associated Samples	Qualifications
		AQ-BMB-CG-1.5-5.5 (A12J576)	DUP S	Total CN	3.699 mg/kg (≤0.58)	All 1-6	J/UJ/A
					RPD		
		12	S	TOC	28 (≤20)	1-6	J/UJ/A

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 24, 2012
LDC Report Date:	January 25, 2013
Matrix:	Soil
Parameters:	Total Petroleum Hydrocarbons as Extractables
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J671

Sample Identification

AQ-BMP-02-1-15
AQ-BMP-02-1-15DUP

Introduction

This data review covers 2 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method NWTPH-Dx for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 15.0%.

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 15.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XII. Field Duplicates

No field duplicates were identified in this SDG.

XIII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG A12J671

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG A12J671

No Sample Data Qualified in this SDG

LDC #: 29076E8

SDG #: A12J671

Laboratory: Apex Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/23/13

Page: 1 of 1

Reviewer: FZ

2nd Reviewer: dv

METHOD: GC Diesel Range Organics(NWTPH-Dx With Silica Gel Cleanup)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/24/12
II	Initial calibration	A	% RSD ≤ ~~20~~ 15
III.	Calibration verification/ICV	A	ICV/CCV ≤ ~~20~~ 15
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates /DUP	N/A	client specified
VII.	Laboratory control samples	A	LCS
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	N	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

SOIL

1	AQ-BMP-02-1-15	11	121183	21		31	
2	AQ-BMP-02-1-15DUP	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

Analytical Method APEXsolids

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-01-2-16	A12J671-17	Total solids	10/30/2012	57.7		Yes	Y				1.00	1.00	pct
AQ-BMP-02-11-13B	A12J671-08	Total solids	11/2/2012	72.8		Yes	Y				1.00	1.00	pct
AQ-BMP-02-1-15	A12J671-09	Total solids	10/30/2012	74.5		Yes	Y				1.00	1.00	pct
AQ-SO-OF3-0-10	A12J671-36	Total solids	10/30/2012	37.5		Yes	Y				1.00	1.00	pct
AQ-SO-OF5-0-10	A12J671-38	Total solids	10/30/2012	40.8		Yes	Y				1.00	1.00	pct
AQ-SO-OF5D-0-10	A12J671-40	Total solids	10/30/2012	11.4		Yes	Y				1.00	1.00	pct
AQ-WMP-01-2.5-7.5	A12J671-35	Total solids	12/14/2012	60.1		Yes	Y				1.00	1.00	pct
AQ-WMP-02-2-8	A12J671-30	Total solids	12/14/2012	59		Yes	Y				1.00	1.00	pct
AQ-WMP-02-6-8	A12J671-29	Total solids	11/2/2012	58		Yes	Y				1.00	1.00	pct
AQ-WMP-03-2-6	A12J671-22	Total solids	12/14/2012	62.2		Yes	Y				1.00	1.00	pct
AQ-WMP-04-2-8	A12J671-26	Total solids	12/14/2012	68.2		Yes	Y				1.00	1.00	pct

Analytical Method NWTPHDx

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-02-1-15	A12J671-09	Diesel Range Hydrocarbons	11/8/2012	1990		Yes	Y	D			104	52.1	mg/kg
AQ-BMP-02-1-15	A12J671-09	Oil	11/8/2012	1960		Yes	Y	D			209	104	mg/kg

Analytical Method SM2540G

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SO-OF3-0-10	A12J671-36	Total solids	11/9/2012	37.5		Yes	Y				0.100	0.100	pct
AQ-SO-OF5-0-10	A12J671-38	Total solids	11/9/2012	37.4		Yes	Y				0.100	0.100	pct
AQ-SO-OF5D-0-10	A12J671-40	Total solids	11/9/2012	12.6		Yes	Y				0.100	0.100	pct

Analytical Method SM4500CNE

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-01-2-16	A12J671-17	Cyanide, total	10/30/2012	2.57		Yes	Y		J	9	0.410	0.410	mg/kg
AQ-BMP-02-1-15	A12J671-09	Cyanide, total	10/30/2012	2.35		Yes	Y		J	9	0.306	0.306	mg/kg
AQ-WMP-01-2.5-7.5	A12J671-35RE1	Cyanide, total	10/30/2012	4.64		Yes	Y		J	9	0.405	0.405	mg/kg

Analytical Method SM4500CNE

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-WMP-02-2-8	A12J671-30RE1	Cyanide, total	10/30/2012	86.3	Yes	Y	D	J	9	3.88	3.88	mg/kg
AQ-WMP-03-2-6	A12J671-22	Cyanide, total	10/30/2012	2.04	Yes	Y		J	9	0.380	0.380	mg/kg
AQ-WMP-04-2-8	A12J671-26RE1	Cyanide, total	10/30/2012	51.2	Yes	Y	D	J	9	1.67	1.67	mg/kg

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-01-2-16	A12J671-17	Cyanide, Weak acid dissociable (WAD)	10/30/2012	1.79	Yes	Y				0.410	0.410	mg/kg
AQ-BMP-02-1-15	A12J671-09	Cyanide, Weak acid dissociable (WAD)	10/30/2012	0.311	Yes	Y				0.306	0.306	mg/kg
AQ-WMP-01-2.5-7.5	A12J671-35	Cyanide, Weak acid dissociable (WAD)	10/30/2012	0.405	Yes	N	U			0.405	0.405	mg/kg
AQ-WMP-02-2-8	A12J671-30	Cyanide, Weak acid dissociable (WAD)	10/30/2012	0.864	Yes	Y				0.388	0.388	mg/kg
AQ-WMP-03-2-6	A12J671-22	Cyanide, Weak acid dissociable (WAD)	10/30/2012	0.38	Yes	N	U			0.380	0.380	mg/kg
AQ-WMP-04-2-8	A12J671-26	Cyanide, Weak acid dissociable (WAD)	10/30/2012	1.26	Yes	Y				0.335	0.335	mg/kg

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-01-2-16	A12J671-17	Fluoride	11/1/2012	53200	Yes	Y	D			852	852	mg/kg
AQ-BMP-02-1-15	A12J671-09	Fluoride	11/1/2012	43700	Yes	Y	D			665	665	mg/kg
AQ-WMP-01-2.5-7.5	A12J671-35	Fluoride	11/1/2012	76000	Yes	Y	D			1150	1150	mg/kg
AQ-WMP-02-2-8	A12J671-30	Fluoride	11/1/2012	47000	Yes	Y	D			1550	1550	mg/kg
AQ-WMP-03-2-6	A12J671-22	Fluoride	11/1/2012	52000	Yes	Y	D			1150	1150	mg/kg
AQ-WMP-04-2-8	A12J671-26	Fluoride	11/1/2012	31400	Yes	Y	D			1130	1130	mg/kg

Analytical Method SM5310B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-01-2-16	A12J671-17	Total organic carbon	11/5/2012	130000	Yes	Y		J	9	200	100	mg/kg
AQ-BMP-02-1-15	A12J671-09	Total organic carbon	11/5/2012	130000	Yes	Y		J	9	200	100	mg/kg
AQ-WMP-01-2.5-7.5	A12J671-35	Total organic carbon	11/5/2012	840	Yes	Y		J	9	200	100	mg/kg
AQ-WMP-02-2-8	A12J671-30	Total organic carbon	11/5/2012	1200	Yes	Y		J	9	200	100	mg/kg

Analytical Method SM5310B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-WMP-03-2-6	A12J671-22	Total organic carbon	11/5/2012	920	Yes	Y		J	9	200	100	mg/kg
AQ-WMP-04-2-8	A12J671-26	Total organic carbon	11/5/2012	1400	Yes	Y		J	9	200	100	mg/kg

Analytical Method SW6010C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-01-2-16	A12J671-17	Beryllium	11/5/2012	14.4	Yes	Y	D			7.22	3.61	mg/kg
AQ-BMP-02-1-15	A12J671-09	Beryllium	11/5/2012	13.9	Yes	Y	D			5.41	2.71	mg/kg
AQ-WMP-01-2.5-7.5	A12J671-35	Beryllium	11/5/2012	3.94	Yes	Y	D J			6.46	3.23	mg/kg
AQ-WMP-02-2-8	A12J671-30	Beryllium	11/5/2012	6.28	Yes	N	D U			6.28	3.14	mg/kg

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-01-2-16	A12J671-17	Antimony	11/2/2012	1.48	Yes	Y	D J			1.81	0.903	mg/kg
AQ-BMP-01-2-16	A12J671-17	Cadmium	11/2/2012	1.81	Yes	N	D U			1.81	0.903	mg/kg
AQ-BMP-01-2-16	A12J671-17	Selenium	11/2/2012	3.61	Yes	N	D U			3.61	1.81	mg/kg
AQ-BMP-01-2-16	A12J671-17	Zinc	11/2/2012	48	Yes	Y	D			7.22	3.61	mg/kg
AQ-BMP-01-2-16	A12J671-17	Chromium	11/2/2012	16.9	Yes	Y	D			3.61	1.81	mg/kg
AQ-BMP-01-2-16	A12J671-17	Arsenic	11/2/2012	10	Yes	Y	D			3.61	0.903	mg/kg
AQ-BMP-01-2-16	A12J671-17	Silver	11/2/2012	1.81	Yes	N	D U			1.81	0.903	mg/kg
AQ-BMP-01-2-16	A12J671-17	Nickel	11/2/2012	375	Yes	Y	D			3.61	1.81	mg/kg
AQ-BMP-01-2-16	A12J671-17	Mercury	11/2/2012	0.144	Yes	N	D U			0.144	0.0722	mg/kg
AQ-BMP-01-2-16	A12J671-17	Lead	11/2/2012	15.5	Yes	Y	D			1.81	0.903	mg/kg
AQ-BMP-01-2-16	A12J671-17	Copper	11/2/2012	124	Yes	Y	D			3.61	1.81	mg/kg
AQ-BMP-01-2-16	A12J671-17	Thallium	11/2/2012	1.81	Yes	N	D U			1.81	0.903	mg/kg
AQ-BMP-02-1-15	A12J671-09	Lead	11/2/2012	16.6	Yes	Y	D			1.35	0.677	mg/kg
AQ-BMP-02-1-15	A12J671-09	Thallium	11/2/2012	1.35	Yes	N	D U			1.35	0.677	mg/kg
AQ-BMP-02-1-15	A12J671-09	Chromium	11/2/2012	43.1	Yes	Y	D			2.71	1.35	mg/kg

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-02-1-15	A12J671-09	Copper	11/2/2012	248	Yes	Y	D			2.71	1.35	mg/kg
AQ-BMP-02-1-15	A12J671-09	Antimony	11/2/2012	0.852	Yes	Y	D J			1.35	0.677	mg/kg
AQ-BMP-02-1-15	A12J671-09	Silver	11/2/2012	1.35	Yes	N	D U			1.35	0.677	mg/kg
AQ-BMP-02-1-15	A12J671-09	Nickel	11/2/2012	251	Yes	Y	D			2.71	1.35	mg/kg
AQ-BMP-02-1-15	A12J671-09	Arsenic	11/2/2012	4.55	Yes	Y	D			2.71	0.677	mg/kg
AQ-BMP-02-1-15	A12J671-09	Selenium	11/2/2012	2.71	Yes	N	D U			2.71	1.35	mg/kg
AQ-BMP-02-1-15	A12J671-09	Zinc	11/2/2012	106	Yes	Y	D			5.41	2.71	mg/kg
AQ-BMP-02-1-15	A12J671-09	Cadmium	11/2/2012	1.14	Yes	Y	D J			1.35	0.677	mg/kg
AQ-BMP-02-1-15	A12J671-09	Mercury	11/4/2012	0.131	Yes	Y	D			0.108	0.0541	mg/kg
AQ-SO-OF3-0-10	A12J671-36	Arsenic	11/2/2012	21.1	Yes	Y	D			5.82	1.46	mg/kg
AQ-SO-OF3-0-10	A12J671-36	Cadmium	11/2/2012	2.91	Yes	N	D U			2.91	1.46	mg/kg
AQ-SO-OF3-0-10	A12J671-36	Copper	11/2/2012	38.7	Yes	Y	D			5.82	2.91	mg/kg
AQ-SO-OF3-0-10	A12J671-36	Zinc	11/2/2012	109	Yes	Y	D			11.6	5.82	mg/kg
AQ-SO-OF3-0-10	A12J671-36	Antimony	11/2/2012	2.91	Yes	N	D U			2.91	1.46	mg/kg
AQ-SO-OF3-0-10	A12J671-36	Nickel	11/2/2012	23.4	Yes	Y	D			5.82	2.91	mg/kg
AQ-SO-OF3-0-10	A12J671-36	Chromium	11/2/2012	15.3	Yes	Y	D			5.82	2.91	mg/kg
AQ-SO-OF3-0-10	A12J671-36	Mercury	11/2/2012	0.233	Yes	N	D U			0.233	0.116	mg/kg
AQ-SO-OF3-0-10	A12J671-36	Lead	11/2/2012	11.6	Yes	Y	D			2.91	1.46	mg/kg
AQ-SO-OF3-0-10	A12J671-36	Silver	11/2/2012	2.91	Yes	N	D U			2.91	1.46	mg/kg
AQ-SO-OF5-0-10	A12J671-38	Lead	11/2/2012	7.56	Yes	Y	D			2.58	1.29	mg/kg
AQ-SO-OF5-0-10	A12J671-38	Mercury	11/2/2012	0.206	Yes	N	D U			0.206	0.103	mg/kg
AQ-SO-OF5-0-10	A12J671-38	Cadmium	11/2/2012	2.58	Yes	N	D U			2.58	1.29	mg/kg
AQ-SO-OF5-0-10	A12J671-38	Nickel	11/2/2012	17.1	Yes	Y	D			5.16	2.58	mg/kg
AQ-SO-OF5-0-10	A12J671-38	Silver	11/2/2012	2.58	Yes	N	D U			2.58	1.29	mg/kg
AQ-SO-OF5-0-10	A12J671-38	Arsenic	11/2/2012	4.31	Yes	Y	D J			5.16	1.29	mg/kg

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SO-OF5-0-10	A12J671-38	Chromium	11/2/2012	12.8	Yes	Y	D			5.16	2.58	mg/kg
AQ-SO-OF5-0-10	A12J671-38	Copper	11/2/2012	36.7	Yes	Y	D			5.16	2.58	mg/kg
AQ-SO-OF5-0-10	A12J671-38	Zinc	11/2/2012	73.9	Yes	Y	D			10.3	5.16	mg/kg
AQ-SO-OF5-0-10	A12J671-38	Antimony	11/2/2012	2.58	Yes	N	D U			2.58	1.29	mg/kg
AQ-SO-OF5D-0-10	A12J671-40	Nickel	11/2/2012	37.9	Yes	Y	D			18.5	9.27	mg/kg
AQ-SO-OF5D-0-10	A12J671-40	Mercury	11/2/2012	0.742	Yes	N	D U			0.742	0.371	mg/kg
AQ-SO-OF5D-0-10	A12J671-40	Arsenic	11/2/2012	30	Yes	Y	D			18.5	4.64	mg/kg
AQ-SO-OF5D-0-10	A12J671-40	Lead	11/2/2012	16.9	Yes	Y	D			9.27	4.64	mg/kg
AQ-SO-OF5D-0-10	A12J671-40	Silver	11/2/2012	9.27	Yes	N	D U			9.27	4.64	mg/kg
AQ-SO-OF5D-0-10	A12J671-40	Cadmium	11/2/2012	9.27	Yes	N	D U			9.27	4.64	mg/kg
AQ-SO-OF5D-0-10	A12J671-40	Chromium	11/2/2012	18.7	Yes	Y	D			18.5	9.27	mg/kg
AQ-SO-OF5D-0-10	A12J671-40	Copper	11/2/2012	70.1	Yes	Y	D			18.5	9.27	mg/kg
AQ-SO-OF5D-0-10	A12J671-40	Zinc	11/2/2012	182	Yes	Y	D			37.1	18.5	mg/kg
AQ-SO-OF5D-0-10	A12J671-40	Antimony	11/2/2012	9.27	Yes	N	D U			9.27	4.64	mg/kg
AQ-WMP-01-2.5-7.5	A12J671-35	Mercury	11/4/2012	0.129	Yes	N	D U			0.129	0.0646	mg/kg
AQ-WMP-01-2.5-7.5	A12J671-35	Cadmium	11/4/2012	1.62	Yes	N	D U			1.62	0.808	mg/kg
AQ-WMP-01-2.5-7.5	A12J671-35	Lead	11/4/2012	0.824	Yes	Y	D J			1.62	0.808	mg/kg
AQ-WMP-01-2.5-7.5	A12J671-35	Silver	11/4/2012	1.62	Yes	N	D U			1.62	0.808	mg/kg
AQ-WMP-01-2.5-7.5	A12J671-35	Thallium	11/4/2012	1.62	Yes	N	D U			1.62	0.808	mg/kg
AQ-WMP-01-2.5-7.5	A12J671-35	Arsenic	11/4/2012	9.87	Yes	Y	D			3.23	0.808	mg/kg
AQ-WMP-01-2.5-7.5	A12J671-35	Chromium	11/4/2012	2.42	Yes	Y	D J			3.23	1.62	mg/kg
AQ-WMP-01-2.5-7.5	A12J671-35	Copper	11/4/2012	76.3	Yes	Y	D			3.23	1.62	mg/kg
AQ-WMP-01-2.5-7.5	A12J671-35	Nickel	11/4/2012	31.7	Yes	Y	D			3.23	1.62	mg/kg
AQ-WMP-01-2.5-7.5	A12J671-35	Zinc	11/4/2012	4.3	Yes	Y	D J			6.46	3.23	mg/kg
AQ-WMP-01-2.5-7.5	A12J671-35	Selenium	11/4/2012	3.23	Yes	N	D U			3.23	1.62	mg/kg

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-WMP-01-2.5-7.5	A12J671-35	Antimony	11/4/2012	1.11	Yes	Y	D J			1.62	0.808	mg/kg
AQ-WMP-02-2-8	A12J671-30	Arsenic	11/4/2012	14.1	Yes	Y	D			3.14	0.785	mg/kg
AQ-WMP-02-2-8	A12J671-30	Lead	11/4/2012	0.957	Yes	Y	D J			1.57	0.785	mg/kg
AQ-WMP-02-2-8	A12J671-30	Mercury	11/4/2012	0.126	Yes	N	D U			0.126	0.0628	mg/kg
AQ-WMP-02-2-8	A12J671-30	Nickel	11/4/2012	37.7	Yes	Y	D			3.14	1.57	mg/kg
AQ-WMP-02-2-8	A12J671-30	Silver	11/4/2012	1.57	Yes	N	D U			1.57	0.785	mg/kg
AQ-WMP-02-2-8	A12J671-30	Antimony	11/4/2012	1.59	Yes	Y	D			1.57	0.785	mg/kg
AQ-WMP-02-2-8	A12J671-30	Cadmium	11/4/2012	1.57	Yes	N	D U			1.57	0.785	mg/kg
AQ-WMP-02-2-8	A12J671-30	Chromium	11/4/2012	2.37	Yes	Y	D J			3.14	1.57	mg/kg
AQ-WMP-02-2-8	A12J671-30	Copper	11/4/2012	68	Yes	Y	D			3.14	1.57	mg/kg
AQ-WMP-02-2-8	A12J671-30	Zinc	11/4/2012	6.28	Yes	N	D U			6.28	3.14	mg/kg
AQ-WMP-02-2-8	A12J671-30	Selenium	11/4/2012	2.02	Yes	Y	D J			3.14	1.57	mg/kg
AQ-WMP-02-2-8	A12J671-30	Thallium	11/4/2012	1.57	Yes	N	D U			1.57	0.785	mg/kg
AQ-WMP-03-2-6	A12J671-22	Silver	11/4/2012	1.56	Yes	N	D U			1.56	0.780	mg/kg
AQ-WMP-03-2-6	A12J671-22	Copper	11/4/2012	133	Yes	Y	D			3.12	1.56	mg/kg
AQ-WMP-03-2-6	A12J671-22	Lead	11/4/2012	1.03	Yes	Y	D J			1.56	0.780	mg/kg
AQ-WMP-03-2-6	A12J671-22	Mercury	11/4/2012	0.125	Yes	N	D U			0.125	0.0624	mg/kg
AQ-WMP-03-2-6	A12J671-22	Nickel	11/4/2012	42.7	Yes	Y	D			3.12	1.56	mg/kg
AQ-WMP-03-2-6	A12J671-22	Thallium	11/4/2012	1.56	Yes	N	D U			1.56	0.780	mg/kg
AQ-WMP-03-2-6	A12J671-22	Arsenic	11/4/2012	11.4	Yes	Y	D			3.12	0.780	mg/kg
AQ-WMP-03-2-6	A12J671-22	Barium	11/4/2012	19.5	Yes	Y	D			1.56	0.780	mg/kg
AQ-WMP-03-2-6	A12J671-22	Beryllium	11/4/2012	2.19	Yes	Y	D			1.56	0.780	mg/kg
AQ-WMP-03-2-6	A12J671-22	Antimony	11/4/2012	1.51	Yes	Y	D J			1.56	0.780	mg/kg
AQ-WMP-03-2-6	A12J671-22	Chromium	11/4/2012	3.59	Yes	Y	D			3.12	1.56	mg/kg
AQ-WMP-03-2-6	A12J671-22	Zinc	11/4/2012	6.24	Yes	N	D U			6.24	3.12	mg/kg

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-WMP-03-2-6	A12J671-22	Selenium	11/4/2012	2.11	Yes	Y	D J			3.12	1.56	mg/kg
AQ-WMP-03-2-6	A12J671-22	Cadmium	11/4/2012	1.56	Yes	N	D U			1.56	0.780	mg/kg
AQ-WMP-03-2-6	A12J671-22	Selenium	11/20/2012	0.1	Yes	N	D U			0.100	0.0500	mg/L
AQ-WMP-03-2-6	A12J671-22	Lead	11/20/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-WMP-03-2-6	A12J671-22	Mercury	11/20/2012	0.004	Yes	N	D U			0.00400	0.00250	mg/L
AQ-WMP-03-2-6	A12J671-22	Silver	11/20/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-WMP-03-2-6	A12J671-22	Arsenic	11/20/2012	0.1	Yes	N	D U			0.100	0.0500	mg/L
AQ-WMP-03-2-6	A12J671-22	Barium	11/20/2012	0.5	Yes	N	D U			0.500	0.250	mg/L
AQ-WMP-03-2-6	A12J671-22	Cadmium	11/20/2012	0.05	Yes	N	D U			0.0500	0.0250	mg/L
AQ-WMP-03-2-6	A12J671-22	Chromium	11/20/2012	0.1	Yes	N	D U			0.100	0.0500	mg/L
AQ-WMP-04-2-8	A12J671-26	Antimony	11/4/2012	1.13	Yes	Y	D J			1.49	0.747	mg/kg
AQ-WMP-04-2-8	A12J671-26	Nickel	11/4/2012	39.2	Yes	Y	D			2.99	1.49	mg/kg
AQ-WMP-04-2-8	A12J671-26	Mercury	11/4/2012	0.119	Yes	N	D U			0.119	0.0597	mg/kg
AQ-WMP-04-2-8	A12J671-26	Silver	11/4/2012	1.49	Yes	N	D U			1.49	0.747	mg/kg
AQ-WMP-04-2-8	A12J671-26	Thallium	11/4/2012	1.49	Yes	N	D U			1.49	0.747	mg/kg
AQ-WMP-04-2-8	A12J671-26	Arsenic	11/4/2012	6.94	Yes	Y	D			2.99	0.747	mg/kg
AQ-WMP-04-2-8	A12J671-26	Cadmium	11/4/2012	1.49	Yes	N	D U			1.49	0.747	mg/kg
AQ-WMP-04-2-8	A12J671-26	Chromium	11/4/2012	3.54	Yes	Y	D			2.99	1.49	mg/kg
AQ-WMP-04-2-8	A12J671-26	Copper	11/4/2012	107	Yes	Y	D			2.99	1.49	mg/kg
AQ-WMP-04-2-8	A12J671-26	Zinc	11/4/2012	3.08	Yes	Y	D J			5.97	2.99	mg/kg
AQ-WMP-04-2-8	A12J671-26	Lead	11/4/2012	0.836	Yes	Y	D J			1.49	0.747	mg/kg
AQ-WMP-04-2-8	A12J671-26	Beryllium	11/4/2012	1.49	Yes	N	D U			1.49	0.747	mg/kg
AQ-WMP-04-2-8	A12J671-26	Selenium	11/4/2012	1.61	Yes	Y	D J			2.99	1.49	mg/kg

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SO-OF3-0-10	A12J671-36	Aroclor 1254	11/4/2012	29.5	Yes	Y				10.7	5.33	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Aroclor 1242	11/4/2012	5.76	Yes	Y	J			10.7	5.33	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Aroclor 1262	11/4/2012	10.7	Yes	N	U			10.7	5.33	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Aroclor 1016	11/4/2012	10.7	Yes	N	U			10.7	5.33	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Aroclor 1248	11/4/2012	10.7	Yes	N	U			10.7	5.33	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Aroclor 1232	11/4/2012	10.7	Yes	N	U			10.7	5.33	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Aroclor 1268	11/4/2012	10.7	Yes	N	U			10.7	5.33	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Aroclor 1260	11/4/2012	25	Yes	Y				10.7	5.33	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Aroclor 1221	11/4/2012	10.7	Yes	N	U			10.7	5.33	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Aroclor 1260	11/4/2012	20.2	Yes	Y				9.79	4.90	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Aroclor 1016	11/4/2012	9.79	Yes	N	U			9.79	4.90	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Aroclor 1248	11/4/2012	9.79	Yes	N	U			9.79	4.90	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Aroclor 1232	11/4/2012	9.79	Yes	N	U			9.79	4.90	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Aroclor 1242	11/4/2012	9.79	Yes	N	U			9.79	4.90	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Aroclor 1221	11/4/2012	9.79	Yes	N	U			9.79	4.90	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Aroclor 1268	11/4/2012	9.79	Yes	N	U			9.79	4.90	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Aroclor 1254	11/4/2012	14	Yes	Y				9.79	4.90	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Aroclor 1262	11/4/2012	9.79	Yes	N	U			9.79	4.90	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Aroclor 1262	11/4/2012	34.6	Yes	N	U			34.6	17.3	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Aroclor 1260	11/4/2012	50	Yes	Y				34.6	17.3	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Aroclor 1254	11/4/2012	44.5	Yes	Y				34.6	17.3	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Aroclor 1268	11/4/2012	34.6	Yes	N	U			34.6	17.3	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Aroclor 1232	11/4/2012	34.6	Yes	N	U			34.6	17.3	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Aroclor 1221	11/4/2012	34.6	Yes	N	U			34.6	17.3	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Aroclor 1248	11/4/2012	34.6	Yes	N	U			34.6	17.3	ug/kg

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SO-OF5D-0-10	A12J671-40	Aroclor 1242	11/4/2012	34.6	Yes	N	U			34.6	17.3	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Aroclor 1016	11/4/2012	34.6	Yes	N	U			34.6	17.3	ug/kg
AQ-WMP-04-2-8	A12J671-26	Aroclor 1016	11/2/2012	5.86	Yes	N	U			5.86	2.93	ug/kg
AQ-WMP-04-2-8	A12J671-26	Aroclor 1260	11/2/2012	5.86	Yes	N	U			5.86	2.93	ug/kg
AQ-WMP-04-2-8	A12J671-26	Aroclor 1254	11/2/2012	4.83	Yes	Y	J			5.86	2.93	ug/kg
AQ-WMP-04-2-8	A12J671-26	Aroclor 1268	11/2/2012	5.86	Yes	N	U			5.86	2.93	ug/kg
AQ-WMP-04-2-8	A12J671-26	Aroclor 1221	11/2/2012	5.86	Yes	N	U			5.86	2.93	ug/kg
AQ-WMP-04-2-8	A12J671-26	Aroclor 1232	11/2/2012	5.86	Yes	N	U			5.86	2.93	ug/kg
AQ-WMP-04-2-8	A12J671-26	Aroclor 1242	11/2/2012	5.86	Yes	N	U			5.86	2.93	ug/kg
AQ-WMP-04-2-8	A12J671-26	Aroclor 1248	11/2/2012	5.86	Yes	N	U			5.86	2.93	ug/kg
AQ-WMP-04-2-8	A12J671-26	Aroclor 1262	11/2/2012	5.86	Yes	N	U			5.86	2.93	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-02-11-13B	A12J671-08RE1	Benzene	11/2/2012	28.1	Yes	N	D U			28.1	15.7	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	2-Hexanone (Methyl butyl ketone)	11/2/2012	1120	Yes	N	D U	UJ	5	1120	561	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Dibromochloromethane	11/2/2012	225	Yes	N	D U	UJ	5	225	112	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	1,2,4-Trichlorobenzene	11/2/2012	561	Yes	N	D U			561	281	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	sec-Butylbenzene	11/2/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	1,3-Dichloropropane	11/2/2012	56.1	Yes	N	D U	UJ	5	56.1	28.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	1,2-Dichloroethene, cis-	11/2/2012	56.1	Yes	N	D U			56.1	28.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Dibromomethane	11/2/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	1,1-Dichloropropene	11/2/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	2,2-Dichloropropane	11/2/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	1,1,1,2-Tetrachloroethane	11/2/2012	112	Yes	N	D U	UJ	5	112	56.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Ethylbenzene	11/2/2012	56.1	Yes	N	D U			56.1	28.1	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-02-11-13B	A12J671-08RE1	Chloroform	11/2/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	1,1,1-Trichloroethane	11/2/2012	56.1	Yes	N	D U			56.1	28.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Bromomethane (Methyl Bromide)	11/2/2012	1120	Yes	N	D U			1120	1120	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Chloromethane	11/2/2012	561	Yes	N	D U			561	281	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Carbon tetrachloride (Tetrachloromethane)	11/2/2012	56.1	Yes	N	D U			56.1	28.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Methyl tert-butyl ether (MTBE)	11/2/2012	112	Yes	N	D U			112	67.0	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Acetone	11/2/2012	2250	Yes	N	D U	UJ	5	2250	1120	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Dichlorodifluoromethane	11/2/2012	225	Yes	N	D U	UJ	5	225	112	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	o-Xylene	11/2/2012	56.1	Yes	N	D U	UJ	5	56.1	28.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Naphthalene	11/2/2012	203	Yes	Y	D J			225	112	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Tetrachloroethene (PCE)	11/2/2012	56.1	Yes	N	D U			56.1	28.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	1,2,3-Trichlorobenzene	11/2/2012	561	Yes	N	D U			561	281	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	1,3-Dichlorobenzene	11/2/2012	56.1	Yes	N	D U			56.1	28.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	1,1,2,2-Tetrachloroethane	11/2/2012	56.1	Yes	N	D U			56.1	28.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Trichloroethene (TCE)	11/2/2012	56.1	Yes	N	D U			56.1	40.6	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	1,1,2-Trichloroethane	11/2/2012	112	Yes	N	D U	UJ	5	112	56.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Styrene	11/2/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	2-Chlorotoluene	11/2/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	1,2-Dichloropropane	11/2/2012	56.1	Yes	N	D U			56.1	28.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	11/2/2012	225	Yes	N	D U	UJ	5	225	112	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Trichlorofluoromethane (Fluorotrichloromethane)	11/2/2012	225	Yes	N	D U			225	112	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	1,1-Dichloroethene	11/2/2012	56.1	Yes	N	D U			56.1	30.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	1,1-Dichloroethane	11/2/2012	56.1	Yes	N	D U			56.1	33.2	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Bromodichloromethane	11/2/2012	56.1	Yes	N	D U			56.1	28.1	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-02-11-13B	A12J671-08RE1	Bromoform (Tribromomethane)	11/2/2012	112	Yes	N	D U	UJ	5	112	56.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Carbon disulfide	11/2/2012	1120	Yes	N	D U			1120	561	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Dichloromethane (Methylene chloride)	11/2/2012	561	Yes	N	D U			561	281	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Vinyl chloride	11/2/2012	56.1	Yes	N	D U			56.1	40.7	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Chloroethane	11/2/2012	1120	Yes	N	D U			1120	561	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Bromochloromethane	11/2/2012	56.1	Yes	N	D U			56.1	28.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	2-Butanone (MEK)	11/2/2012	1120	Yes	N	D U	UJ	5	1120	561	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	4-Isopropyltoluene (4-Cymene)	11/2/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	m,p-Xylene	11/2/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	1,2-Dichloroethene, trans-	11/2/2012	56.1	Yes	N	D U			56.1	28.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Chlorobenzene	11/2/2012	56.1	Yes	N	D U			56.1	29.2	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Toluene	11/2/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Bromobenzene	11/2/2012	56.1	Yes	N	D U			56.1	30.6	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	1,3,5-Trimethylbenzene (Mesitylene)	11/2/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	11/2/2012	1120	Yes	N	D U	UJ	5	1120	561	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	1,2-Dichloroethane	11/2/2012	56.1	Yes	N	D U			56.1	28.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Ethylene dibromide (1,2-Dibromoethane)	11/2/2012	56.1	Yes	N	D U	UJ	5	56.1	34.0	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	1,4-Dichlorobenzene	11/2/2012	56.1	Yes	N	D U			56.1	28.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	4-Chlorotoluene	11/2/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	n-Butylbenzene	11/2/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	n-Propylbenzene	11/2/2012	56.1	Yes	N	D U			56.1	28.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	1,3-Dichloropropene, cis-	11/2/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	1,2,4-Trimethylbenzene	11/2/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	1,2-Dibromo-3-chloropropane	11/2/2012	561	Yes	N	D U	UJ	5	561	281	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-02-11-13B	A12J671-08RE1	1,2,3-Trichloropropane	11/2/2012	112	Yes	N	D U	UJ	5	112	56.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	tert-Butylbenzene	11/2/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	Isopropylbenzene (Cumene)	11/2/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	1,3-Dichloropropene, trans-	11/2/2012	112	Yes	N	D U			112	56.1	ug/kg
AQ-BMP-02-11-13B	A12J671-08RE1	1,2-Dichlorobenzene	11/2/2012	56.1	Yes	N	D U			56.1	28.1	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Bromomethane (Methyl Bromide)	11/2/2012	1020	Yes	N	D U			1020	1020	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Chloromethane	11/2/2012	510	Yes	N	D U			510	255	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Dibromomethane	11/2/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Bromochloromethane	11/2/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Chloroethane	11/2/2012	1020	Yes	N	D U			1020	510	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	1,1,1-Trichloroethane	11/2/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Dichloromethane (Methylene chloride)	11/2/2012	510	Yes	N	D U			510	255	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	2-Hexanone (Methyl butyl ketone)	11/2/2012	1020	Yes	N	D U	UJ	5	1020	510	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Carbon disulfide	11/2/2012	1020	Yes	N	D U			1020	510	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Vinyl chloride	11/2/2012	51	Yes	N	D U			51.0	37.0	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Benzene	11/2/2012	25.5	Yes	N	D U			25.5	14.3	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Chloroform	11/2/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Acetone	11/2/2012	2040	Yes	N	D U	UJ	5	2040	1020	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	2,2-Dichloropropane	11/2/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Dichlorodifluoromethane	11/2/2012	204	Yes	N	D U	UJ	5	204	102	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	1,1-Dichloropropene	11/2/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Carbon tetrachloride (Tetrachloromethane)	11/2/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	1,3-Dichlorobenzene	11/2/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	m,p-Xylene	11/2/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Methyl tert-butyl ether (MTBE)	11/2/2012	102	Yes	N	D U			102	60.9	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-WMP-02-6-8	A12J671-29RE1	1,2-Dichloroethene, trans-	11/2/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	1,1,1,2-Tetrachloroethane	11/2/2012	102	Yes	N	D U	UJ	5	102	51.0	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	1,2,3-Trichlorobenzene	11/2/2012	510	Yes	N	D U			510	255	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	1,2-Dichloroethene, cis-	11/2/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Isopropylbenzene (Cumene)	11/2/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	tert-Butylbenzene	11/2/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	1,2,3-Trichloropropane	11/2/2012	102	Yes	N	D U	UJ	5	102	51.0	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	1,2-Dibromo-3-chloropropane	11/2/2012	510	Yes	N	D U	UJ	5	510	255	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	1,2,4-Trimethylbenzene	11/2/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	1,2-Dichlorobenzene	11/2/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	2-Chlorotoluene	11/2/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	o-Xylene	11/2/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	1,1-Dichloroethene	11/2/2012	51	Yes	N	D U			51.0	27.3	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	11/2/2012	204	Yes	N	D U			204	102	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Bromoform (Tribromomethane)	11/2/2012	102	Yes	N	D U	UJ	5	102	51.0	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	1,1,2,2-Tetrachloroethane	11/2/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Trichloroethene (TCE)	11/2/2012	51	Yes	N	D U			51.0	36.9	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	1,1,2-Trichloroethane	11/2/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	2-Butanone (MEK)	11/2/2012	1020	Yes	N	D U	UJ	5	1020	510	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	1,2-Dichloropropane	11/2/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Trichlorofluoromethane (Fluorotrichloromethane)	11/2/2012	204	Yes	N	D U			204	102	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	4-Isopropyltoluene (4-Cymene)	11/2/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	1,1-Dichloroethane	11/2/2012	51	Yes	N	D U			51.0	30.2	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Bromodichloromethane	11/2/2012	51	Yes	N	D U			51.0	25.5	ug/kg

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-WMP-02-6-8	A12J671-29RE1	Naphthalene	11/2/2012	204	Yes	N	D U			204	102	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	1,3-Dichloropropene, cis-	11/2/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Styrene	11/2/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	1,3-Dichloropropane	11/2/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Ethylbenzene	11/2/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	1,3-Dichloropropene, trans-	11/2/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	n-Propylbenzene	11/2/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	n-Butylbenzene	11/2/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	4-Chlorotoluene	11/2/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	1,4-Dichlorobenzene	11/2/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Ethylene dibromide (1,2-Dibromoethane)	11/2/2012	51	Yes	N	D U			51.0	30.9	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Dibromochloromethane	11/2/2012	204	Yes	N	D U			204	102	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	11/2/2012	1020	Yes	N	D U	UJ	5	1020	510	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	1,3,5-Trimethylbenzene (Mesitylene)	11/2/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Bromobenzene	11/2/2012	51	Yes	N	D U			51.0	27.8	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Toluene	11/2/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Chlorobenzene	11/2/2012	51	Yes	N	D U			51.0	26.5	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	1,2,4-Trichlorobenzene	11/2/2012	510	Yes	N	D U			510	255	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	sec-Butylbenzene	11/2/2012	102	Yes	N	D U			102	51.0	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	Tetrachloroethene (PCE)	11/2/2012	51	Yes	N	D U			51.0	25.5	ug/kg
AQ-WMP-02-6-8	A12J671-29RE1	1,2-Dichloroethane	11/2/2012	51	Yes	N	D U			51.0	25.5	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SO-OF3-0-10	A12J671-36	Benzo(k)fluoranthene	11/2/2012	138	Yes	Y	D			46.3	23.1	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SO-OF3-0-10	A12J671-36	Fluoranthene	11/2/2012	178	Yes	Y	D			30.9	15.4	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Benzo(b)fluoranthene	11/2/2012	477	Yes	Y	D			46.3	23.1	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Indeno(1,2,3-c,d)pyrene	11/2/2012	213	Yes	Y	D			30.9	15.4	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Acenaphthylene	11/2/2012	30.9	Yes	N	D U			30.9	15.4	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Dibenzofuran	11/2/2012	30.9	Yes	N	D U			30.9	15.4	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Benzo(g,h,i)perylene	11/2/2012	252	Yes	Y	D			30.9	15.4	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Chrysene	11/2/2012	273	Yes	Y	D			30.9	15.4	ug/kg
AQ-SO-OF3-0-10	A12J671-36	bis(2-Chloroisopropyl)ether	11/2/2012	77.1	Yes	N	D U			77.1	38.6	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Benzo(a)pyrene	11/2/2012	200	Yes	Y	D			46.3	23.1	ug/kg
AQ-SO-OF3-0-10	A12J671-36	1,3-Dichlorobenzene	11/2/2012	77.1	Yes	N	D U			77.1	38.6	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Dibenzo(a,h)anthracene	11/2/2012	42.7	Yes	Y	D			30.9	15.4	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	11/2/2012	771	Yes	N	D U			771	386	ug/kg
AQ-SO-OF3-0-10	A12J671-36	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	11/2/2012	77.1	Yes	N	D U			77.1	38.6	ug/kg
AQ-SO-OF3-0-10	A12J671-36	bis(2-Chloroethyl)ether	11/2/2012	77.1	Yes	N	D U			77.1	38.6	ug/kg
AQ-SO-OF3-0-10	A12J671-36	2,4-Dinitrophenol	11/2/2012	771	Yes	N	D U			771	386	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Benzo(a)anthracene	11/2/2012	117	Yes	Y	D			30.9	15.4	ug/kg
AQ-SO-OF3-0-10	A12J671-36	4-Nitrophenol	11/2/2012	309	Yes	N	D U			309	154	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Benzyl alcohol	11/2/2012	154	Yes	N	D U			154	77.1	ug/kg
AQ-SO-OF3-0-10	A12J671-36	4-Bromophenyl-phenyl ether	11/2/2012	77.1	Yes	N	D U			77.1	38.6	ug/kg
AQ-SO-OF3-0-10	A12J671-36	2,4-Dimethylphenol	11/2/2012	154	Yes	N	D U			154	77.1	ug/kg
AQ-SO-OF3-0-10	A12J671-36	1,4-Dichlorobenzene	11/2/2012	77.1	Yes	N	D U			77.1	38.6	ug/kg
AQ-SO-OF3-0-10	A12J671-36	4-Chloroaniline	11/2/2012	77.1	Yes	N	D U	UJ	10	77.1	38.6	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Phenol	11/2/2012	61.7	Yes	N	D U			61.7	30.9	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Bis(2-ethylhexyl)phthalate	11/2/2012	617	Yes	N	D U			617	309	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SO-OF3-0-10	A12J671-36	bis(2-Chloroethoxy)methane	11/2/2012	77.1	Yes	N	D U			77.1	38.6	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Dimethyl phthalate	11/2/2012	154	Yes	N	D U			154	77.1	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Di-n-octyl phthalate	11/2/2012	617	Yes	N	D U			617	309	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Hexachlorobenzene	11/2/2012	30.9	Yes	N	D U			30.9	15.4	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Anthracene	11/2/2012	30.9	Yes	N	D U			30.9	15.4	ug/kg
AQ-SO-OF3-0-10	A12J671-36	1,2,4-Trichlorobenzene	11/2/2012	77.1	Yes	N	D U			77.1	38.6	ug/kg
AQ-SO-OF3-0-10	A12J671-36	2,4-Dichlorophenol	11/2/2012	154	Yes	N	D U			154	77.1	ug/kg
AQ-SO-OF3-0-10	A12J671-36	2,4-Dinitrotoluene	11/2/2012	309	Yes	N	D U			309	154	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Pyrene	11/2/2012	168	Yes	Y	D			30.9	15.4	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Hexachlorocyclopentadiene	11/2/2012	154	Yes	N	D U			154	77.1	ug/kg
AQ-SO-OF3-0-10	A12J671-36	3,3'-Dichlorobenzidine	11/2/2012	309	Yes	N	D U	UJ	5	309	154	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Pentachlorophenol	11/2/2012	617	Yes	N	D U			617	309	ug/kg
AQ-SO-OF3-0-10	A12J671-36	2,4,6-Trichlorophenol	11/2/2012	154	Yes	N	D U			154	77.1	ug/kg
AQ-SO-OF3-0-10	A12J671-36	2-Nitroaniline	11/2/2012	1070	Yes	N	D U			1070	1070	ug/kg
AQ-SO-OF3-0-10	A12J671-36	2-Nitrophenol	11/2/2012	309	Yes	N	D U			309	154	ug/kg
AQ-SO-OF3-0-10	A12J671-36	1-Methylnaphthalene	11/2/2012	61.7	Yes	N	D U			61.7	30.9	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Naphthalene	11/2/2012	61.7	Yes	N	D U			61.7	30.9	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Hexachloroethane	11/2/2012	77.1	Yes	N	D U			77.1	38.6	ug/kg
AQ-SO-OF3-0-10	A12J671-36	2-Chloronaphthalene	11/2/2012	30.9	Yes	N	D U			30.9	15.4	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Fluorene	11/2/2012	30.9	Yes	N	D U			30.9	15.4	ug/kg
AQ-SO-OF3-0-10	A12J671-36	2-Methylphenol (o-Cresol)	11/2/2012	77.1	Yes	N	D U			77.1	38.6	ug/kg
AQ-SO-OF3-0-10	A12J671-36	1,2-Dichlorobenzene	11/2/2012	77.1	Yes	N	D U			77.1	38.6	ug/kg
AQ-SO-OF3-0-10	A12J671-36	2-Chlorophenol	11/2/2012	154	Yes	N	D U			154	77.1	ug/kg
AQ-SO-OF3-0-10	A12J671-36	2,4,5-Trichlorophenol	11/2/2012	154	Yes	N	D U			154	77.1	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Nitrobenzene	11/2/2012	309	Yes	N	D U			309	154	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SO-OF3-0-10	A12J671-36	3-Nitroaniline	11/2/2012	617	Yes	N	D U			617	309	ug/kg
AQ-SO-OF3-0-10	A12J671-36	2-Methylnaphthalene	11/2/2012	61.7	Yes	N	D U			61.7	30.9	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Isophorone	11/2/2012	77.1	Yes	N	D U			77.1	38.6	ug/kg
AQ-SO-OF3-0-10	A12J671-36	4-Chloro-3-methylphenol	11/2/2012	309	Yes	N	D U			309	154	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Aniline	11/2/2012	154	Yes	N	D U			154	77.1	ug/kg
AQ-SO-OF3-0-10	A12J671-36	N-Nitrosodimethylamine	11/2/2012	77.1	Yes	N	D U			77.1	38.6	ug/kg
AQ-SO-OF3-0-10	A12J671-36	N-Nitrosodi-N-propylamine	11/2/2012	77.1	Yes	N	D U			77.1	38.6	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Benzoic acid	11/2/2012	3860	Yes	N	D U	UJ	10	3860	1930	ug/kg
AQ-SO-OF3-0-10	A12J671-36	4-Nitroaniline	11/2/2012	617	Yes	N	D U			617	309	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	11/2/2012	77.1	Yes	N	D U			77.1	38.6	ug/kg
AQ-SO-OF3-0-10	A12J671-36	2,6-Dinitrotoluene	11/2/2012	309	Yes	N	D U			309	154	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Carbazole	11/2/2012	31.5	Yes	Y	D J	J	5	46.3	23.1	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Acenaphthene	11/2/2012	30.9	Yes	N	D U			30.9	15.4	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Diethyl phthalate	11/2/2012	154	Yes	N	D U			154	77.1	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Di-n-butyl phthalate	11/2/2012	154	Yes	N	D U			154	77.1	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Phenanthrene	11/2/2012	66.1	Yes	Y	D			30.9	15.4	ug/kg
AQ-SO-OF3-0-10	A12J671-36	Butylbenzyl phthalate	11/2/2012	617	Yes	N	D U			617	309	ug/kg
AQ-SO-OF3-0-10	A12J671-36	N-Nitrosodiphenylamine	11/2/2012	77.1	Yes	N	D U			77.1	38.6	ug/kg
AQ-SO-OF3-0-10	A12J671-36	2,3,4,6-Tetrachlorophenol	11/2/2012	154	Yes	N	D U			154	77.1	ug/kg
AQ-SO-OF3-0-10	A12J671-36	4-Chlorophenyl phenyl ether	11/2/2012	77.1	Yes	N	D U			77.1	38.6	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Hexachloroethane	11/2/2012	17.6	Yes	N	U			17.6	8.80	ug/kg
AQ-SO-OF5-0-10	A12J671-38	2,4-Dinitrotoluene	11/2/2012	70.4	Yes	N	U			70.4	35.2	ug/kg
AQ-SO-OF5-0-10	A12J671-38	2,4-Dichlorophenol	11/2/2012	35.2	Yes	N	U			35.2	17.6	ug/kg
AQ-SO-OF5-0-10	A12J671-38	1,2,4-Trichlorobenzene	11/2/2012	17.6	Yes	N	U			17.6	8.80	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Anthracene	11/2/2012	40	Yes	Y				7.04	3.52	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SO-OF5-0-10	A12J671-38	Hexachlorobenzene	11/2/2012	7.04	Yes	N	U			7.04	3.52	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Di-n-octyl phthalate	11/2/2012	141	Yes	N	U			141	70.4	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Nitrobenzene	11/2/2012	70.4	Yes	N	U			70.4	35.2	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Bis(2-ethylhexyl)phthalate	11/2/2012	141	Yes	N	U			141	70.4	ug/kg
AQ-SO-OF5-0-10	A12J671-38	bis(2-Chloroethyl)ether	11/2/2012	17.6	Yes	N	U			17.6	8.80	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Benzoic acid	11/2/2012	880	Yes	N	U	UJ	10	880	440	ug/kg
AQ-SO-OF5-0-10	A12J671-38	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	11/2/2012	9.17	Yes	Y	J			17.6	8.80	ug/kg
AQ-SO-OF5-0-10	A12J671-38	4-Chlorophenyl phenyl ether	11/2/2012	17.6	Yes	N	U			17.6	8.80	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Hexachlorocyclopentadiene	11/2/2012	35.2	Yes	N	U			35.2	17.6	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Isophorone	11/2/2012	17.6	Yes	N	U			17.6	8.80	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Acenaphthene	11/2/2012	24.4	Yes	Y				7.04	3.52	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Diethyl phthalate	11/2/2012	35.2	Yes	N	U			35.2	17.6	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Di-n-butyl phthalate	11/2/2012	35.2	Yes	N	U			35.2	17.6	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Phenanthrene	11/2/2012	142	Yes	Y				7.04	3.52	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Chrysene	11/2/2012	266	Yes	Y				7.04	3.52	ug/kg
AQ-SO-OF5-0-10	A12J671-38	N-Nitrosodi-N-propylamine	11/2/2012	17.6	Yes	N	U			17.6	8.80	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Acenaphthylene	11/2/2012	7.04	Yes	N	U			7.04	3.52	ug/kg
AQ-SO-OF5-0-10	A12J671-38	bis(2-Chloroisopropyl)ether	11/2/2012	17.6	Yes	N	U			17.6	8.80	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Benzo(a)pyrene	11/2/2012	337	Yes	Y				10.6	5.28	ug/kg
AQ-SO-OF5-0-10	A12J671-38	2,4-Dinitrophenol	11/2/2012	176	Yes	N	U			176	88.0	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Dibenzo(a,h)anthracene	11/2/2012	64.9	Yes	Y				7.04	3.52	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	11/2/2012	176	Yes	N	U			176	88.0	ug/kg
AQ-SO-OF5-0-10	A12J671-38	1,3-Dichlorobenzene	11/2/2012	17.6	Yes	N	U			17.6	8.80	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Benzo(a)anthracene	11/2/2012	126	Yes	Y				7.04	3.52	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SO-OF5-0-10	A12J671-38	2,3,4,6-Tetrachlorophenol	11/2/2012	35.2	Yes	N	U			35.2	17.6	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Pyrene	11/2/2012	204	Yes	Y				7.04	3.52	ug/kg
AQ-SO-OF5-0-10	A12J671-38	2,6-Dinitrotoluene	11/2/2012	70.4	Yes	N	U			70.4	35.2	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Dimethyl phthalate	11/2/2012	35.2	Yes	N	U			35.2	17.6	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Aniline	11/2/2012	35.2	Yes	N	U			35.2	17.6	ug/kg
AQ-SO-OF5-0-10	A12J671-38	N-Nitrosodimethylamine	11/2/2012	17.6	Yes	N	U			17.6	8.80	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Benzo(k)fluoranthene	11/2/2012	179	Yes	Y				10.6	5.28	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Fluoranthene	11/2/2012	217	Yes	Y				7.04	3.52	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Benzo(b)fluoranthene	11/2/2012	701	Yes	Y				10.6	5.28	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Indeno(1,2,3-c,d)pyrene	11/2/2012	281	Yes	Y				7.04	3.52	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Benzo(g,h,i)perylene	11/2/2012	332	Yes	Y				7.04	3.52	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Dibenzofuran	11/2/2012	18.1	Yes	Y				7.04	3.52	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Phenol	11/2/2012	14.1	Yes	N	U			14.1	7.04	ug/kg
AQ-SO-OF5-0-10	A12J671-38	4-Chloro-3-methylphenol	11/2/2012	70.4	Yes	N	U			70.4	35.2	ug/kg
AQ-SO-OF5-0-10	A12J671-38	2-Nitroaniline	11/2/2012	141	Yes	N	U			141	141	ug/kg
AQ-SO-OF5-0-10	A12J671-38	4-Nitrophenol	11/2/2012	70.4	Yes	N	U			70.4	35.2	ug/kg
AQ-SO-OF5-0-10	A12J671-38	bis(2-Chloroethoxy)methane	11/2/2012	17.6	Yes	N	U			17.6	8.80	ug/kg
AQ-SO-OF5-0-10	A12J671-38	4-Nitroaniline	11/2/2012	141	Yes	N	U			141	70.4	ug/kg
AQ-SO-OF5-0-10	A12J671-38	4-Chloroaniline	11/2/2012	17.6	Yes	N	U	UJ	10	17.6	8.80	ug/kg
AQ-SO-OF5-0-10	A12J671-38	2-Methylnaphthalene	11/2/2012	10.5	Yes	Y	J			14.1	7.04	ug/kg
AQ-SO-OF5-0-10	A12J671-38	2-Chloronaphthalene	11/2/2012	7.04	Yes	N	U			7.04	3.52	ug/kg
AQ-SO-OF5-0-10	A12J671-38	3-Nitroaniline	11/2/2012	141	Yes	N	U			141	70.4	ug/kg
AQ-SO-OF5-0-10	A12J671-38	3,3'-Dichlorobenzidine	11/2/2012	70.4	Yes	N	U	UJ	5	70.4	35.2	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Naphthalene	11/2/2012	33.5	Yes	Y				14.1	7.04	ug/kg
AQ-SO-OF5-0-10	A12J671-38	2-Nitrophenol	11/2/2012	70.4	Yes	N	U			70.4	35.2	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SO-OF5-0-10	A12J671-38	2,4,6-Trichlorophenol	11/2/2012	35.2	Yes	N	U			35.2	17.6	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Pentachlorophenol	11/2/2012	141	Yes	N	U			141	70.4	ug/kg
AQ-SO-OF5-0-10	A12J671-38	4-Bromophenyl-phenyl ether	11/2/2012	17.6	Yes	N	U			17.6	8.80	ug/kg
AQ-SO-OF5-0-10	A12J671-38	2,4,5-Trichlorophenol	11/2/2012	35.2	Yes	N	U			35.2	17.6	ug/kg
AQ-SO-OF5-0-10	A12J671-38	1,4-Dichlorobenzene	11/2/2012	17.6	Yes	N	U			17.6	8.80	ug/kg
AQ-SO-OF5-0-10	A12J671-38	1-Methylnaphthalene	11/2/2012	14.1	Yes	N	U			14.1	7.04	ug/kg
AQ-SO-OF5-0-10	A12J671-38	2-Chlorophenol	11/2/2012	35.2	Yes	N	U			35.2	17.6	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	11/2/2012	17.6	Yes	N	U			17.6	8.80	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Benzyl alcohol	11/2/2012	35.2	Yes	N	U			35.2	17.6	ug/kg
AQ-SO-OF5-0-10	A12J671-38	1,2-Dichlorobenzene	11/2/2012	17.6	Yes	N	U			17.6	8.80	ug/kg
AQ-SO-OF5-0-10	A12J671-38	2-Methylphenol (o-Cresol)	11/2/2012	17.6	Yes	N	U			17.6	8.80	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Butylbenzyl phthalate	11/2/2012	141	Yes	N	U			141	70.4	ug/kg
AQ-SO-OF5-0-10	A12J671-38	N-Nitrosodiphenylamine	11/2/2012	17.6	Yes	N	U			17.6	8.80	ug/kg
AQ-SO-OF5-0-10	A12J671-38	Fluorene	11/2/2012	25	Yes	Y				7.04	3.52	ug/kg
AQ-SO-OF5-0-10	A12J671-38	2,4-Dimethylphenol	11/2/2012	35.2	Yes	N	U			35.2	17.6	ug/kg
AQ-SO-OF5-0-10	A12J671-38RE1	Carbazole	11/3/2012	26.2	Yes	Y				10.6	5.28	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	1,3-Dichlorobenzene	11/2/2012	64.4	Yes	N	U			64.4	32.2	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	2,4,5-Trichlorophenol	11/2/2012	129	Yes	N	U			129	64.4	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Chrysene	11/2/2012	72.1	Yes	Y				25.8	12.9	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	4-Nitroaniline	11/2/2012	515	Yes	N	U			515	258	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	4-Nitrophenol	11/2/2012	258	Yes	N	U			258	129	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Dibenzo(a,h)anthracene	11/2/2012	25.8	Yes	N	U			25.8	12.9	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Benzyl alcohol	11/2/2012	129	Yes	N	U			129	64.4	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	4-Bromophenyl-phenyl ether	11/2/2012	64.4	Yes	N	U			64.4	32.2	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	2,4-Dimethylphenol	11/2/2012	129	Yes	N	U			129	64.4	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SO-OF5D-0-10	A12J671-40	1,4-Dichlorobenzene	11/2/2012	64.4	Yes	N	U			64.4	32.2	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	4-Chloroaniline	11/2/2012	64.4	Yes	N	U	UJ	8,10	64.4	32.2	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Nitrobenzene	11/2/2012	258	Yes	N	U			258	129	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	2-Chlorophenol	11/2/2012	129	Yes	N	U			129	64.4	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	2,4-Dinitrophenol	11/2/2012	644	Yes	N	U	UJ	8	644	322	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	1,2-Dichlorobenzene	11/2/2012	64.4	Yes	N	U			64.4	32.2	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	2-Methylphenol (o-Cresol)	11/2/2012	64.4	Yes	N	U			64.4	32.2	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Benzo(k)fluoranthene	11/2/2012	41.4	Yes	Y				38.6	19.3	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Phenol	11/2/2012	51.5	Yes	N	U			51.5	25.8	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	11/2/2012	644	Yes	N	U			644	322	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Isophorone	11/2/2012	64.4	Yes	N	U			64.4	32.2	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	3-Nitroaniline	11/2/2012	515	Yes	N	U			515	258	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	2,4-Dinitrotoluene	11/2/2012	258	Yes	N	U			258	129	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Diethyl phthalate	11/2/2012	129	Yes	N	U			129	64.4	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Pentachlorophenol	11/2/2012	515	Yes	N	U			515	258	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	11/2/2012	64.4	Yes	N	U			64.4	32.2	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Carbazole	11/2/2012	38.6	Yes	N	U			38.6	19.3	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	bis(2-Chloroethyl)ether	11/2/2012	64.4	Yes	N	U			64.4	32.2	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	bis(2-Chloroethoxy)methane	11/2/2012	64.4	Yes	N	U			64.4	32.2	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Bis(2-ethylhexyl)phthalate	11/2/2012	515	Yes	N	U			515	258	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Di-n-octyl phthalate	11/2/2012	515	Yes	N	U			515	258	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Hexachlorobenzene	11/2/2012	25.8	Yes	N	U			25.8	12.9	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Anthracene	11/2/2012	25.8	Yes	N	U			25.8	12.9	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	2-Nitroaniline	11/2/2012	515	Yes	N	U			515	258	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SO-OF5D-0-10	A12J671-40	2,4-Dichlorophenol	11/2/2012	129	Yes	N	U			129	64.4	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	2-Nitrophenol	11/2/2012	258	Yes	N	U			258	129	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Acenaphthylene	11/2/2012	25.8	Yes	N	U			25.8	12.9	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Pyrene	11/2/2012	42.3	Yes	Y				25.8	12.9	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Dimethyl phthalate	11/2/2012	129	Yes	N	U			129	64.4	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	11/2/2012	64.4	Yes	N	U			64.4	32.2	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Dibenzofuran	11/2/2012	25.8	Yes	N	U			25.8	12.9	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Benzo(g,h,i)perylene	11/2/2012	72.1	Yes	Y				25.8	12.9	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Indeno(1,2,3-c,d)pyrene	11/2/2012	65.7	Yes	Y				25.8	12.9	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Benzo(b)fluoranthene	11/2/2012	156	Yes	Y				38.6	19.3	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Fluoranthene	11/2/2012	44.9	Yes	Y				25.8	12.9	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	bis(2-Chloroisopropyl)ether	11/2/2012	64.4	Yes	N	U			64.4	32.2	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	1,2,4-Trichlorobenzene	11/2/2012	64.4	Yes	N	U			64.4	32.2	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	N-Nitrosodimethylamine	11/2/2012	64.4	Yes	N	U			64.4	32.2	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Fluorene	11/2/2012	25.8	Yes	N	U			25.8	12.9	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	N-Nitrosodiphenylamine	11/2/2012	64.4	Yes	N	U			64.4	32.2	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Butylbenzyl phthalate	11/2/2012	515	Yes	N	U			515	258	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Phenanthrene	11/2/2012	16.6	Yes	Y	J			25.8	12.9	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Di-n-butyl phthalate	11/2/2012	129	Yes	N	U			129	64.4	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Acenaphthene	11/2/2012	25.8	Yes	N	U			25.8	12.9	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Hexachlorocyclopentadiene	11/2/2012	129	Yes	N	U			129	64.4	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	4-Chlorophenyl phenyl ether	11/2/2012	64.4	Yes	N	U			64.4	32.2	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Hexachloroethane	11/2/2012	64.4	Yes	N	U			64.4	32.2	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	2,4,6-Trichlorophenol	11/2/2012	129	Yes	N	U			129	64.4	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	N-Nitrosodi-N-propylamine	11/2/2012	64.4	Yes	N	U			64.4	32.2	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SO-OF5D-0-10	A12J671-40	Benzo(a)pyrene	11/2/2012	55.2	Yes	Y				38.6	19.3	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Benzo(a)anthracene	11/2/2012	28.9	Yes	Y				25.8	12.9	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Aniline	11/2/2012	129	Yes	N	U			129	64.4	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	2,6-Dinitrotoluene	11/2/2012	258	Yes	N	U			258	129	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	4-Chloro-3-methylphenol	11/2/2012	258	Yes	N	U			258	129	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	2,3,4,6-Tetrachlorophenol	11/2/2012	129	Yes	N	U			129	64.4	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	3,3'-Dichlorobenzidine	11/2/2012	258	Yes	N	U	UJ	5	258	129	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	2-Chloronaphthalene	11/2/2012	25.8	Yes	N	U			25.8	12.9	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	2-Methylnaphthalene	11/2/2012	51.5	Yes	N	U			51.5	25.8	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Naphthalene	11/2/2012	51.5	Yes	N	U			51.5	25.8	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	1-Methylnaphthalene	11/2/2012	51.5	Yes	N	U			51.5	25.8	ug/kg
AQ-SO-OF5D-0-10	A12J671-40	Benzoic acid	11/2/2012	3220	Yes	N	U	UJ	8,10	3220	1610	ug/kg
AQ-WMP-04-2-8	A12J671-26	1-Methylnaphthalene	11/2/2012	9.68	Yes	N	U			9.68	4.84	ug/kg
AQ-WMP-04-2-8	A12J671-26	Chrysene	11/2/2012	211	Yes	Y				4.84	2.42	ug/kg
AQ-WMP-04-2-8	A12J671-26	2-Methylnaphthalene	11/2/2012	9.68	Yes	N	U			9.68	4.84	ug/kg
AQ-WMP-04-2-8	A12J671-26	Dibenzofuran	11/2/2012	4.84	Yes	N	U			4.84	2.42	ug/kg
AQ-WMP-04-2-8	A12J671-26	Benzo(g,h,i)perylene	11/2/2012	15.5	Yes	Y				4.84	2.42	ug/kg
AQ-WMP-04-2-8	A12J671-26	Indeno(1,2,3-c,d)pyrene	11/2/2012	14.4	Yes	Y				4.84	2.42	ug/kg
AQ-WMP-04-2-8	A12J671-26	Benzo(b)fluoranthene	11/2/2012	114	Yes	Y				7.26	3.63	ug/kg
AQ-WMP-04-2-8	A12J671-26	Fluoranthene	11/2/2012	909	Yes	Y				4.84	2.42	ug/kg
AQ-WMP-04-2-8	A12J671-26	4-Nitroaniline	11/2/2012	96.8	Yes	N	U			96.8	48.4	ug/kg
AQ-WMP-04-2-8	A12J671-26	Acenaphthylene	11/2/2012	4.84	Yes	N	U			4.84	2.42	ug/kg
AQ-WMP-04-2-8	A12J671-26	4-Nitrophenol	11/2/2012	48.4	Yes	N	U			48.4	24.2	ug/kg
AQ-WMP-04-2-8	A12J671-26	bis(2-Chloroisopropyl)ether	11/2/2012	12.1	Yes	N	U			12.1	6.05	ug/kg
AQ-WMP-04-2-8	A12J671-26	Benzo(a)pyrene	11/2/2012	23.8	Yes	Y				7.26	3.63	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-WMP-04-2-8	A12J671-26	2,4-Dinitrophenol	11/2/2012	121	Yes	N	U			121	60.5	ug/kg
AQ-WMP-04-2-8	A12J671-26	Dibenzo(a,h)anthracene	11/2/2012	3.79	Yes	Y	J			4.84	2.42	ug/kg
AQ-WMP-04-2-8	A12J671-26	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	11/2/2012	121	Yes	N	U			121	60.5	ug/kg
AQ-WMP-04-2-8	A12J671-26	1,3-Dichlorobenzene	11/2/2012	12.1	Yes	N	U			12.1	6.05	ug/kg
AQ-WMP-04-2-8	A12J671-26	Benzo(a)anthracene	11/2/2012	84.9	Yes	Y				4.84	2.42	ug/kg
AQ-WMP-04-2-8	A12J671-26	Benzo(k)fluoranthene	11/2/2012	33.6	Yes	Y				7.26	3.63	ug/kg
AQ-WMP-04-2-8	A12J671-26	bis(2-Chloroethoxy)methane	11/2/2012	12.1	Yes	N	U			12.1	6.05	ug/kg
AQ-WMP-04-2-8	A12J671-26	Pyrene	11/2/2012	840	Yes	Y				4.84	2.42	ug/kg
AQ-WMP-04-2-8	A12J671-26	2,4-Dinitrotoluene	11/2/2012	48.4	Yes	N	U			48.4	24.2	ug/kg
AQ-WMP-04-2-8	A12J671-26	2,4-Dichlorophenol	11/2/2012	24.2	Yes	N	U			24.2	12.1	ug/kg
AQ-WMP-04-2-8	A12J671-26	1,2,4-Trichlorobenzene	11/2/2012	12.1	Yes	N	U			12.1	6.05	ug/kg
AQ-WMP-04-2-8	A12J671-26	Anthracene	11/2/2012	18.6	Yes	Y				4.84	2.42	ug/kg
AQ-WMP-04-2-8	A12J671-26	Hexachlorobenzene	11/2/2012	4.84	Yes	N	U			4.84	4.84	ug/kg
AQ-WMP-04-2-8	A12J671-26	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	11/2/2012	44.2	Yes	Y				12.1	6.05	ug/kg
AQ-WMP-04-2-8	A12J671-26	Bis(2-ethylhexyl)phthalate	11/2/2012	96.8	Yes	N	U			96.8	48.4	ug/kg
AQ-WMP-04-2-8	A12J671-26	2,6-Dinitrotoluene	11/2/2012	48.4	Yes	N	U			48.4	24.2	ug/kg
AQ-WMP-04-2-8	A12J671-26	bis(2-Chloroethyl)ether	11/2/2012	12.1	Yes	N	U			12.1	6.05	ug/kg
AQ-WMP-04-2-8	A12J671-26	Phenol	11/2/2012	104	Yes	Y				9.68	4.84	ug/kg
AQ-WMP-04-2-8	A12J671-26	4-Chloroaniline	11/2/2012	12.1	Yes	N	U	UJ	10	12.1	6.05	ug/kg
AQ-WMP-04-2-8	A12J671-26	1,4-Dichlorobenzene	11/2/2012	12.1	Yes	N	U			12.1	6.05	ug/kg
AQ-WMP-04-2-8	A12J671-26	2,4-Dimethylphenol	11/2/2012	24.2	Yes	N	U			24.2	12.1	ug/kg
AQ-WMP-04-2-8	A12J671-26	4-Bromophenyl-phenyl ether	11/2/2012	12.1	Yes	N	U			12.1	6.05	ug/kg
AQ-WMP-04-2-8	A12J671-26	Benzyl alcohol	11/2/2012	24.2	Yes	N	U			24.2	12.1	ug/kg
AQ-WMP-04-2-8	A12J671-26	Di-n-octyl phthalate	11/2/2012	96.8	Yes	N	U			96.8	48.4	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-WMP-04-2-8	A12J671-26	2-Methylphenol (o-Cresol)	11/2/2012	12.1	Yes	N	U			12.1	6.05	ug/kg
AQ-WMP-04-2-8	A12J671-26	Pentachlorophenol	11/2/2012	96.8	Yes	N	U			96.8	48.4	ug/kg
AQ-WMP-04-2-8	A12J671-26	2,3,4,6-Tetrachlorophenol	11/2/2012	24.2	Yes	N	U			24.2	12.1	ug/kg
AQ-WMP-04-2-8	A12J671-26	2-Nitroaniline	11/2/2012	96.8	Yes	N	U			96.8	48.4	ug/kg
AQ-WMP-04-2-8	A12J671-26	2-Nitrophenol	11/2/2012	48.4	Yes	N	U			48.4	24.2	ug/kg
AQ-WMP-04-2-8	A12J671-26	Naphthalene	11/2/2012	9.68	Yes	N	U			9.68	4.84	ug/kg
AQ-WMP-04-2-8	A12J671-26	4-Chloro-3-methylphenol	11/2/2012	48.4	Yes	N	U			48.4	24.2	ug/kg
AQ-WMP-04-2-8	A12J671-26	3,3'-Dichlorobenzidine	11/2/2012	48.4	Yes	N	U	UJ	5	48.4	24.2	ug/kg
AQ-WMP-04-2-8	A12J671-26	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	11/2/2012	12.1	Yes	N	U			12.1	6.05	ug/kg
AQ-WMP-04-2-8	A12J671-26	1,2-Dichlorobenzene	11/2/2012	12.1	Yes	N	U			12.1	6.05	ug/kg
AQ-WMP-04-2-8	A12J671-26	2-Chlorophenol	11/2/2012	24.2	Yes	N	U			24.2	12.1	ug/kg
AQ-WMP-04-2-8	A12J671-26	2,4,5-Trichlorophenol	11/2/2012	24.2	Yes	N	U			24.2	12.1	ug/kg
AQ-WMP-04-2-8	A12J671-26	Nitrobenzene	11/2/2012	48.4	Yes	N	U			48.4	24.2	ug/kg
AQ-WMP-04-2-8	A12J671-26	3-Nitroaniline	11/2/2012	96.8	Yes	N	U			96.8	48.4	ug/kg
AQ-WMP-04-2-8	A12J671-26	Dimethyl phthalate	11/2/2012	24.2	Yes	N	U			24.2	12.1	ug/kg
AQ-WMP-04-2-8	A12J671-26	2-Chloronaphthalene	11/2/2012	4.84	Yes	N	U			4.84	2.42	ug/kg
AQ-WMP-04-2-8	A12J671-26	Hexachlorocyclopentadiene	11/2/2012	24.2	Yes	N	U			24.2	12.1	ug/kg
AQ-WMP-04-2-8	A12J671-26	Aniline	11/2/2012	24.2	Yes	N	U			24.2	12.1	ug/kg
AQ-WMP-04-2-8	A12J671-26	N-Nitrosodimethylamine	11/2/2012	12.1	Yes	N	U			12.1	6.05	ug/kg
AQ-WMP-04-2-8	A12J671-26	N-Nitrosodi-N-propylamine	11/2/2012	12.1	Yes	N	U			12.1	6.05	ug/kg
AQ-WMP-04-2-8	A12J671-26	Benzoic acid	11/2/2012	605	Yes	N	U	UJ	10	605	302	ug/kg
AQ-WMP-04-2-8	A12J671-26	2,4,6-Trichlorophenol	11/2/2012	24.2	Yes	N	U			24.2	12.1	ug/kg
AQ-WMP-04-2-8	A12J671-26	4-Chlorophenyl phenyl ether	11/2/2012	12.1	Yes	N	U			12.1	6.05	ug/kg
AQ-WMP-04-2-8	A12J671-26	Fluorene	11/2/2012	4.84	Yes	N	U			4.84	2.42	ug/kg
AQ-WMP-04-2-8	A12J671-26	Isophorone	11/2/2012	12.1	Yes	N	U			12.1	6.05	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-WMP-04-2-8	A12J671-26	Acenaphthene	11/2/2012	4.84	Yes	N	U			4.84	2.42	ug/kg
AQ-WMP-04-2-8	A12J671-26	Diethyl phthalate	11/2/2012	24.2	Yes	N	U			24.2	12.1	ug/kg
AQ-WMP-04-2-8	A12J671-26	Di-n-butyl phthalate	11/2/2012	24.2	Yes	N	U			24.2	12.1	ug/kg
AQ-WMP-04-2-8	A12J671-26	Phenanthrene	11/2/2012	295	Yes	Y				4.84	2.42	ug/kg
AQ-WMP-04-2-8	A12J671-26	Butylbenzyl phthalate	11/2/2012	96.8	Yes	N	U			96.8	48.4	ug/kg
AQ-WMP-04-2-8	A12J671-26	N-Nitrosodiphenylamine	11/2/2012	12.1	Yes	N	U			12.1	6.05	ug/kg
AQ-WMP-04-2-8	A12J671-26	Hexachloroethane	11/2/2012	12.1	Yes	N	U			12.1	6.05	ug/kg
AQ-WMP-04-2-8	A12J671-26RE2	Carbazole	11/3/2012	140	Yes	Y	D			72.6	36.3	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-01-2-16	A12J671-17	2-Methylnaphthalene	11/3/2012	690	Yes	N	D U			690	345	ug/kg
AQ-BMP-01-2-16	A12J671-17	Benzo(g,h,i)perylene	11/3/2012	48800	Yes	Y	D			345	172	ug/kg
AQ-BMP-01-2-16	A12J671-17	Anthracene	11/3/2012	39000	Yes	Y	D			345	172	ug/kg
AQ-BMP-01-2-16	A12J671-17	Dibenzofuran	11/3/2012	2090	Yes	Y	D			345	172	ug/kg
AQ-BMP-01-2-16	A12J671-17	Fluorene	11/3/2012	4100	Yes	Y	D			345	172	ug/kg
AQ-BMP-01-2-16	A12J671-17	1-Methylnaphthalene	11/3/2012	690	Yes	N	D U			690	345	ug/kg
AQ-BMP-01-2-16	A12J671-17	Indeno(1,2,3-c,d)pyrene	11/3/2012	48100	Yes	Y	D			345	172	ug/kg
AQ-BMP-01-2-16	A12J671-17	Acenaphthene	11/3/2012	6300	Yes	Y	D			345	172	ug/kg
AQ-BMP-01-2-16	A12J671-17	Naphthalene	11/3/2012	690	Yes	N	D U			690	345	ug/kg
AQ-BMP-01-2-16	A12J671-17	Benzo(a)anthracene	11/3/2012	126000	Yes	Y	D			345	172	ug/kg
AQ-BMP-01-2-16	A12J671-17	Acenaphthylene	11/3/2012	345	Yes	N	D U			345	172	ug/kg
AQ-BMP-01-2-16	A12J671-17	Benzo(a)pyrene	11/3/2012	86200	Yes	Y	D			345	172	ug/kg
AQ-BMP-01-2-16	A12J671-17	Dibenzo(a,h)anthracene	11/3/2012	13500	Yes	Y	D			345	172	ug/kg
AQ-BMP-01-2-16	A12J671-17RE1	Pyrene	11/5/2012	693000	Yes	Y	D			3450	1720	ug/kg
AQ-BMP-01-2-16	A12J671-17RE1	Benzo(b,k)fluoranthene	11/5/2012	327000	Yes	Y	D			6900	3450	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMP-01-2-16	A12J671-17RE1	Phenanthrene	11/5/2012	218000	Yes	Y	D			3450	1720	ug/kg
AQ-BMP-01-2-16	A12J671-17RE1	Fluoranthene	11/5/2012	772000	Yes	Y	D			3450	1720	ug/kg
AQ-BMP-01-2-16	A12J671-17RE1	Chrysene	11/5/2012	282000	Yes	Y	D			3450	1720	ug/kg
AQ-BMP-02-1-15	A12J671-09	Naphthalene	11/3/2012	1060	Yes	N	D U			1060	531	ug/kg
AQ-BMP-02-1-15	A12J671-09	Acenaphthene	11/3/2012	4690	Yes	Y	D	J	9	531	265	ug/kg
AQ-BMP-02-1-15	A12J671-09	2-Methylnaphthalene	11/3/2012	1060	Yes	N	D U			1060	531	ug/kg
AQ-BMP-02-1-15	A12J671-09	1-Methylnaphthalene	11/3/2012	1060	Yes	N	D U			1060	531	ug/kg
AQ-BMP-02-1-15	A12J671-09	Fluorene	11/3/2012	2040	Yes	Y	D	J	9	531	265	ug/kg
AQ-BMP-02-1-15	A12J671-09	Anthracene	11/3/2012	22800	Yes	Y	D	J	9	531	265	ug/kg
AQ-BMP-02-1-15	A12J671-09	Dibenzofuran	11/3/2012	1340	Yes	Y	D	J	9	531	265	ug/kg
AQ-BMP-02-1-15	A12J671-09	Dibenzo(a,h)anthracene	11/3/2012	9090	Yes	Y	D			531	265	ug/kg
AQ-BMP-02-1-15	A12J671-09	Indeno(1,2,3-c,d)pyrene	11/3/2012	32700	Yes	Y	D			531	265	ug/kg
AQ-BMP-02-1-15	A12J671-09	Acenaphthylene	11/3/2012	531	Yes	N	D U			531	265	ug/kg
AQ-BMP-02-1-15	A12J671-09	Chrysene	11/3/2012	199000	Yes	Y	D			531	265	ug/kg
AQ-BMP-02-1-15	A12J671-09	Phenanthrene	11/3/2012	144000	Yes	Y	D			531	265	ug/kg
AQ-BMP-02-1-15	A12J671-09	Benzo(a)anthracene	11/3/2012	82600	Yes	Y	D			531	265	ug/kg
AQ-BMP-02-1-15	A12J671-09	Benzo(a)pyrene	11/3/2012	54600	Yes	Y	D			531	265	ug/kg
AQ-BMP-02-1-15	A12J671-09	Benzo(b,k)fluoranthene	11/3/2012	236000	Yes	Y	D			1060	531	ug/kg
AQ-BMP-02-1-15	A12J671-09	Benzo(g,h,i)perylene	11/3/2012	33400	Yes	Y	D			531	265	ug/kg
AQ-BMP-02-1-15	A12J671-09RE1	Fluoranthene	11/5/2012	490000	Yes	Y	D			5310	2650	ug/kg
AQ-BMP-02-1-15	A12J671-09RE1	Pyrene	11/5/2012	393000	Yes	Y	D			5310	2650	ug/kg
AQ-WMP-01-2.5-7.5	A12J671-35RE1	Chrysene	11/7/2012	469	Yes	Y				6.66	3.33	ug/kg
AQ-WMP-01-2.5-7.5	A12J671-35RE1	Benzo(b,k)fluoranthene	11/7/2012	530	Yes	Y				13.3	6.66	ug/kg
AQ-WMP-01-2.5-7.5	A12J671-35RE1	Pyrene	11/7/2012	301	Yes	Y				6.66	3.33	ug/kg
AQ-WMP-01-2.5-7.5	A12J671-35RE1	Dibenzofuran	11/7/2012	6.66	Yes	N	U			6.66	3.33	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-WMP-01-2.5-7.5	A12J671-35RE1	Benzo(g,h,i)perylene	11/7/2012	115	Yes	Y				6.66	3.33	ug/kg
AQ-WMP-01-2.5-7.5	A12J671-35RE1	Indeno(1,2,3-c,d)pyrene	11/7/2012	112	Yes	Y				6.66	3.33	ug/kg
AQ-WMP-01-2.5-7.5	A12J671-35RE1	Fluoranthene	11/7/2012	225	Yes	Y				6.66	3.33	ug/kg
AQ-WMP-01-2.5-7.5	A12J671-35RE1	Acenaphthylene	11/7/2012	6.66	Yes	N	U			6.66	3.33	ug/kg
AQ-WMP-01-2.5-7.5	A12J671-35RE1	Anthracene	11/7/2012	5.21	Yes	Y	J			6.66	3.33	ug/kg
AQ-WMP-01-2.5-7.5	A12J671-35RE1	Benzo(a)pyrene	11/7/2012	51.8	Yes	Y				6.66	3.33	ug/kg
AQ-WMP-01-2.5-7.5	A12J671-35RE1	Dibenzo(a,h)anthracene	11/7/2012	27.5	Yes	Y				6.66	3.33	ug/kg
AQ-WMP-01-2.5-7.5	A12J671-35RE1	Benzo(a)anthracene	11/7/2012	110	Yes	Y				6.66	3.33	ug/kg
AQ-WMP-01-2.5-7.5	A12J671-35RE1	Acenaphthene	11/7/2012	6.66	Yes	N	U			6.66	3.33	ug/kg
AQ-WMP-01-2.5-7.5	A12J671-35RE1	Phenanthrene	11/7/2012	10.5	Yes	Y				6.66	3.33	ug/kg
AQ-WMP-01-2.5-7.5	A12J671-35RE1	Fluorene	11/7/2012	6.66	Yes	N	U			6.66	3.33	ug/kg
AQ-WMP-01-2.5-7.5	A12J671-35RE1	1-Methylnaphthalene	11/7/2012	13.3	Yes	N	U			13.3	6.66	ug/kg
AQ-WMP-01-2.5-7.5	A12J671-35RE1	Naphthalene	11/7/2012	13.3	Yes	N	U	UJ	8	13.3	6.66	ug/kg
AQ-WMP-01-2.5-7.5	A12J671-35RE1	2-Methylnaphthalene	11/7/2012	13.3	Yes	N	U			13.3	6.66	ug/kg
AQ-WMP-02-2-8	A12J671-30	Fluoranthene	11/3/2012	1850	Yes	Y		J	13	6.75	3.37	ug/kg
AQ-WMP-02-2-8	A12J671-30	Phenanthrene	11/3/2012	372	Yes	Y		J	13	6.75	3.37	ug/kg
AQ-WMP-02-2-8	A12J671-30	Anthracene	11/3/2012	28.7	Yes	N	U	UJ	13	28.7	28.7	ug/kg
AQ-WMP-02-2-8	A12J671-30	Pyrene	11/3/2012	1760	Yes	Y		J	13	6.75	3.37	ug/kg
AQ-WMP-02-2-8	A12J671-30	Dibenzofuran	11/3/2012	6.85	Yes	Y		J	13	6.75	3.37	ug/kg
AQ-WMP-02-2-8	A12J671-30	Benzo(g,h,i)perylene	11/3/2012	74	Yes	Y		J	13	6.75	3.37	ug/kg
AQ-WMP-02-2-8	A12J671-30	Indeno(1,2,3-c,d)pyrene	11/3/2012	74.7	Yes	Y		J	13	6.75	3.37	ug/kg
AQ-WMP-02-2-8	A12J671-30	Acenaphthylene	11/3/2012	6.75	Yes	N	U	UJ	13	6.75	3.37	ug/kg
AQ-WMP-02-2-8	A12J671-30	Benzo(a)pyrene	11/3/2012	82.4	Yes	Y		J	13	6.75	3.37	ug/kg
AQ-WMP-02-2-8	A12J671-30	Dibenzo(a,h)anthracene	11/3/2012	21.4	Yes	Y		J	13	6.75	3.37	ug/kg
AQ-WMP-02-2-8	A12J671-30	Benzo(a)anthracene	11/3/2012	233	Yes	Y		J	13	6.75	3.37	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-WMP-02-2-8	A12J671-30	Acenaphthene	11/3/2012	4.93	Yes	Y	J	J	13	6.75	3.37	ug/kg
AQ-WMP-02-2-8	A12J671-30	Fluorene	11/3/2012	6.75	Yes	N	U	UJ	13	6.75	3.37	ug/kg
AQ-WMP-02-2-8	A12J671-30	Naphthalene	11/3/2012	13.5	Yes	N	U	UJ	13	13.5	6.75	ug/kg
AQ-WMP-02-2-8	A12J671-30	2-Methylnaphthalene	11/3/2012	13.5	Yes	N	U	UJ	13	13.5	6.75	ug/kg
AQ-WMP-02-2-8	A12J671-30	Benzo(b,k)fluoranthene	11/3/2012	531	Yes	Y		J	13	13.5	6.75	ug/kg
AQ-WMP-02-2-8	A12J671-30	Chrysene	11/3/2012	539	Yes	Y		J	13	6.75	3.37	ug/kg
AQ-WMP-02-2-8	A12J671-30	1-Methylnaphthalene	11/3/2012	13.5	Yes	N	U	UJ	13	13.5	6.75	ug/kg
AQ-WMP-03-2-6	A12J671-22RE1	Benzo(a)anthracene	11/7/2012	94.2	Yes	Y	D			31.8	15.9	ug/kg
AQ-WMP-03-2-6	A12J671-22RE1	Fluorene	11/7/2012	31.8	Yes	N	D U			31.8	15.9	ug/kg
AQ-WMP-03-2-6	A12J671-22RE1	Phenanthrene	11/7/2012	16.5	Yes	Y	D J			31.8	15.9	ug/kg
AQ-WMP-03-2-6	A12J671-22RE1	Pyrene	11/7/2012	727	Yes	Y	D			31.8	15.9	ug/kg
AQ-WMP-03-2-6	A12J671-22RE1	Benzo(g,h,i)perylene	11/7/2012	40.2	Yes	Y	D			31.8	15.9	ug/kg
AQ-WMP-03-2-6	A12J671-22RE1	Indeno(1,2,3-c,d)pyrene	11/7/2012	41.6	Yes	Y	D			31.8	15.9	ug/kg
AQ-WMP-03-2-6	A12J671-22RE1	Fluoranthene	11/7/2012	713	Yes	Y	D			31.8	15.9	ug/kg
AQ-WMP-03-2-6	A12J671-22RE1	Dibenzo(a,h)anthracene	11/7/2012	31.8	Yes	N	D U			31.8	15.9	ug/kg
AQ-WMP-03-2-6	A12J671-22RE1	Acenaphthylene	11/7/2012	31.8	Yes	N	D U			31.8	15.9	ug/kg
AQ-WMP-03-2-6	A12J671-22RE1	Chrysene	11/7/2012	243	Yes	Y	D			31.8	15.9	ug/kg
AQ-WMP-03-2-6	A12J671-22RE1	Benzo(a)pyrene	11/7/2012	37.2	Yes	Y	D			31.8	15.9	ug/kg
AQ-WMP-03-2-6	A12J671-22RE1	1-Methylnaphthalene	11/7/2012	63.7	Yes	N	D U			63.7	31.8	ug/kg
AQ-WMP-03-2-6	A12J671-22RE1	Dibenzofuran	11/7/2012	31.8	Yes	N	D U			31.8	15.9	ug/kg
AQ-WMP-03-2-6	A12J671-22RE1	Acenaphthene	11/7/2012	31.8	Yes	N	D U			31.8	15.9	ug/kg
AQ-WMP-03-2-6	A12J671-22RE1	2-Methylnaphthalene	11/7/2012	63.7	Yes	N	D U			63.7	31.8	ug/kg
AQ-WMP-03-2-6	A12J671-22RE1	Benzo(b,k)fluoranthene	11/7/2012	250	Yes	Y	D			63.7	31.8	ug/kg
AQ-WMP-03-2-6	A12J671-22RE1	Anthracene	11/7/2012	31.8	Yes	N	D U			31.8	15.9	ug/kg
AQ-WMP-03-2-6	A12J671-22RE1	Naphthalene	11/7/2012	63.7	Yes	N	D U			63.7	31.8	ug/kg

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Millennium Bulk Terminals

Collection Date: November 8 through November 9, 2012

LDC Report Date: January 24, 2013

Matrix: Soil/Water

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2B

Laboratory: APEX Laboratories, LLC

Sample Delivery Group (SDG): A12K226

Sample Identification

AQ-SSA4-12A-0-1	AQ-SSA4-69-0-1
AQ-SSA4-12A-1-2	AQ-SSA4-69-1-2
AQ-SSA4-12B-0-1	AQ-SSA4-RB-110912
AQ-SSA4-12B-1-2	AQ-SSA4-12A-0-1DUP
AQ-SSA4-13-0-1	AQ-SSA4-12A-1-2DUP
AQ-SSA4-13-1-2	AQ-SSA4-18-0-1MS
AQ-SSA4-14-0-1	AQ-SSA4-69-1-2MS
AQ-SSA4-14-1-2	
AQ-SSA4-16-0-1	
AQ-SSA4-16-1-12	
AQ-SSA4-15-0-1	
AQ-SSA4-15-1-2	
AQ-SSA4-18-0-1	
AQ-SSA4-18-1-2	
AQ-SSA4-17-0-1	
AQ-SSA4-17-1-2	
AQ-SSA4-20-0-1	
AQ-SSA4-20-1-2	
AQ-SSA4-19-0-1	
AQ-SSA4-19-1-2	

Introduction

This data review covers 26 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
1211403-LCS/D (AQ-SSA4-RB-110912)	1-Methylnaphthalene 2-Methylnaphthalene Naphthalene	43 (50-150) 41 (50-150) 43 (50-150)	44 (50-150) 42 (50-150) 44 (50-150)	- - -	J (all detects) UJ (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to LCS %R problems, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples AQ-SSA4-19-0-1 and AQ-SSA4-69-0-1 and samples AQ-SSA4-19-1-2 and AQ-SSA4-69-1-2 were identified as field duplicates. No polynuclear aromatic hydrocarbons were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD
	AQ-SSA4-19-0-1	AQ-SSA4-69-0-1	
Phenanthrene	2.80	4.01U	200
Fluoranthene	6.82	4.64	38
Pyrene	7.45	5.03	39
Benzo(a)anthracene	4.60	3.52	27
Chrysene	7.60	5.84	26
Benzo(a)pyrene	5.15	4.11	22
Indeno(1,2,3-cd)pyrene	6.78	4.63	38
Benzo(g,h,i)perylene	7.40	5.06	38
Benzo(b+k)fluorantheneS	13.7	12.7	8

Compound	Concentration (ug/Kg)		RPD
	AQ-SSA4-19-1-2	AQ-SSA4-69-1-2	
Fluoranthene	4.67	2.95	45

Compound	Concentration (ug/Kg)		RPD
	AQ-SSA4-19-1-2	AQ-SSA4-69-1-2	
Pyrene	4.75	3.14	41
Benzo(a)anthracene	3.29	2.88	13
Chrysene	4.30	2.67	47
Benzo(b+k)fluorantheneS	9.22	5.65	48
Benzo(a)pyrene	3.34	4.36U	200
Indeno(1,2,3-cd)pyrene	3.71	3.03	20
Benzo(g,h,i)perylene	3.88	3.24	18

XVII. Field Blanks

Sample AQ-SSA4-RB-110912 was identified as a rinsate blank. No polynuclear aromatic hydrocarbon contaminants were found with the following exceptions:

Blank ID	Compound	Concentration (ug/L)
AQ-SSA4-RB-110912	Fluoranthene Pyrene	0.0118 ug/L 0.0100 ug/L

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A12K226

SDG	Sample	Compound	Flag	A or P	Reason
A12K226	AQ-SSA4-RB-110912	1-Methylnaphthalene 2-Methylnaphthalene Naphthalene	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A12K226

No Sample Data Qualified in this SDG

LDC #: 29076F2b

SDG #: A12K226

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/23/13

Page: 1 of 1

Reviewer: B

2nd Reviewer: [illegible]

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/8 – 11/9/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20, r²
IV.	Continuing calibration/ICV	A	ICV ≤ 30 CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates /DUP	A/A	
VIII.	Laboratory control samples	SW	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 19 + 21 20 + 22
XVII.	Field blanks	SW	RB = 23

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: SOIL & W

1	AQ-SSA4-12A-0-1	11	AQ-SSA4-15-0-1	21	AQ-SSA4-69-0-1		31	1211327	
2	AQ-SSA4-12A-1-2	12	AQ-SSA4-15-1-2	22	AQ-SSA4-69-1-2		32	1211397	
3	AQ-SSA4-12B-0-1	13	AQ-SSA4-18-0-1	23	AQ-SSA4-RB-110912	W	33	1211403	
4	AQ-SSA4-12B-1-2	14	AQ-SSA4-18-1-2	24	AQ-SSA4-12A-0-1DUP		34		
5	AQ-SSA4-13-0-1	15	AQ-SSA4-17-0-1	25	AQ-SSA4-12A-1-2DUP		35		
6	AQ-SSA4-13-1-2	16	AQ-SSA4-17-1-2	26	AQ-SSA4-18-0-1MS	13	36		
7	AQ-SSA4-14-0-1	17	AQ-SSA4-20-0-1	27	AQ-SSA4-69-1-2MS	22	37		
8	AQ-SSA4-14-1-2	18	AQ-SSA4-20-1-2	28			38		
9	AQ-SSA4-16-0-1	19	AQ-SSA4-19-0-1	29			39		
10	AQ-SSA4-16-1-1	20	AQ-SSA4-19-1-2	30			40		

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1- Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 29076F2b

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FT
2nd Reviewer: CR

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?

Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		1211403-lcs/D	TTT	43 (50-150)	44 (50-150)	( )	23	J/W/P
			W	41 ( )	42 ( )	( )		
			S	43 ( )	44 ( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		
				( )	( )	( )		

LDC#: 29076 Fdb
SDG#: See cover

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: B
2nd Reviewer: a

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/Kg)		RPD	
	19	21		
Phenanthrene	2.80	4.01U	200	
Fluoranthene	6.82	4.64	38	
Pyrene	7.45	5.03	39	
Benzo(a)anthracene	4.60	3.52	27	
Chrysene	7.60	5.84	26	
Benzo(a)pyrene	5.15	4.11	22	
Indeno(1,2,3-cd)pyrene	6.78	4.63	38	
Benzo(g,h,i)perylene	7.40	5.06	38	
Benzo(b+k)fluorantheneS	13.7	12.7	8	

LDC#: 29076 F2b
SDG#: see cover

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 2 of 2
Reviewer: B
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/Kg)		RPD	
	20	22		
Fluoranthene	4.67	2.95	45	
Pyrene	4.75	3.14	41	
Benzo(a)anthracene	3.29	2.88	13	
Chrysene	4.30	2.67	47	
Benzo(b+k)fluorantheneS	9.22	5.65	48	
Benzo(a)pyrene	3.34	4.36U	200	
Indeno(1,2,3-cd)pyrene	3.71	3.03	20	
Benzo(g,h,i)perylene	3.88	3.24	18	

V:\FIELD DUPLICATES\templates\29076F2b.wpd

LDC #: 29076P2b
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds identified in the field blanks?

Sample: 23 (RB) Field Blank / Trip Blank / Rinsate (circle one)

Compound	Concentration Units (ug/L)
YY	0.0118
ZZ	0.0100

Sample: _____ Field Blank / Trip Blank / Rinsate (circle one)

Compound	Concentration Units ( )

Sample: _____ Field Blank / Trip Blank / Rinsate (circle one)

Compound	Concentration Units ( )

Analytical Method APEXsolids

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-12A-0-1	A12K226-01	Total solids	11/14/2012	79	Yes	Y				1.00	1.00	pct
AQ-SSA4-12A-1-2	A12K226-02	Total solids	11/14/2012	82.4	Yes	Y				1.00	1.00	pct
AQ-SSA4-12B-0-1	A12K226-03	Total solids	11/14/2012	84.7	Yes	Y				1.00	1.00	pct
AQ-SSA4-12B-1-2	A12K226-04	Total solids	11/14/2012	84	Yes	Y				1.00	1.00	pct
AQ-SSA4-13-0-1	A12K226-06	Total solids	11/14/2012	89.6	Yes	Y				1.00	1.00	pct
AQ-SSA4-13-1-2	A12K226-07	Total solids	11/14/2012	84.6	Yes	Y				1.00	1.00	pct
AQ-SSA4-14-0-1	A12K226-10	Total solids	11/14/2012	84	Yes	Y				1.00	1.00	pct
AQ-SSA4-14-1-2	A12K226-11	Total solids	11/14/2012	87.9	Yes	Y				1.00	1.00	pct
AQ-SSA4-15-0-1	A12K226-18	Total solids	11/14/2012	82.6	Yes	Y				1.00	1.00	pct
AQ-SSA4-15-1-2	A12K226-19	Total solids	11/14/2012	81.5	Yes	Y				1.00	1.00	pct
AQ-SSA4-16-0-1	A12K226-14	Total solids	11/14/2012	87.9	Yes	Y				1.00	1.00	pct
AQ-SSA4-16-1-2	A12K226-15	Total solids	11/14/2012	89.3	Yes	Y				1.00	1.00	pct
AQ-SSA4-17-0-1	A12K226-26	Total solids	11/14/2012	80.4	Yes	Y				1.00	1.00	pct
AQ-SSA4-17-1-2	A12K226-27	Total solids	11/14/2012	79.8	Yes	Y				1.00	1.00	pct
AQ-SSA4-18-0-1	A12K226-22	Total solids	11/14/2012	85.6	Yes	Y				1.00	1.00	pct
AQ-SSA4-18-1-2	A12K226-23	Total solids	11/14/2012	83.2	Yes	Y				1.00	1.00	pct
AQ-SSA4-19-0-1	A12K226-33	Total solids	11/14/2012	90.6	Yes	Y				1.00	1.00	pct
AQ-SSA4-19-1-2	A12K226-34	Total solids	11/14/2012	88.3	Yes	Y				1.00	1.00	pct
AQ-SSA4-20-0-1	A12K226-29	Total solids	11/14/2012	77.3	Yes	Y				1.00	1.00	pct
AQ-SSA4-20-1-2	A12K226-30	Total solids	11/14/2012	82	Yes	Y				1.00	1.00	pct
AQ-SSA4-69-0-1	A12K226-37	Total solids	11/14/2012	90.6	Yes	Y				1.00	1.00	pct
AQ-SSA4-69-1-2	A12K226-38	Total solids	11/14/2012	88.5	Yes	Y				1.00	1.00	pct

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-12A-0-1	A12K226-01	Phenanthrene	11/16/2012	4.61	Yes	Y	J			4.82	2.41	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-12A-0-1	A12K226-01	Benzo(b,k)fluoranthene	11/16/2012	28.5	Yes	Y				9.64	4.82	ug/kg
AQ-SSA4-12A-0-1	A12K226-01	2-Methylnaphthalene	11/16/2012	9.64	Yes	N	U			9.64	4.82	ug/kg
AQ-SSA4-12A-0-1	A12K226-01	Naphthalene	11/16/2012	9.64	Yes	N	U			9.64	4.82	ug/kg
AQ-SSA4-12A-0-1	A12K226-01	Chrysene	11/16/2012	12.8	Yes	Y				4.82	2.41	ug/kg
AQ-SSA4-12A-0-1	A12K226-01	Indeno(1,2,3-c,d)pyrene	11/16/2012	15.7	Yes	Y				4.82	2.41	ug/kg
AQ-SSA4-12A-0-1	A12K226-01	Fluoranthene	11/16/2012	9.73	Yes	Y				4.82	2.41	ug/kg
AQ-SSA4-12A-0-1	A12K226-01	Acenaphthylene	11/16/2012	4.82	Yes	N	U			4.82	2.41	ug/kg
AQ-SSA4-12A-0-1	A12K226-01	1-Methylnaphthalene	11/16/2012	9.64	Yes	N	U			9.64	4.82	ug/kg
AQ-SSA4-12A-0-1	A12K226-01	Dibenzofuran	11/16/2012	4.82	Yes	N	U			4.82	2.41	ug/kg
AQ-SSA4-12A-0-1	A12K226-01	Fluorene	11/16/2012	4.82	Yes	N	U			4.82	2.41	ug/kg
AQ-SSA4-12A-0-1	A12K226-01	Pyrene	11/16/2012	9.54	Yes	Y				4.82	2.41	ug/kg
AQ-SSA4-12A-0-1	A12K226-01	Benzo(g,h,i)perylene	11/16/2012	17	Yes	Y				4.82	2.41	ug/kg
AQ-SSA4-12A-0-1	A12K226-01	Anthracene	11/16/2012	4.82	Yes	N	U			4.82	2.41	ug/kg
AQ-SSA4-12A-0-1	A12K226-01	Benzo(a)pyrene	11/16/2012	6.46	Yes	Y				4.82	2.41	ug/kg
AQ-SSA4-12A-0-1	A12K226-01	Dibenzo(a,h)anthracene	11/16/2012	3.65	Yes	Y	J			4.82	2.41	ug/kg
AQ-SSA4-12A-0-1	A12K226-01	Benzo(a)anthracene	11/16/2012	5.93	Yes	Y				4.82	2.41	ug/kg
AQ-SSA4-12A-0-1	A12K226-01	Acenaphthene	11/16/2012	4.82	Yes	N	U			4.82	2.41	ug/kg
AQ-SSA4-12A-0-1	A12K226-01	Dibenzo(a,e)pyrene	11/16/2012	48.2	Yes	N	U			48.2	24.1	ug/kg
AQ-SSA4-12A-0-1	A12K226-01	Dibenzo(a,l)pyrene	11/16/2012	48.2	Yes	N	U			48.2	24.1	ug/kg
AQ-SSA4-12A-0-1	A12K226-01	Dibenzo(a,h)pyrene	11/16/2012	48.2	Yes	N	U			48.2	24.1	ug/kg
AQ-SSA4-12A-0-1	A12K226-01	Dibenzo(a,i)pyrene	11/16/2012	48.2	Yes	N	U			48.2	24.1	ug/kg
AQ-SSA4-12A-0-1	A12K226-01	Dibenzo(a,j)acridine	11/16/2012	48.2	Yes	N	U			48.2	24.1	ug/kg
AQ-SSA4-12A-1-2	A12K226-02	Dibenzo(a,l)pyrene	11/13/2012	30.2	Yes	Y	J			40.3	20.1	ug/kg
AQ-SSA4-12A-1-2	A12K226-02	Dibenzo(a,e)pyrene	11/13/2012	40.3	Yes	N	U			40.3	20.1	ug/kg
AQ-SSA4-12A-1-2	A12K226-02	Dibenzo(a,h)pyrene	11/13/2012	40.3	Yes	N	U			40.3	20.1	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-12A-1-2	A12K226-02	Dibenzo(a,i)pyrene	11/13/2012	40.3	Yes	N	U			40.3	20.1	ug/kg
AQ-SSA4-12A-1-2	A12K226-02	Dibenzo(a,j)acridine	11/13/2012	40.3	Yes	N	U			40.3	20.1	ug/kg
AQ-SSA4-12A-1-2	A12K226-02RE1	Benzo(b,k)fluoranthene	11/15/2012	138	Yes	Y				8.06	4.03	ug/kg
AQ-SSA4-12A-1-2	A12K226-02RE1	2-Methylnaphthalene	11/15/2012	8.06	Yes	N	U			8.06	4.03	ug/kg
AQ-SSA4-12A-1-2	A12K226-02RE1	Naphthalene	11/15/2012	4.5	Yes	Y	J			8.06	4.03	ug/kg
AQ-SSA4-12A-1-2	A12K226-02RE1	1-Methylnaphthalene	11/15/2012	8.06	Yes	N	U			8.06	4.03	ug/kg
AQ-SSA4-12A-1-2	A12K226-02RE1	Fluorene	11/15/2012	4.03	Yes	N	U			4.03	2.01	ug/kg
AQ-SSA4-12A-1-2	A12K226-02RE1	Dibenzofuran	11/15/2012	4.03	Yes	N	U			4.03	2.01	ug/kg
AQ-SSA4-12A-1-2	A12K226-02RE1	Indeno(1,2,3-c,d)pyrene	11/15/2012	71.5	Yes	Y				4.03	2.01	ug/kg
AQ-SSA4-12A-1-2	A12K226-02RE1	Benzo(g,h,i)perylene	11/15/2012	83.1	Yes	Y				4.03	2.01	ug/kg
AQ-SSA4-12A-1-2	A12K226-02RE1	Anthracene	11/15/2012	3.19	Yes	Y	J			4.03	2.01	ug/kg
AQ-SSA4-12A-1-2	A12K226-02RE1	Pyrene	11/15/2012	51.5	Yes	Y				4.03	2.01	ug/kg
AQ-SSA4-12A-1-2	A12K226-02RE1	Phenanthrene	11/15/2012	14.8	Yes	Y				4.03	2.01	ug/kg
AQ-SSA4-12A-1-2	A12K226-02RE1	Acenaphthene	11/15/2012	4.03	Yes	N	U			4.03	2.01	ug/kg
AQ-SSA4-12A-1-2	A12K226-02RE1	Acenaphthylene	11/15/2012	4.03	Yes	N	U			4.03	2.01	ug/kg
AQ-SSA4-12A-1-2	A12K226-02RE1	Benzo(a)anthracene	11/15/2012	29.3	Yes	Y				4.03	2.01	ug/kg
AQ-SSA4-12A-1-2	A12K226-02RE1	Dibenzo(a,h)anthracene	11/15/2012	16.7	Yes	Y				4.03	2.01	ug/kg
AQ-SSA4-12A-1-2	A12K226-02RE1	Chrysene	11/15/2012	62.5	Yes	Y				4.03	2.01	ug/kg
AQ-SSA4-12A-1-2	A12K226-02RE1	Fluoranthene	11/15/2012	46	Yes	Y				4.03	2.01	ug/kg
AQ-SSA4-12A-1-2	A12K226-02RE1	Benzo(a)pyrene	11/15/2012	40.9	Yes	Y				4.03	2.01	ug/kg
AQ-SSA4-12B-0-1	A12K226-03	Dibenzo(a,i)pyrene	11/13/2012	37.6	Yes	N	U			37.6	18.8	ug/kg
AQ-SSA4-12B-0-1	A12K226-03	Dibenzo(a,e)pyrene	11/13/2012	37.6	Yes	N	U			37.6	18.8	ug/kg
AQ-SSA4-12B-0-1	A12K226-03	Dibenzo(a,j)acridine	11/13/2012	37.6	Yes	N	U			37.6	18.8	ug/kg
AQ-SSA4-12B-0-1	A12K226-03	Dibenzo(a,l)pyrene	11/13/2012	37.6	Yes	N	U			37.6	18.8	ug/kg
AQ-SSA4-12B-0-1	A12K226-03	Dibenzo(a,h)pyrene	11/13/2012	37.6	Yes	N	U			37.6	18.8	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-12B-0-1	A12K226-03RE1	Benzo(a)anthracene	11/15/2012	4.59	Yes	Y				3.76	1.88	ug/kg
AQ-SSA4-12B-0-1	A12K226-03RE1	Fluorene	11/15/2012	3.76	Yes	N	U			3.76	1.88	ug/kg
AQ-SSA4-12B-0-1	A12K226-03RE1	Benzo(b,k)fluoranthene	11/15/2012	10.7	Yes	Y				7.51	3.76	ug/kg
AQ-SSA4-12B-0-1	A12K226-03RE1	2-Methylnaphthalene	11/15/2012	7.51	Yes	N	U			7.51	3.76	ug/kg
AQ-SSA4-12B-0-1	A12K226-03RE1	Naphthalene	11/15/2012	7.51	Yes	N	U			7.51	3.76	ug/kg
AQ-SSA4-12B-0-1	A12K226-03RE1	1-Methylnaphthalene	11/15/2012	7.51	Yes	N	U			7.51	3.76	ug/kg
AQ-SSA4-12B-0-1	A12K226-03RE1	Indeno(1,2,3-c,d)pyrene	11/15/2012	6.38	Yes	Y				3.76	1.88	ug/kg
AQ-SSA4-12B-0-1	A12K226-03RE1	Anthracene	11/15/2012	3.76	Yes	N	U			3.76	1.88	ug/kg
AQ-SSA4-12B-0-1	A12K226-03RE1	Pyrene	11/15/2012	7.26	Yes	Y				3.76	1.88	ug/kg
AQ-SSA4-12B-0-1	A12K226-03RE1	Dibenzo(a,h)anthracene	11/15/2012	3.76	Yes	N	U			3.76	1.88	ug/kg
AQ-SSA4-12B-0-1	A12K226-03RE1	Benzo(a)pyrene	11/15/2012	4.37	Yes	Y				3.76	1.88	ug/kg
AQ-SSA4-12B-0-1	A12K226-03RE1	Chrysene	11/15/2012	6.06	Yes	Y				3.76	1.88	ug/kg
AQ-SSA4-12B-0-1	A12K226-03RE1	Acenaphthylene	11/15/2012	3.76	Yes	N	U			3.76	1.88	ug/kg
AQ-SSA4-12B-0-1	A12K226-03RE1	Fluoranthene	11/15/2012	7.29	Yes	Y				3.76	1.88	ug/kg
AQ-SSA4-12B-0-1	A12K226-03RE1	Dibenzofuran	11/15/2012	3.76	Yes	N	U			3.76	1.88	ug/kg
AQ-SSA4-12B-0-1	A12K226-03RE1	Benzo(g,h,i)perylene	11/15/2012	6.93	Yes	Y				3.76	1.88	ug/kg
AQ-SSA4-12B-0-1	A12K226-03RE1	Phenanthrene	11/15/2012	4.72	Yes	Y				3.76	1.88	ug/kg
AQ-SSA4-12B-0-1	A12K226-03RE1	Acenaphthene	11/15/2012	3.76	Yes	N	U			3.76	1.88	ug/kg
AQ-SSA4-12B-1-2	A12K226-04	Dibenzo(a,e)pyrene	11/13/2012	39	Yes	N	U			39.0	19.5	ug/kg
AQ-SSA4-12B-1-2	A12K226-04	Dibenzo(a,l)pyrene	11/13/2012	39	Yes	N	U			39.0	19.5	ug/kg
AQ-SSA4-12B-1-2	A12K226-04	Dibenzo(a,h)pyrene	11/13/2012	39	Yes	N	U			39.0	19.5	ug/kg
AQ-SSA4-12B-1-2	A12K226-04	Dibenzo(a,i)pyrene	11/13/2012	39	Yes	N	U			39.0	19.5	ug/kg
AQ-SSA4-12B-1-2	A12K226-04	Dibenzo(a,j)acridine	11/13/2012	39	Yes	N	U			39.0	19.5	ug/kg
AQ-SSA4-12B-1-2	A12K226-04RE1	Benzo(b,k)fluoranthene	11/15/2012	73.4	Yes	Y				7.80	3.90	ug/kg
AQ-SSA4-12B-1-2	A12K226-04RE1	2-Methylnaphthalene	11/15/2012	7.8	Yes	N	U			7.80	3.90	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-12B-1-2	A12K226-04RE1	Naphthalene	11/15/2012	7.8	Yes	N	U			7.80	3.90	ug/kg
AQ-SSA4-12B-1-2	A12K226-04RE1	1-Methylnaphthalene	11/15/2012	7.8	Yes	N	U			7.80	3.90	ug/kg
AQ-SSA4-12B-1-2	A12K226-04RE1	Fluoranthene	11/15/2012	20.2	Yes	Y				3.90	1.95	ug/kg
AQ-SSA4-12B-1-2	A12K226-04RE1	Fluorene	11/15/2012	3.9	Yes	N	U			3.90	1.95	ug/kg
AQ-SSA4-12B-1-2	A12K226-04RE1	Acenaphthene	11/15/2012	3.9	Yes	N	U			3.90	1.95	ug/kg
AQ-SSA4-12B-1-2	A12K226-04RE1	Phenanthrene	11/15/2012	6.04	Yes	Y				3.90	1.95	ug/kg
AQ-SSA4-12B-1-2	A12K226-04RE1	Dibenzo(a,h)anthracene	11/15/2012	9.94	Yes	Y				3.90	1.95	ug/kg
AQ-SSA4-12B-1-2	A12K226-04RE1	Benzo(a)pyrene	11/15/2012	15.4	Yes	Y				3.90	1.95	ug/kg
AQ-SSA4-12B-1-2	A12K226-04RE1	Acenaphthylene	11/15/2012	3.9	Yes	N	U			3.90	1.95	ug/kg
AQ-SSA4-12B-1-2	A12K226-04RE1	Indeno(1,2,3-c,d)pyrene	11/15/2012	39.5	Yes	Y				3.90	1.95	ug/kg
AQ-SSA4-12B-1-2	A12K226-04RE1	Benzo(g,h,i)perylene	11/15/2012	44.6	Yes	Y				3.90	1.95	ug/kg
AQ-SSA4-12B-1-2	A12K226-04RE1	Dibenzofuran	11/15/2012	3.9	Yes	N	U			3.90	1.95	ug/kg
AQ-SSA4-12B-1-2	A12K226-04RE1	Pyrene	11/15/2012	20.1	Yes	Y				3.90	1.95	ug/kg
AQ-SSA4-12B-1-2	A12K226-04RE1	Anthracene	11/15/2012	3.9	Yes	N	U			3.90	1.95	ug/kg
AQ-SSA4-12B-1-2	A12K226-04RE1	Chrysene	11/15/2012	29.9	Yes	Y				3.90	1.95	ug/kg
AQ-SSA4-12B-1-2	A12K226-04RE1	Benzo(a)anthracene	11/15/2012	13.3	Yes	Y				3.90	1.95	ug/kg
AQ-SSA4-13-0-1	A12K226-06	Dibenzo(a,e)pyrene	11/13/2012	35.9	Yes	N	U			35.9	18.0	ug/kg
AQ-SSA4-13-0-1	A12K226-06	Dibenzo(a,j)acridine	11/13/2012	35.9	Yes	N	U			35.9	18.0	ug/kg
AQ-SSA4-13-0-1	A12K226-06	Dibenzo(a,l)pyrene	11/13/2012	35.9	Yes	N	U			35.9	18.0	ug/kg
AQ-SSA4-13-0-1	A12K226-06	Dibenzo(a,h)pyrene	11/13/2012	35.9	Yes	N	U			35.9	18.0	ug/kg
AQ-SSA4-13-0-1	A12K226-06	Dibenzo(a,i)pyrene	11/13/2012	35.9	Yes	N	U			35.9	18.0	ug/kg
AQ-SSA4-13-0-1	A12K226-06RE1	Indeno(1,2,3-c,d)pyrene	11/15/2012	10.4	Yes	Y				3.59	1.80	ug/kg
AQ-SSA4-13-0-1	A12K226-06RE1	Benzo(a)anthracene	11/15/2012	5.37	Yes	Y				3.59	1.80	ug/kg
AQ-SSA4-13-0-1	A12K226-06RE1	2-Methylnaphthalene	11/15/2012	7.19	Yes	N	U			7.19	3.59	ug/kg
AQ-SSA4-13-0-1	A12K226-06RE1	Naphthalene	11/15/2012	7.19	Yes	N	U			7.19	3.59	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-13-0-1	A12K226-06RE1	1-Methylnaphthalene	11/15/2012	7.19	Yes	N	U			7.19	3.59	ug/kg
AQ-SSA4-13-0-1	A12K226-06RE1	Fluorene	11/15/2012	3.59	Yes	N	U			3.59	1.80	ug/kg
AQ-SSA4-13-0-1	A12K226-06RE1	Phenanthrene	11/15/2012	3.59	Yes	N	U			3.59	1.80	ug/kg
AQ-SSA4-13-0-1	A12K226-06RE1	Acenaphthene	11/15/2012	3.59	Yes	N	U			3.59	1.80	ug/kg
AQ-SSA4-13-0-1	A12K226-06RE1	Benzo(b,k)fluoranthene	11/15/2012	25.4	Yes	Y				7.19	3.59	ug/kg
AQ-SSA4-13-0-1	A12K226-06RE1	Dibenzo(a,h)anthracene	11/15/2012	2.74	Yes	Y	J			3.59	1.80	ug/kg
AQ-SSA4-13-0-1	A12K226-06RE1	Benzo(a)pyrene	11/15/2012	6.01	Yes	Y				3.59	1.80	ug/kg
AQ-SSA4-13-0-1	A12K226-06RE1	Chrysene	11/15/2012	11	Yes	Y				3.59	1.80	ug/kg
AQ-SSA4-13-0-1	A12K226-06RE1	Fluoranthene	11/15/2012	5.66	Yes	Y				3.59	1.80	ug/kg
AQ-SSA4-13-0-1	A12K226-06RE1	Benzo(g,h,i)perylene	11/15/2012	11.7	Yes	Y				3.59	1.80	ug/kg
AQ-SSA4-13-0-1	A12K226-06RE1	Dibenzofuran	11/15/2012	3.59	Yes	N	U			3.59	1.80	ug/kg
AQ-SSA4-13-0-1	A12K226-06RE1	Pyrene	11/15/2012	6.21	Yes	Y				3.59	1.80	ug/kg
AQ-SSA4-13-0-1	A12K226-06RE1	Anthracene	11/15/2012	3.59	Yes	N	U			3.59	1.80	ug/kg
AQ-SSA4-13-0-1	A12K226-06RE1	Acenaphthylene	11/15/2012	3.59	Yes	N	U			3.59	1.80	ug/kg
AQ-SSA4-13-1-2	A12K226-07	Dibenzo(a,j)acridine	11/13/2012	47.1	Yes	N	U			47.1	23.6	ug/kg
AQ-SSA4-13-1-2	A12K226-07	Dibenzo(a,h)pyrene	11/13/2012	47.1	Yes	N	U			47.1	23.6	ug/kg
AQ-SSA4-13-1-2	A12K226-07	Dibenzo(a,l)pyrene	11/13/2012	47.1	Yes	N	U			47.1	23.6	ug/kg
AQ-SSA4-13-1-2	A12K226-07	Dibenzo(a,e)pyrene	11/13/2012	47.1	Yes	N	U			47.1	23.6	ug/kg
AQ-SSA4-13-1-2	A12K226-07	Dibenzo(a,i)pyrene	11/13/2012	47.1	Yes	N	U			47.1	23.6	ug/kg
AQ-SSA4-13-1-2	A12K226-07RE1	1-Methylnaphthalene	11/15/2012	9.43	Yes	N	U			9.43	4.71	ug/kg
AQ-SSA4-13-1-2	A12K226-07RE1	Dibenzofuran	11/15/2012	4.71	Yes	N	U			4.71	2.36	ug/kg
AQ-SSA4-13-1-2	A12K226-07RE1	Benzo(b,k)fluoranthene	11/15/2012	9.43	Yes	N	U			9.43	4.71	ug/kg
AQ-SSA4-13-1-2	A12K226-07RE1	Naphthalene	11/15/2012	9.43	Yes	N	U			9.43	4.71	ug/kg
AQ-SSA4-13-1-2	A12K226-07RE1	Fluorene	11/15/2012	4.71	Yes	N	U			4.71	2.36	ug/kg
AQ-SSA4-13-1-2	A12K226-07RE1	Phenanthrene	11/15/2012	2.59	Yes	Y	J			4.71	2.36	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-13-1-2	A12K226-07RE1	Acenaphthene	11/15/2012	4.71	Yes	N	U			4.71	2.36	ug/kg
AQ-SSA4-13-1-2	A12K226-07RE1	Benzo(a)anthracene	11/15/2012	2.88	Yes	Y	J			4.71	2.36	ug/kg
AQ-SSA4-13-1-2	A12K226-07RE1	Dibenzo(a,h)anthracene	11/15/2012	4.71	Yes	N	U			4.71	2.36	ug/kg
AQ-SSA4-13-1-2	A12K226-07RE1	Chrysene	11/15/2012	2.38	Yes	Y	J			4.71	2.36	ug/kg
AQ-SSA4-13-1-2	A12K226-07RE1	Acenaphthylene	11/15/2012	4.71	Yes	N	U			4.71	2.36	ug/kg
AQ-SSA4-13-1-2	A12K226-07RE1	Fluoranthene	11/15/2012	3.92	Yes	Y	J			4.71	2.36	ug/kg
AQ-SSA4-13-1-2	A12K226-07RE1	Indeno(1,2,3-c,d)pyrene	11/15/2012	4.71	Yes	N	U			4.71	2.36	ug/kg
AQ-SSA4-13-1-2	A12K226-07RE1	Pyrene	11/15/2012	4.34	Yes	Y	J			4.71	2.36	ug/kg
AQ-SSA4-13-1-2	A12K226-07RE1	Benzo(g,h,i)perylene	11/15/2012	4.71	Yes	N	U			4.71	2.36	ug/kg
AQ-SSA4-13-1-2	A12K226-07RE1	Anthracene	11/15/2012	4.71	Yes	N	U			4.71	2.36	ug/kg
AQ-SSA4-13-1-2	A12K226-07RE1	2-Methylnaphthalene	11/15/2012	9.43	Yes	N	U			9.43	4.71	ug/kg
AQ-SSA4-13-1-2	A12K226-07RE1	Benzo(a)pyrene	11/15/2012	4.71	Yes	N	U			4.71	2.36	ug/kg
AQ-SSA4-14-0-1	A12K226-10	Dibenzo(a,h)pyrene	11/13/2012	43.6	Yes	N	U			43.6	21.8	ug/kg
AQ-SSA4-14-0-1	A12K226-10	Dibenzo(a,j)acridine	11/13/2012	43.6	Yes	N	U			43.6	21.8	ug/kg
AQ-SSA4-14-0-1	A12K226-10	Dibenzo(a,l)pyrene	11/13/2012	43.6	Yes	N	U			43.6	21.8	ug/kg
AQ-SSA4-14-0-1	A12K226-10	Dibenzo(a,i)pyrene	11/13/2012	43.6	Yes	N	U			43.6	21.8	ug/kg
AQ-SSA4-14-0-1	A12K226-10	Dibenzo(a,e)pyrene	11/13/2012	43.6	Yes	N	U			43.6	21.8	ug/kg
AQ-SSA4-14-0-1	A12K226-10RE1	Benzo(a)anthracene	11/15/2012	9.35	Yes	Y				4.36	2.18	ug/kg
AQ-SSA4-14-0-1	A12K226-10RE1	Benzo(g,h,i)perylene	11/15/2012	42.8	Yes	Y				4.36	2.18	ug/kg
AQ-SSA4-14-0-1	A12K226-10RE1	Benzo(b,k)fluoranthene	11/15/2012	50.4	Yes	Y				8.73	4.36	ug/kg
AQ-SSA4-14-0-1	A12K226-10RE1	2-Methylnaphthalene	11/15/2012	8.73	Yes	N	U			8.73	4.36	ug/kg
AQ-SSA4-14-0-1	A12K226-10RE1	Naphthalene	11/15/2012	8.73	Yes	N	U			8.73	4.36	ug/kg
AQ-SSA4-14-0-1	A12K226-10RE1	1-Methylnaphthalene	11/15/2012	8.73	Yes	N	U			8.73	4.36	ug/kg
AQ-SSA4-14-0-1	A12K226-10RE1	Fluorene	11/15/2012	4.36	Yes	N	U			4.36	2.18	ug/kg
AQ-SSA4-14-0-1	A12K226-10RE1	Phenanthrene	11/15/2012	2.76	Yes	Y	J			4.36	2.18	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-14-0-1	A12K226-10RE1	Acenaphthene	11/15/2012	4.36	Yes	N	U			4.36	2.18	ug/kg
AQ-SSA4-14-0-1	A12K226-10RE1	Benzo(a)pyrene	11/15/2012	12.5	Yes	Y				4.36	2.18	ug/kg
AQ-SSA4-14-0-1	A12K226-10RE1	Chrysene	11/15/2012	26.4	Yes	Y				4.36	2.18	ug/kg
AQ-SSA4-14-0-1	A12K226-10RE1	Acenaphthylene	11/15/2012	4.36	Yes	N	U			4.36	2.18	ug/kg
AQ-SSA4-14-0-1	A12K226-10RE1	Anthracene	11/15/2012	4.36	Yes	N	U			4.36	2.18	ug/kg
AQ-SSA4-14-0-1	A12K226-10RE1	Indeno(1,2,3-c,d)pyrene	11/15/2012	34.5	Yes	Y				4.36	2.18	ug/kg
AQ-SSA4-14-0-1	A12K226-10RE1	Fluoranthene	11/15/2012	11.9	Yes	Y				4.36	2.18	ug/kg
AQ-SSA4-14-0-1	A12K226-10RE1	Dibenzofuran	11/15/2012	4.36	Yes	N	U			4.36	2.18	ug/kg
AQ-SSA4-14-0-1	A12K226-10RE1	Pyrene	11/15/2012	13.5	Yes	Y				4.36	2.18	ug/kg
AQ-SSA4-14-0-1	A12K226-10RE1	Dibenzo(a,h)anthracene	11/15/2012	7.8	Yes	Y				4.36	2.18	ug/kg
AQ-SSA4-14-1-2	A12K226-11	Dibenzo(a,h)pyrene	11/13/2012	40.2	Yes	N	U			40.2	20.1	ug/kg
AQ-SSA4-14-1-2	A12K226-11	Dibenzo(a,l)pyrene	11/13/2012	40.2	Yes	N	U			40.2	20.1	ug/kg
AQ-SSA4-14-1-2	A12K226-11	Dibenzo(a,i)pyrene	11/13/2012	40.2	Yes	N	U			40.2	20.1	ug/kg
AQ-SSA4-14-1-2	A12K226-11	Dibenzo(a,j)acridine	11/13/2012	40.2	Yes	N	U			40.2	20.1	ug/kg
AQ-SSA4-14-1-2	A12K226-11	Dibenzo(a,e)pyrene	11/13/2012	40.2	Yes	N	U			40.2	20.1	ug/kg
AQ-SSA4-14-1-2	A12K226-11RE1	Dibenzo(a,h)anthracene	11/15/2012	3.56	Yes	Y	J			4.02	2.01	ug/kg
AQ-SSA4-14-1-2	A12K226-11RE1	Benzo(b,k)fluoranthene	11/15/2012	26.3	Yes	Y				8.03	4.02	ug/kg
AQ-SSA4-14-1-2	A12K226-11RE1	2-Methylnaphthalene	11/15/2012	8.03	Yes	N	U			8.03	4.02	ug/kg
AQ-SSA4-14-1-2	A12K226-11RE1	Naphthalene	11/15/2012	8.03	Yes	N	U			8.03	4.02	ug/kg
AQ-SSA4-14-1-2	A12K226-11RE1	1-Methylnaphthalene	11/15/2012	8.03	Yes	N	U			8.03	4.02	ug/kg
AQ-SSA4-14-1-2	A12K226-11RE1	Fluorene	11/15/2012	4.02	Yes	N	U			4.02	2.01	ug/kg
AQ-SSA4-14-1-2	A12K226-11RE1	Phenanthrene	11/15/2012	4.02	Yes	N	U			4.02	2.01	ug/kg
AQ-SSA4-14-1-2	A12K226-11RE1	Acenaphthene	11/15/2012	4.02	Yes	N	U			4.02	2.01	ug/kg
AQ-SSA4-14-1-2	A12K226-11RE1	Benzo(a)anthracene	11/15/2012	5.72	Yes	Y				4.02	2.01	ug/kg
AQ-SSA4-14-1-2	A12K226-11RE1	Chrysene	11/15/2012	15.5	Yes	Y				4.02	2.01	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-14-1-2	A12K226-11RE1	Acenaphthylene	11/15/2012	4.02	Yes	N	U			4.02	2.01	ug/kg
AQ-SSA4-14-1-2	A12K226-11RE1	Fluoranthene	11/15/2012	7.91	Yes	Y				4.02	2.01	ug/kg
AQ-SSA4-14-1-2	A12K226-11RE1	Indeno(1,2,3-c,d)pyrene	11/15/2012	15.7	Yes	Y				4.02	2.01	ug/kg
AQ-SSA4-14-1-2	A12K226-11RE1	Benzo(g,h,i)perylene	11/15/2012	18.2	Yes	Y				4.02	2.01	ug/kg
AQ-SSA4-14-1-2	A12K226-11RE1	Dibenzofuran	11/15/2012	4.02	Yes	N	U			4.02	2.01	ug/kg
AQ-SSA4-14-1-2	A12K226-11RE1	Pyrene	11/15/2012	8.71	Yes	Y				4.02	2.01	ug/kg
AQ-SSA4-14-1-2	A12K226-11RE1	Anthracene	11/15/2012	4.02	Yes	N	U			4.02	2.01	ug/kg
AQ-SSA4-14-1-2	A12K226-11RE1	Benzo(a)pyrene	11/15/2012	6.59	Yes	Y				4.02	2.01	ug/kg
AQ-SSA4-15-0-1	A12K226-18	Dibenzo(a,j)acridine	11/13/2012	37.1	Yes	N	U			37.1	18.5	ug/kg
AQ-SSA4-15-0-1	A12K226-18	Dibenzo(a,l)pyrene	11/13/2012	37.1	Yes	N	U			37.1	18.5	ug/kg
AQ-SSA4-15-0-1	A12K226-18	Dibenzo(a,i)pyrene	11/13/2012	37.1	Yes	N	U			37.1	18.5	ug/kg
AQ-SSA4-15-0-1	A12K226-18	Dibenzo(a,h)pyrene	11/13/2012	37.1	Yes	N	U			37.1	18.5	ug/kg
AQ-SSA4-15-0-1	A12K226-18	Dibenzo(a,e)pyrene	11/13/2012	37.1	Yes	N	U			37.1	18.5	ug/kg
AQ-SSA4-15-0-1	A12K226-18RE1	Fluorene	11/15/2012	3.71	Yes	N	U			3.71	1.85	ug/kg
AQ-SSA4-15-0-1	A12K226-18RE1	Benzo(g,h,i)perylene	11/15/2012	3.71	Yes	N	U			3.71	1.85	ug/kg
AQ-SSA4-15-0-1	A12K226-18RE1	2-Methylnaphthalene	11/15/2012	7.42	Yes	N	U			7.42	3.71	ug/kg
AQ-SSA4-15-0-1	A12K226-18RE1	Acenaphthene	11/15/2012	3.71	Yes	N	U			3.71	1.85	ug/kg
AQ-SSA4-15-0-1	A12K226-18RE1	Acenaphthylene	11/15/2012	3.71	Yes	N	U			3.71	1.85	ug/kg
AQ-SSA4-15-0-1	A12K226-18RE1	Anthracene	11/15/2012	3.71	Yes	N	U			3.71	1.85	ug/kg
AQ-SSA4-15-0-1	A12K226-18RE1	Benzo(a)anthracene	11/15/2012	3.71	Yes	N	U			3.71	1.85	ug/kg
AQ-SSA4-15-0-1	A12K226-18RE1	Benzo(a)pyrene	11/15/2012	3.71	Yes	N	U			3.71	1.85	ug/kg
AQ-SSA4-15-0-1	A12K226-18RE1	Benzo(b)fluoranthene	11/15/2012	3.71	Yes	N	U			3.71	1.85	ug/kg
AQ-SSA4-15-0-1	A12K226-18RE1	1-Methylnaphthalene	11/15/2012	7.42	Yes	N	U			7.42	3.71	ug/kg
AQ-SSA4-15-0-1	A12K226-18RE1	Benzo(k)fluoranthene	11/15/2012	3.71	Yes	N	U			3.71	1.85	ug/kg
AQ-SSA4-15-0-1	A12K226-18RE1	Chrysene	11/15/2012	3.71	Yes	N	U			3.71	1.85	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-15-0-1	A12K226-18RE1	Dibenzo(a,h)anthracene	11/15/2012	3.71	Yes	N	U			3.71	1.85	ug/kg
AQ-SSA4-15-0-1	A12K226-18RE1	Fluoranthene	11/15/2012	3.71	Yes	N	U			3.71	1.85	ug/kg
AQ-SSA4-15-0-1	A12K226-18RE1	Indeno(1,2,3-c,d)pyrene	11/15/2012	3.71	Yes	N	U			3.71	1.85	ug/kg
AQ-SSA4-15-0-1	A12K226-18RE1	Naphthalene	11/15/2012	7.42	Yes	N	U			7.42	3.71	ug/kg
AQ-SSA4-15-0-1	A12K226-18RE1	Phenanthrene	11/15/2012	3.71	Yes	N	U			3.71	1.85	ug/kg
AQ-SSA4-15-0-1	A12K226-18RE1	Pyrene	11/15/2012	3.71	Yes	N	U			3.71	1.85	ug/kg
AQ-SSA4-15-0-1	A12K226-18RE1	Dibenzofuran	11/15/2012	3.71	Yes	N	U			3.71	1.85	ug/kg
AQ-SSA4-15-1-2	A12K226-19	Dibenzo(a,i)pyrene	11/13/2012	43.9	Yes	N	U			43.9	21.9	ug/kg
AQ-SSA4-15-1-2	A12K226-19	Dibenzo(a,h)pyrene	11/13/2012	43.9	Yes	N	U			43.9	21.9	ug/kg
AQ-SSA4-15-1-2	A12K226-19	Dibenzo(a,l)pyrene	11/13/2012	43.9	Yes	N	U			43.9	21.9	ug/kg
AQ-SSA4-15-1-2	A12K226-19	Dibenzo(a,j)acridine	11/13/2012	43.9	Yes	N	U			43.9	21.9	ug/kg
AQ-SSA4-15-1-2	A12K226-19	Dibenzo(a,e)pyrene	11/13/2012	43.9	Yes	N	U			43.9	21.9	ug/kg
AQ-SSA4-15-1-2	A12K226-19	Benzo(a)anthracene	11/15/2012	4.39	Yes	N	U			4.39	2.19	ug/kg
AQ-SSA4-15-1-2	A12K226-19	Dibenzofuran	11/15/2012	4.39	Yes	N	U			4.39	2.19	ug/kg
AQ-SSA4-15-1-2	A12K226-19	Benzo(g,h,i)perylene	11/15/2012	4.39	Yes	N	U			4.39	2.19	ug/kg
AQ-SSA4-15-1-2	A12K226-19	Indeno(1,2,3-c,d)pyrene	11/15/2012	4.39	Yes	N	U			4.39	2.19	ug/kg
AQ-SSA4-15-1-2	A12K226-19	Benzo(b)fluoranthene	11/15/2012	4.39	Yes	N	U			4.39	2.19	ug/kg
AQ-SSA4-15-1-2	A12K226-19	Fluoranthene	11/15/2012	4.39	Yes	N	U			4.39	2.19	ug/kg
AQ-SSA4-15-1-2	A12K226-19	Benzo(k)fluoranthene	11/15/2012	4.39	Yes	N	U			4.39	2.19	ug/kg
AQ-SSA4-15-1-2	A12K226-19	Pyrene	11/15/2012	4.39	Yes	N	U			4.39	2.19	ug/kg
AQ-SSA4-15-1-2	A12K226-19	Benzo(a)pyrene	11/15/2012	4.39	Yes	N	U			4.39	2.19	ug/kg
AQ-SSA4-15-1-2	A12K226-19	Chrysene	11/15/2012	4.39	Yes	N	U			4.39	2.19	ug/kg
AQ-SSA4-15-1-2	A12K226-19	Acenaphthene	11/15/2012	4.39	Yes	N	U			4.39	2.19	ug/kg
AQ-SSA4-15-1-2	A12K226-19	Phenanthrene	11/15/2012	4.39	Yes	N	U			4.39	2.19	ug/kg
AQ-SSA4-15-1-2	A12K226-19	Fluorene	11/15/2012	4.39	Yes	N	U			4.39	2.19	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-15-1-2	A12K226-19	1-Methylnaphthalene	11/15/2012	8.77	Yes	N	U			8.77	4.39	ug/kg
AQ-SSA4-15-1-2	A12K226-19	Naphthalene	11/15/2012	8.77	Yes	N	U			8.77	4.39	ug/kg
AQ-SSA4-15-1-2	A12K226-19	2-Methylnaphthalene	11/15/2012	8.77	Yes	N	U			8.77	4.39	ug/kg
AQ-SSA4-15-1-2	A12K226-19	Anthracene	11/15/2012	4.39	Yes	N	U			4.39	2.19	ug/kg
AQ-SSA4-15-1-2	A12K226-19	Acenaphthylene	11/15/2012	4.39	Yes	N	U			4.39	2.19	ug/kg
AQ-SSA4-15-1-2	A12K226-19	Dibenzo(a,h)anthracene	11/15/2012	4.39	Yes	N	U			4.39	2.19	ug/kg
AQ-SSA4-16-0-1	A12K226-14	Dibenzo(a,h)pyrene	11/13/2012	39.4	Yes	N	U			39.4	19.7	ug/kg
AQ-SSA4-16-0-1	A12K226-14	Dibenzo(a,i)pyrene	11/13/2012	39.4	Yes	N	U			39.4	19.7	ug/kg
AQ-SSA4-16-0-1	A12K226-14	Dibenzo(a,l)pyrene	11/13/2012	39.4	Yes	N	U			39.4	19.7	ug/kg
AQ-SSA4-16-0-1	A12K226-14	Dibenzo(a,e)pyrene	11/13/2012	39.4	Yes	N	U			39.4	19.7	ug/kg
AQ-SSA4-16-0-1	A12K226-14	Dibenzo(a,j)acridine	11/13/2012	39.4	Yes	N	U			39.4	19.7	ug/kg
AQ-SSA4-16-0-1	A12K226-14RE1	Indeno(1,2,3-c,d)pyrene	11/15/2012	35	Yes	Y				3.94	1.97	ug/kg
AQ-SSA4-16-0-1	A12K226-14RE1	Anthracene	11/15/2012	2.62	Yes	Y	J			3.94	1.97	ug/kg
AQ-SSA4-16-0-1	A12K226-14RE1	Pyrene	11/15/2012	30	Yes	Y				3.94	1.97	ug/kg
AQ-SSA4-16-0-1	A12K226-14RE1	Benzo(g,h,i)perylene	11/15/2012	40.6	Yes	Y				3.94	1.97	ug/kg
AQ-SSA4-16-0-1	A12K226-14RE1	Fluoranthene	11/15/2012	29.2	Yes	Y				3.94	1.97	ug/kg
AQ-SSA4-16-0-1	A12K226-14RE1	Acenaphthylene	11/15/2012	3.94	Yes	N	U			3.94	1.97	ug/kg
AQ-SSA4-16-0-1	A12K226-14RE1	Chrysene	11/15/2012	34.7	Yes	Y				3.94	1.97	ug/kg
AQ-SSA4-16-0-1	A12K226-14RE1	Benzo(a)pyrene	11/15/2012	23.3	Yes	Y				3.94	1.97	ug/kg
AQ-SSA4-16-0-1	A12K226-14RE1	Benzo(a)anthracene	11/15/2012	18.3	Yes	Y				3.94	1.97	ug/kg
AQ-SSA4-16-0-1	A12K226-14RE1	Acenaphthene	11/15/2012	3.94	Yes	N	U			3.94	1.97	ug/kg
AQ-SSA4-16-0-1	A12K226-14RE1	Phenanthrene	11/15/2012	12	Yes	Y				3.94	1.97	ug/kg
AQ-SSA4-16-0-1	A12K226-14RE1	Fluorene	11/15/2012	3.94	Yes	N	U			3.94	1.97	ug/kg
AQ-SSA4-16-0-1	A12K226-14RE1	1-Methylnaphthalene	11/15/2012	7.88	Yes	N	U			7.88	3.94	ug/kg
AQ-SSA4-16-0-1	A12K226-14RE1	Naphthalene	11/15/2012	7.88	Yes	N	U			7.88	3.94	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-16-0-1	A12K226-14RE1	2-Methylnaphthalene	11/15/2012	7.88	Yes	N	U			7.88	3.94	ug/kg
AQ-SSA4-16-0-1	A12K226-14RE1	Benzo(b,k)fluoranthene	11/15/2012	68.8	Yes	Y				7.88	3.94	ug/kg
AQ-SSA4-16-0-1	A12K226-14RE1	Dibenzo(a,h)anthracene	11/15/2012	8.2	Yes	Y				3.94	1.97	ug/kg
AQ-SSA4-16-0-1	A12K226-14RE1	Dibenzofuran	11/15/2012	3.94	Yes	N	U			3.94	1.97	ug/kg
AQ-SSA4-16-1-2	A12K226-15	Dibenzo(a,i)pyrene	11/13/2012	42.3	Yes	N	U			42.3	21.1	ug/kg
AQ-SSA4-16-1-2	A12K226-15	Dibenzo(a,j)acridine	11/13/2012	42.3	Yes	N	U			42.3	21.1	ug/kg
AQ-SSA4-16-1-2	A12K226-15	Dibenzo(a,e)pyrene	11/13/2012	42.3	Yes	N	U			42.3	21.1	ug/kg
AQ-SSA4-16-1-2	A12K226-15	Dibenzo(a,h)pyrene	11/13/2012	42.3	Yes	N	U			42.3	21.1	ug/kg
AQ-SSA4-16-1-2	A12K226-15	Dibenzo(a,l)pyrene	11/13/2012	42.3	Yes	N	U			42.3	21.1	ug/kg
AQ-SSA4-16-1-2	A12K226-15RE1	Benzo(a)anthracene	11/15/2012	23.7	Yes	Y				4.23	2.11	ug/kg
AQ-SSA4-16-1-2	A12K226-15RE1	Pyrene	11/15/2012	44.9	Yes	Y				4.23	2.11	ug/kg
AQ-SSA4-16-1-2	A12K226-15RE1	Anthracene	11/15/2012	6.03	Yes	Y				4.23	2.11	ug/kg
AQ-SSA4-16-1-2	A12K226-15RE1	Indeno(1,2,3-c,d)pyrene	11/15/2012	30.5	Yes	Y				4.23	2.11	ug/kg
AQ-SSA4-16-1-2	A12K226-15RE1	Fluoranthene	11/15/2012	48.2	Yes	Y				4.23	2.11	ug/kg
AQ-SSA4-16-1-2	A12K226-15RE1	Acenaphthylene	11/15/2012	4.23	Yes	N	U			4.23	2.11	ug/kg
AQ-SSA4-16-1-2	A12K226-15RE1	Chrysene	11/15/2012	39.8	Yes	Y				4.23	2.11	ug/kg
AQ-SSA4-16-1-2	A12K226-15RE1	Benzo(a)pyrene	11/15/2012	24.1	Yes	Y				4.23	2.11	ug/kg
AQ-SSA4-16-1-2	A12K226-15RE1	Dibenzo(a,h)anthracene	11/15/2012	6.88	Yes	Y				4.23	2.11	ug/kg
AQ-SSA4-16-1-2	A12K226-15RE1	Benzo(b,k)fluoranthene	11/15/2012	66.9	Yes	Y				8.46	4.23	ug/kg
AQ-SSA4-16-1-2	A12K226-15RE1	Benzo(g,h,i)perylene	11/15/2012	31.3	Yes	Y				4.23	2.11	ug/kg
AQ-SSA4-16-1-2	A12K226-15RE1	Dibenzofuran	11/15/2012	4.23	Yes	N	U			4.23	2.11	ug/kg
AQ-SSA4-16-1-2	A12K226-15RE1	2-Methylnaphthalene	11/15/2012	8.46	Yes	N	U			8.46	4.23	ug/kg
AQ-SSA4-16-1-2	A12K226-15RE1	Naphthalene	11/15/2012	8.46	Yes	N	U			8.46	4.23	ug/kg
AQ-SSA4-16-1-2	A12K226-15RE1	Fluorene	11/15/2012	2.17	Yes	Y	J			4.23	2.11	ug/kg
AQ-SSA4-16-1-2	A12K226-15RE1	Phenanthrene	11/15/2012	28.2	Yes	Y				4.23	2.11	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-16-1-2	A12K226-15RE1	Acenaphthene	11/15/2012	2.64		Yes	Y	J			4.23	2.11	ug/kg
AQ-SSA4-16-1-2	A12K226-15RE1	1-Methylnaphthalene	11/15/2012	8.46		Yes	N	U			8.46	4.23	ug/kg
AQ-SSA4-17-0-1	A12K226-26	Dibenzo(a,e)pyrene	11/14/2012	48.3		Yes	N	U			48.3	24.2	ug/kg
AQ-SSA4-17-0-1	A12K226-26	Dibenzo(a,l)pyrene	11/14/2012	26.4		Yes	Y	J			48.3	24.2	ug/kg
AQ-SSA4-17-0-1	A12K226-26	Dibenzo(a,j)acridine	11/14/2012	48.3		Yes	N	U			48.3	24.2	ug/kg
AQ-SSA4-17-0-1	A12K226-26	Dibenzo(a,i)pyrene	11/14/2012	48.3		Yes	N	U			48.3	24.2	ug/kg
AQ-SSA4-17-0-1	A12K226-26	Dibenzo(a,h)pyrene	11/14/2012	48.3		Yes	N	U			48.3	24.2	ug/kg
AQ-SSA4-17-0-1	A12K226-26	Acenaphthylene	11/15/2012	4.83		Yes	N	U			4.83	2.42	ug/kg
AQ-SSA4-17-0-1	A12K226-26	Pyrene	11/15/2012	134		Yes	Y				4.83	2.42	ug/kg
AQ-SSA4-17-0-1	A12K226-26	Dibenzofuran	11/15/2012	9.47		Yes	Y				4.83	2.42	ug/kg
AQ-SSA4-17-0-1	A12K226-26	Benzo(g,h,i)perylene	11/15/2012	79.5		Yes	Y				4.83	2.42	ug/kg
AQ-SSA4-17-0-1	A12K226-26	Indeno(1,2,3-c,d)pyrene	11/15/2012	74.6		Yes	Y				4.83	2.42	ug/kg
AQ-SSA4-17-0-1	A12K226-26	Fluoranthene	11/15/2012	144		Yes	Y				4.83	2.42	ug/kg
AQ-SSA4-17-0-1	A12K226-26	Anthracene	11/15/2012	27.4		Yes	Y				4.83	2.42	ug/kg
AQ-SSA4-17-0-1	A12K226-26	Benzo(a)pyrene	11/15/2012	77		Yes	Y				4.83	2.42	ug/kg
AQ-SSA4-17-0-1	A12K226-26	Dibenzo(a,h)anthracene	11/15/2012	16		Yes	Y				4.83	2.42	ug/kg
AQ-SSA4-17-0-1	A12K226-26	Benzo(a)anthracene	11/15/2012	75.6		Yes	Y				4.83	2.42	ug/kg
AQ-SSA4-17-0-1	A12K226-26	Acenaphthene	11/15/2012	18.7		Yes	Y				4.83	2.42	ug/kg
AQ-SSA4-17-0-1	A12K226-26	Phenanthrene	11/15/2012	99.9		Yes	Y				4.83	2.42	ug/kg
AQ-SSA4-17-0-1	A12K226-26	Fluorene	11/15/2012	13.5		Yes	Y				4.83	2.42	ug/kg
AQ-SSA4-17-0-1	A12K226-26	1-Methylnaphthalene	11/15/2012	9.67		Yes	N	U			9.67	4.83	ug/kg
AQ-SSA4-17-0-1	A12K226-26	Naphthalene	11/15/2012	7.99		Yes	Y	J			9.67	4.83	ug/kg
AQ-SSA4-17-0-1	A12K226-26	2-Methylnaphthalene	11/15/2012	9.67		Yes	N	U			9.67	4.83	ug/kg
AQ-SSA4-17-0-1	A12K226-26	Chrysene	11/15/2012	91.6		Yes	Y				4.83	2.42	ug/kg
AQ-SSA4-17-0-1	A12K226-26	Benzo(b,k)fluoranthene	11/15/2012	142		Yes	Y				9.67	4.83	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-17-1-2	A12K226-27	Dibenzo(a,l)pyrene	11/14/2012	47.8	Yes	N	U			47.8	23.9	ug/kg
AQ-SSA4-17-1-2	A12K226-27	Dibenzo(a,i)pyrene	11/14/2012	47.8	Yes	N	U			47.8	23.9	ug/kg
AQ-SSA4-17-1-2	A12K226-27	Dibenzo(a,j)acridine	11/14/2012	47.8	Yes	N	U			47.8	23.9	ug/kg
AQ-SSA4-17-1-2	A12K226-27	Dibenzo(a,e)pyrene	11/14/2012	47.8	Yes	N	U			47.8	23.9	ug/kg
AQ-SSA4-17-1-2	A12K226-27	Dibenzo(a,h)pyrene	11/14/2012	47.8	Yes	N	U			47.8	23.9	ug/kg
AQ-SSA4-17-1-2	A12K226-27	Benzo(b)fluoranthene	11/15/2012	4.78	Yes	N	U			4.78	2.39	ug/kg
AQ-SSA4-17-1-2	A12K226-27	Anthracene	11/15/2012	4.78	Yes	N	U			4.78	2.39	ug/kg
AQ-SSA4-17-1-2	A12K226-27	Acenaphthene	11/15/2012	4.78	Yes	N	U			4.78	2.39	ug/kg
AQ-SSA4-17-1-2	A12K226-27	Pyrene	11/15/2012	4.78	Yes	N	U			4.78	2.39	ug/kg
AQ-SSA4-17-1-2	A12K226-27	Dibenzofuran	11/15/2012	4.78	Yes	N	U			4.78	2.39	ug/kg
AQ-SSA4-17-1-2	A12K226-27	Benzo(g,h,i)perylene	11/15/2012	4.78	Yes	N	U			4.78	2.39	ug/kg
AQ-SSA4-17-1-2	A12K226-27	Indeno(1,2,3-c,d)pyrene	11/15/2012	4.78	Yes	N	U			4.78	2.39	ug/kg
AQ-SSA4-17-1-2	A12K226-27	2-Methylnaphthalene	11/15/2012	9.56	Yes	N	U			9.56	4.78	ug/kg
AQ-SSA4-17-1-2	A12K226-27	Fluoranthene	11/15/2012	4.78	Yes	N	U			4.78	2.39	ug/kg
AQ-SSA4-17-1-2	A12K226-27	Benzo(k)fluoranthene	11/15/2012	4.78	Yes	N	U			4.78	2.39	ug/kg
AQ-SSA4-17-1-2	A12K226-27	Acenaphthylene	11/15/2012	4.78	Yes	N	U			4.78	2.39	ug/kg
AQ-SSA4-17-1-2	A12K226-27	Chrysene	11/15/2012	4.78	Yes	N	U			4.78	2.39	ug/kg
AQ-SSA4-17-1-2	A12K226-27	Benzo(a)pyrene	11/15/2012	4.78	Yes	N	U			4.78	2.39	ug/kg
AQ-SSA4-17-1-2	A12K226-27	Benzo(a)anthracene	11/15/2012	4.78	Yes	N	U			4.78	2.39	ug/kg
AQ-SSA4-17-1-2	A12K226-27	Phenanthrene	11/15/2012	4.78	Yes	N	U			4.78	2.39	ug/kg
AQ-SSA4-17-1-2	A12K226-27	Fluorene	11/15/2012	4.78	Yes	N	U			4.78	2.39	ug/kg
AQ-SSA4-17-1-2	A12K226-27	1-Methylnaphthalene	11/15/2012	9.56	Yes	N	U			9.56	4.78	ug/kg
AQ-SSA4-17-1-2	A12K226-27	Naphthalene	11/15/2012	9.56	Yes	N	U			9.56	4.78	ug/kg
AQ-SSA4-17-1-2	A12K226-27	Dibenzo(a,h)anthracene	11/15/2012	4.78	Yes	N	U			4.78	2.39	ug/kg
AQ-SSA4-18-0-1	A12K226-22	Dibenzofuran	11/16/2012	4.44	Yes	N	U			4.44	2.22	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-18-0-1	A12K226-22	Phenanthrene	11/16/2012	4.55		Yes	Y				4.44	2.22	ug/kg
AQ-SSA4-18-0-1	A12K226-22	Anthracene	11/16/2012	4.44		Yes	N	U			4.44	2.22	ug/kg
AQ-SSA4-18-0-1	A12K226-22	Pyrene	11/16/2012	11		Yes	Y				4.44	2.22	ug/kg
AQ-SSA4-18-0-1	A12K226-22	Benzo(g,h,i)perylene	11/16/2012	10		Yes	Y				4.44	2.22	ug/kg
AQ-SSA4-18-0-1	A12K226-22	Fluoranthene	11/16/2012	10.6		Yes	Y				4.44	2.22	ug/kg
AQ-SSA4-18-0-1	A12K226-22	Acenaphthylene	11/16/2012	4.44		Yes	N	U			4.44	2.22	ug/kg
AQ-SSA4-18-0-1	A12K226-22	Chrysene	11/16/2012	10.6		Yes	Y				4.44	2.22	ug/kg
AQ-SSA4-18-0-1	A12K226-22	Benzo(a)pyrene	11/16/2012	7.54		Yes	Y				4.44	2.22	ug/kg
AQ-SSA4-18-0-1	A12K226-22	Dibenzo(a,h)anthracene	11/16/2012	4.44		Yes	N	U			4.44	2.22	ug/kg
AQ-SSA4-18-0-1	A12K226-22	Indeno(1,2,3-c,d)pyrene	11/16/2012	9.55		Yes	Y				4.44	2.22	ug/kg
AQ-SSA4-18-0-1	A12K226-22	Acenaphthene	11/16/2012	4.44		Yes	N	U			4.44	2.22	ug/kg
AQ-SSA4-18-0-1	A12K226-22	Fluorene	11/16/2012	4.44		Yes	N	U			4.44	2.22	ug/kg
AQ-SSA4-18-0-1	A12K226-22	1-Methylnaphthalene	11/16/2012	8.88		Yes	N	U			8.88	4.44	ug/kg
AQ-SSA4-18-0-1	A12K226-22	Naphthalene	11/16/2012	8.88		Yes	N	U			8.88	4.44	ug/kg
AQ-SSA4-18-0-1	A12K226-22	2-Methylnaphthalene	11/16/2012	8.88		Yes	N	U			8.88	4.44	ug/kg
AQ-SSA4-18-0-1	A12K226-22	Benzo(b,k)fluoranthene	11/16/2012	19.4		Yes	Y				8.88	4.44	ug/kg
AQ-SSA4-18-0-1	A12K226-22	Benzo(a)anthracene	11/16/2012	7.36		Yes	Y				4.44	2.22	ug/kg
AQ-SSA4-18-0-1	A12K226-22	Dibenzo(a,j)acridine	11/16/2012	44.4		Yes	N	U			44.4	22.2	ug/kg
AQ-SSA4-18-0-1	A12K226-22	Dibenzo(a,i)pyrene	11/16/2012	44.4		Yes	N	U			44.4	22.2	ug/kg
AQ-SSA4-18-0-1	A12K226-22	Dibenzo(a,h)pyrene	11/16/2012	44.4		Yes	N	U			44.4	22.2	ug/kg
AQ-SSA4-18-0-1	A12K226-22	Dibenzo(a,l)pyrene	11/16/2012	44.4		Yes	N	U			44.4	22.2	ug/kg
AQ-SSA4-18-0-1	A12K226-22	Dibenzo(a,e)pyrene	11/16/2012	44.4		Yes	N	U			44.4	22.2	ug/kg
AQ-SSA4-18-1-2	A12K226-23	Dibenzo(a,e)pyrene	11/14/2012	43.4		Yes	N	U			43.4	21.7	ug/kg
AQ-SSA4-18-1-2	A12K226-23	Dibenzo(a,i)pyrene	11/14/2012	43.4		Yes	N	U			43.4	21.7	ug/kg
AQ-SSA4-18-1-2	A12K226-23	Dibenzo(a,h)pyrene	11/14/2012	43.4		Yes	N	U			43.4	21.7	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-18-1-2	A12K226-23	Dibenzo(a,l)pyrene	11/14/2012	43.4	Yes	N	U			43.4	21.7	ug/kg
AQ-SSA4-18-1-2	A12K226-23	Dibenzo(a,j)acridine	11/14/2012	43.4	Yes	N	U			43.4	21.7	ug/kg
AQ-SSA4-18-1-2	A12K226-23	Acenaphthylene	11/15/2012	4.34	Yes	N	U			4.34	2.17	ug/kg
AQ-SSA4-18-1-2	A12K226-23	Anthracene	11/15/2012	4.34	Yes	N	U			4.34	2.17	ug/kg
AQ-SSA4-18-1-2	A12K226-23	Pyrene	11/15/2012	4.12	Yes	Y	J			4.34	2.17	ug/kg
AQ-SSA4-18-1-2	A12K226-23	Dibenzofuran	11/15/2012	4.34	Yes	N	U			4.34	2.17	ug/kg
AQ-SSA4-18-1-2	A12K226-23	Benzo(g,h,i)perylene	11/15/2012	4.92	Yes	Y				4.34	2.17	ug/kg
AQ-SSA4-18-1-2	A12K226-23	Fluoranthene	11/15/2012	3.94	Yes	Y	J			4.34	2.17	ug/kg
AQ-SSA4-18-1-2	A12K226-23	Benzo(b,k)fluoranthene	11/15/2012	9.51	Yes	Y				8.68	4.34	ug/kg
AQ-SSA4-18-1-2	A12K226-23	Chrysene	11/15/2012	4	Yes	Y	J			4.34	2.17	ug/kg
AQ-SSA4-18-1-2	A12K226-23	Benzo(a)pyrene	11/15/2012	3.06	Yes	Y	J			4.34	2.17	ug/kg
AQ-SSA4-18-1-2	A12K226-23	Dibenzo(a,h)anthracene	11/15/2012	4.34	Yes	N	U			4.34	2.17	ug/kg
AQ-SSA4-18-1-2	A12K226-23	Benzo(a)anthracene	11/15/2012	3.99	Yes	Y	J			4.34	2.17	ug/kg
AQ-SSA4-18-1-2	A12K226-23	Acenaphthene	11/15/2012	4.34	Yes	N	U			4.34	2.17	ug/kg
AQ-SSA4-18-1-2	A12K226-23	Phenanthrene	11/15/2012	4.34	Yes	N	U			4.34	2.17	ug/kg
AQ-SSA4-18-1-2	A12K226-23	Fluorene	11/15/2012	4.34	Yes	N	U			4.34	2.17	ug/kg
AQ-SSA4-18-1-2	A12K226-23	1-Methylnaphthalene	11/15/2012	8.68	Yes	N	U			8.68	4.34	ug/kg
AQ-SSA4-18-1-2	A12K226-23	Naphthalene	11/15/2012	5.27	Yes	Y	J			8.68	4.34	ug/kg
AQ-SSA4-18-1-2	A12K226-23	2-Methylnaphthalene	11/15/2012	8.68	Yes	N	U			8.68	4.34	ug/kg
AQ-SSA4-18-1-2	A12K226-23	Indeno(1,2,3-c,d)pyrene	11/15/2012	4.43	Yes	Y				4.34	2.17	ug/kg
AQ-SSA4-19-0-1	A12K226-33	Dibenzo(a,e)pyrene	11/14/2012	38.7	Yes	N	U			38.7	19.3	ug/kg
AQ-SSA4-19-0-1	A12K226-33	Dibenzo(a,j)acridine	11/14/2012	38.7	Yes	N	U			38.7	19.3	ug/kg
AQ-SSA4-19-0-1	A12K226-33	Dibenzo(a,i)pyrene	11/14/2012	38.7	Yes	N	U			38.7	19.3	ug/kg
AQ-SSA4-19-0-1	A12K226-33	Dibenzo(a,l)pyrene	11/14/2012	38.7	Yes	N	U			38.7	19.3	ug/kg
AQ-SSA4-19-0-1	A12K226-33	Dibenzo(a,h)pyrene	11/14/2012	38.7	Yes	N	U			38.7	19.3	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-19-0-1	A12K226-33	Dibenzo(a,h)anthracene	11/15/2012	3.87	Yes	N	U			3.87	1.93	ug/kg
AQ-SSA4-19-0-1	A12K226-33	Anthracene	11/15/2012	3.87	Yes	N	U			3.87	1.93	ug/kg
AQ-SSA4-19-0-1	A12K226-33	Pyrene	11/15/2012	7.45	Yes	Y				3.87	1.93	ug/kg
AQ-SSA4-19-0-1	A12K226-33	Dibenzofuran	11/15/2012	3.87	Yes	N	U			3.87	1.93	ug/kg
AQ-SSA4-19-0-1	A12K226-33	Benzo(g,h,i)perylene	11/15/2012	7.4	Yes	Y				3.87	1.93	ug/kg
AQ-SSA4-19-0-1	A12K226-33	Indeno(1,2,3-c,d)pyrene	11/15/2012	6.78	Yes	Y				3.87	1.93	ug/kg
AQ-SSA4-19-0-1	A12K226-33	Fluoranthene	11/15/2012	6.82	Yes	Y				3.87	1.93	ug/kg
AQ-SSA4-19-0-1	A12K226-33	Acenaphthylene	11/15/2012	3.87	Yes	N	U			3.87	1.93	ug/kg
AQ-SSA4-19-0-1	A12K226-33	Benzo(a)pyrene	11/15/2012	5.15	Yes	Y				3.87	1.93	ug/kg
AQ-SSA4-19-0-1	A12K226-33	Benzo(a)anthracene	11/15/2012	4.6	Yes	Y				3.87	1.93	ug/kg
AQ-SSA4-19-0-1	A12K226-33	Acenaphthene	11/15/2012	3.87	Yes	N	U			3.87	1.93	ug/kg
AQ-SSA4-19-0-1	A12K226-33	Phenanthrene	11/15/2012	2.8	Yes	Y	J			3.87	1.93	ug/kg
AQ-SSA4-19-0-1	A12K226-33	Fluorene	11/15/2012	3.87	Yes	N	U			3.87	1.93	ug/kg
AQ-SSA4-19-0-1	A12K226-33	1-Methylnaphthalene	11/15/2012	7.74	Yes	N	U			7.74	3.87	ug/kg
AQ-SSA4-19-0-1	A12K226-33	Naphthalene	11/15/2012	7.74	Yes	N	U			7.74	3.87	ug/kg
AQ-SSA4-19-0-1	A12K226-33	2-Methylnaphthalene	11/15/2012	7.74	Yes	N	U			7.74	3.87	ug/kg
AQ-SSA4-19-0-1	A12K226-33	Benzo(b,k)fluoranthene	11/15/2012	13.7	Yes	Y				7.74	3.87	ug/kg
AQ-SSA4-19-0-1	A12K226-33	Chrysene	11/15/2012	7.6	Yes	Y				3.87	1.93	ug/kg
AQ-SSA4-19-1-2	A12K226-34	Dibenzo(a,j)acridine	11/14/2012	43.9	Yes	N	U			43.9	21.9	ug/kg
AQ-SSA4-19-1-2	A12K226-34	Dibenzo(a,l)pyrene	11/14/2012	43.9	Yes	N	U			43.9	21.9	ug/kg
AQ-SSA4-19-1-2	A12K226-34	Dibenzo(a,h)pyrene	11/14/2012	43.9	Yes	N	U			43.9	21.9	ug/kg
AQ-SSA4-19-1-2	A12K226-34	Dibenzo(a,i)pyrene	11/14/2012	43.9	Yes	N	U			43.9	21.9	ug/kg
AQ-SSA4-19-1-2	A12K226-34	Dibenzo(a,e)pyrene	11/14/2012	43.9	Yes	N	U			43.9	21.9	ug/kg
AQ-SSA4-19-1-2	A12K226-34	Benzo(a)pyrene	11/15/2012	3.34	Yes	Y	J			4.39	2.19	ug/kg
AQ-SSA4-19-1-2	A12K226-34	Anthracene	11/15/2012	4.39	Yes	N	U			4.39	2.19	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-19-1-2	A12K226-34	Pyrene	11/15/2012	4.75	Yes	Y				4.39	2.19	ug/kg
AQ-SSA4-19-1-2	A12K226-34	Dibenzofuran	11/15/2012	4.39	Yes	N	U			4.39	2.19	ug/kg
AQ-SSA4-19-1-2	A12K226-34	Benzo(g,h,i)perylene	11/15/2012	3.88	Yes	Y	J			4.39	2.19	ug/kg
AQ-SSA4-19-1-2	A12K226-34	Indeno(1,2,3-c,d)pyrene	11/15/2012	3.71	Yes	Y	J			4.39	2.19	ug/kg
AQ-SSA4-19-1-2	A12K226-34	Fluoranthene	11/15/2012	4.67	Yes	Y				4.39	2.19	ug/kg
AQ-SSA4-19-1-2	A12K226-34	Chrysene	11/15/2012	4.3	Yes	Y	J			4.39	2.19	ug/kg
AQ-SSA4-19-1-2	A12K226-34	Phenanthrene	11/15/2012	4.39	Yes	N	U			4.39	2.19	ug/kg
AQ-SSA4-19-1-2	A12K226-34	Dibenzo(a,h)anthracene	11/15/2012	4.39	Yes	N	U			4.39	2.19	ug/kg
AQ-SSA4-19-1-2	A12K226-34	Benzo(a)anthracene	11/15/2012	3.29	Yes	Y	J			4.39	2.19	ug/kg
AQ-SSA4-19-1-2	A12K226-34	Acenaphthene	11/15/2012	4.39	Yes	N	U			4.39	2.19	ug/kg
AQ-SSA4-19-1-2	A12K226-34	Fluorene	11/15/2012	4.39	Yes	N	U			4.39	2.19	ug/kg
AQ-SSA4-19-1-2	A12K226-34	Naphthalene	11/15/2012	8.77	Yes	N	U			8.77	4.39	ug/kg
AQ-SSA4-19-1-2	A12K226-34	2-Methylnaphthalene	11/15/2012	8.77	Yes	N	U			8.77	4.39	ug/kg
AQ-SSA4-19-1-2	A12K226-34	Benzo(b,k)fluoranthene	11/15/2012	9.22	Yes	Y				8.77	4.39	ug/kg
AQ-SSA4-19-1-2	A12K226-34	Acenaphthylene	11/15/2012	4.39	Yes	N	U			4.39	2.19	ug/kg
AQ-SSA4-19-1-2	A12K226-34	1-Methylnaphthalene	11/15/2012	8.77	Yes	N	U			8.77	4.39	ug/kg
AQ-SSA4-20-0-1	A12K226-29	Dibenzo(a,j)acridine	11/14/2012	39.4	Yes	N	U			39.4	19.7	ug/kg
AQ-SSA4-20-0-1	A12K226-29	Dibenzo(a,h)pyrene	11/14/2012	39.4	Yes	N	U			39.4	19.7	ug/kg
AQ-SSA4-20-0-1	A12K226-29	Dibenzo(a,l)pyrene	11/14/2012	39.4	Yes	N	U			39.4	19.7	ug/kg
AQ-SSA4-20-0-1	A12K226-29	Dibenzo(a,e)pyrene	11/14/2012	39.4	Yes	N	U			39.4	19.7	ug/kg
AQ-SSA4-20-0-1	A12K226-29	Dibenzo(a,i)pyrene	11/14/2012	39.4	Yes	N	U			39.4	19.7	ug/kg
AQ-SSA4-20-0-1	A12K226-29	Chrysene	11/15/2012	27.6	Yes	Y				3.94	1.97	ug/kg
AQ-SSA4-20-0-1	A12K226-29	Anthracene	11/15/2012	3.39	Yes	Y	J			3.94	1.97	ug/kg
AQ-SSA4-20-0-1	A12K226-29	Pyrene	11/15/2012	36.8	Yes	Y				3.94	1.97	ug/kg
AQ-SSA4-20-0-1	A12K226-29	Dibenzofuran	11/15/2012	3.94	Yes	N	U			3.94	1.97	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-20-0-1	A12K226-29	Benzo(g,h,i)perylene	11/15/2012	30.3	Yes	Y				3.94	1.97	ug/kg
AQ-SSA4-20-0-1	A12K226-29	Indeno(1,2,3-c,d)pyrene	11/15/2012	25.8	Yes	Y				3.94	1.97	ug/kg
AQ-SSA4-20-0-1	A12K226-29	Benzo(b,k)fluoranthene	11/15/2012	46.3	Yes	Y				7.87	3.94	ug/kg
AQ-SSA4-20-0-1	A12K226-29	Acenaphthylene	11/15/2012	3.94	Yes	N	U			3.94	1.97	ug/kg
AQ-SSA4-20-0-1	A12K226-29	Benzo(a)pyrene	11/15/2012	21.8	Yes	Y				3.94	1.97	ug/kg
AQ-SSA4-20-0-1	A12K226-29	Dibenzo(a,h)anthracene	11/15/2012	5.32	Yes	Y				3.94	1.97	ug/kg
AQ-SSA4-20-0-1	A12K226-29	Benzo(a)anthracene	11/15/2012	19.3	Yes	Y				3.94	1.97	ug/kg
AQ-SSA4-20-0-1	A12K226-29	Acenaphthene	11/15/2012	3.94	Yes	N	U			3.94	1.97	ug/kg
AQ-SSA4-20-0-1	A12K226-29	Phenanthrene	11/15/2012	15.2	Yes	Y				3.94	1.97	ug/kg
AQ-SSA4-20-0-1	A12K226-29	Fluorene	11/15/2012	3.94	Yes	N	U			3.94	1.97	ug/kg
AQ-SSA4-20-0-1	A12K226-29	1-Methylnaphthalene	11/15/2012	7.87	Yes	N	U			7.87	3.94	ug/kg
AQ-SSA4-20-0-1	A12K226-29	Naphthalene	11/15/2012	7.87	Yes	N	U			7.87	3.94	ug/kg
AQ-SSA4-20-0-1	A12K226-29	2-Methylnaphthalene	11/15/2012	7.87	Yes	N	U			7.87	3.94	ug/kg
AQ-SSA4-20-0-1	A12K226-29	Fluoranthene	11/15/2012	34.7	Yes	Y				3.94	1.97	ug/kg
AQ-SSA4-20-1-2	A12K226-30	Dibenzo(a,h)pyrene	11/14/2012	46.6	Yes	N	U			46.6	23.3	ug/kg
AQ-SSA4-20-1-2	A12K226-30	Dibenzo(a,e)pyrene	11/14/2012	46.6	Yes	N	U			46.6	23.3	ug/kg
AQ-SSA4-20-1-2	A12K226-30	Dibenzo(a,j)acridine	11/14/2012	46.6	Yes	N	U			46.6	23.3	ug/kg
AQ-SSA4-20-1-2	A12K226-30	Dibenzo(a,i)pyrene	11/14/2012	46.6	Yes	N	U			46.6	23.3	ug/kg
AQ-SSA4-20-1-2	A12K226-30	Dibenzo(a,l)pyrene	11/14/2012	46.6	Yes	N	U			46.6	23.3	ug/kg
AQ-SSA4-20-1-2	A12K226-30	Chrysene	11/15/2012	3.33	Yes	Y	J			4.66	2.33	ug/kg
AQ-SSA4-20-1-2	A12K226-30	Anthracene	11/15/2012	4.66	Yes	N	U			4.66	2.33	ug/kg
AQ-SSA4-20-1-2	A12K226-30	Pyrene	11/15/2012	4.04	Yes	Y	J			4.66	2.33	ug/kg
AQ-SSA4-20-1-2	A12K226-30	Dibenzofuran	11/15/2012	4.66	Yes	N	U			4.66	2.33	ug/kg
AQ-SSA4-20-1-2	A12K226-30	Benzo(g,h,i)perylene	11/15/2012	3.64	Yes	Y	J			4.66	2.33	ug/kg
AQ-SSA4-20-1-2	A12K226-30	Indeno(1,2,3-c,d)pyrene	11/15/2012	3.46	Yes	Y	J			4.66	2.33	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-20-1-2	A12K226-30	2-Methylnaphthalene	11/15/2012	9.32	Yes	N	U			9.32	4.66	ug/kg
AQ-SSA4-20-1-2	A12K226-30	Acenaphthylene	11/15/2012	4.66	Yes	N	U			4.66	2.33	ug/kg
AQ-SSA4-20-1-2	A12K226-30	Benzo(a)pyrene	11/15/2012	2.45	Yes	Y	J			4.66	2.33	ug/kg
AQ-SSA4-20-1-2	A12K226-30	Dibenzo(a,h)anthracene	11/15/2012	4.66	Yes	N	U			4.66	2.33	ug/kg
AQ-SSA4-20-1-2	A12K226-30	Benzo(a)anthracene	11/15/2012	3.38	Yes	Y	J			4.66	2.33	ug/kg
AQ-SSA4-20-1-2	A12K226-30	Acenaphthene	11/15/2012	4.66	Yes	N	U			4.66	2.33	ug/kg
AQ-SSA4-20-1-2	A12K226-30	Phenanthrene	11/15/2012	4.66	Yes	N	U			4.66	2.33	ug/kg
AQ-SSA4-20-1-2	A12K226-30	Fluorene	11/15/2012	4.66	Yes	N	U			4.66	2.33	ug/kg
AQ-SSA4-20-1-2	A12K226-30	1-Methylnaphthalene	11/15/2012	9.32	Yes	N	U			9.32	4.66	ug/kg
AQ-SSA4-20-1-2	A12K226-30	Naphthalene	11/15/2012	9.32	Yes	N	U			9.32	4.66	ug/kg
AQ-SSA4-20-1-2	A12K226-30	Benzo(b,k)fluoranthene	11/15/2012	6.65	Yes	Y	J			9.32	4.66	ug/kg
AQ-SSA4-20-1-2	A12K226-30	Fluoranthene	11/15/2012	3.8	Yes	Y	J			4.66	2.33	ug/kg
AQ-SSA4-69-0-1	A12K226-37	Dibenzo(a,e)pyrene	11/14/2012	40.1	Yes	N	U			40.1	20.1	ug/kg
AQ-SSA4-69-0-1	A12K226-37	Dibenzo(a,j)acridine	11/14/2012	40.1	Yes	N	U			40.1	20.1	ug/kg
AQ-SSA4-69-0-1	A12K226-37	Dibenzo(a,h)pyrene	11/14/2012	40.1	Yes	N	U			40.1	20.1	ug/kg
AQ-SSA4-69-0-1	A12K226-37	Dibenzo(a,i)pyrene	11/14/2012	40.1	Yes	N	U			40.1	20.1	ug/kg
AQ-SSA4-69-0-1	A12K226-37	Dibenzo(a,l)pyrene	11/14/2012	40.1	Yes	N	U			40.1	20.1	ug/kg
AQ-SSA4-69-0-1	A12K226-37	Fluorene	11/15/2012	4.01	Yes	N	U			4.01	2.01	ug/kg
AQ-SSA4-69-0-1	A12K226-37	Anthracene	11/15/2012	4.01	Yes	N	U			4.01	2.01	ug/kg
AQ-SSA4-69-0-1	A12K226-37	Benzo(b,k)fluoranthene	11/15/2012	12.7	Yes	Y				8.03	4.01	ug/kg
AQ-SSA4-69-0-1	A12K226-37	2-Methylnaphthalene	11/15/2012	8.03	Yes	N	U			8.03	4.01	ug/kg
AQ-SSA4-69-0-1	A12K226-37	1-Methylnaphthalene	11/15/2012	8.03	Yes	N	U			8.03	4.01	ug/kg
AQ-SSA4-69-0-1	A12K226-37	Phenanthrene	11/15/2012	4.01	Yes	N	U			4.01	2.01	ug/kg
AQ-SSA4-69-0-1	A12K226-37	Acenaphthene	11/15/2012	4.01	Yes	N	U			4.01	2.01	ug/kg
AQ-SSA4-69-0-1	A12K226-37	Benzo(a)anthracene	11/15/2012	3.52	Yes	Y	J			4.01	2.01	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-69-0-1	A12K226-37	Dibenzo(a,h)anthracene	11/15/2012	4.01	Yes	N	U			4.01	2.01	ug/kg
AQ-SSA4-69-0-1	A12K226-37	Chrysene	11/15/2012	5.84	Yes	Y				4.01	2.01	ug/kg
AQ-SSA4-69-0-1	A12K226-37	Acenaphthylene	11/15/2012	4.01	Yes	N	U			4.01	2.01	ug/kg
AQ-SSA4-69-0-1	A12K226-37	Fluoranthene	11/15/2012	4.64	Yes	Y				4.01	2.01	ug/kg
AQ-SSA4-69-0-1	A12K226-37	Pyrene	11/15/2012	5.03	Yes	Y				4.01	2.01	ug/kg
AQ-SSA4-69-0-1	A12K226-37	Indeno(1,2,3-c,d)pyrene	11/15/2012	4.63	Yes	Y				4.01	2.01	ug/kg
AQ-SSA4-69-0-1	A12K226-37	Benzo(g,h,i)perylene	11/15/2012	5.06	Yes	Y				4.01	2.01	ug/kg
AQ-SSA4-69-0-1	A12K226-37	Dibenzofuran	11/15/2012	4.01	Yes	N	U			4.01	2.01	ug/kg
AQ-SSA4-69-0-1	A12K226-37	Naphthalene	11/15/2012	8.03	Yes	N	U			8.03	4.01	ug/kg
AQ-SSA4-69-0-1	A12K226-37	Benzo(a)pyrene	11/15/2012	4.11	Yes	Y				4.01	2.01	ug/kg
AQ-SSA4-69-1-2	A12K226-38	Dibenzo(a,h)pyrene	11/14/2012	43.6	Yes	N	U			43.6	21.8	ug/kg
AQ-SSA4-69-1-2	A12K226-38	Dibenzo(a,j)acridine	11/14/2012	43.6	Yes	N	U			43.6	21.8	ug/kg
AQ-SSA4-69-1-2	A12K226-38	Dibenzo(a,l)pyrene	11/14/2012	43.6	Yes	N	U			43.6	21.8	ug/kg
AQ-SSA4-69-1-2	A12K226-38	Dibenzo(a,i)pyrene	11/14/2012	43.6	Yes	N	U			43.6	21.8	ug/kg
AQ-SSA4-69-1-2	A12K226-38	Dibenzo(a,e)pyrene	11/14/2012	43.6	Yes	N	U			43.6	21.8	ug/kg
AQ-SSA4-69-1-2	A12K226-38RE1	Benzo(a)anthracene	11/15/2012	2.88	Yes	Y	J			4.36	2.18	ug/kg
AQ-SSA4-69-1-2	A12K226-38RE1	Anthracene	11/15/2012	4.36	Yes	N	U			4.36	2.18	ug/kg
AQ-SSA4-69-1-2	A12K226-38RE1	2-Methylnaphthalene	11/15/2012	8.73	Yes	N	U			8.73	4.36	ug/kg
AQ-SSA4-69-1-2	A12K226-38RE1	Benzo(b,k)fluoranthene	11/15/2012	5.65	Yes	Y	J			8.73	4.36	ug/kg
AQ-SSA4-69-1-2	A12K226-38RE1	Naphthalene	11/15/2012	8.73	Yes	N	U			8.73	4.36	ug/kg
AQ-SSA4-69-1-2	A12K226-38RE1	1-Methylnaphthalene	11/15/2012	8.73	Yes	N	U			8.73	4.36	ug/kg
AQ-SSA4-69-1-2	A12K226-38RE1	Fluorene	11/15/2012	4.36	Yes	N	U			4.36	2.18	ug/kg
AQ-SSA4-69-1-2	A12K226-38RE1	Phenanthrene	11/15/2012	4.36	Yes	N	U			4.36	2.18	ug/kg
AQ-SSA4-69-1-2	A12K226-38RE1	Acenaphthene	11/15/2012	4.36	Yes	N	U			4.36	2.18	ug/kg
AQ-SSA4-69-1-2	A12K226-38RE1	Benzo(a)pyrene	11/15/2012	4.36	Yes	N	U			4.36	2.18	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-69-1-2	A12K226-38RE1	Chrysene	11/15/2012	2.67	Yes	Y	J			4.36	2.18	ug/kg
AQ-SSA4-69-1-2	A12K226-38RE1	Acenaphthylene	11/15/2012	4.36	Yes	N	U			4.36	2.18	ug/kg
AQ-SSA4-69-1-2	A12K226-38RE1	Fluoranthene	11/15/2012	2.95	Yes	Y	J			4.36	2.18	ug/kg
AQ-SSA4-69-1-2	A12K226-38RE1	Indeno(1,2,3-c,d)pyrene	11/15/2012	3.03	Yes	Y	J			4.36	2.18	ug/kg
AQ-SSA4-69-1-2	A12K226-38RE1	Benzo(g,h,i)perylene	11/15/2012	3.24	Yes	Y	J			4.36	2.18	ug/kg
AQ-SSA4-69-1-2	A12K226-38RE1	Pyrene	11/15/2012	3.14	Yes	Y	J			4.36	2.18	ug/kg
AQ-SSA4-69-1-2	A12K226-38RE1	Dibenzo(a,h)anthracene	11/15/2012	4.36	Yes	N	U			4.36	2.18	ug/kg
AQ-SSA4-69-1-2	A12K226-38RE1	Dibenzofuran	11/15/2012	4.36	Yes	N	U			4.36	2.18	ug/kg
AQ-SSA4-RB-110912	A12K226-52	Benzo(a)pyrene	11/16/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
AQ-SSA4-RB-110912	A12K226-52	Dibenzo(a,h)anthracene	11/16/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
AQ-SSA4-RB-110912	A12K226-52	Benzo(a)anthracene	11/16/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
AQ-SSA4-RB-110912	A12K226-52	Acenaphthene	11/16/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
AQ-SSA4-RB-110912	A12K226-52	Phenanthrene	11/16/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
AQ-SSA4-RB-110912	A12K226-52	Fluorene	11/16/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
AQ-SSA4-RB-110912	A12K226-52	1-Methylnaphthalene	11/16/2012	0.0374	Yes	N	U	UJ	10	0.0374	0.0187	ug/L
AQ-SSA4-RB-110912	A12K226-52	Naphthalene	11/16/2012	0.0374	Yes	N	U	UJ	10	0.0374	0.0187	ug/L
AQ-SSA4-RB-110912	A12K226-52	Dibenzofuran	11/16/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
AQ-SSA4-RB-110912	A12K226-52	2-Methylnaphthalene	11/16/2012	0.0374	Yes	N	U	UJ	10	0.0374	0.0187	ug/L
AQ-SSA4-RB-110912	A12K226-52	Acenaphthylene	11/16/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
AQ-SSA4-RB-110912	A12K226-52	Benzo(k)fluoranthene	11/16/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
AQ-SSA4-RB-110912	A12K226-52	Fluoranthene	11/16/2012	0.0118	Yes	Y	J			0.0187	0.00935	ug/L
AQ-SSA4-RB-110912	A12K226-52	Benzo(b)fluoranthene	11/16/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
AQ-SSA4-RB-110912	A12K226-52	Chrysene	11/16/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
AQ-SSA4-RB-110912	A12K226-52	Benzo(g,h,i)perylene	11/16/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
AQ-SSA4-RB-110912	A12K226-52	Indeno(1,2,3-c,d)pyrene	11/16/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L

SDG: A12K226

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-RB-110912	A12K226-52	Pyrene	11/16/2012	0.01	Yes	Y	J			0.0187	0.00935	ug/L
AQ-SSA4-RB-110912	A12K226-52	Anthracene	11/16/2012	0.0187	Yes	N	U			0.0187	0.00935	ug/L
AQ-SSA4-RB-110912	A12K226-52	Dibenzo(a,i)pyrene	11/16/2012	0.187	Yes	N	U			0.187	0.0935	ug/L
AQ-SSA4-RB-110912	A12K226-52	Dibenzo(a,j)acridine	11/16/2012	0.187	Yes	N	U			0.187	0.0935	ug/L
AQ-SSA4-RB-110912	A12K226-52	Dibenzo(a,e)pyrene	11/16/2012	0.187	Yes	N	U			0.187	0.0935	ug/L
AQ-SSA4-RB-110912	A12K226-52	Dibenzo(a,h)pyrene	11/16/2012	0.187	Yes	N	U			0.187	0.0935	ug/L
AQ-SSA4-RB-110912	A12K226-52	Dibenzo(a,l)pyrene	11/16/2012	0.187	Yes	N	U			0.187	0.0935	ug/L

LDC Report# 29076G2a

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	November 12 through November 13, 2012
LDC Report Date:	January 24, 2013
Matrix:	Sediment/Water
Parameters:	Semivolatiles
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12K308

Sample Identification

AQ-SE-03-10
AQ-SE-04-10
AQ-SE-05-10
AQ-SE-06-10
AQ-SE-07-10
AQ-SE-57-10
AQ-SE-08-10
AQ-SE-01-10
AQ-SE-02-10
AQ-SE-RB
AQ-SE-FB
AQ-SE-03-10DUP
AQ-SE-02-10MS

Introduction

This data review covers 11 sediment samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270D for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
11/20/12 (11:51)	2-Methylphenol	24.4	AQ-SE-03-10 AQ-SE-05-10 AQ-SE-06-10 AQ-SE-07-10 AQ-SE-57-10 AQ-SE-03-10DUP	J (all detects)	A
11/20/12 (11:51)	3+4 Methylphenol Phenol	29.7 26.0	AQ-SE-03-10 AQ-SE-03-10DUP	J (all detects) J (all detects)	A

Date	Compound	%D	Associated Samples	Flag	A or P
11/20/12 (11:51)	Benzoic acid	22.8	AQ-SE-03-10 AQ-SE-05-10 AQ-SE-06-10 AQ-SE-07-10 AQ-SE-57-10 AQ-SE-03-10DUP	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
1211517-MB	11/20/12	Benzoic acid	1.16 ug/L	All water samples in SDG A12K308

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were not within QC limits. Since the sample concentration was greater than the spiked concentration, no data were qualified.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Analyte	RPD (Limits)	Difference (Limits)	Flag	A or P
AQ-SE-03-10DUP (AQ-SE-03-10)	Anthracene	-	28.78 ug/Kg (≤8.84)	J (all detects)	A
	Benzo(a)anthracene	-	97.71 ug/Kg (≤8.84)	J (all detects)	
	Benzo(a)pyrene	-	124.6 ug/Kg (≤13.24)	J (all detects)	
	Benzo(b)fluoranthene	-	162.7 ug/Kg (≤13.24)	J (all detects)	
	Benzo(k)fluoranthene	-	53.45 ug/Kg (≤13.24)	J (all detects)	
	Benzo(g,h,i)perylene	-	76.48 ug/Kg (≤8.84)	J (all detects)	
	Chrysene	-	119.9 ug/Kg (≤8.84)	J (all detects)	
	Dibenzo(a,h)anthracene	-	14.18 ug/Kg (≤8.84)	J (all detects)	
	Fluoranthene	-	225.5 ug/Kg (≤8.84)	J (all detects)	
	Indeno(1,2,3-cd)pyrene	-	81.18 ug/Kg (≤8.84)	J (all detects)	
	Phenanthrene	-	123.33 ug/Kg (≤8.84)	J (all detects)	
	Pyrene	-	185 ug/Kg (≤8.84)	J (all detects)	

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
1211517-LCS/D (All water samples in SDG A12K308)	1-Methylnaphthalene	57 (60-140)	56 (60-140)	-	J (all detects)	P
	2-Methylnaphthalene	55 (60-140)	55 (60-140)	-	UJ (all non-detects)	
	Naphthalene	54 (60-140)	55 (60-140)	-		
	Phenol	33 (60-140)	37 (60-140)	-		
	Hexachlorobutadiene	30 (60-140)	32 (60-140)	-		
	Hexachloroethane	30 (60-140)	33 (60-140)	-		
	1,2-Dichlorobenzene	39 (60-140)	41 (60-140)	-		
	1,3-Dichlorobenzene	36 (60-140)	28 (60-140)	-		
	1,4-Dichlorobenzene	37 (60-140)	40 (60-140)	-		
	1,2,4-Trichlorobenzene	40 (60-140)	-	-		

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to calibration %D, Duplicate difference, and LCS %R problems, data were qualified as estimated in eleven samples.

The quality control criteria reviewed were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples AQ-SE-07-10 and AQ-SE-57-10 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (ug/Kg)		RPD
	AQ-SE-07-10	AQ-SE-57-10	
Anthracene	4.31	4.46U	200
Dimethylphthalate	12.4	3.05	121
Benzo(a)pyrene	15.4	6.38	83
Benzo(b)fluoranthene	19.9	6.79	98
Benzo(k)fluoranthene	7.24	6.69U	200
Benzo(g,h,i)perylene	8.93	3.88	79
Chrysene	13.8	2.98	129
Fluoranthene	30.3	5.59	138

Analyte	Concentration (ug/Kg)		RPD
	AQ-SE-07-10	AQ-SE-57-10	
Indeno(1,2,3-cd)pyrene	7.82	2.29	109
Phenanthrene	20.4	3.88	136
Pyrene	24.4	5.01	132

XVII. Field Blanks

Sample AQ-SE-RB was identified as a rinsate blank. No semivolatile contaminants were found with the following exceptions:

Blank ID	Compound	Concentration
AQ-SE-RB	Naphthalene	0.0222 ug/L

Sample AQ-SE-FB was identified as a field blank. No semivolatile contaminants were found with the following exceptions:

Blank ID	Compound	Concentration
AQ-SE-FB	Naphthalene	0.0334 ug/L

Millennium Bulk Terminals
Semivolatiles - Data Qualification Summary - SDG A12K308

SDG	Sample	Compound	Flag	A or P	Reason
A12K308	AQ-SE-03-10 AQ-SE-05-10 AQ-SE-06-10 AQ-SE-07-10 AQ-SE-57-10	2-Methylphenol	J (all detects)	A	Continuing calibration (%D)
A12K308	AQ-SE-03-10 AQ-SE-05-10 AQ-SE-06-10 AQ-SE-07-10 AQ-SE-57-10	Benzoic acid	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
A12K308	AQ-SE-03-10	3+4 Methylphenol Phenol	J (all detects) J (all detects)	A	Continuing calibration (%D)
A12K308	AQ-SE-03-10	Anthracene Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(g,h,i)perylene Chrysene Dibenzo(a,h)anthracene Fluoranthene Indeno(1,2,3-cd)pyrene Phenanthrene Pyrene	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A	Duplicate sample analysis (difference)
A12K308	AQ-SE-RB AQ-SE-FB	1-Methylnaphthalene 2-Methylnaphthalene Naphthalene Phenol Hexachlorobutadiene Hexachloroethane 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,2,4-Trichlorobenzene	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)

Millennium Bulk Terminals
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG A12K308

No Sample Data Qualified in this SDG

LDC #: 29076G2a

SDG #: A12K308

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/23/13

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	Δ	Sampling dates: 11/12 – 11/13/12
II.	GC/MS Instrument performance check	Δ	
III.	Initial calibration	Δ	% RSD ≤ 20, r²
IV.	Continuing calibration/ICV	SW	ICV ≤ 30 CCV ≤ 20
V.	Blanks	SW	
VI.	Surrogate spikes	Δ	
VII.	Matrix spike/Matrix spike duplicates /DUP	SW/SW	
VIII.	Laboratory control samples	SW	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	Δ	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	Δ	
XVI.	Field duplicates	SW	D = 5, 6
XVII.	Field blanks	SW	RB = 10 FB = 11

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: sediments

1	AQ-SE-03-10	11	AQ-SE-FB W	21	1211516	31	
2	AQ-SE-04-10	12	AQ-SE-03-10DUP	22	1211517	32	
3	AQ-SE-05-10	13	AQ-SE-02-10MS	23		33	
4	AQ-SE-06-10	14		24		34	
5	AQ-SE-07-10	15		25		35	
6	AQ-SE-57-10	16		26		36	
7	AQ-SE-08-10	17		27		37	
8	AQ-SE-01-10	18		28		38	
9	AQ-SE-02-10	19		29		39	
10	AQ-SE-RB W	20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1- Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU 3+4 methylphenol
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 29076G2a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: FT
2nd Reviewer: CR

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ≤20 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: <20.0%)	Finding RRF (Limit: >0.05)	Associated Samples	Qualifications
+	11/20/12	H1120205-ccv	G	24.4		1, 3→6, 12	J/A det
+	11:51		uuu	29.7		1, 12	↓
+			A	26.0		1, 12	↓
−			PPP	22.8		1, 3→6, 12	J/UJ/A
−	11/20/12	E1201202-ccv	OO	21.7		All water, 1211516-MB, 3, 7, 9, 13	J/UJ/A
−	11/21/12	E1211205-ccv	T	27.0		8	J/UJ/A
+	11:02		OO	27.0		↓	J/A det

CONCAL.2S

LDC #: 29076G22

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: FT
2nd Reviewer: OR

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a method blank analyzed for each matrix?
Y N N/A Was a method blank analyzed for each concentration preparation level?
Y N N/A Was a method blank associated with every sample?
Y N N/A Was the blank contaminated? If yes, please see qualification below.

Blank extraction date: 11/20/12 **Blank analysis date:** 11/20/12
Conc. units: ug/L Associated Samples: All water (NO)

Compound	Blank ID	Sample Identification								
	121517-MB3									
PPP	1-16									

Blank extraction date:_____ **Blank analysis date:**_____
Conc. units:_____ Associated Samples:_____

Compound	Blank ID	Sample Identification								

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 29076G2a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: FT
2nd Reviewer: OR

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

Y N N/A Was a MS/MSD analyzed every 20 samples of each matrix?

Y N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		13	T	40 (50-152)	( )	( )	9	~~J/UJ/A~~
				( )	( )	( )		no qual 4X DL
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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LDC#:28932A1

VALIDATION FINDINGS WORKSHEET
Laboratory Duplicates

Reviewer: FT

2nd Reviewer: [illegible]

METHOD: GC MS SVOA (EPA SW 846 Method 8270D)

Y N NA Were ~~field~~ Lab duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the ~~field~~ lab duplicate pairs?

Compound	Concentration (ug/Kg) 1	Concentration (ug/Kg) 12	RPD (≤35%)	Difference (ug/L)	Limits (ug/L)	Qualifications (Parent Only)
VV	33.2	4.42U		28.78	≤8.84	J/A det
CCC	106	8.29		97.71	≤8.84	J/A det
III	136	11.4		124.6	≤13.24	J/A det
GGG	180	17.3		162.7	≤13.24	J/A det
HHH	59.9	6.45		53.45	≤13.24	J/A det
LLL	85.5	9.02		76.48	≤8.84	J/A det
DDD	134	14.1		119.9	≤8.84	J/A det
KKK	18.6	4.42U		14.18	≤8.84	J/A det
YY	240	14.5		225.5	≤8.84	J/A det
JJJ	87.1	5.92		81.18	≤8.84	J/A det
UU	131	7.67		123.33	≤8.84	J/A det
ZZ	199	14.0		185	≤8.84	J/A det
~~WW~~	~~22.9~~	~~6.62U~~		~~16.28~~	~~≤13.24~~	~~J/A det~~
~~JJ~~	~~7.21~~	~~4.42U~~		~~2.79~~	~~≤8.84~~	~~J/A det~~

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LDC #: 29076G22

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FT
2nd Reviewer: 02

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?

Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		1211517-LCS/D	TTT	57 (60-140)	56 (60-140)	( )	All water	J/UJ/P
			W	55 ( )	55 ( )	( )		
			S	54 ( )	55 ( )	( )		
			~~EI~~	~~42~~ ( )	~~43~~ ( )	( )		
			A	33 ( )	37 ( )	( )		
			~~DDD~~	~~47~~ ( )	~~54~~ ( )	( )		
			U	30 ( )	32 ( )	( )		
			~~X~~	~~24~~ ( )	~~22~~ ( )	( )		
			K	30 ( )	33 ( )	( )		
			F	39 ( )	41 ( )	( )		
			D	36 ( )	38 ( )	( )		
			E	37 ( )	40 ( )	( )		
			R	40 ( )	( )	( )		
			~~T~~	~~59~~ ( )	( )	( )		
			~~AA~~	( )	~~58~~ ( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

LDC#: 29076G2a

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer: FT
2nd Reviewer: DV

METHOD: GC/MS SVOA (EPA SW 846 Method 8270D)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L) 65		RPD
	5	6	
VV	4.31	4.46U	200
CCC	12.4	3.05	121
III	15.4	6.38	83
GGG	19.9	6.79	98
HHH	7.24	6.69U	200
LLL	8.93	3.88	79
DDD	13.8	2.98	129
YY	30.3	5.59	138
JJJ	7.82	2.29	109
UU	20.4	3.88	136
ZZ	24.4	5.01	132

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LDC #: 29076G2a
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds identified in the field blanks?

Sample: 10 (RB) Field Blank / Trip Blank / Rinsate (circle one)

Compound	Concentration Units (ug/L)
S	0.0322

Sample: 11 (FB) Field Blank / Trip Blank / Rinsate (circle one)

Compound	Concentration Units (ug/L)
S	0.0334

Sample: _____ Field Blank / Trip Blank / Rinsate (circle one)

Compound	Concentration Units ( )

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	November 12 through November 13, 2012
LDC Report Date:	January 22, 2013
Matrix:	Sediment/Water
Parameters:	Metals
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12K308

Sample Identification

AQ-SE-03-10
AQ-SE-04-10
AQ-SE-05-10
AQ-SE-06-10
AQ-SE-07-10
AQ-SE-57-10
AQ-SE-08-10
AQ-SE-01-10
AQ-SE-02-10
AQ-SE-RB
AQ-SE-FB
AQ-SE-06-10DUP
AQ-SE-06-10MS

Introduction

This data review covers 11 sediment samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6020 for Metals. The metals analyzed were Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Silver, and Zinc.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this method.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

Samples AQ-SE-07-10 and AQ-SE-57-10 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD
	AQ-SE-07-10	AQ-SE-57-10	
Arsenic	1.31	1.21	8
Chromium	5.35	5.68	6
Copper	14.2	14.7	3
Lead	2.34	2.25	4
Mercury	0.537	0.0291U	200
Zinc	27.8	28.5	2

XV. Field Blanks

Sample AQ-SE-RB was identified as a rinsate blank. No metal contaminants were found with the following exceptions:

Blank ID	Analyte	Concentration (ug/L)
AQ-SE-RB	Chromium	0.511

Sample AQ-SE-FB was identified as a field blank. No metal contaminants were found.

Millennium Bulk Terminals
Metals - Data Qualification Summary - SDG A12K308

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Metals - Laboratory Blank Data Qualification Summary - SDG A12K308

No Sample Data Qualified in this SDG

LDC #: 29076G4

SDG #: A12K308

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/21/13

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: Metals (EPA SW846 Method ~~6010C~~/6020)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/12-13/12
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	A	MS
VII.	Duplicate Sample Analysis	A	Dup
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	SW	(5,6)
XV	Field Blanks	SW	RB=10 FB=11

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: sediment/water

1	AQ-SE-03-10	11	AQ-SE-FB W	21		31	
2	AQ-SE-04-10	12	AQ-SE-06-10DUP	22		32	
3	AQ-SE-05-10	13	↓ MS	23		33	
4	AQ-SE-06-10	14		24		34	
5	AQ-SE-07-10	15		25		35	
6	AQ-SE-57-10	16		26		36	
7	AQ-SE-08-10	17		27		37	
8	AQ-SE-01-10	18		28		38	
9	AQ-SE-02-10	19		29		39	
10	AQ-SE-RB W	20		30		40	

Notes:

LDC #: 29076G4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: CB
2nd reviewer: W

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-1		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
QC:12,13		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____

Comments: Mercury by CVAA if performed

LDC#: 29076G4

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Metals (EPA Method 6010B/7000)

Analyte	Concentration (mg/Kg)		RPD
	5	6	
Arsenic	1.31	1.21	8
Chromium	5.35	5.68	6
Copper	14.2	14.7	3
Lead	2.34	2.25	4
Mercury	0.537	0.0291U	200
Zinc	27.8	28.5	2

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LDC #: 29076G7

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target analytes detected in the field blanks?

Sample: 10 Field Blank / Trip Blank / Rinsate / Other BK (circle one)

Analyte	Concentration Units (ug/L)
Cr	0.511 ug/L

Sample: _____ Field Blank / Trip Blank / Rinsate / Other_____ (circle one)

Analyte	Concentration Units ( )

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Millennium Bulk Terminals

Collection Date: November 12 through November 13, 2012

LDC Report Date: January 23, 2013

Matrix: Sediment/Water

Parameters: Wet Chemistry

Validation Level: Stage 2B

Laboratory: APEX Laboratories, LLC

Sample Delivery Group (SDG): A12K308

Sample Identification

AQ-SE-03-10
AQ-SE-04-10
AQ-SE-05-10
AQ-SE-06-10
AQ-SE-07-10
AQ-SE-57-10
AQ-SE-08-10
AQ-SE-01-10
AQ-SE-02-10
AQ-SE-RB
AQ-SE-FB
AQ-SE-03-10DUP
AQ-SE-RBDUP

Introduction

This data review covers 11 sediment samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2540G and Standard Method 2540B for Total Solids and PSEP and Standard Method 5310B modified for Total Organic Carbon.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

X. Field Duplicates

Samples AQ-SE-07-10 and AQ-SE-57-10 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (%)		RPD
	AQ-SE-07-10	AQ-SE-57-10	
Total organic carbon	0.21	0.21	0
Total solids	68.0	68.3	0

XI. Field Blanks

Sample AQ-SE-RB was identified as a rinsate blank. No contaminant concentrations were found with the following exceptions:

Blank ID	Analyte	Concentration (mg/L)
AQ-SE-RB	Total organic carbon	9.90

Sample AQ-SE-FB was identified as a field blank. No contaminant concentrations were found with the following exceptions:

Blank ID	Analyte	Concentration (mg/L)
AQ-SE-FB	Total organic carbon	10.3

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A12K308

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A12K308

No Sample Data Qualified in this SDG

LDC #: 29076G6

SDG #: A12K308

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/21/13

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: (Analyte) Total Solids (SM2540G/SM2540B), Total Organic Carbon (SM5310B/PSEP MOD)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 11/12-13/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	N	CS
VI.	Duplicates	A	Dup
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	SW	(5,6)
XI.	Field blanks	SW	RB=10 FB=11

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: sediment/water

1	AQ-SE-03-10	11	AQ-SE-FB W	21		31	
2	AQ-SE-04-10	12	AQ-SE-03-10DUP	22		32	
3	AQ-SE-05-10	13	AQ-SE-RBDUP	23		33	
4	AQ-SE-06-10	14		24		34	
5	AQ-SE-07-10	15		25		35	
6	AQ-SE-57-10	16		26		36	
7	AQ-SE-08-10	17		27		37	
8	AQ-SE-01-10	18		28		38	
9	AQ-SE-02-10	19		29		39	
10	AQ-SE-RB W	20		30		40	

Notes:

LDC #: 2907G6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Reviewer: CR
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Parameter
1-11	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN (TOC) Cr6+ ClO_4 (TS)
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
QC: 12	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 (TS)
13	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN (TOC) Cr6+ ClO_4 (TS)
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

LDC# 29076G6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

Inorganics: Method See Cover

Analyte	Concentration (~~mg/L~~ %)		RPD
	5	6	
TOC	0.21	0.21	0
Total Solids	68.0	68.3	0

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LDC #: 2907666
SDG #: —

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: Inorganics, EPA Method see cover

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target anlytes detected in the field blanks?

Sample: 10 Field Blank / Trip Blank / Rinsate (circle one) Blk

Analyte	Concentration Units ( )
TOC	9.90 mg/L

Sample: 11 Field Blank / Trip Blank / Rinsate (circle one)

Analyte	Concentration Units ( )
TOC	10.3 mg/L

FLDBLK2.6

Analytical Method APEXsolids

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-01-10	A12K308-14	Total solids	11/20/2012	81.5	Yes	Y				1.00	1.00	pct
AQ-SE-02-10	A12K308-16	Total solids	11/20/2012	70.5	Yes	Y				1.00	1.00	pct
AQ-SE-03-10	A12K308-01	Total solids	11/20/2012	74	Yes	Y				1.00	1.00	pct
AQ-SE-04-10	A12K308-03	Total solids	11/20/2012	64.6	Yes	Y				1.00	1.00	pct
AQ-SE-05-10	A12K308-05	Total solids	11/20/2012	67	Yes	Y				1.00	1.00	pct
AQ-SE-06-10	A12K308-07	Total solids	11/20/2012	68.2	Yes	Y				1.00	1.00	pct
AQ-SE-07-10	A12K308-09	Total solids	11/20/2012	68	Yes	Y				1.00	1.00	pct
AQ-SE-08-10	A12K308-12	Total solids	11/20/2012	68.6	Yes	Y				1.00	1.00	pct
AQ-SE-57-10	A12K308-11	Total solids	11/20/2012	68.3	Yes	Y				1.00	1.00	pct

Analytical Method SM2540B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-FB	A12K308-19	Total solids	11/20/2012	10	Yes	N	U			10.0	10.0	mg/L
AQ-SE-RB	A12K308-18	Total solids	11/20/2012	10	Yes	N	U			10.0	10.0	mg/L

Analytical Method SM2540G

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-01-10	A12K308-14	Total solids	11/20/2012	81.5	Yes	Y				1.00	1.00	pct
AQ-SE-02-10	A12K308-16	Total solids	11/20/2012	70.5	Yes	Y				1.00	1.00	pct
AQ-SE-03-10	A12K308-01	Total solids	11/20/2012	74	Yes	Y				1.00	1.00	pct
AQ-SE-04-10	A12K308-03	Total solids	11/20/2012	64.6	Yes	Y				1.00	1.00	pct
AQ-SE-05-10	A12K308-05	Total solids	11/20/2012	67	Yes	Y				1.00	1.00	pct
AQ-SE-06-10	A12K308-07	Total solids	11/20/2012	68.2	Yes	Y				1.00	1.00	pct
AQ-SE-07-10	A12K308-09	Total solids	11/20/2012	68	No	Y				1.00	1.00	pct
AQ-SE-08-10	A12K308-12	Total solids	11/20/2012	68.6	Yes	Y				1.00	1.00	pct
AQ-SE-57-10	A12K308-11	Total solids	11/20/2012	68.3	No	Y				1.00	1.00	pct

Analytical Method SM5310B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-01-10	A12K308-14	Total organic carbon	11/26/2012	0.58	Yes	Y				0.020	0.010	pct
AQ-SE-02-10	A12K308-16	Total organic carbon	11/26/2012	0.21	Yes	Y				0.020	0.010	pct
AQ-SE-03-10	A12K308-01	Total organic carbon	11/26/2012	0.22	Yes	Y				0.020	0.010	pct
AQ-SE-04-10	A12K308-03	Total organic carbon	11/26/2012	0.4	Yes	Y				0.020	0.010	pct
AQ-SE-05-10	A12K308-05	Total organic carbon	11/26/2012	0.3	Yes	Y				0.020	0.010	pct
AQ-SE-06-10	A12K308-07	Total organic carbon	11/26/2012	0.23	Yes	Y				0.020	0.010	pct
AQ-SE-07-10	A12K308-09	Total organic carbon	11/26/2012	0.21	Yes	Y				0.020	0.010	pct
AQ-SE-08-10	A12K308-12	Total organic carbon	11/26/2012	0.2	Yes	Y				0.020	0.010	pct
AQ-SE-57-10	A12K308-11	Total organic carbon	11/26/2012	0.21	Yes	Y				0.020	0.010	pct
AQ-SE-FB	A12K308-19	Total organic carbon	11/20/2012	10.3	Yes	Y				2.22	1.11	mg/L
AQ-SE-RB	A12K308-18	Total organic carbon	11/20/2012	9.9	Yes	Y				2.22	1.11	mg/L

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-01-10	A12K308-14	Lead	11/26/2012	13	Yes	Y	D			0.603	0.301	mg/kg
AQ-SE-01-10	A12K308-14	Mercury	11/26/2012	0.498	Yes	Y	D			0.0482	0.0241	mg/kg
AQ-SE-01-10	A12K308-14	Chromium	11/26/2012	6.65	Yes	Y	D			1.21	0.603	mg/kg
AQ-SE-01-10	A12K308-14	Silver	11/26/2012	0.603	Yes	N	D U			0.603	0.301	mg/kg
AQ-SE-01-10	A12K308-14	Zinc	11/26/2012	43.5	Yes	Y	D			2.41	1.21	mg/kg
AQ-SE-01-10	A12K308-14	Arsenic	11/26/2012	2.49	Yes	Y	D			1.21	0.301	mg/kg
AQ-SE-01-10	A12K308-14	Cadmium	11/26/2012	0.603	Yes	N	D U			0.603	0.301	mg/kg
AQ-SE-01-10	A12K308-14	Copper	11/26/2012	25.4	Yes	Y	D			1.21	0.603	mg/kg
AQ-SE-02-10	A12K308-16	Lead	11/26/2012	1.74	Yes	Y	D			0.701	0.350	mg/kg
AQ-SE-02-10	A12K308-16	Cadmium	11/26/2012	0.701	Yes	N	D U			0.701	0.350	mg/kg
AQ-SE-02-10	A12K308-16	Arsenic	11/26/2012	1.47	Yes	Y	D			1.40	0.350	mg/kg
AQ-SE-02-10	A12K308-16	Zinc	11/26/2012	20.9	Yes	Y	D			2.80	1.40	mg/kg

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-02-10	A12K308-16	Chromium	11/26/2012	4.73		Yes	Y	D			1.40	0.701	mg/kg
AQ-SE-02-10	A12K308-16	Copper	11/26/2012	13.8		Yes	Y	D			1.40	0.701	mg/kg
AQ-SE-02-10	A12K308-16	Silver	11/26/2012	0.701		Yes	N	D U			0.701	0.350	mg/kg
AQ-SE-02-10	A12K308-16	Mercury	11/26/2012	0.0397		Yes	Y	D J			0.0561	0.0280	mg/kg
AQ-SE-03-10	A12K308-01	Arsenic	11/26/2012	2.39		Yes	Y	D			1.39	0.348	mg/kg
AQ-SE-03-10	A12K308-01	Lead	11/26/2012	2.96		Yes	Y	D			0.697	0.348	mg/kg
AQ-SE-03-10	A12K308-01	Silver	11/26/2012	0.697		Yes	N	D U			0.697	0.348	mg/kg
AQ-SE-03-10	A12K308-01	Cadmium	11/26/2012	0.697		Yes	N	D U			0.697	0.348	mg/kg
AQ-SE-03-10	A12K308-01	Chromium	11/26/2012	4.4		Yes	Y	D			1.39	0.697	mg/kg
AQ-SE-03-10	A12K308-01	Copper	11/26/2012	12.9		Yes	Y	D			1.39	0.697	mg/kg
AQ-SE-03-10	A12K308-01	Zinc	11/26/2012	27.8		Yes	Y	D			2.79	1.39	mg/kg
AQ-SE-03-10	A12K308-01	Mercury	11/26/2012	0.105		Yes	Y	D			0.0557	0.0279	mg/kg
AQ-SE-04-10	A12K308-03	Zinc	11/26/2012	37.9		Yes	Y	D			3.25	1.63	mg/kg
AQ-SE-04-10	A12K308-03	Copper	11/26/2012	17.8		Yes	Y	D			1.63	0.813	mg/kg
AQ-SE-04-10	A12K308-03	Chromium	11/26/2012	6.76		Yes	Y	D			1.63	0.813	mg/kg
AQ-SE-04-10	A12K308-03	Cadmium	11/26/2012	0.813		Yes	N	D U			0.813	0.407	mg/kg
AQ-SE-04-10	A12K308-03	Arsenic	11/26/2012	2.28		Yes	Y	D			1.63	0.407	mg/kg
AQ-SE-04-10	A12K308-03	Silver	11/26/2012	0.813		Yes	N	D U			0.813	0.407	mg/kg
AQ-SE-04-10	A12K308-03	Mercury	11/26/2012	0.0887		Yes	Y	D			0.0650	0.0325	mg/kg
AQ-SE-04-10	A12K308-03	Lead	11/26/2012	3.55		Yes	Y	D			0.813	0.407	mg/kg
AQ-SE-05-10	A12K308-05	Arsenic	11/26/2012	1.51		Yes	Y	D J			1.58	0.395	mg/kg
AQ-SE-05-10	A12K308-05	Zinc	11/26/2012	29.6		Yes	Y	D			3.16	1.58	mg/kg
AQ-SE-05-10	A12K308-05	Chromium	11/26/2012	5.03		Yes	Y	D			1.58	0.791	mg/kg
AQ-SE-05-10	A12K308-05	Cadmium	11/26/2012	0.791		Yes	N	D U			0.791	0.395	mg/kg
AQ-SE-05-10	A12K308-05	Mercury	11/26/2012	0.231		Yes	Y	D			0.0632	0.0316	mg/kg

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-05-10	A12K308-05	Silver	11/26/2012	0.791	Yes	N	D U			0.791	0.395	mg/kg
AQ-SE-05-10	A12K308-05	Copper	11/26/2012	15.4	Yes	Y	D			1.58	0.791	mg/kg
AQ-SE-05-10	A12K308-05	Lead	11/26/2012	2.67	Yes	Y	D			0.791	0.395	mg/kg
AQ-SE-06-10	A12K308-07	Chromium	11/26/2012	6.2	Yes	Y	D			1.56	0.782	mg/kg
AQ-SE-06-10	A12K308-07	Copper	11/26/2012	14.9	Yes	Y	D			1.56	0.782	mg/kg
AQ-SE-06-10	A12K308-07	Zinc	11/26/2012	30.9	Yes	Y	D			3.13	1.56	mg/kg
AQ-SE-06-10	A12K308-07	Lead	11/26/2012	2.52	Yes	Y	D			0.782	0.391	mg/kg
AQ-SE-06-10	A12K308-07	Mercury	11/26/2012	0.0625	Yes	N	D U			0.0625	0.0313	mg/kg
AQ-SE-06-10	A12K308-07	Arsenic	11/26/2012	1.81	Yes	Y	D			1.56	0.391	mg/kg
AQ-SE-06-10	A12K308-07	Silver	11/26/2012	0.782	Yes	N	D U			0.782	0.391	mg/kg
AQ-SE-06-10	A12K308-07	Cadmium	11/26/2012	0.782	Yes	N	D U			0.782	0.391	mg/kg
AQ-SE-07-10	A12K308-09	Copper	11/26/2012	14.2	Yes	Y	D			1.59	0.797	mg/kg
AQ-SE-07-10	A12K308-09	Mercury	11/26/2012	0.537	Yes	Y	D			0.0638	0.0319	mg/kg
AQ-SE-07-10	A12K308-09	Silver	11/26/2012	0.797	Yes	N	D U			0.797	0.399	mg/kg
AQ-SE-07-10	A12K308-09	Arsenic	11/26/2012	1.31	Yes	Y	D J			1.59	0.399	mg/kg
AQ-SE-07-10	A12K308-09	Chromium	11/26/2012	5.35	Yes	Y	D			1.59	0.797	mg/kg
AQ-SE-07-10	A12K308-09	Lead	11/26/2012	2.34	Yes	Y	D			0.797	0.399	mg/kg
AQ-SE-07-10	A12K308-09	Zinc	11/26/2012	27.8	Yes	Y	D			3.19	1.59	mg/kg
AQ-SE-07-10	A12K308-09	Cadmium	11/26/2012	0.797	Yes	N	D U			0.797	0.399	mg/kg
AQ-SE-08-10	A12K308-12	Chromium	11/26/2012	3.7	Yes	Y	D			1.41	0.704	mg/kg
AQ-SE-08-10	A12K308-12	Copper	11/26/2012	12	Yes	Y	D			1.41	0.704	mg/kg
AQ-SE-08-10	A12K308-12	Cadmium	11/26/2012	0.704	Yes	N	D U			0.704	0.352	mg/kg
AQ-SE-08-10	A12K308-12	Arsenic	11/26/2012	1.31	Yes	Y	D J			1.41	0.352	mg/kg
AQ-SE-08-10	A12K308-12	Silver	11/26/2012	0.704	Yes	N	D U			0.704	0.352	mg/kg
AQ-SE-08-10	A12K308-12	Mercury	11/26/2012	0.0563	Yes	N	D U			0.0563	0.0281	mg/kg

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-08-10	A12K308-12	Lead	11/26/2012	1.8	Yes	Y	D			0.704	0.352	mg/kg
AQ-SE-08-10	A12K308-12	Zinc	11/26/2012	20	Yes	Y	D			2.81	1.41	mg/kg
AQ-SE-57-10	A12K308-11	Cadmium	11/26/2012	0.726	Yes	N	D U			0.726	0.363	mg/kg
AQ-SE-57-10	A12K308-11	Lead	11/26/2012	2.25	Yes	Y	D			0.726	0.363	mg/kg
AQ-SE-57-10	A12K308-11	Mercury	11/26/2012	0.0581	Yes	N	D U			0.0581	0.0291	mg/kg
AQ-SE-57-10	A12K308-11	Copper	11/26/2012	14.7	Yes	Y	D			1.45	0.726	mg/kg
AQ-SE-57-10	A12K308-11	Silver	11/26/2012	0.726	Yes	N	D U			0.726	0.363	mg/kg
AQ-SE-57-10	A12K308-11	Arsenic	11/26/2012	1.21	Yes	Y	D J			1.45	0.363	mg/kg
AQ-SE-57-10	A12K308-11	Chromium	11/26/2012	5.68	Yes	Y	D			1.45	0.726	mg/kg
AQ-SE-57-10	A12K308-11	Zinc	11/26/2012	28.5	Yes	Y	D			2.91	1.45	mg/kg
AQ-SE-FB	A12K308-19	Cadmium	11/16/2012	1	Yes	N	U			1.00	0.500	ug/L
AQ-SE-FB	A12K308-19	Lead	11/16/2012	1	Yes	N	U			1.00	0.500	ug/L
AQ-SE-FB	A12K308-19	Mercury	11/16/2012	0.08	Yes	N	U			0.0800	0.0400	ug/L
AQ-SE-FB	A12K308-19	Silver	11/16/2012	1	Yes	N	U			1.00	0.500	ug/L
AQ-SE-FB	A12K308-19	Zinc	11/16/2012	4	Yes	N	U			4.00	2.00	ug/L
AQ-SE-FB	A12K308-19	Chromium	11/16/2012	2	Yes	N	U			2.00	0.500	ug/L
AQ-SE-FB	A12K308-19	Arsenic	11/16/2012	2	Yes	N	U			2.00	0.500	ug/L
AQ-SE-FB	A12K308-19	Copper	11/16/2012	2	Yes	N	U			2.00	1.00	ug/L
AQ-SE-RB	A12K308-18	Mercury	11/16/2012	0.08	Yes	N	U			0.0800	0.0400	ug/L
AQ-SE-RB	A12K308-18	Silver	11/16/2012	1	Yes	N	U			1.00	0.500	ug/L
AQ-SE-RB	A12K308-18	Arsenic	11/16/2012	2	Yes	N	U			2.00	0.500	ug/L
AQ-SE-RB	A12K308-18	Cadmium	11/16/2012	1	Yes	N	U			1.00	0.500	ug/L
AQ-SE-RB	A12K308-18	Chromium	11/16/2012	0.511	Yes	Y	J			2.00	0.500	ug/L
AQ-SE-RB	A12K308-18	Copper	11/16/2012	2	Yes	N	U			2.00	1.00	ug/L
AQ-SE-RB	A12K308-18	Zinc	11/16/2012	4	Yes	N	U			4.00	2.00	ug/L

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-RB	A12K308-18	Lead	11/16/2012	1		Yes	N	U			1.00	0.500	ug/L

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-01-10	A12K308-14RE1	Dibenzofuran	11/21/2012	37.1		Yes	N	D U			37.1	18.5	ug/kg
AQ-SE-01-10	A12K308-14RE1	Benzyl alcohol	11/21/2012	185		Yes	N	D U			185	92.7	ug/kg
AQ-SE-01-10	A12K308-14RE1	Bis(2-ethylhexyl)phthalate	11/21/2012	742		Yes	N	D U			742	371	ug/kg
AQ-SE-01-10	A12K308-14RE1	Butylbenzyl phthalate	11/21/2012	742		Yes	N	D U			742	371	ug/kg
AQ-SE-01-10	A12K308-14RE1	Chrysene	11/21/2012	58.6		Yes	Y	D			37.1	18.5	ug/kg
AQ-SE-01-10	A12K308-14RE1	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	11/21/2012	92.7		Yes	N	D U			92.7	46.4	ug/kg
AQ-SE-01-10	A12K308-14RE1	Dibenzo(a,h)anthracene	11/21/2012	37.1		Yes	N	D U			37.1	18.5	ug/kg
AQ-SE-01-10	A12K308-14RE1	Fluorene	11/21/2012	37.1		Yes	N	D U			37.1	18.5	ug/kg
AQ-SE-01-10	A12K308-14RE1	Diethyl phthalate	11/21/2012	185		Yes	N	D U			185	92.7	ug/kg
AQ-SE-01-10	A12K308-14RE1	Dimethyl phthalate	11/21/2012	185		Yes	N	D U			185	92.7	ug/kg
AQ-SE-01-10	A12K308-14RE1	Di-n-butyl phthalate	11/21/2012	185		Yes	N	D U			185	92.7	ug/kg
AQ-SE-01-10	A12K308-14RE1	Fluoranthene	11/21/2012	69.2		Yes	Y	D			37.1	18.5	ug/kg
AQ-SE-01-10	A12K308-14RE1	Benzoic acid	11/21/2012	4640		Yes	N	D U			4640	2320	ug/kg
AQ-SE-01-10	A12K308-14RE1	Di-n-octyl phthalate	11/21/2012	742		Yes	N	D U			742	371	ug/kg
AQ-SE-01-10	A12K308-14RE1	Acenaphthene	11/21/2012	37.1		Yes	N	D U			37.1	18.5	ug/kg
AQ-SE-01-10	A12K308-14RE1	Hexachlorobenzene	11/21/2012	37.1		Yes	N	D U			37.1	18.5	ug/kg
AQ-SE-01-10	A12K308-14RE1	2-Methylphenol (o-Cresol)	11/21/2012	92.7		Yes	N	D U			92.7	46.4	ug/kg
AQ-SE-01-10	A12K308-14RE1	1,2,4-Trichlorobenzene	11/21/2012	92.7		Yes	N	D U			92.7	46.4	ug/kg
AQ-SE-01-10	A12K308-14RE1	1,2-Dichlorobenzene	11/21/2012	92.7		Yes	N	D U			92.7	46.4	ug/kg
AQ-SE-01-10	A12K308-14RE1	1,3-Dichlorobenzene	11/21/2012	92.7		Yes	N	D U			92.7	46.4	ug/kg
AQ-SE-01-10	A12K308-14RE1	1,4-Dichlorobenzene	11/21/2012	92.7		Yes	N	D U			92.7	46.4	ug/kg
AQ-SE-01-10	A12K308-14RE1	1-Methylnaphthalene	11/21/2012	74.2		Yes	N	D U			74.2	37.1	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-01-10	A12K308-14RE1	2,4-Dimethylphenol	11/21/2012	185	Yes	N	D U			185	92.7	ug/kg
AQ-SE-01-10	A12K308-14RE1	Anthracene	11/21/2012	37.1	Yes	N	D U			37.1	18.5	ug/kg
AQ-SE-01-10	A12K308-14RE1	2-Methylnaphthalene	11/21/2012	74.2	Yes	N	D U			74.2	37.1	ug/kg
AQ-SE-01-10	A12K308-14RE1	Benzo(k)fluoranthene	11/21/2012	25.9	Yes	Y	D J			37.1	18.5	ug/kg
AQ-SE-01-10	A12K308-14RE1	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	11/21/2012	92.7	Yes	N	D U			92.7	46.4	ug/kg
AQ-SE-01-10	A12K308-14RE1	Naphthalene	11/21/2012	74.2	Yes	N	D U			74.2	37.1	ug/kg
AQ-SE-01-10	A12K308-14RE1	Acenaphthylene	11/21/2012	37.1	Yes	N	D U			37.1	18.5	ug/kg
AQ-SE-01-10	A12K308-14RE1	Benzo(a)anthracene	11/21/2012	43.6	Yes	Y	D			37.1	18.5	ug/kg
AQ-SE-01-10	A12K308-14RE1	Benzo(a)pyrene	11/21/2012	61.3	Yes	Y	D			37.1	18.5	ug/kg
AQ-SE-01-10	A12K308-14RE1	Benzo(b)fluoranthene	11/21/2012	97.5	Yes	Y	D			37.1	18.5	ug/kg
AQ-SE-01-10	A12K308-14RE1	Benzo(g,h,i)perylene	11/21/2012	40.6	Yes	Y	D			37.1	18.5	ug/kg
AQ-SE-01-10	A12K308-14RE1	2,4-Dinitrophenol	11/21/2012	927	Yes	N	D U			927	464	ug/kg
AQ-SE-01-10	A12K308-14RE1	Indeno(1,2,3-c,d)pyrene	11/21/2012	38	Yes	Y	D			37.1	18.5	ug/kg
AQ-SE-01-10	A12K308-14RE1	Hexachloroethane	11/21/2012	92.7	Yes	N	D U			92.7	46.4	ug/kg
AQ-SE-01-10	A12K308-14RE1	N-Nitrosodiphenylamine	11/21/2012	92.7	Yes	N	D U			92.7	46.4	ug/kg
AQ-SE-01-10	A12K308-14RE1	Pentachlorophenol	11/21/2012	742	Yes	N	D U			742	371	ug/kg
AQ-SE-01-10	A12K308-14RE1	Phenanthrene	11/21/2012	45.9	Yes	Y	D			37.1	18.5	ug/kg
AQ-SE-01-10	A12K308-14RE1	Phenol	11/21/2012	74.2	Yes	N	D U			74.2	37.1	ug/kg
AQ-SE-01-10	A12K308-14RE1	Pyrene	11/21/2012	75.2	Yes	Y	D			37.1	18.5	ug/kg
AQ-SE-02-10	A12K308-16	2-Methylphenol (o-Cresol)	11/20/2012	10.9	Yes	N	U			10.9	5.46	ug/kg
AQ-SE-02-10	A12K308-16	2-Methylnaphthalene	11/20/2012	15.7	Yes	Y				8.73	4.36	ug/kg
AQ-SE-02-10	A12K308-16	2,4-Dinitrophenol	11/20/2012	109	Yes	N	U			109	54.6	ug/kg
AQ-SE-02-10	A12K308-16	2,4-Dimethylphenol	11/20/2012	21.8	Yes	N	U			21.8	10.9	ug/kg
AQ-SE-02-10	A12K308-16	1-Methylnaphthalene	11/20/2012	8.65	Yes	Y	J			8.73	4.36	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-02-10	A12K308-16	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	11/20/2012	10.9	Yes	N	U			10.9	5.46	ug/kg
AQ-SE-02-10	A12K308-16	Chrysene	11/20/2012	15.3	Yes	Y				4.36	2.18	ug/kg
AQ-SE-02-10	A12K308-16	Benzo(a)anthracene	11/20/2012	6.13	Yes	Y				4.36	2.18	ug/kg
AQ-SE-02-10	A12K308-16	Butylbenzyl phthalate	11/20/2012	87.3	Yes	N	U			87.3	43.6	ug/kg
AQ-SE-02-10	A12K308-16	Acenaphthene	11/20/2012	4.36	Yes	N	U			4.36	2.18	ug/kg
AQ-SE-02-10	A12K308-16	Dibenzo(a,h)anthracene	11/20/2012	4.36	Yes	N	U			4.36	2.18	ug/kg
AQ-SE-02-10	A12K308-16	Anthracene	11/20/2012	3.01	Yes	Y	J			4.36	2.18	ug/kg
AQ-SE-02-10	A12K308-16	Di-n-octyl phthalate	11/20/2012	87.3	Yes	N	U			87.3	43.6	ug/kg
AQ-SE-02-10	A12K308-16	Benzo(a)pyrene	11/20/2012	8.63	Yes	Y				4.36	2.18	ug/kg
AQ-SE-02-10	A12K308-16	Benzo(b)fluoranthene	11/20/2012	17.3	Yes	Y				4.36	2.18	ug/kg
AQ-SE-02-10	A12K308-16	Benzo(g,h,i)perylene	11/20/2012	10.3	Yes	Y				4.36	2.18	ug/kg
AQ-SE-02-10	A12K308-16	Benzo(k)fluoranthene	11/20/2012	3.96	Yes	Y	J			4.36	2.18	ug/kg
AQ-SE-02-10	A12K308-16	Benzoic acid	11/20/2012	546	Yes	N	U			546	273	ug/kg
AQ-SE-02-10	A12K308-16	Benzyl alcohol	11/20/2012	21.8	Yes	N	U			21.8	10.9	ug/kg
AQ-SE-02-10	A12K308-16	Acenaphthylene	11/20/2012	4.36	Yes	N	U			4.36	2.18	ug/kg
AQ-SE-02-10	A12K308-16	N-Nitrosodiphenylamine	11/20/2012	10.9	Yes	N	U			10.9	5.46	ug/kg
AQ-SE-02-10	A12K308-16	Bis(2-ethylhexyl)phthalate	11/20/2012	87.3	Yes	N	U			87.3	43.6	ug/kg
AQ-SE-02-10	A12K308-16	1,2,4-Trichlorobenzene	11/20/2012	10.9	Yes	N	U			10.9	5.46	ug/kg
AQ-SE-02-10	A12K308-16	1,2-Dichlorobenzene	11/20/2012	10.9	Yes	N	U			10.9	5.46	ug/kg
AQ-SE-02-10	A12K308-16	1,3-Dichlorobenzene	11/20/2012	10.9	Yes	N	U			10.9	5.46	ug/kg
AQ-SE-02-10	A12K308-16	1,4-Dichlorobenzene	11/20/2012	10.9	Yes	N	U			10.9	5.46	ug/kg
AQ-SE-02-10	A12K308-16	Pyrene	11/20/2012	13.4	Yes	Y				4.36	2.18	ug/kg
AQ-SE-02-10	A12K308-16	Phenol	11/20/2012	11.3	Yes	Y				8.73	4.36	ug/kg
AQ-SE-02-10	A12K308-16	Phenanthrene	11/20/2012	13.6	Yes	Y				4.36	2.18	ug/kg
AQ-SE-02-10	A12K308-16	Dimethyl phthalate	11/20/2012	21.8	Yes	N	U			21.8	10.9	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-02-10	A12K308-16	Pentachlorophenol	11/20/2012	87.3	Yes	N	U			87.3	43.6	ug/kg
AQ-SE-02-10	A12K308-16	Dibenzofuran	11/20/2012	4.36	Yes	N	U			4.36	2.18	ug/kg
AQ-SE-02-10	A12K308-16	Naphthalene	11/20/2012	8.73	Yes	N	U			8.73	4.36	ug/kg
AQ-SE-02-10	A12K308-16	Indeno(1,2,3-c,d)pyrene	11/20/2012	7.73	Yes	Y				4.36	2.18	ug/kg
AQ-SE-02-10	A12K308-16	Hexachloroethane	11/20/2012	10.9	Yes	N	U			10.9	5.46	ug/kg
AQ-SE-02-10	A12K308-16	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	11/20/2012	10.9	Yes	N	U			10.9	5.46	ug/kg
AQ-SE-02-10	A12K308-16	Hexachlorobenzene	11/20/2012	4.36	Yes	N	U			4.36	2.18	ug/kg
AQ-SE-02-10	A12K308-16	Fluorene	11/20/2012	4.36	Yes	N	U			4.36	2.18	ug/kg
AQ-SE-02-10	A12K308-16	Fluoranthene	11/20/2012	12.9	Yes	Y				4.36	2.18	ug/kg
AQ-SE-02-10	A12K308-16	Di-n-butyl phthalate	11/20/2012	21.8	Yes	N	U			21.8	10.9	ug/kg
AQ-SE-02-10	A12K308-16	Diethyl phthalate	11/20/2012	21.8	Yes	N	U			21.8	10.9	ug/kg
AQ-SE-03-10	A12K308-01	Pentachlorophenol	11/20/2012	82.5	Yes	N	U			82.5	41.3	ug/kg
AQ-SE-03-10	A12K308-01	2-Methylphenol (o-Cresol)	11/20/2012	10.3	Yes	N	U			10.3	5.16	ug/kg
AQ-SE-03-10	A12K308-01	Phenol	11/20/2012	5.99	Yes	Y	J	J	5,9	8.25	4.13	ug/kg
AQ-SE-03-10	A12K308-01	Benzo(g,h,i)perylene	11/20/2012	85.5	Yes	Y		J	9	4.13	2.06	ug/kg
AQ-SE-03-10	A12K308-01	Benzo(b)fluoranthene	11/20/2012	180	Yes	Y		J	9	6.19	3.09	ug/kg
AQ-SE-03-10	A12K308-01	Benzo(a)pyrene	11/20/2012	136	Yes	Y		J	9	6.19	3.09	ug/kg
AQ-SE-03-10	A12K308-01	Benzo(a)anthracene	11/20/2012	106	Yes	Y		J	9	4.13	2.06	ug/kg
AQ-SE-03-10	A12K308-01	Anthracene	11/20/2012	33.2	Yes	Y		J	9	4.13	2.06	ug/kg
AQ-SE-03-10	A12K308-01	Acenaphthylene	11/20/2012	4.13	Yes	N	U			4.13	2.06	ug/kg
AQ-SE-03-10	A12K308-01	Benzoic acid	11/20/2012	516	Yes	N	U	UJ	5	516	258	ug/kg
AQ-SE-03-10	A12K308-01	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	11/20/2012	10.3	Yes	N	U			10.3	5.16	ug/kg
AQ-SE-03-10	A12K308-01	Benzyl alcohol	11/20/2012	20.6	Yes	N	U			20.6	10.3	ug/kg
AQ-SE-03-10	A12K308-01	2-Methylnaphthalene	11/20/2012	8.25	Yes	N	U			8.25	4.13	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-03-10	A12K308-01	2,4-Dinitrophenol	11/20/2012	103	Yes	N	U			103	51.6	ug/kg
AQ-SE-03-10	A12K308-01	2,4-Dimethylphenol	11/20/2012	20.6	Yes	N	U			20.6	10.3	ug/kg
AQ-SE-03-10	A12K308-01	1-Methylnaphthalene	11/20/2012	8.25	Yes	N	U			8.25	4.13	ug/kg
AQ-SE-03-10	A12K308-01	1,4-Dichlorobenzene	11/20/2012	10.3	Yes	N	U			10.3	5.16	ug/kg
AQ-SE-03-10	A12K308-01	1,3-Dichlorobenzene	11/20/2012	10.3	Yes	N	U			10.3	5.16	ug/kg
AQ-SE-03-10	A12K308-01	1,2-Dichlorobenzene	11/20/2012	10.3	Yes	N	U			10.3	5.16	ug/kg
AQ-SE-03-10	A12K308-01	1,2,4-Trichlorobenzene	11/20/2012	10.3	Yes	N	U			10.3	5.16	ug/kg
AQ-SE-03-10	A12K308-01	Acenaphthene	11/20/2012	12.1	Yes	Y				4.13	2.06	ug/kg
AQ-SE-03-10	A12K308-01	Di-n-octyl phthalate	11/20/2012	82.5	Yes	N	U			82.5	41.3	ug/kg
AQ-SE-03-10	A12K308-01	Phenanthrene	11/20/2012	131	Yes	Y		J	9	4.13	2.06	ug/kg
AQ-SE-03-10	A12K308-01	N-Nitrosodiphenylamine	11/20/2012	10.3	Yes	N	U			10.3	5.16	ug/kg
AQ-SE-03-10	A12K308-01	Naphthalene	11/20/2012	8.25	Yes	N	U			8.25	4.13	ug/kg
AQ-SE-03-10	A12K308-01	Indeno(1,2,3-c,d)pyrene	11/20/2012	87.1	Yes	Y		J	9	4.13	2.06	ug/kg
AQ-SE-03-10	A12K308-01	Hexachloroethane	11/20/2012	10.3	Yes	N	U			10.3	5.16	ug/kg
AQ-SE-03-10	A12K308-01	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	11/20/2012	10.3	Yes	N	U			10.3	5.16	ug/kg
AQ-SE-03-10	A12K308-01	Hexachlorobenzene	11/20/2012	4.13	Yes	N	U			4.13	2.06	ug/kg
AQ-SE-03-10	A12K308-01	Benzo(k)fluoranthene	11/20/2012	59.9	Yes	Y		J	9	6.19	3.09	ug/kg
AQ-SE-03-10	A12K308-01	Fluoranthene	11/20/2012	240	Yes	Y		J	9	4.13	2.06	ug/kg
AQ-SE-03-10	A12K308-01	Pyrene	11/20/2012	199	Yes	Y		J	9	4.13	2.06	ug/kg
AQ-SE-03-10	A12K308-01	Di-n-butyl phthalate	11/20/2012	20.6	Yes	N	U			20.6	10.3	ug/kg
AQ-SE-03-10	A12K308-01	Dimethyl phthalate	11/20/2012	20.6	Yes	N	U			20.6	10.3	ug/kg
AQ-SE-03-10	A12K308-01	Diethyl phthalate	11/20/2012	20.6	Yes	N	U			20.6	10.3	ug/kg
AQ-SE-03-10	A12K308-01	Dibenzofuran	11/20/2012	7.21	Yes	Y				4.13	2.06	ug/kg
AQ-SE-03-10	A12K308-01	Dibenzo(a,h)anthracene	11/20/2012	18.6	Yes	Y		J	9	4.13	2.06	ug/kg
AQ-SE-03-10	A12K308-01	Chrysene	11/20/2012	134	Yes	Y		J	9	4.13	2.06	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-03-10	A12K308-01	Butylbenzyl phthalate	11/20/2012	82.5	Yes	N	U			82.5	41.3	ug/kg
AQ-SE-03-10	A12K308-01	Bis(2-ethylhexyl)phthalate	11/20/2012	82.5	Yes	N	U			82.5	41.3	ug/kg
AQ-SE-03-10	A12K308-01	Fluorene	11/20/2012	11.5	Yes	Y				4.13	2.06	ug/kg
AQ-SE-04-10	A12K308-03	1,3-Dichlorobenzene	11/20/2012	11.9	Yes	N	U			11.9	5.94	ug/kg
AQ-SE-04-10	A12K308-03	Benzo(g,h,i)perylene	11/20/2012	9.37	Yes	Y				4.76	2.38	ug/kg
AQ-SE-04-10	A12K308-03	2-Methylphenol (o-Cresol)	11/20/2012	11.9	Yes	N	U			11.9	5.94	ug/kg
AQ-SE-04-10	A12K308-03	Chrysene	11/20/2012	41.9	Yes	Y				4.76	2.38	ug/kg
AQ-SE-04-10	A12K308-03	Butylbenzyl phthalate	11/20/2012	95.1	Yes	N	U			95.1	47.6	ug/kg
AQ-SE-04-10	A12K308-03	Bis(2-ethylhexyl)phthalate	11/20/2012	95.1	Yes	N	U			95.1	47.6	ug/kg
AQ-SE-04-10	A12K308-03	Benzyl alcohol	11/20/2012	23.8	Yes	N	U			23.8	11.9	ug/kg
AQ-SE-04-10	A12K308-03	Dibenzofuran	11/20/2012	3.09	Yes	Y	J			4.76	2.38	ug/kg
AQ-SE-04-10	A12K308-03	Benzo(k)fluoranthene	11/20/2012	5.84	Yes	Y				4.76	2.38	ug/kg
AQ-SE-04-10	A12K308-03	Diethyl phthalate	11/20/2012	23.8	Yes	N	U			23.8	11.9	ug/kg
AQ-SE-04-10	A12K308-03	Benzo(b)fluoranthene	11/20/2012	17.7	Yes	Y				4.76	2.38	ug/kg
AQ-SE-04-10	A12K308-03	Pyrene	11/20/2012	17.1	Yes	Y				4.76	2.38	ug/kg
AQ-SE-04-10	A12K308-03	Benzo(a)anthracene	11/20/2012	10.1	Yes	Y				4.76	2.38	ug/kg
AQ-SE-04-10	A12K308-03	Acenaphthylene	11/20/2012	4.76	Yes	N	U			4.76	2.38	ug/kg
AQ-SE-04-10	A12K308-03	Acenaphthene	11/20/2012	3.25	Yes	Y	J			4.76	2.38	ug/kg
AQ-SE-04-10	A12K308-03	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	11/20/2012	31.4	Yes	Y				11.9	5.94	ug/kg
AQ-SE-04-10	A12K308-03	Benzoic acid	11/20/2012	594	Yes	N	U			594	297	ug/kg
AQ-SE-04-10	A12K308-03	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	11/20/2012	11.9	Yes	N	U			11.9	5.94	ug/kg
AQ-SE-04-10	A12K308-03	Phenol	11/20/2012	26.8	Yes	Y				9.51	4.76	ug/kg
AQ-SE-04-10	A12K308-03	Phenanthrene	11/20/2012	22.1	Yes	Y				4.76	2.38	ug/kg
AQ-SE-04-10	A12K308-03	Pentachlorophenol	11/20/2012	95.1	Yes	N	U			95.1	47.6	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-04-10	A12K308-03	N-Nitrosodiphenylamine	11/20/2012	11.9	Yes	N	U			11.9	5.94	ug/kg
AQ-SE-04-10	A12K308-03	Naphthalene	11/20/2012	9.51	Yes	N	U			9.51	4.76	ug/kg
AQ-SE-04-10	A12K308-03	Dibenzo(a,h)anthracene	11/20/2012	4.76	Yes	N	U			4.76	2.38	ug/kg
AQ-SE-04-10	A12K308-03	Hexachloroethane	11/20/2012	11.9	Yes	N	U			11.9	5.94	ug/kg
AQ-SE-04-10	A12K308-03	Anthracene	11/20/2012	5.71	Yes	Y				4.76	2.38	ug/kg
AQ-SE-04-10	A12K308-03	Hexachlorobenzene	11/20/2012	4.76	Yes	N	U			4.76	2.38	ug/kg
AQ-SE-04-10	A12K308-03	Fluorene	11/20/2012	4.41	Yes	Y	J			4.76	2.38	ug/kg
AQ-SE-04-10	A12K308-03	Fluoranthene	11/20/2012	18.8	Yes	Y				4.76	2.38	ug/kg
AQ-SE-04-10	A12K308-03	Di-n-octyl phthalate	11/20/2012	95.1	Yes	N	U			95.1	47.6	ug/kg
AQ-SE-04-10	A12K308-03	Di-n-butyl phthalate	11/20/2012	23.8	Yes	N	U			23.8	11.9	ug/kg
AQ-SE-04-10	A12K308-03	Dimethyl phthalate	11/20/2012	23.8	Yes	N	U			23.8	11.9	ug/kg
AQ-SE-04-10	A12K308-03	Indeno(1,2,3-c,d)pyrene	11/20/2012	7.23	Yes	Y				4.76	2.38	ug/kg
AQ-SE-04-10	A12K308-03	Benzo(a)pyrene	11/20/2012	10.1	Yes	Y				4.76	2.38	ug/kg
AQ-SE-04-10	A12K308-03	2,4-Dinitrophenol	11/20/2012	119	Yes	N	U			119	59.4	ug/kg
AQ-SE-04-10	A12K308-03	2,4-Dimethylphenol	11/20/2012	23.8	Yes	N	U			23.8	11.9	ug/kg
AQ-SE-04-10	A12K308-03	1,4-Dichlorobenzene	11/20/2012	11.9	Yes	N	U			11.9	5.94	ug/kg
AQ-SE-04-10	A12K308-03	1,2-Dichlorobenzene	11/20/2012	11.9	Yes	N	U			11.9	5.94	ug/kg
AQ-SE-04-10	A12K308-03	1-Methylnaphthalene	11/20/2012	9.51	Yes	N	U			9.51	4.76	ug/kg
AQ-SE-04-10	A12K308-03	1,2,4-Trichlorobenzene	11/20/2012	11.9	Yes	N	U			11.9	5.94	ug/kg
AQ-SE-04-10	A12K308-03	2-Methylnaphthalene	11/20/2012	9.51	Yes	N	U			9.51	4.76	ug/kg
AQ-SE-05-10	A12K308-05	Fluoranthene	11/20/2012	954	Yes	Y				4.59	2.29	ug/kg
AQ-SE-05-10	A12K308-05	Di-n-octyl phthalate	11/20/2012	91.7	Yes	N	U			91.7	45.9	ug/kg
AQ-SE-05-10	A12K308-05	1,2-Dichlorobenzene	11/20/2012	11.5	Yes	N	U			11.5	5.73	ug/kg
AQ-SE-05-10	A12K308-05	1,3-Dichlorobenzene	11/20/2012	11.5	Yes	N	U			11.5	5.73	ug/kg
AQ-SE-05-10	A12K308-05	Fluorene	11/20/2012	37.8	Yes	Y				4.59	2.29	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-05-10	A12K308-05	2,4-Dimethylphenol	11/20/2012	22.9	Yes	N	U			22.9	11.5	ug/kg
AQ-SE-05-10	A12K308-05	Indeno(1,2,3-c,d)pyrene	11/20/2012	38.4	Yes	Y				4.59	2.29	ug/kg
AQ-SE-05-10	A12K308-05	1,4-Dichlorobenzene	11/20/2012	11.5	Yes	N	U			11.5	5.73	ug/kg
AQ-SE-05-10	A12K308-05	Hexachlorobenzene	11/20/2012	4.59	Yes	N	U			4.59	2.29	ug/kg
AQ-SE-05-10	A12K308-05	2-Methylnaphthalene	11/20/2012	7.41	Yes	Y	J			9.17	4.59	ug/kg
AQ-SE-05-10	A12K308-05	Hexachloroethane	11/20/2012	11.5	Yes	N	U			11.5	5.73	ug/kg
AQ-SE-05-10	A12K308-05	Benzo(a)anthracene	11/20/2012	84.9	Yes	Y				4.59	2.29	ug/kg
AQ-SE-05-10	A12K308-05	Naphthalene	11/20/2012	10.4	Yes	Y				9.17	4.59	ug/kg
AQ-SE-05-10	A12K308-05	N-Nitrosodiphenylamine	11/20/2012	11.5	Yes	N	U			11.5	5.73	ug/kg
AQ-SE-05-10	A12K308-05	Pentachlorophenol	11/20/2012	91.7	Yes	N	U			91.7	45.9	ug/kg
AQ-SE-05-10	A12K308-05	Phenanthrene	11/20/2012	718	Yes	Y				4.59	2.29	ug/kg
AQ-SE-05-10	A12K308-05	Pyrene	11/20/2012	667	Yes	Y				4.59	2.29	ug/kg
AQ-SE-05-10	A12K308-05	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	11/20/2012	11.5	Yes	N	U			11.5	5.73	ug/kg
AQ-SE-05-10	A12K308-05	Dibenzo(a,h)anthracene	11/20/2012	9.64	Yes	Y				4.59	2.29	ug/kg
AQ-SE-05-10	A12K308-05	1-Methylnaphthalene	11/20/2012	5.21	Yes	Y	J			9.17	4.59	ug/kg
AQ-SE-05-10	A12K308-05	Benzo(b)fluoranthene	11/20/2012	261	Yes	Y				6.88	3.44	ug/kg
AQ-SE-05-10	A12K308-05	Benzo(g,h,i)perylene	11/20/2012	38	Yes	Y				4.59	2.29	ug/kg
AQ-SE-05-10	A12K308-05	Benzo(k)fluoranthene	11/20/2012	71.6	Yes	Y				6.88	3.44	ug/kg
AQ-SE-05-10	A12K308-05	Benzoic acid	11/20/2012	573	Yes	N	U	UJ	5	573	287	ug/kg
AQ-SE-05-10	A12K308-05	Benzyl alcohol	11/20/2012	20.9	Yes	Y	J			22.9	11.5	ug/kg
AQ-SE-05-10	A12K308-05	Bis(2-ethylhexyl)phthalate	11/20/2012	91.7	Yes	N	U			91.7	45.9	ug/kg
AQ-SE-05-10	A12K308-05	Acenaphthylene	11/20/2012	16.6	Yes	Y				4.59	2.29	ug/kg
AQ-SE-05-10	A12K308-05	Chrysene	11/20/2012	294	Yes	Y				4.59	2.29	ug/kg
AQ-SE-05-10	A12K308-05	2-Methylphenol (o-Cresol)	11/20/2012	11.5	Yes	N	U			11.5	5.73	ug/kg
AQ-SE-05-10	A12K308-05	Dibenzofuran	11/20/2012	34.3	Yes	Y				4.59	2.29	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-05-10	A12K308-05	Diethyl phthalate	11/20/2012	22.9	Yes	N	U			22.9	11.5	ug/kg
AQ-SE-05-10	A12K308-05	Dimethyl phthalate	11/20/2012	22.9	Yes	N	U			22.9	11.5	ug/kg
AQ-SE-05-10	A12K308-05	Di-n-butyl phthalate	11/20/2012	22.9	Yes	N	U			22.9	11.5	ug/kg
AQ-SE-05-10	A12K308-05	Benzo(a)pyrene	11/20/2012	71.6	Yes	Y				6.88	3.44	ug/kg
AQ-SE-05-10	A12K308-05	Anthracene	11/20/2012	36	Yes	Y				4.59	2.29	ug/kg
AQ-SE-05-10	A12K308-05	Acenaphthene	11/20/2012	25.5	Yes	Y				4.59	2.29	ug/kg
AQ-SE-05-10	A12K308-05	Butylbenzyl phthalate	11/20/2012	91.7	Yes	N	U			91.7	45.9	ug/kg
AQ-SE-05-10	A12K308-05	2,4-Dinitrophenol	11/20/2012	115	Yes	N	U			115	57.3	ug/kg
AQ-SE-05-10	A12K308-05	1,2,4-Trichlorobenzene	11/20/2012	11.5	Yes	N	U			11.5	5.73	ug/kg
AQ-SE-05-10	A12K308-05RE1	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	11/21/2012	87.4	Yes	Y				11.5	5.73	ug/kg
AQ-SE-05-10	A12K308-05RE1	Phenol	11/21/2012	12.8	Yes	Y				9.17	4.59	ug/kg
AQ-SE-06-10	A12K308-07	Pentachlorophenol	11/20/2012	88.7	Yes	N	U			88.7	44.3	ug/kg
AQ-SE-06-10	A12K308-07	Acenaphthene	11/20/2012	2.5	Yes	Y	J			4.43	2.22	ug/kg
AQ-SE-06-10	A12K308-07	2-Methylphenol (o-Cresol)	11/20/2012	11.1	Yes	N	U			11.1	5.54	ug/kg
AQ-SE-06-10	A12K308-07	2-Methylnaphthalene	11/20/2012	5.38	Yes	Y	J			8.87	4.43	ug/kg
AQ-SE-06-10	A12K308-07	2,4-Dinitrophenol	11/20/2012	111	Yes	N	U			111	55.4	ug/kg
AQ-SE-06-10	A12K308-07	2,4-Dimethylphenol	11/20/2012	22.2	Yes	N	U			22.2	11.1	ug/kg
AQ-SE-06-10	A12K308-07	1-Methylnaphthalene	11/20/2012	8.87	Yes	N	U			8.87	4.43	ug/kg
AQ-SE-06-10	A12K308-07	1,4-Dichlorobenzene	11/20/2012	11.1	Yes	N	U			11.1	5.54	ug/kg
AQ-SE-06-10	A12K308-07	1,3-Dichlorobenzene	11/20/2012	11.1	Yes	N	U			11.1	5.54	ug/kg
AQ-SE-06-10	A12K308-07	Anthracene	11/20/2012	4.39	Yes	Y	J			4.43	2.22	ug/kg
AQ-SE-06-10	A12K308-07	Phenanthrene	11/20/2012	6.49	Yes	Y				4.43	2.22	ug/kg
AQ-SE-06-10	A12K308-07	Benzo(a)anthracene	11/20/2012	2.96	Yes	Y	J			4.43	2.22	ug/kg
AQ-SE-06-10	A12K308-07	N-Nitrosodiphenylamine	11/20/2012	11.1	Yes	N	U			11.1	5.54	ug/kg
AQ-SE-06-10	A12K308-07	Naphthalene	11/20/2012	8.87	Yes	N	U			8.87	4.43	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-06-10	A12K308-07	Indeno(1,2,3-c,d)pyrene	11/20/2012	4.43	Yes	N	U			4.43	2.22	ug/kg
AQ-SE-06-10	A12K308-07	1,2-Dichlorobenzene	11/20/2012	11.1	Yes	N	U			11.1	5.54	ug/kg
AQ-SE-06-10	A12K308-07	1,2,4-Trichlorobenzene	11/20/2012	11.1	Yes	N	U			11.1	5.54	ug/kg
AQ-SE-06-10	A12K308-07	Pyrene	11/20/2012	9.6	Yes	Y				4.43	2.22	ug/kg
AQ-SE-06-10	A12K308-07	Benzyl alcohol	11/20/2012	22.2	Yes	N	U			22.2	11.1	ug/kg
AQ-SE-06-10	A12K308-07	Hexachloroethane	11/20/2012	11.1	Yes	N	U			11.1	5.54	ug/kg
AQ-SE-06-10	A12K308-07	Dimethyl phthalate	11/20/2012	22.2	Yes	N	U			22.2	11.1	ug/kg
AQ-SE-06-10	A12K308-07	Diethyl phthalate	11/20/2012	22.2	Yes	N	U			22.2	11.1	ug/kg
AQ-SE-06-10	A12K308-07	Dibenzofuran	11/20/2012	6.21	Yes	Y				4.43	2.22	ug/kg
AQ-SE-06-10	A12K308-07	Dibenzo(a,h)anthracene	11/20/2012	4.43	Yes	N	U			4.43	2.22	ug/kg
AQ-SE-06-10	A12K308-07	Acenaphthylene	11/20/2012	2.39	Yes	Y	J			4.43	2.22	ug/kg
AQ-SE-06-10	A12K308-07	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	11/20/2012	11.1	Yes	N	U			11.1	5.54	ug/kg
AQ-SE-06-10	A12K308-07	Benzo(a)pyrene	11/20/2012	5.48	Yes	Y	J			6.65	3.32	ug/kg
AQ-SE-06-10	A12K308-07	Di-n-butyl phthalate	11/20/2012	22.2	Yes	N	U			22.2	11.1	ug/kg
AQ-SE-06-10	A12K308-07	Bis(2-ethylhexyl)phthalate	11/20/2012	88.7	Yes	N	U			88.7	44.3	ug/kg
AQ-SE-06-10	A12K308-07	Chrysene	11/20/2012	5.89	Yes	Y				4.43	2.22	ug/kg
AQ-SE-06-10	A12K308-07	Benzoic acid	11/20/2012	554	Yes	N	U	UJ	5	554	277	ug/kg
AQ-SE-06-10	A12K308-07	Hexachlorobenzene	11/20/2012	7.17	Yes	Y				4.43	2.22	ug/kg
AQ-SE-06-10	A12K308-07	Benzo(k)fluoranthene	11/20/2012	3.88	Yes	Y	J			6.65	3.32	ug/kg
AQ-SE-06-10	A12K308-07	Fluorene	11/20/2012	3.72	Yes	Y	J			4.43	2.22	ug/kg
AQ-SE-06-10	A12K308-07	Benzo(g,h,i)perylene	11/20/2012	3.4	Yes	Y	J			4.43	2.22	ug/kg
AQ-SE-06-10	A12K308-07	Fluoranthene	11/20/2012	12.1	Yes	Y				4.43	2.22	ug/kg
AQ-SE-06-10	A12K308-07	Benzo(b)fluoranthene	11/20/2012	7.92	Yes	Y				6.65	3.32	ug/kg
AQ-SE-06-10	A12K308-07	Di-n-octyl phthalate	11/20/2012	88.7	Yes	N	U			88.7	44.3	ug/kg
AQ-SE-06-10	A12K308-07	Butylbenzyl phthalate	11/20/2012	88.7	Yes	N	U			88.7	44.3	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-06-10	A12K308-07RE1	Phenol	11/21/2012	18.1	Yes	Y				8.87	4.43	ug/kg
AQ-SE-06-10	A12K308-07RE1	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	11/21/2012	64.5	Yes	Y				11.1	5.54	ug/kg
AQ-SE-07-10	A12K308-09	Bis(2-ethylhexyl)phthalate	11/20/2012	90.5	Yes	N	U			90.5	45.2	ug/kg
AQ-SE-07-10	A12K308-09	Butylbenzyl phthalate	11/20/2012	90.5	Yes	N	U			90.5	45.2	ug/kg
AQ-SE-07-10	A12K308-09	Benzyl alcohol	11/20/2012	22.6	Yes	N	U			22.6	11.3	ug/kg
AQ-SE-07-10	A12K308-09	Dibenzofuran	11/20/2012	4.52	Yes	N	U			4.52	2.26	ug/kg
AQ-SE-07-10	A12K308-09	Acenaphthene	11/20/2012	4.52	Yes	N	U			4.52	2.26	ug/kg
AQ-SE-07-10	A12K308-09	N-Nitrosodiphenylamine	11/20/2012	11.3	Yes	N	U			11.3	5.66	ug/kg
AQ-SE-07-10	A12K308-09	Chrysene	11/20/2012	13.8	Yes	Y				4.52	2.26	ug/kg
AQ-SE-07-10	A12K308-09	Phenanthrene	11/20/2012	20.4	Yes	Y				4.52	2.26	ug/kg
AQ-SE-07-10	A12K308-09	Pyrene	11/20/2012	24.4	Yes	Y				4.52	2.26	ug/kg
AQ-SE-07-10	A12K308-09	Benzo(a)pyrene	11/20/2012	15.4	Yes	Y				6.79	3.39	ug/kg
AQ-SE-07-10	A12K308-09	Benzo(a)anthracene	11/20/2012	12.4	Yes	Y				4.52	2.26	ug/kg
AQ-SE-07-10	A12K308-09	Benzoic acid	11/20/2012	566	Yes	N	U	UJ	5	566	283	ug/kg
AQ-SE-07-10	A12K308-09	Acenaphthylene	11/20/2012	4.52	Yes	N	U			4.52	2.26	ug/kg
AQ-SE-07-10	A12K308-09	Naphthalene	11/20/2012	9.05	Yes	N	U			9.05	4.52	ug/kg
AQ-SE-07-10	A12K308-09	2-Methylphenol (o-Cresol)	11/20/2012	11.3	Yes	N	U			11.3	5.66	ug/kg
AQ-SE-07-10	A12K308-09	2-Methylnaphthalene	11/20/2012	9.05	Yes	N	U			9.05	4.52	ug/kg
AQ-SE-07-10	A12K308-09	2,4-Dinitrophenol	11/20/2012	113	Yes	N	U			113	56.6	ug/kg
AQ-SE-07-10	A12K308-09	2,4-Dimethylphenol	11/20/2012	22.6	Yes	N	U			22.6	11.3	ug/kg
AQ-SE-07-10	A12K308-09	1-Methylnaphthalene	11/20/2012	9.05	Yes	N	U			9.05	4.52	ug/kg
AQ-SE-07-10	A12K308-09	1,4-Dichlorobenzene	11/20/2012	11.3	Yes	N	U			11.3	5.66	ug/kg
AQ-SE-07-10	A12K308-09	Anthracene	11/20/2012	4.31	Yes	Y	J			4.52	2.26	ug/kg
AQ-SE-07-10	A12K308-09	Di-n-butyl phthalate	11/20/2012	22.6	Yes	N	U			22.6	11.3	ug/kg
AQ-SE-07-10	A12K308-09	Benzo(k)fluoranthene	11/20/2012	7.24	Yes	Y				6.79	3.39	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-07-10	A12K308-09	Benzo(g,h,i)perylene	11/20/2012	8.93	Yes	Y				4.52	2.26	ug/kg
AQ-SE-07-10	A12K308-09	Benzo(b)fluoranthene	11/20/2012	19.9	Yes	Y				6.79	3.39	ug/kg
AQ-SE-07-10	A12K308-09	Dibenzo(a,h)anthracene	11/20/2012	4.52	Yes	N	U			4.52	2.26	ug/kg
AQ-SE-07-10	A12K308-09	1,2,4-Trichlorobenzene	11/20/2012	11.3	Yes	N	U			11.3	5.66	ug/kg
AQ-SE-07-10	A12K308-09	1,2-Dichlorobenzene	11/20/2012	11.3	Yes	N	U			11.3	5.66	ug/kg
AQ-SE-07-10	A12K308-09	1,3-Dichlorobenzene	11/20/2012	11.3	Yes	N	U			11.3	5.66	ug/kg
AQ-SE-07-10	A12K308-09	Pentachlorophenol	11/20/2012	90.5	Yes	N	U			90.5	45.2	ug/kg
AQ-SE-07-10	A12K308-09	Dimethyl phthalate	11/20/2012	22.6	Yes	N	U			22.6	11.3	ug/kg
AQ-SE-07-10	A12K308-09	Indeno(1,2,3-c,d)pyrene	11/20/2012	7.82	Yes	Y				4.52	2.26	ug/kg
AQ-SE-07-10	A12K308-09	Di-n-octyl phthalate	11/20/2012	90.5	Yes	N	U			90.5	45.2	ug/kg
AQ-SE-07-10	A12K308-09	Fluoranthene	11/20/2012	30.3	Yes	Y				4.52	2.26	ug/kg
AQ-SE-07-10	A12K308-09	Fluorene	11/20/2012	4.52	Yes	N	U			4.52	2.26	ug/kg
AQ-SE-07-10	A12K308-09	Hexachlorobenzene	11/20/2012	4.52	Yes	N	U			4.52	2.26	ug/kg
AQ-SE-07-10	A12K308-09	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	11/20/2012	11.3	Yes	N	U			11.3	5.66	ug/kg
AQ-SE-07-10	A12K308-09	Hexachloroethane	11/20/2012	11.3	Yes	N	U			11.3	5.66	ug/kg
AQ-SE-07-10	A12K308-09	Diethyl phthalate	11/20/2012	22.6	Yes	N	U			22.6	11.3	ug/kg
AQ-SE-07-10	A12K308-09RE1	Phenol	11/21/2012	11.6	Yes	Y				9.05	4.52	ug/kg
AQ-SE-07-10	A12K308-09RE1	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	11/21/2012	80.8	Yes	Y				11.3	5.66	ug/kg
AQ-SE-08-10	A12K308-12	Fluoranthene	11/20/2012	10.3	Yes	Y				4.48	2.24	ug/kg
AQ-SE-08-10	A12K308-12	Anthracene	11/20/2012	4.48	Yes	N	U			4.48	2.24	ug/kg
AQ-SE-08-10	A12K308-12	Di-n-butyl phthalate	11/20/2012	22.4	Yes	N	U			22.4	11.2	ug/kg
AQ-SE-08-10	A12K308-12	Dimethyl phthalate	11/20/2012	22.4	Yes	N	U			22.4	11.2	ug/kg
AQ-SE-08-10	A12K308-12	Diethyl phthalate	11/20/2012	22.4	Yes	N	U			22.4	11.2	ug/kg
AQ-SE-08-10	A12K308-12	Dibenzofuran	11/20/2012	4.48	Yes	N	U			4.48	2.24	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-08-10	A12K308-12	Dibenzo(a,h)anthracene	11/20/2012	4.48	Yes	N	U			4.48	2.24	ug/kg
AQ-SE-08-10	A12K308-12	Chrysene	11/20/2012	5.14	Yes	Y				4.48	2.24	ug/kg
AQ-SE-08-10	A12K308-12	Butylbenzyl phthalate	11/20/2012	89.6	Yes	N	U			89.6	44.8	ug/kg
AQ-SE-08-10	A12K308-12	Bis(2-ethylhexyl)phthalate	11/20/2012	89.6	Yes	N	U			89.6	44.8	ug/kg
AQ-SE-08-10	A12K308-12	Benzyl alcohol	11/20/2012	22.4	Yes	N	U			22.4	11.2	ug/kg
AQ-SE-08-10	A12K308-12	Benzoic acid	11/20/2012	560	Yes	N	U			560	280	ug/kg
AQ-SE-08-10	A12K308-12	Benzo(k)fluoranthene	11/20/2012	4.48	Yes	N	U			4.48	2.24	ug/kg
AQ-SE-08-10	A12K308-12	Benzo(g,h,i)perylene	11/20/2012	4.48	Yes	N	U			4.48	2.24	ug/kg
AQ-SE-08-10	A12K308-12	Benzo(b)fluoranthene	11/20/2012	7.16	Yes	Y				4.48	2.24	ug/kg
AQ-SE-08-10	A12K308-12	Di-n-octyl phthalate	11/20/2012	89.6	Yes	N	U			89.6	44.8	ug/kg
AQ-SE-08-10	A12K308-12	2,4-Dinitrophenol	11/20/2012	112	Yes	N	U			112	56.0	ug/kg
AQ-SE-08-10	A12K308-12	Hexachlorobenzene	11/20/2012	4.48	Yes	N	U			4.48	2.24	ug/kg
AQ-SE-08-10	A12K308-12	1,2,4-Trichlorobenzene	11/20/2012	11.2	Yes	N	U			11.2	5.60	ug/kg
AQ-SE-08-10	A12K308-12	Pyrene	11/20/2012	7.85	Yes	Y				4.48	2.24	ug/kg
AQ-SE-08-10	A12K308-12	1,3-Dichlorobenzene	11/20/2012	11.2	Yes	N	U			11.2	5.60	ug/kg
AQ-SE-08-10	A12K308-12	1,4-Dichlorobenzene	11/20/2012	11.2	Yes	N	U			11.2	5.60	ug/kg
AQ-SE-08-10	A12K308-12	Benzo(a)pyrene	11/20/2012	5.3	Yes	Y				4.48	2.24	ug/kg
AQ-SE-08-10	A12K308-12	2,4-Dimethylphenol	11/20/2012	22.4	Yes	N	U			22.4	11.2	ug/kg
AQ-SE-08-10	A12K308-12	Benzo(a)anthracene	11/20/2012	3.47	Yes	Y	J			4.48	2.24	ug/kg
AQ-SE-08-10	A12K308-12	2-Methylnaphthalene	11/20/2012	8.96	Yes	N	U			8.96	4.48	ug/kg
AQ-SE-08-10	A12K308-12	2-Methylphenol (o-Cresol)	11/20/2012	11.2	Yes	N	U			11.2	5.60	ug/kg
AQ-SE-08-10	A12K308-12	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	11/20/2012	18.5	Yes	Y				11.2	5.60	ug/kg
AQ-SE-08-10	A12K308-12	Acenaphthene	11/20/2012	4.48	Yes	N	U			4.48	2.24	ug/kg
AQ-SE-08-10	A12K308-12	Acenaphthylene	11/20/2012	4.48	Yes	N	U			4.48	2.24	ug/kg
AQ-SE-08-10	A12K308-12	1,2-Dichlorobenzene	11/20/2012	11.2	Yes	N	U			11.2	5.60	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-08-10	A12K308-12	1-Methylnaphthalene	11/20/2012	8.96	Yes	N	U			8.96	4.48	ug/kg
AQ-SE-08-10	A12K308-12	N-Nitrosodiphenylamine	11/20/2012	11.2	Yes	N	U			11.2	5.60	ug/kg
AQ-SE-08-10	A12K308-12	Fluorene	11/20/2012	4.48	Yes	N	U			4.48	2.24	ug/kg
AQ-SE-08-10	A12K308-12	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	11/20/2012	11.2	Yes	N	U			11.2	5.60	ug/kg
AQ-SE-08-10	A12K308-12	Hexachloroethane	11/20/2012	11.2	Yes	N	U			11.2	5.60	ug/kg
AQ-SE-08-10	A12K308-12	Naphthalene	11/20/2012	8.96	Yes	N	U			8.96	4.48	ug/kg
AQ-SE-08-10	A12K308-12	Pentachlorophenol	11/20/2012	89.6	Yes	N	U			89.6	44.8	ug/kg
AQ-SE-08-10	A12K308-12	Phenanthrene	11/20/2012	5.19	Yes	Y				4.48	2.24	ug/kg
AQ-SE-08-10	A12K308-12	Phenol	11/20/2012	14.4	Yes	Y				8.96	4.48	ug/kg
AQ-SE-08-10	A12K308-12	Indeno(1,2,3-c,d)pyrene	11/20/2012	2.76	Yes	Y	J			4.48	2.24	ug/kg
AQ-SE-57-10	A12K308-11	Di-n-butyl phthalate	11/20/2012	22.3	Yes	N	U			22.3	11.2	ug/kg
AQ-SE-57-10	A12K308-11	Benzyl alcohol	11/20/2012	22.3	Yes	N	U			22.3	11.2	ug/kg
AQ-SE-57-10	A12K308-11	Fluoranthene	11/20/2012	5.59	Yes	Y				4.46	2.23	ug/kg
AQ-SE-57-10	A12K308-11	Hexachloroethane	11/20/2012	11.2	Yes	N	U			11.2	5.58	ug/kg
AQ-SE-57-10	A12K308-11	Fluorene	11/20/2012	4.46	Yes	N	U			4.46	2.23	ug/kg
AQ-SE-57-10	A12K308-11	Hexachlorobenzene	11/20/2012	4.46	Yes	N	U			4.46	2.23	ug/kg
AQ-SE-57-10	A12K308-11	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	11/20/2012	11.2	Yes	N	U			11.2	5.58	ug/kg
AQ-SE-57-10	A12K308-11	Diethyl phthalate	11/20/2012	22.3	Yes	N	U			22.3	11.2	ug/kg
AQ-SE-57-10	A12K308-11	Dibenzofuran	11/20/2012	4.46	Yes	N	U			4.46	2.23	ug/kg
AQ-SE-57-10	A12K308-11	Dibenzo(a,h)anthracene	11/20/2012	4.46	Yes	N	U			4.46	2.23	ug/kg
AQ-SE-57-10	A12K308-11	Chrysene	11/20/2012	2.98	Yes	Y	J			4.46	2.23	ug/kg
AQ-SE-57-10	A12K308-11	Acenaphthylene	11/20/2012	4.46	Yes	N	U			4.46	2.23	ug/kg
AQ-SE-57-10	A12K308-11	1,2,4-Trichlorobenzene	11/20/2012	11.2	Yes	N	U			11.2	5.58	ug/kg
AQ-SE-57-10	A12K308-11	1,2-Dichlorobenzene	11/20/2012	11.2	Yes	N	U			11.2	5.58	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-57-10	A12K308-11	1,3-Dichlorobenzene	11/20/2012	11.2	Yes	N	U			11.2	5.58	ug/kg
AQ-SE-57-10	A12K308-11	1,4-Dichlorobenzene	11/20/2012	11.2	Yes	N	U			11.2	5.58	ug/kg
AQ-SE-57-10	A12K308-11	1-Methylnaphthalene	11/20/2012	8.92	Yes	N	U			8.92	4.46	ug/kg
AQ-SE-57-10	A12K308-11	2,4-Dimethylphenol	11/20/2012	22.3	Yes	N	U			22.3	11.2	ug/kg
AQ-SE-57-10	A12K308-11	2,4-Dinitrophenol	11/20/2012	112	Yes	N	U			112	55.8	ug/kg
AQ-SE-57-10	A12K308-11	2-Methylnaphthalene	11/20/2012	8.92	Yes	N	U			8.92	4.46	ug/kg
AQ-SE-57-10	A12K308-11	Butylbenzyl phthalate	11/20/2012	89.2	Yes	N	U			89.2	44.6	ug/kg
AQ-SE-57-10	A12K308-11	Acenaphthene	11/20/2012	4.46	Yes	N	U			4.46	2.23	ug/kg
AQ-SE-57-10	A12K308-11	Bis(2-ethylhexyl)phthalate	11/20/2012	89.2	Yes	N	U			89.2	44.6	ug/kg
AQ-SE-57-10	A12K308-11	Anthracene	11/20/2012	4.46	Yes	N	U			4.46	2.23	ug/kg
AQ-SE-57-10	A12K308-11	Benzo(a)anthracene	11/20/2012	3.05	Yes	Y	J			4.46	2.23	ug/kg
AQ-SE-57-10	A12K308-11	Benzo(a)pyrene	11/20/2012	6.38	Yes	Y	J			6.69	3.35	ug/kg
AQ-SE-57-10	A12K308-11	Benzo(b)fluoranthene	11/20/2012	6.79	Yes	Y				6.69	3.35	ug/kg
AQ-SE-57-10	A12K308-11	Benzo(g,h,i)perylene	11/20/2012	3.88	Yes	Y	J			4.46	2.23	ug/kg
AQ-SE-57-10	A12K308-11	Benzo(k)fluoranthene	11/20/2012	6.69	Yes	N	U			6.69	3.35	ug/kg
AQ-SE-57-10	A12K308-11	Benzoic acid	11/20/2012	558	Yes	N	U	UJ	5	558	279	ug/kg
AQ-SE-57-10	A12K308-11	Di-n-octyl phthalate	11/20/2012	89.2	Yes	N	U			89.2	44.6	ug/kg
AQ-SE-57-10	A12K308-11	2-Methylphenol (o-Cresol)	11/20/2012	11.2	Yes	N	U			11.2	5.58	ug/kg
AQ-SE-57-10	A12K308-11	Dimethyl phthalate	11/20/2012	22.3	Yes	N	U			22.3	11.2	ug/kg
AQ-SE-57-10	A12K308-11	Naphthalene	11/20/2012	8.92	Yes	N	U			8.92	4.46	ug/kg
AQ-SE-57-10	A12K308-11	N-Nitrosodiphenylamine	11/20/2012	11.2	Yes	N	U			11.2	5.58	ug/kg
AQ-SE-57-10	A12K308-11	Pentachlorophenol	11/20/2012	89.2	Yes	N	U			89.2	44.6	ug/kg
AQ-SE-57-10	A12K308-11	Phenanthrene	11/20/2012	3.88	Yes	Y	J			4.46	2.23	ug/kg
AQ-SE-57-10	A12K308-11	Pyrene	11/20/2012	5.01	Yes	Y				4.46	2.23	ug/kg
AQ-SE-57-10	A12K308-11	Indeno(1,2,3-c,d)pyrene	11/20/2012	2.29	Yes	Y	J			4.46	2.23	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-57-10	A12K308-11RE1	Phenol	11/21/2012	11.7	Yes	Y				8.92	4.46	ug/kg
AQ-SE-57-10	A12K308-11RE1	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	11/21/2012	91.8	Yes	Y				11.2	5.58	ug/kg
AQ-SE-FB	A12K308-19	Bis(2-ethylhexyl)phthalate	11/20/2012	2.12	Yes	N	U			2.12	1.06	ug/L
AQ-SE-FB	A12K308-19	Acenaphthylene	11/20/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
AQ-SE-FB	A12K308-19	Fluoranthene	11/20/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
AQ-SE-FB	A12K308-19	Hexachlorobenzene	11/20/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
AQ-SE-FB	A12K308-19	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	11/20/2012	0.0481	Yes	N	U	UJ	10	0.0481	0.0240	ug/L
AQ-SE-FB	A12K308-19	Hexachloroethane	11/20/2012	0.0481	Yes	N	U	UJ	10	0.0481	0.0240	ug/L
AQ-SE-FB	A12K308-19	Indeno(1,2,3-c,d)pyrene	11/20/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
AQ-SE-FB	A12K308-19	Naphthalene	11/20/2012	0.0334	Yes	Y	J	J	10	0.0385	0.0192	ug/L
AQ-SE-FB	A12K308-19	N-Nitrosodiphenylamine	11/20/2012	0.0481	Yes	N	U			0.0481	0.0240	ug/L
AQ-SE-FB	A12K308-19	Fluorene	11/20/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
AQ-SE-FB	A12K308-19	Anthracene	11/20/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
AQ-SE-FB	A12K308-19	Benzo(a)anthracene	11/20/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
AQ-SE-FB	A12K308-19	Di-n-octyl phthalate	11/20/2012	2.88	Yes	N	U			2.88	1.44	ug/L
AQ-SE-FB	A12K308-19	Benzo(b)fluoranthene	11/20/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
AQ-SE-FB	A12K308-19	Chrysene	11/20/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
AQ-SE-FB	A12K308-19	Benzyl alcohol	11/20/2012	0.192	Yes	N	U			0.192	0.0962	ug/L
AQ-SE-FB	A12K308-19	Benzoic acid	11/20/2012	2.4	Yes	N	U			2.40	1.20	ug/L
AQ-SE-FB	A12K308-19	Benzo(k)fluoranthene	11/20/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
AQ-SE-FB	A12K308-19	Pyrene	11/20/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
AQ-SE-FB	A12K308-19	Pentachlorophenol	11/20/2012	0.385	Yes	N	U			0.385	0.192	ug/L
AQ-SE-FB	A12K308-19	Phenanthrene	11/20/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
AQ-SE-FB	A12K308-19	Phenol	11/20/2012	0.385	Yes	N	U	UJ	10	0.385	0.192	ug/L

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-FB	A12K308-19	Benzo(a)pyrene	11/20/2012	0.0288	Yes	N	U			0.0288	0.0144	ug/L
AQ-SE-FB	A12K308-19	2,4-Dimethylphenol	11/20/2012	0.0962	Yes	N	U			0.0962	0.0481	ug/L
AQ-SE-FB	A12K308-19	Benzo(g,h,i)perylene	11/20/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
AQ-SE-FB	A12K308-19	1,2,4-Trichlorobenzene	11/20/2012	0.0481	Yes	N	U	UJ	10	0.0481	0.0240	ug/L
AQ-SE-FB	A12K308-19	1,2-Dichlorobenzene	11/20/2012	0.0481	Yes	N	U	UJ	10	0.0481	0.0240	ug/L
AQ-SE-FB	A12K308-19	1,3-Dichlorobenzene	11/20/2012	0.0481	Yes	N	U	UJ	10	0.0481	0.0240	ug/L
AQ-SE-FB	A12K308-19	1,4-Dichlorobenzene	11/20/2012	0.0481	Yes	N	U	UJ	10	0.0481	0.0240	ug/L
AQ-SE-FB	A12K308-19	1-Methylnaphthalene	11/20/2012	0.0385	Yes	N	U	UJ	10	0.0385	0.0192	ug/L
AQ-SE-FB	A12K308-19	Dibenzofuran	11/20/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
AQ-SE-FB	A12K308-19	2,4,5-Trichlorophenol	11/20/2012	0.0962	Yes	N	U			0.0962	0.0481	ug/L
AQ-SE-FB	A12K308-19	Di-n-butyl phthalate	11/20/2012	2.88	Yes	N	U			2.88	1.44	ug/L
AQ-SE-FB	A12K308-19	2,4-Dinitrophenol	11/20/2012	0.481	Yes	N	U			0.481	0.240	ug/L
AQ-SE-FB	A12K308-19	2-Methylnaphthalene	11/20/2012	0.0385	Yes	N	U	UJ	10	0.0385	0.0192	ug/L
AQ-SE-FB	A12K308-19	2-Methylphenol (o-Cresol)	11/20/2012	0.0481	Yes	N	U			0.0481	0.0240	ug/L
AQ-SE-FB	A12K308-19	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	11/20/2012	0.0481	Yes	N	U			0.0481	0.0240	ug/L
AQ-SE-FB	A12K308-19	Acenaphthene	11/20/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
AQ-SE-FB	A12K308-19	Butylbenzyl phthalate	11/20/2012	2.88	Yes	N	U			2.88	1.44	ug/L
AQ-SE-FB	A12K308-19	Dibenzo(a,h)anthracene	11/20/2012	0.0192	Yes	N	U			0.0192	0.00962	ug/L
AQ-SE-FB	A12K308-19	Diethyl phthalate	11/20/2012	2.88	Yes	N	U			2.88	1.44	ug/L
AQ-SE-FB	A12K308-19	Dimethyl phthalate	11/20/2012	2.88	Yes	N	U			2.88	1.44	ug/L
AQ-SE-FB	A12K308-19	2,3,4,6-Tetrachlorophenol	11/20/2012	0.0962	Yes	N	U			0.0962	0.0481	ug/L
AQ-SE-RB	A12K308-18	Butylbenzyl phthalate	11/20/2012	3.09	Yes	N	U			3.09	1.55	ug/L
AQ-SE-RB	A12K308-18	2-Methylphenol (o-Cresol)	11/20/2012	0.0515	Yes	N	U			0.0515	0.0258	ug/L
AQ-SE-RB	A12K308-18	Dibenzo(a,h)anthracene	11/20/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
AQ-SE-RB	A12K308-18	Benzo(g,h,i)perylene	11/20/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-RB	A12K308-18	Benzo(b)fluoranthene	11/20/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
AQ-SE-RB	A12K308-18	Benzo(a)pyrene	11/20/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
AQ-SE-RB	A12K308-18	Benzo(a)anthracene	11/20/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
AQ-SE-RB	A12K308-18	Anthracene	11/20/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
AQ-SE-RB	A12K308-18	Acenaphthylene	11/20/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
AQ-SE-RB	A12K308-18	Benzoic acid	11/20/2012	2.58	Yes	N	U			2.58	1.29	ug/L
AQ-SE-RB	A12K308-18	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	11/20/2012	0.0515	Yes	N	U			0.0515	0.0258	ug/L
AQ-SE-RB	A12K308-18	Benzyl alcohol	11/20/2012	0.206	Yes	N	U			0.206	0.103	ug/L
AQ-SE-RB	A12K308-18	2-Methylnaphthalene	11/20/2012	0.0412	Yes	N	U	UJ	10	0.0412	0.0206	ug/L
AQ-SE-RB	A12K308-18	2,4-Dinitrophenol	11/20/2012	0.515	Yes	N	U			0.515	0.258	ug/L
AQ-SE-RB	A12K308-18	2,4-Dimethylphenol	11/20/2012	0.103	Yes	N	U			0.103	0.0515	ug/L
AQ-SE-RB	A12K308-18	1-Methylnaphthalene	11/20/2012	0.0412	Yes	N	U	UJ	10	0.0412	0.0206	ug/L
AQ-SE-RB	A12K308-18	1,4-Dichlorobenzene	11/20/2012	0.0515	Yes	N	U	UJ	10	0.0515	0.0258	ug/L
AQ-SE-RB	A12K308-18	1,3-Dichlorobenzene	11/20/2012	0.0515	Yes	N	U	UJ	10	0.0515	0.0258	ug/L
AQ-SE-RB	A12K308-18	1,2-Dichlorobenzene	11/20/2012	0.0515	Yes	N	U	UJ	10	0.0515	0.0258	ug/L
AQ-SE-RB	A12K308-18	Acenaphthene	11/20/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
AQ-SE-RB	A12K308-18	Fluoranthene	11/20/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
AQ-SE-RB	A12K308-18	N-Nitrosodiphenylamine	11/20/2012	0.0515	Yes	N	U			0.0515	0.0258	ug/L
AQ-SE-RB	A12K308-18	N-Nitrosodi-N-propylamine	11/20/2012	0.0515	Yes	N	U			0.0515	0.0258	ug/L
AQ-SE-RB	A12K308-18	N-Nitrosodimethylamine	11/20/2012	0.0515	Yes	N	U			0.0515	0.0258	ug/L
AQ-SE-RB	A12K308-18	Naphthalene	11/20/2012	0.0222	Yes	Y	J	J	10	0.0412	0.0206	ug/L
AQ-SE-RB	A12K308-18	Indeno(1,2,3-c,d)pyrene	11/20/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
AQ-SE-RB	A12K308-18	Hexachloroethane	11/20/2012	0.0515	Yes	N	U	UJ	10	0.0515	0.0258	ug/L
AQ-SE-RB	A12K308-18	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	11/20/2012	0.0515	Yes	N	U	UJ	10	0.0515	0.0258	ug/L

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SE-RB	A12K308-18	Benzo(k)fluoranthene	11/20/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
AQ-SE-RB	A12K308-18	Fluorene	11/20/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
AQ-SE-RB	A12K308-18	Pentachlorophenol	11/20/2012	0.412	Yes	N	U			0.412	0.206	ug/L
AQ-SE-RB	A12K308-18	Di-n-octyl phthalate	11/20/2012	3.09	Yes	N	U			3.09	1.55	ug/L
AQ-SE-RB	A12K308-18	Di-n-butyl phthalate	11/20/2012	3.09	Yes	N	U			3.09	1.55	ug/L
AQ-SE-RB	A12K308-18	Dimethyl phthalate	11/20/2012	3.09	Yes	N	U			3.09	1.55	ug/L
AQ-SE-RB	A12K308-18	Diethyl phthalate	11/20/2012	3.09	Yes	N	U			3.09	1.55	ug/L
AQ-SE-RB	A12K308-18	Dibenzofuran	11/20/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
AQ-SE-RB	A12K308-18	Chrysene	11/20/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
AQ-SE-RB	A12K308-18	Bis(2-ethylhexyl)phthalate	11/20/2012	2.27	Yes	N	U			2.27	1.13	ug/L
AQ-SE-RB	A12K308-18	Hexachlorobenzene	11/20/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
AQ-SE-RB	A12K308-18	1,2,4-Trichlorobenzene	11/20/2012	0.0515	Yes	N	U	UJ	10	0.0515	0.0258	ug/L
AQ-SE-RB	A12K308-18	Pyrene	11/20/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
AQ-SE-RB	A12K308-18	Phenol	11/20/2012	0.412	Yes	N	U	UJ	10	0.412	0.206	ug/L
AQ-SE-RB	A12K308-18	Phenanthrene	11/20/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L

Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

Anchor Environmental, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101
ATTN: Ms. Cindy Fields

January 30, 2013

SUBJECT: Millennium Bulk Terminals, Data Validation

Dear Ms. Fields,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on January 18, 2013. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 29096:

SDG #	**Fraction**
A4995 & A5019	Polychlorinated Biphenyls as Congeners

The data validation was performed under Stage 2B guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review, September 2005

Please feel free to contact us if you have any questions.

Sincerely,

Ming-Hwa Hwang
Project Manager/Senior Chemist

L:\Anchor\Millennium-Reynolds\29096COV.wpd

Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

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Anchor Environmental, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101
ATTN: Ms. Cindy Fields

February 25, 2013

SUBJECT: Revised Millennium Bulk Terminals, Data Validation

Dear Ms. Fields,

Enclosed is the revised data validation report for the fraction listed below. Please replace the previously submitted report with the enclosed revised report.

LDC Project # 29096:

SDG #	**Fraction**
A5019	Polychlorinated Biphenyls as Congeners

Please feel free to contact us if you have any questions.

Sincerely,

Ming-Hwa Hwang
Project Manager/Senior Chemist

745 Pages-EX

Attachment 1

Stage 2B EDD

LDC #29096 (Anchor Environmental-Seattle WA /Millennium Bulk Terminals)

LDC	SDG#	DATE REC'D	(3) DATE DUE	PCB Cong (1668A)																																	
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	A4995	01/18/13	02/08/13	0	4																																
B	A5019	01/18/13	02/08/13	0	1																																
Total	A/MH			0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5

Shaded cells indicate Stage 4 validation (all other cells are Stage 2B validation). These sample counts do not include MS, MSD, or DUP's.

29096ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 10, 2012
LDC Report Date:	January 29, 2013
Matrix:	Soil
Parameters:	Polychlorinated Biphenyls as Congeners
Validation Level:	Stage 2B
Laboratory:	SGS Analytical Perspectives
Sample Delivery Group (SDG):	A4995

Sample Identification

AQ-SS-14-10
AQ-SS-10-10
AQ-SS-09-10
AQ-SS-04-10

Introduction

This data review covers 4 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1668A for Polychlorinated Biphenyl as Congeners.

This review follows USEPA Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of single compounds was performed for the primary (quantitation) column and confirmation column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for unlabeled compounds and less than or equal to 50.0% for labeled compounds.

The ion abundance ratios for all compounds were within method criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyls as congeners contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB1-10495	12/31/12	PCB-105 PCB-118	0.302 pg/g 0.468 pg/g	All samples in SDG A4995

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Ongoing Precision Recovery (OPR)

Ongoing precision recovery samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

All internal standard recoveries (%R) were within QC limits.

X. Target Compound Identification

Raw data were not reviewed for this SDG.

XI. Compound Quantitation

All compound quantitation were within validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
AQ-SS-09-10	PCB-105 PCB-118 PCB-156	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects) J (all detects) J (all detects)	P

Sample	Compound	Flag	A or P
AQ-SS-14-10 AQ-SS-09-10	All compounds reported as estimated maximum possible concentration (EMPC)	J (all detects)	A

Raw data were not reviewed for this SDG.

XII. System Performance

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to compound quantitation problems, data were qualified as estimated in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polychlorinated Biphenyls as Congeners - Data Qualification Summary - SDG A4995

SDG	Sample	Compound	Flag	A or P	Reason
A4995	AQ-SS-09-10	PCB-105 PCB-118 PCB-156	J (all detects) J (all detects) J (all detects)	P	Compound quantitation (exceeded range)
A4995	AQ-SS-14-10 AQ-SS-09-10	All compounds reported as estimated maximum possible concentration (EMPC)	J (all detects)	A	Compound quantitation (EMPC)

Millennium Bulk Terminals
Polychlorinated Biphenyls as Congeners - Laboratory Blank Data Qualification Summary - SDG A4995

No Sample Data Qualified in this SDG

LDC #: 29096A31

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/24/13

SDG #: A4995

Page: 1 of 1

Laboratory: SGS Analytical Perspectives

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: HRGC/HRMS Polychlorinated Biphenyl Congeners (EPA Method 1668A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/10/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20 labeled + unlabeled
IV.	Continuing calibration/ICV	A	% CCV ≤ 30/50
V.	Blanks	A	
VI.	Matrix spike/Matrix spike duplicates	N	
VII.	Laboratory control samples	A	OPR
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	A	
X.	Target compound identifications	N	
XI.	Compound quantitation/RL/LOQ/LODs	SW	
XII.	System performance	N	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	N	
XV.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

SOIL

1	AQ-SS-14-10	11	MB1_10495	21		31	
2	AQ-SS-10-10	12		22		32	
3	AQ-SS-09-10	13		23		33	
4	AQ-SS-04-10	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 29096A31

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: P
2nd Reviewer: [illegible]

METHOD: HRGC/HRMS PCB Congeners (EPA Method 1668A)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were all samples associated with a method blank?
Y N N/A Was a method blank performed for each matrix and whenever a sample extraction was performed?
Y N N/A Was the method blank contaminated? If yes, please see qualification below.

Blank extraction date: 12/31/12 **Blank analysis date:** 1/3/13
Conc. units: pg/g **Associated samples:** All 75X

Compound	Blank ID	Sample Identification								
	MB1-10495	5X								
PCB-105	0.302	1.51								
PCB-118	0.468	2.34								

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 29096A3

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and RLs

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: HRGC/HRMS PCB Congeners (EPA Method 1668A)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were the correct internal standard (IS), quantitation ions and relative response factors (RRF) used to quantitate the compound?
Y N N/A Compound quantitation and CRQLs were adjusted to reflect all sample dilutions and dry weight factors (if necessary).

#	Date	~~Sample ID~~ compds	Finding	Associated Samples	Qualifications
		PCB-105, PCB-118, PCB-156	x'd cal Range	3	J/Pdet
			All EMPC	1, 3	J/Adet

Comments: See sample calculation verification worksheet for recalculations

Millennium Bulk Terminals - LDC# 29096

SDG: A4995

Analytical Method E1668A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-04-10	A4995_10495_PC	PCB-114	1/3/2013	0.504	Yes	N	U			0.982	0.504	pg/g
AQ-SS-04-10	A4995_10495_PC	PCB-189	1/3/2013	0.587	Yes	N	U			0.982	0.587	pg/g
AQ-SS-04-10	A4995_10495_PC	PCB-077	1/3/2013	2.2	Yes	Y				0.982	0.667	pg/g
AQ-SS-04-10	A4995_10495_PC	PCB-105	1/3/2013	8.63	Yes	Y				0.982	0.576	pg/g
AQ-SS-04-10	A4995_10495_PC	PCB-118	1/3/2013	18.2	Yes	Y				0.982	0.531	pg/g
AQ-SS-04-10	A4995_10495_PC	PCB-123	1/3/2013	0.554	Yes	N	U			0.982	0.554	pg/g
AQ-SS-04-10	A4995_10495_PC	PCB-126	1/3/2013	0.641	Yes	N	U			0.982	0.641	pg/g
AQ-SS-04-10	A4995_10495_PC	PCB-156/157	1/3/2013	2.49	Yes	Y	C			1.96	0.817	pg/g
AQ-SS-04-10	A4995_10495_PC	PCB-167	1/3/2013	0.869	Yes	Y	J			0.982	0.581	pg/g
AQ-SS-04-10	A4995_10495_PC	PCB-169	1/3/2013	0.785	Yes	N	U			0.982	0.785	pg/g
AQ-SS-04-10	A4995_10495_PC	PCB-081	1/3/2013	0.639	Yes	N	U			0.982	0.639	pg/g
AQ-SS-09-10	A4995_10495_PC	PCB-169	1/3/2013	14	Yes	N	U			0.978	14	pg/g
AQ-SS-09-10	A4995_10495_PC	PCB-118	1/3/2013	48200	Yes	Y	E	J	20	0.978	1.47	pg/g
AQ-SS-09-10	A4995_10495_PC	PCB-077	1/3/2013	1380	Yes	Y				0.978	23.4	pg/g
AQ-SS-09-10	A4995_10495_PC	PCB-081	1/3/2013	20.3	Yes	N	U			0.978	20.3	pg/g
AQ-SS-09-10	A4995_10495_PC	PCB-105	1/3/2013	17500	Yes	Y	E	J	20	0.978	1.65	pg/g
AQ-SS-09-10	A4995_10495_PC	PCB-114	1/3/2013	1280	Yes	Y				0.978	1.55	pg/g
AQ-SS-09-10	A4995_10495_PC	PCB-123	1/3/2013	1.48	Yes	N	U			0.978	1.48	pg/g
AQ-SS-09-10	A4995_10495_PC	PCB-126	1/3/2013	47.5	Yes	Y	EMPC	J	23	0.978	7.51	pg/g
AQ-SS-09-10	A4995_10495_PC	PCB-167	1/3/2013	2760	Yes	Y				0.978	8.73	pg/g
AQ-SS-09-10	A4995_10495_PC	PCB-189	1/3/2013	462	Yes	Y				0.978	3.82	pg/g
AQ-SS-09-10	A4995_10495_PC	PCB-156/157	1/3/2013	10200	Yes	Y	E C	J	20	1.96	12	pg/g
AQ-SS-10-10	A4995_10495_PC	PCB-126	1/3/2013	0.315	Yes	N	U			0.977	0.315	pg/g
AQ-SS-10-10	A4995_10495_PC	PCB-077	1/3/2013	2.23	Yes	Y	EMPC	J	23	0.977	0.332	pg/g

SDG: A4995

Analytical Method E1668A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-10-10	A4995_10495_PC	PCB-081	1/3/2013	0.327	Yes	N	U			0.977	0.327	pg/g
AQ-SS-10-10	A4995_10495_PC	PCB-105	1/3/2013	10.8	Yes	Y				0.977	0.235	pg/g
AQ-SS-10-10	A4995_10495_PC	PCB-114	1/3/2013	0.589	Yes	Y	J EMPC	J	23	0.977	0.232	pg/g
AQ-SS-10-10	A4995_10495_PC	PCB-156/157	1/3/2013	4.1	Yes	Y	C			1.95	0.34	pg/g
AQ-SS-10-10	A4995_10495_PC	PCB-167	1/3/2013	1.25	Yes	Y				0.977	0.233	pg/g
AQ-SS-10-10	A4995_10495_PC	PCB-169	1/3/2013	0.327	Yes	N	U			0.977	0.327	pg/g
AQ-SS-10-10	A4995_10495_PC	PCB-189	1/3/2013	0.272	Yes	N	U			0.977	0.272	pg/g
AQ-SS-10-10	A4995_10495_PC	PCB-118	1/3/2013	22.3	Yes	Y				0.977	0.232	pg/g
AQ-SS-10-10	A4995_10495_PC	PCB-123	1/3/2013	0.367	Yes	Y	J EMPC	J	23	0.977	0.234	pg/g
AQ-SS-14-10	A4995_10495_PC	PCB-114	1/3/2013	0.919	Yes	Y	J			0.959	0.277	pg/g
AQ-SS-14-10	A4995_10495_PC	PCB-077	1/3/2013	5.91	Yes	Y				0.959	0.367	pg/g
AQ-SS-14-10	A4995_10495_PC	PCB-105	1/3/2013	18.5	Yes	Y				0.959	0.297	pg/g
AQ-SS-14-10	A4995_10495_PC	PCB-118	1/3/2013	33.2	Yes	Y				0.959	0.267	pg/g
AQ-SS-14-10	A4995_10495_PC	PCB-123	1/3/2013	1.14	Yes	Y				0.959	0.268	pg/g
AQ-SS-14-10	A4995_10495_PC	PCB-156/157	1/3/2013	3.35	Yes	Y	C			1.92	0.409	pg/g
AQ-SS-14-10	A4995_10495_PC	PCB-167	1/3/2013	1.26	Yes	Y				0.959	0.269	pg/g
AQ-SS-14-10	A4995_10495_PC	PCB-169	1/3/2013	0.372	Yes	N	U			0.959	0.372	pg/g
AQ-SS-14-10	A4995_10495_PC	PCB-189	1/3/2013	0.495	Yes	Y	J EMPC	J	23	0.959	0.284	pg/g
AQ-SS-14-10	A4995_10495_PC	PCB-126	1/3/2013	0.312	Yes	N	U			0.959	0.312	pg/g
AQ-SS-14-10	A4995_10495_PC	PCB-081	1/3/2013	0.382	Yes	N	U			0.959	0.382	pg/g

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 12, 2012
LDC Report Date:	February 25, 2013
Matrix:	Soil
Parameters:	Polychlorinated Biphenyls as Congeners
Validation Level:	Stage 2B
Laboratory:	SGS Analytical Perspectives
Sample Delivery Group (SDG):	A5019

Sample Identification

AQ-SS-03-10RE1
AQ-SS-03-10RE2

Introduction

This data review covers 2 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 1668A for Polychlorinated Biphenyl as Congeners.

This review follows USEPA Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. HRGC/HRMS Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of single compounds was performed for the primary (quantitation) column and confirmation column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for unlabeled compounds and less than or equal to 50.0% for labeled compounds.

The ion abundance ratios for all compounds were within method criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyls as congeners contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB1_10601	1/28/13	PCB-118	0.443 pg/g	AQ-SS-03-10RE1
MB1_10631	2/5/13	PCB-105 PCB-118	0.223 pg/g 0.438 pg/g	AQ-SS-03-10RE2

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Ongoing Precision Recovery (OPR)

Ongoing precision recovery samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Regional Quality Assurance and Quality Control

Not applicable.

IX. Internal Standards

All internal standard recoveries (%R) were within QC limits.

X. Target Compound Identification

Raw data were not reviewed for this SDG.

XI. Compound Quantitation

Raw data were not reviewed for this SDG.

XII. System Performance

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
AQ-SS-03-10RE2	All TCL compounds	R	A

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be rejected (R) are unusable for all purposes. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polychlorinated Biphenyls as Congeners - Data Qualification Summary - SDG A5019

SDG	Sample	Compound	Flag	A or P	Reason
A5019	AQ-SS-03-10RE2	All TCL compounds	R	A	Overall assessment of data

Millennium Bulk Terminals
Polychlorinated Biphenyls as Congeners - Laboratory Blank Data Qualification Summary - SDG A5019

No Sample Data Qualified in this SDG

LDC #: 29096B31 **VALIDATION COMPLETENESS WORKSHEET** Date: 1/24/13
SDG #: A5019 Stage 2B Page: 1 of 1
Laboratory: SGS Analytical Perspectives Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: HRGC/HRMS Polychlorinated Biphenyl Congeners (EPA Method 1668A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/12/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20 labeled + unlabeled
IV.	Continuing calibration/~~CCV~~	A	% CCV ≤ 30/50
V.	Blanks	SW	
VI.	Matrix spike/Matrix spike duplicates	N	client specific
VII.	Laboratory control samples	A	OPR
VIII.	Regional quality assurance and quality control	N	
IX.	Internal standards	A	
X.	Target compound identifications	N	
XI.	Compound quantitation/RL/LOQ/LODs	SW	
XII.	System performance	N	
XIII.	Overall assessment of data	SW	
XIV.	Field duplicates	N	
XV.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: SOIL

1	~~AQ-SS-03-10~~	11		21		31	
2	RZ1	12		22		32	
3	RZ2	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 29096B31

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer: TM

2nd Reviewer: [illegible]

METHOD: HRGC/HRMS PCB Congeners (EPA Method 1668)A

Blank extraction date: 01/28/13 **Blank analysis date:** 02/02/13

Conc. units: pg/g **Associated samples:** 2

Compound	Blank ID	Sample Identification									
	MB1 10601	5x									
PCB-118	0.443	2.215									

*- EMPC

LDC #: 29096B31

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer: TM

2nd Reviewer: ✓

METHOD: HRGC/HRMS PCB Congeners (EPA Method 1668)A

Blank extraction date: 02/05/13 **Blank analysis date:** 02/09/13

Conc. units: pg/g **Associated samples:** 3

Compound	Blank ID	Sample Identification									
	MB1 10631	5x									
PCB-105	0.223*	1.15									
PCB-118	0.438*	2.19									

*- EMPC

Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

Anchor Environmental, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101
ATTN: Ms. Cindy Fields

February 14, 2013

SUBJECT: Millennium Bulk Terminals, Data Validation

Dear Ms. Fields,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on January 30, 2013. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 29157:

SDG #		Fraction
A12J138	A12L002	Volatiles, Semivolatiles, Polychlorinated Biphenyls, Metals,
A12L049	A12L076	Wet Chemistry, Barium, Total Solid, Polynuclear Aromatic
A12L107	A12L200	Hydrocarbons, Diesel Range Organics
A12L258		

The data validation was performed under Stage 2B guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Ming-Hwa Hwang
Project Manager/Senior Chemist

L:\Anchor\Millennium-Reynolds\29157COV.wpd

Stage 2B EDD

LDC #29157 (Anchor Environmental-Seattle WA /Millennium Bulk Terminals)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		SVOA (8270D)		PAH (8270D-SIM)		PCB (8082A)		Metals (6020)		Metals (200.7)		Diss Metals (200.7)		Metals (200.8)		Diss Metals (200.8)		DRO (NWTPH-Dx)		DRO NWTPH-Dx SGC													
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	A12J138	01/30/13	02/21/13	1	0	1	0	-	-	1	0	-	-	8	0	8	0	8	0	8	0	-	-	-	-												
B	A12L002	01/30/13	02/21/13	-	-	-	-	-	-	-	-	0	18	-	-	-	-	-	-	-	-	-	-	-	-												
C	A12L049	01/30/13	02/21/13	-	-	-	-	3	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-												
D	A12L076	01/30/13	02/21/13	-	-	-	-	2	0	-	-	-	-	-	-	-	-	-	-	-	-	2	0	2	0												
E	A12L107	01/30/13	02/21/13	-	-	-	-	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	2												
F	A12L200	01/30/13	02/21/13	-	-	0	4	-	-	-	-	0	4	-	-	-	-	-	-	-	-	-	-	-	-												
G	A12L258	01/30/13	02/21/13	-	-	0	1	-	-	-	-	0	1	-	-	-	-	-	-	-	-	-	-	-	-												
Total	A/MH			1	0	1	5	5	3	1	0	0	23	8	0	8	0	8	0	8	0	2	0	2	2	0	0	0	0	0	0	0	0	0	0	0	77

Stage 2B EDD

LDC #29157 (Anchor Environmental-Seattle WA /Millennium Bulk Terminals)

LDC	SDG#	DATE REC'D	(3) DATE DUE	Alk (2320B)		Cl,SO4 (300.0)		T.CN- (335.4)		Diss CN- (335.4)		WAD CN- (4500)		D.WAD CN- (4500)		Free CN- (D4282)		D. Free CN- (D4282)		F (4500-F-C)		Diss F (4500-F-C)		Phos-phorous (4500)		TS (2540G/SOP)		TDS (2540C)		TOC (5310B)		TSS (2540D)					
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	A12J138	01/30/13	02/21/13	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	-	-	8	0	-	-	8	0				
B	A12L002	01/30/13	02/21/13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	18	-	-	-	-	-	-				
C	A12L049	01/30/13	02/21/13	-	-	-	-	3	0	3	0	3	0	3	0	3	0	3	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
D	A12L076	01/30/13	02/21/13	-	-	-	-	1	0	1	0	1	0	1	0	1	0	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
E	A12L107	01/30/13	02/21/13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	2	-	-	-	-	-	-				
F	A12L200	01/30/13	02/21/13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	4	-	-	0	4	-	-				
G	A12L258	01/30/13	02/21/13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	1	-	-	0	1	-	-				
Total	A/MH			8	0	8	0	12	0	12	0	12	0	12	0	12	0	12	0	8	0	8	0	8	0	0	25	8	0	0	5	8	0	0	0	0	158

Shaded cells indicate Stage 4 validation (all other cells are Stage 2B validation). These sample counts do not include MS, MSD, or DUP's.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 4, 2012
LDC Report Date:	February 8, 2013
Matrix:	Water
Parameters:	Volatiles
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J138

Sample Identification

RL-1S-100412
RL-1S-100412MS

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
10/6/12	Acetone 2-Butanone n-Butylbenzene sec-Butylbenzene Chloroethane Trichlorofluoromethane	32.4 27.8 24.9 20.5 79.7 48.6	RL-1S-100412 1210190-MB	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A
10/6/12	Bromomethane Chloromethane 4-Methyl-2-pentanone	23.9 43.9 21.5	RL-1S-100412 1210190-MB	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID	Compound	%R (Limits)	Associated Samples	Flag	A or P
1210190-LCS	Acetone	152 (60-140)	All samples in SDG A12J138	J (all detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to calibration %D problems, data were qualified as estimated in one sample.

No data were qualified due to high LCS %Rs, the associated results were non-detected.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Volatiles - Data Qualification Summary - SDG A12J138

SDG	Sample	Compound	Flag	A or P	Reason
A12J138	RL-1S-100412	Acetone 2-Butanone n-Butylbenzene sec-Butylbenzene Chloroethane Trichlorofluoromethane	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A	Continuing calibration (%D)
A12J138	RL-1S-100412	Bromomethane Chloromethane 4-Methyl-2-pentanone	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
A12J138	RL-1S-100412	Acetone	J (all detects)	P	Laboratory control samples (%R)

Millennium Bulk Terminals
Volatiles - Laboratory Blank Data Qualification Summary - SDG A12J138

No Sample Data Qualified in this SDG

LDC #: 29157A1

SDG #: A12J138

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 2/6/13

Page: 1 of 1

Reviewer: PR

2nd Reviewer: ✓

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/4/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 15/30, 1st
IV.	Continuing calibration/ICV	SW	ICV ≤ 30 CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	MS only
VIII.	Laboratory control samples	SW	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

water

1 1	RL-1S-100412	11 1	1210190	21		31	
2 2	#1 MS	12 2	1210184	22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	U. 1,1,2-Trichloroethene	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride**	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform*	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene**	BB. 1,1,2,2-Tetrachloroethane*	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane*	CC. Toluene**	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene*	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform**	EE. Ethylbenzene**	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN.
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane**	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVV.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 29157A1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ~~≤25%~~ 20 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ~~≤25.0%~~ 20)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
+	10/6/12	YA100602-CCV	F	32.4	~~32.4~~	1210190-MB, 1	J/A det
-	9:51		B	23.9			J/UJ/A
+			M	27.8			J/A det
+			III	24.9			
+			EEE	20.5			
+			D	79.7			
-			A	43.9			J/UJ/A
-			Y	21.5			
+			KK	48.6			J/Adet

CONCAL_8260B.1S

LDC #: 29157A /

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of
Reviewer: FT
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?

Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		LCS 1210190	F	152 (60-140)	( )	( )	All	J/Pdet
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		
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LDC Report# 29157A2a

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 4, 2012
LDC Report Date:	February 8, 2013
Matrix:	Water
Parameters:	Semivolatiles
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J138

Sample Identification

RL-1S-100412

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270D for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
10/9/12	Carbazole 3,3'-Dichlorobenzidine 2,4-Dinitrophenol 4,6-Dinitro-2-methylphenol	20.8 23.4 27.6 26.2	1210238-MB	J (all detects) J (all detects) J (all detects) J (all detects)	A
10/10/12	2,4-Dichlorophenol 4-Nitroaniline Benzoic acid	21.7 49.2 23.6	RL-1S-100412	J (all detects) J (all detects) J (all detects)	A
10/10/12	3,3'-Dichlorobenzidine	31.8	RL-1S-100412	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
1210238-LCS/D (All samples in SDG A12J138)	4-Nitrophenol	34 (60-140)	36 (60-140)	-	J (all detects)	P
	Phenol	32 (60-140)	32 (60-140)	-	UJ (all non-detects)	
	N-Nitrosodimethylamine	45 (60-140)	44 (60-140)	-		
	Hexachlorobutadiene	59 (60-140)	54 (60-140)	-		
	Hexachloroethane	58 (60-140)	53 (60-140)	-		
	1,2-Dichlorobenzene	59 (60-140)	56 (60-140)	-		
	1,3-Dichlorobenzene	55 (60-140)	51 (60-140)	-		
	1,4-Dichlorobenzene	57 (60-140)	52 (60-140)	-		
	Aniline	58 (60-140)	49 (60-140)	-		
	4-Chloroaniline	42 (60-140)	36 (60-140)	-		
	Pyridine	50 (60-140)	55 (60-140)	-		
	4-Nitroaniline	-	59 (60-140)	-		
	3-Nitroaniline	-	50 (60-140)	-		
	2,4-Dimethylphenol	-	50 (60-140)	-		
	2-Nitroaniline	-	27 (60-140)	82 (≤30)		

Should be 3,3'-dichlorobenzidine

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to calibration %D and LCS %R and RPD problems, data were qualified as estimated in one sample.

The quality control criteria reviewed were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Semivolatiles - Data Qualification Summary - SDG A12J138

SDG	Sample	Compound	Flag	A or P	Reason
A12J138	RL-1S-100412	2,4-Dichlorophenol 4-Nitroaniline Benzoic acid	J (all detects) J (all detects) J (all detects)	A	Continuing calibration (%D)
A12J138	RL-1S-100412	3,3'-Dichlorobenzidine	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
A12J138	RL-1S-100412	4-Nitrophenol Phenol N-Nitrosodimethylamine Hexachlorobutadiene Hexachloroethane 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Aniline 4-Chloroaniline Pyridine 4-Nitroaniline 3-Nitroaniline 2,4-Dimethylphenol	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)
A12J138	RL-1S-100412	2-Nitroaniline	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)(RPD)

Should be 3,3'-dichlorobenzidine

Millennium Bulk Terminals
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG A12J138

No Sample Data Qualified in this SDG

LDC #: 29157A2a

SDG #: A12J138

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 2/6/13

Page: 1 of 1

Reviewer: FD

2nd Reviewer: ✓

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/4/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20, r²
IV.	Continuing calibration/ICV	SW	ICV ≤ 30 CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	SW	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Water

1 + 1	2-5 RL-1S-100412	11 1	1210238	21		31	
2		12 2	1210349	22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1-Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU.
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 09157A29

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ≤20 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤20.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
+	10/09/12	E10091212-CCV	WW	20.8		1210238-MB	J/A det
+			BBB	23.4		↓	↓
+			HH	27.6		↓	
+			PP	26.2		↓	
+	10/10/12	E10101204-CCV	Q	21.7		1	J/A det
-			BBB	31.8			J/US/A
+			OO	49.2		↓	J/A det
+			PPP	23.6		↓	J/A det

LDC #: 29257A29

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?

Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		1210238-LCS/D	II	34 (60-140)	36 (60-140)	(30)	All	J/UJ/P
			A	32 ( )	32 ( )	( )		
			OOO	45 ( )	44 ( )	( )		
			U	59 ( )	54 ( )	( )		
			K	58 ( )	53 ( )	( )		
			F	59 ( )	56 ( )	( )		
			D	55 ( )	51 ( )	( )		
			E	57 ( )	52 ( )	( )		
			NNN	58 ( )	49 ( )	( )		
			T	42 ( )	36 ( )	( )		
			RRR	50 (✓)	55 ( )	( )		
			O	( )	50 ( )	( )		
			FF	( )	50 ( )	( )		
			OO	( )	59 ( )	(✓)		
			BB	( )	27 (✓)	82 (30)	✓	✓
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 4, 2012
LDC Report Date:	February 5, 2013
Matrix:	Water
Parameters:	Polychlorinated Biphenyls
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J138

Sample Identification

RL-1S-100412

Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082A for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

Raw data were not reviewed for this SDG.

XIII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XV. Field Duplicates

No field duplicates were identified in this SDG.

XVI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polychlorinated Biphenyls - Data Qualification Summary - SDG A12J138

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG A12J138

No Sample Data Qualified in this SDG

LDC #: 29157A3b

VALIDATION COMPLETENESS WORKSHEET

Date: 02/01/2013

SDG #: A12J138

Stage 2B

Page: 1 of 1

Laboratory: APEX Laboratories, LLC

Reviewer: SW

2nd Reviewer: [illegible]

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/04/2012
II.	GC/ECD Instrument Performance Check	N	
III.	Initial calibration	A	RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV / CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	CS
VIII.	Laboratory control samples	A	LCS / LCSD
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	N	
XIII.	Compound quantitation/RL/LOQ/LODs	N	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

WATER

1	RL-1S-100412	11		21		31	1210281-BLK1
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 4, 2012
LDC Report Date:	February 7, 2013
Matrix:	Water
Parameters:	Metals
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J138

Sample Identification

G1-S-100412
G1-D-100412
G3-S-100412
G3-D-100412
RLSW-1-100412
G5-S-100412
G5-D-100412
RL-1S-100412
G1-S-100412F
G1-D-100412F
G3-S-100412F
G3-D-100412F
RLSW-1-100412F
G5-S-100412F
G5-D-100412F
RL-1S-100412F
RL-1S-100412MS
RL-1S-100412FMS

Samples appended with "F" were analyzed for dissolved metals

Introduction

This data review covers 18 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 200.7 and 200.8 for Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Beryllium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Thallium, and Zinc.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Arsenic Chromium Manganese	0.589 ug/L 0.933 ug/L 3.17 ug/L	G1-S-100412 G1-D-100412 G3-S-100412 G3-D-100412 RLSW-1-100412 G5-S-100412 G5-D-100412 RL-1S-100412
ICB/CCB	Chromium	0.550 ug/L	G1-S-100412 RLSW-1-100412
ICB/CCB	Manganese	0.520 ug/L	G1-D-100412 G3-S-100412 G3-D-100412 G5-S-100412 RL-1S-100412
ICB/CCB	Iron Potassium	28.2 ug/L 63.9 ug/L	G1-D-100412F G3-S-100412F G3-D-100412F G5-S-100412F G5-D-100412F RL-1S-100412F

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this method.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to method blank contamination problems, data were qualified as not detected in five samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Metals - Data Qualification Summary - SDG A12J138

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Metals - Laboratory Blank Data Qualification Summary - SDG A12J138

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
A12J138	G1-S-100412	Arsenic Chromium	0.956U ug/L 0.622U ug/L	A
A12J138	G1-D-100412	Chromium	2.78U ug/L	A
A12J138	RLSW-1-100412	Chromium	1.94U ug/L	A
A12J138	G5-D-100412	Chromium	0.711U ug/L	A
A12J138	RL-1S-100412	Arsenic Chromium	1.51U ug/L 2.00U ug/L	A

LDC #: 29157A4

SDG #: A12J138

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/31/13

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: Metals (EPA ~~SW846~~ Method 200.7/200.8)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/4/12
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	SW	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	A	MS
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Water

1	G1-S-100412	11	G3-S-100412F	21		31	
2	G1-D-100412	12	G3-D-100412F	22		32	
3	G3-S-100412	13	RLSW-1-100412F	23		33	
4	G3-D-100412	14	G5-S-100412F	24		34	
5	RLSW-1-100412	15	G5-D-100412F	25		35	
6	G5-S-100412	16	RL-1S-100412F	26		36	
7	G5-D-100412	17	RL-1S-100412MS	27		37	
8	RL-1S-100412	18	RL-1S-100412FMS	28		38	
9	G1-S-100412F	19	~~(MS)~~ MSD	29		39	
10	G1-D-100412F	20		30		40	

Notes: Samples appended with "F" were analyzed as dissolved.

LDC #: 29151A4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer: V

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-7, 9-15		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
8, 16		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
QC:17		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, Si
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,

Comments: Mercury by CVAA if performed

LDC #: 29157A4

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: OL
2nd Reviewer: W

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000) Soil preparation factor applied: NA

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: 1-8

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	1	2	5	7	8				
As		0.589		2.945	0.956				1.51				
Cr		0.933		4.665	0.622	2.78	1.94	0.711	2.00				
Mn		3.17		15.85									

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: 1, 5

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	1	5							
Cr			0.550	2.75	See PB	See PB							

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: 2-4, 6, 8

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	No Qualifiers								
Mn			0.520	2.6									

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: 10-12, 14-16

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	No Qualifiers								
Fe			28.2	141									
K			63.9	319.5									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC Report# 29157A6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 4, 2012
LDC Report Date:	February 1, 2013
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12J138

Sample Identification

G1-S-100412
G1-D-100412
G3-S-100412
G3-D-100412
RLSW-1-100412
G5-S-100412
G5-D-100412
RL-1S-100412
G1-S-100412MS
G1-S-100412DUP
G1-D-100412MS
G1-D-100412DUP
G3-S-100412MS
G3-S-100412DUP

Introduction

This data review covers 14 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2320B for Alkalinity, EPA Method 300.0 for Chloride and Sulfate, EPA Method 335.4 for Total Cyanide and Dissolved Cyanide, Standard Method 4500-CN-I-E for Weak Acid Dissociable Cyanide and Dissolved Weak Acid Dissociable Cyanide, ASTM D4282 for Free Cyanide and Dissolved Free Cyanide, Standard Method 4500-F-C for Fluoride and Dissolved Fluoride, Standard Method 4500-P-B for Phosphorus, Standard Method 2540C for Total Dissolved Solids, and Standard Method 2540D for Total Suspended Solids.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
G1-D-100412MS (All samples in SDG A12J138)	Dissolved free cyanide	38 (80-120)	J (all detects) UJ (all non-detects)	A

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS %R problems, data were qualified as estimated in eight samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A12J138

SDG	Sample	Analyte	Flag	A or P	Reason
A12J138	G1-S-100412 G1-D-100412 G3-S-100412 G3-D-100412 RLSW-1-100412 G5-S-100412 G5-D-100412 RL-1S-100412	Dissolved free cyanide	J (all detects) UJ (all non-detects)	A	Matrix spike (%R)

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A12J138

No Sample Data Qualified in this SDG

LDC #: 29157A6

SDG #: A12J138

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/31/13

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: (Analyte) Alkalinity (SM2320B), Chloride, Sulfate (EPA Method 300.0), Total Cyanide, Dissolved Cyande (EPA Method 335.4), WAD Cyanide, Dissolved WAD Cyanide (~~EPA SW846 Method 9013M/~~SM4500--CN-I-E), Free Cyanide, Dissolved Free Cyanide (ASTM D4282), Fluoride, Dissolved Fluoride (SM4500-F-C), Phosphours (SM4500-P-B) TDS (SM2540C), TSS (SM2540D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/4/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	SW	MS
VI.	Duplicates	N	Dup
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	G1-S-100412	11	G1-D-100412MS	21		31	
2	G1-D-100412	12	G1-D-100412DUP	22		32	
3	G3-S-100412	13	G3-S-100412MS	23		33	
4	G3-D-100412	14	G3-S-100412DUP	24		34	
5	RLSW-1-100412	15		25		35	
6	G5-S-100412	16		26		36	
7	G5-D-100412	17		27		37	
8	RL-1S-100412	18		28		38	
9	G1-S-100412MS	19		29		39	
10	G1-S-100412DUP	20		30		40	

Notes:

LDC #: 29157A6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer: ✓

All circled methods are applicable to each sample.

Sample ID	Parameter
1-8	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Diss F WAD CN Free CN Diss CN Diss WAD CN Diss Free CN N TSS
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
QC: 9	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Diss F Free CN
10	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Diss F Free CN TSS
11	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Diss Free CN
12	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Diss Free CN
13	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
14	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

LDC #: 29157A6

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: CL
2nd Reviewer: [illegible]

METHOD: Inorganics, Method see cover

Please see qualifications below for all questions answered "N". Not applicable questions ~~are~~ identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of ~~75-125~~ 80-120 (85-115% for Method 300.0)? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
		11	W	Diss. Free CN	38	All	J/UJ/A

Comments:

Millennium Bulk Terminals - LDC# 29157

SDG: A12J138

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-100412	A12J138-02	Cyanide, free	10/5/2012	0.0099		Yes	Y		J	8	0.00500	0.00200	mg/L
G1-D-100412	A12J138-02	Cyanide, free	10/5/2012	0.0097		Yes	Y				0.00500	0.00200	mg/L
G1-S-100412	A12J138-01	Cyanide, free	10/5/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
G1-S-100412	A12J138-01	Cyanide, free	10/5/2012	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
G3-D-100412	A12J138-04	Cyanide, free	10/5/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
G3-D-100412	A12J138-04	Cyanide, free	10/5/2012	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
G3-S-100412	A12J138-03	Cyanide, free	10/5/2012	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
G3-S-100412	A12J138-03	Cyanide, free	10/5/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
G5-D-100412	A12J138-07	Cyanide, free	10/5/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
G5-D-100412	A12J138-07	Cyanide, free	10/5/2012	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
G5-S-100412	A12J138-06	Cyanide, free	10/5/2012	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
G5-S-100412	A12J138-06	Cyanide, free	10/5/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
RL-1S-100412	A12J138-08	Cyanide, free	10/5/2012	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L
RL-1S-100412	A12J138-08	Cyanide, free	10/5/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
RLSW-1-100412	A12J138-05	Cyanide, free	10/5/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
RLSW-1-100412	A12J138-05	Cyanide, free	10/5/2012	0.005		Yes	N	U	UJ	8	0.00500	0.00200	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-100412	A12J138-02	Silicon	10/12/2012	37.3		Yes	Y				0.100	0.0500	mg/L
G1-D-100412	A12J138-02	Silicon	10/12/2012	37.6		Yes	Y				0.100	0.0500	mg/L
G1-S-100412	A12J138-01	Silicon	10/12/2012	15.3		Yes	Y				0.100	0.0500	mg/L
G1-S-100412	A12J138-01	Silicon	10/12/2012	15		Yes	Y				0.100	0.0500	mg/L
G3-D-100412	A12J138-04	Silicon	10/12/2012	27.6		Yes	Y				0.100	0.0500	mg/L
G3-D-100412	A12J138-04	Silicon	10/12/2012	26.5		Yes	Y				0.100	0.0500	mg/L

Analytical Method E200.7

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G3-S-100412	A12J138-03	Silicon	10/12/2012	27.4		Yes	Y				0.100	0.0500	mg/L
G3-S-100412	A12J138-03	Silicon	10/12/2012	27.4		Yes	Y				0.100	0.0500	mg/L
G5-D-100412	A12J138-07	Silicon	10/12/2012	35		Yes	Y				0.100	0.0500	mg/L
G5-D-100412	A12J138-07	Silicon	10/12/2012	34.3		Yes	Y				0.100	0.0500	mg/L
G5-S-100412	A12J138-06	Silicon	10/12/2012	33.8		Yes	Y				0.100	0.0500	mg/L
G5-S-100412	A12J138-06	Silicon	10/12/2012	33.5		Yes	Y				0.100	0.0500	mg/L
RL-1S-100412	A12J138-08	Silicon	10/12/2012	23.7		Yes	Y				0.100	0.0500	mg/L
RL-1S-100412	A12J138-08	Silicon	10/12/2012	22.9		Yes	Y				0.100	0.0500	mg/L
RLSW-1-100412	A12J138-05	Silicon	10/12/2012	24.5		Yes	Y				0.100	0.0500	mg/L
RLSW-1-100412	A12J138-05	Silicon	10/12/2012	24.8		Yes	Y				0.100	0.0500	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-100412	A12J138-02	Magnesium	10/18/2012	81800		Yes	Y	D			100	50.0	ug/L
G1-D-100412	A12J138-02	Copper	10/18/2012	8		Yes	N	D U			8.00	2.00	ug/L
G1-D-100412	A12J138-02	Chromium	10/18/2012	2.49		Yes	Y	D J			4.00	1.00	ug/L
G1-D-100412	A12J138-02	Aluminum	10/18/2012	100		Yes	N	D U			100	50.0	ug/L
G1-D-100412	A12J138-02	Arsenic	10/18/2012	15.1		Yes	Y	D			4.00	1.00	ug/L
G1-D-100412	A12J138-02	Potassium	10/18/2012	2750		Yes	Y	D			400	100	ug/L
G1-D-100412	A12J138-02	Nickel	10/18/2012	4.91		Yes	Y	D			4.00	1.00	ug/L
G1-D-100412	A12J138-02	Iron	10/18/2012	220000		Yes	Y	D			1000	250	ug/L
G1-D-100412	A12J138-02	Manganese	10/18/2012	5420		Yes	Y	D			10.0	5.00	ug/L
G1-D-100412	A12J138-02	Calcium	10/18/2012	167000		Yes	Y	D			1000	500	ug/L
G1-D-100412	A12J138-02	Sodium	10/18/2012	277000		Yes	Y	D			1000	500	ug/L
G1-D-100412	A12J138-02	Aluminum	10/19/2012	61		Yes	Y	D J			100	50.0	ug/L
G1-D-100412	A12J138-02	Magnesium	10/19/2012	82100		Yes	Y	D			100	50.0	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-100412	A12J138-02	Potassium	10/19/2012	2780	Yes	Y	D			400	100	ug/L
G1-D-100412	A12J138-02	Arsenic	10/19/2012	16.2	Yes	Y	D			4.00	1.00	ug/L
G1-D-100412	A12J138-02	Copper	10/19/2012	4	Yes	N	D U			4.00	2.00	ug/L
G1-D-100412	A12J138-02	Chromium	10/19/2012	2.78	Yes	N	D J	U	7	8.00	1.00	ug/L
G1-D-100412	A12J138-02	Nickel	10/19/2012	5.76	Yes	Y	D			4.00	1.00	ug/L
G1-D-100412	A12J138-02	Calcium	10/19/2012	174000	Yes	Y	D			2000	1000	ug/L
G1-D-100412	A12J138-02	Iron	10/19/2012	218000	Yes	Y	D			4000	500	ug/L
G1-D-100412	A12J138-02	Manganese	10/19/2012	5420	Yes	Y	D			20.0	10.0	ug/L
G1-D-100412	A12J138-02	Sodium	10/19/2012	316	Yes	Y	D			2.00	1.00	mg/L
G1-S-100412	A12J138-01	Iron	10/18/2012	4830	Yes	Y				100	25.0	ug/L
G1-S-100412	A12J138-01	Manganese	10/18/2012	642	Yes	Y				1.00	0.500	ug/L
G1-S-100412	A12J138-01	Nickel	10/18/2012	2.88	Yes	Y				2.00	0.500	ug/L
G1-S-100412	A12J138-01	Arsenic	10/18/2012	0.933	Yes	Y	J			2.00	0.500	ug/L
G1-S-100412	A12J138-01	Chromium	10/18/2012	2	Yes	N	U			2.00	0.500	ug/L
G1-S-100412	A12J138-01	Copper	10/18/2012	2.29	Yes	Y	J			4.00	1.00	ug/L
G1-S-100412	A12J138-01	Potassium	10/19/2012	36900	Yes	Y				100	50.0	ug/L
G1-S-100412	A12J138-01	Aluminum	10/19/2012	427	Yes	Y				50.0	25.0	ug/L
G1-S-100412	A12J138-01	Magnesium	10/19/2012	61100	Yes	Y	D			500	250	ug/L
G1-S-100412	A12J138-01	Calcium	10/19/2012	124000	Yes	Y	D			1000	500	ug/L
G1-S-100412	A12J138-01	Sodium	10/19/2012	133000	Yes	Y	D			2000	500	ug/L
G1-S-100412	A12J138-01	Potassium	10/19/2012	38100	Yes	Y				100	50.0	ug/L
G1-S-100412	A12J138-01	Manganese	10/19/2012	681	Yes	Y				1.00	0.500	ug/L
G1-S-100412	A12J138-01	Nickel	10/19/2012	2.89	Yes	Y				2.00	0.500	ug/L
G1-S-100412	A12J138-01	Aluminum	10/19/2012	465	Yes	Y				50.0	25.0	ug/L
G1-S-100412	A12J138-01	Copper	10/19/2012	2.61	Yes	Y				2.00	1.00	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-S-100412	A12J138-01	Arsenic	10/19/2012	0.956		Yes	N	J	U	7	2.00	0.500	ug/L
G1-S-100412	A12J138-01	Chromium	10/19/2012	0.622		Yes	N	J	U	7	4.00	0.500	ug/L
G1-S-100412	A12J138-01	Iron	10/19/2012	5440		Yes	Y				50.0	25.0	ug/L
G1-S-100412	A12J138-01	Calcium	10/19/2012	128000		Yes	Y	D			1000	500	ug/L
G1-S-100412	A12J138-01	Sodium	10/19/2012	137		Yes	Y	D			2.00	0.500	mg/L
G1-S-100412	A12J138-01	Magnesium	10/19/2012	63800		Yes	Y	D			500	250	ug/L
G3-D-100412	A12J138-04	Copper	10/18/2012	4		Yes	N	U			4.00	1.00	ug/L
G3-D-100412	A12J138-04	Chromium	10/18/2012	2		Yes	N	U			2.00	0.500	ug/L
G3-D-100412	A12J138-04	Arsenic	10/18/2012	2.72		Yes	Y				2.00	0.500	ug/L
G3-D-100412	A12J138-04	Potassium	10/18/2012	5630		Yes	Y				200	50.0	ug/L
G3-D-100412	A12J138-04	Nickel	10/18/2012	2.3		Yes	Y				2.00	0.500	ug/L
G3-D-100412	A12J138-04	Manganese	10/18/2012	2070		Yes	Y				1.00	0.500	ug/L
G3-D-100412	A12J138-04	Magnesium	10/18/2012	37600		Yes	Y				50.0	25.0	ug/L
G3-D-100412	A12J138-04	Iron	10/18/2012	27800		Yes	Y				100	25.0	ug/L
G3-D-100412	A12J138-04	Aluminum	10/18/2012	50		Yes	N	U			50.0	25.0	ug/L
G3-D-100412	A12J138-04	Sodium	10/18/2012	142000		Yes	Y	D			500	250	ug/L
G3-D-100412	A12J138-04	Calcium	10/18/2012	70900		Yes	Y	D			500	250	ug/L
G3-D-100412	A12J138-04	Magnesium	10/19/2012	38400		Yes	Y				50.0	25.0	ug/L
G3-D-100412	A12J138-04	Copper	10/19/2012	1.06		Yes	Y	J			2.00	1.00	ug/L
G3-D-100412	A12J138-04	Chromium	10/19/2012	4		Yes	N	U			4.00	0.500	ug/L
G3-D-100412	A12J138-04	Arsenic	10/19/2012	5.37		Yes	Y				2.00	0.500	ug/L
G3-D-100412	A12J138-04	Potassium	10/19/2012	5730		Yes	Y				200	50.0	ug/L
G3-D-100412	A12J138-04	Manganese	10/19/2012	2140		Yes	Y				1.00	0.500	ug/L
G3-D-100412	A12J138-04	Aluminum	10/19/2012	295		Yes	Y				50.0	25.0	ug/L
G3-D-100412	A12J138-04	Iron	10/19/2012	33500		Yes	Y				200	25.0	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G3-D-100412	A12J138-04	Nickel	10/19/2012	2.49		Yes	Y				2.00	0.500	ug/L
G3-D-100412	A12J138-04	Sodium	10/19/2012	137		Yes	Y	D			0.500	0.250	mg/L
G3-D-100412	A12J138-04	Calcium	10/19/2012	73100		Yes	Y	D			500	250	ug/L
G3-S-100412	A12J138-03	Magnesium	10/18/2012	30800		Yes	Y	D			250	125	ug/L
G3-S-100412	A12J138-03	Arsenic	10/18/2012	24.1		Yes	Y	D			10.0	2.50	ug/L
G3-S-100412	A12J138-03	Nickel	10/18/2012	5.06		Yes	Y	D J			10.0	2.50	ug/L
G3-S-100412	A12J138-03	Potassium	10/18/2012	2250		Yes	Y	D			1000	250	ug/L
G3-S-100412	A12J138-03	Calcium	10/18/2012	54700		Yes	Y	D			500	250	ug/L
G3-S-100412	A12J138-03	Manganese	10/18/2012	3010		Yes	Y	D			5.00	2.50	ug/L
G3-S-100412	A12J138-03	Aluminum	10/18/2012	250		Yes	N	D U			250	125	ug/L
G3-S-100412	A12J138-03	Iron	10/18/2012	35600		Yes	Y	D			500	125	ug/L
G3-S-100412	A12J138-03	Chromium	10/18/2012	10		Yes	N	D U			10.0	2.50	ug/L
G3-S-100412	A12J138-03	Copper	10/18/2012	20		Yes	N	D U			20.0	5.00	ug/L
G3-S-100412	A12J138-03	Sodium	10/18/2012	452000		Yes	Y	D			2500	1250	ug/L
G3-S-100412	A12J138-03	Copper	10/19/2012	10		Yes	N	D U			10.0	5.00	ug/L
G3-S-100412	A12J138-03	Potassium	10/19/2012	2050		Yes	Y	D			1000	250	ug/L
G3-S-100412	A12J138-03	Aluminum	10/19/2012	155		Yes	Y	D J			250	125	ug/L
G3-S-100412	A12J138-03	Iron	10/19/2012	36000		Yes	Y	D			1000	125	ug/L
G3-S-100412	A12J138-03	Magnesium	10/19/2012	30000		Yes	Y	D			250	125	ug/L
G3-S-100412	A12J138-03	Manganese	10/19/2012	3000		Yes	Y	D			5.00	2.50	ug/L
G3-S-100412	A12J138-03	Nickel	10/19/2012	5.61		Yes	Y	D J			10.0	2.50	ug/L
G3-S-100412	A12J138-03	Calcium	10/19/2012	53200		Yes	Y	D			500	250	ug/L
G3-S-100412	A12J138-03	Chromium	10/19/2012	20		Yes	N	D U			20.0	2.50	ug/L
G3-S-100412	A12J138-03	Arsenic	10/19/2012	23.6		Yes	Y	D			10.0	2.50	ug/L
G3-S-100412	A12J138-03	Sodium	10/19/2012	451		Yes	Y	D			2.00	1.00	mg/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G5-D-100412	A12J138-07	Nickel	10/18/2012	0.633		Yes	Y	J			2.00	0.500	ug/L
G5-D-100412	A12J138-07	Potassium	10/18/2012	2230		Yes	Y				200	50.0	ug/L
G5-D-100412	A12J138-07	Iron	10/18/2012	46100		Yes	Y				100	25.0	ug/L
G5-D-100412	A12J138-07	Manganese	10/18/2012	2120		Yes	Y				1.00	0.500	ug/L
G5-D-100412	A12J138-07	Magnesium	10/18/2012	13900		Yes	Y				50.0	25.0	ug/L
G5-D-100412	A12J138-07	Aluminum	10/18/2012	50		Yes	N	U			50.0	25.0	ug/L
G5-D-100412	A12J138-07	Calcium	10/18/2012	37000		Yes	Y				100	50.0	ug/L
G5-D-100412	A12J138-07	Copper	10/18/2012	4		Yes	N	U			4.00	1.00	ug/L
G5-D-100412	A12J138-07	Arsenic	10/18/2012	4.3		Yes	Y				2.00	0.500	ug/L
G5-D-100412	A12J138-07	Chromium	10/18/2012	2		Yes	N	U			2.00	0.500	ug/L
G5-D-100412	A12J138-07	Sodium	10/18/2012	8240		Yes	Y				100	50.0	ug/L
G5-D-100412	A12J138-07	Calcium	10/19/2012	37800		Yes	Y				100	50.0	ug/L
G5-D-100412	A12J138-07	Copper	10/19/2012	2		Yes	N	U			2.00	1.00	ug/L
G5-D-100412	A12J138-07	Chromium	10/19/2012	0.711		Yes	N	J	U	7	4.00	0.500	ug/L
G5-D-100412	A12J138-07	Arsenic	10/19/2012	4.66		Yes	Y				2.00	0.500	ug/L
G5-D-100412	A12J138-07	Sodium	10/19/2012	8.24		Yes	Y				0.100	0.0500	mg/L
G5-D-100412	A12J138-07	Potassium	10/19/2012	2260		Yes	Y				200	50.0	ug/L
G5-D-100412	A12J138-07	Nickel	10/19/2012	0.856		Yes	Y	J			2.00	0.500	ug/L
G5-D-100412	A12J138-07	Manganese	10/19/2012	2150		Yes	Y				1.00	0.500	ug/L
G5-D-100412	A12J138-07	Magnesium	10/19/2012	14200		Yes	Y				50.0	25.0	ug/L
G5-D-100412	A12J138-07	Iron	10/19/2012	46500		Yes	Y				200	25.0	ug/L
G5-D-100412	A12J138-07	Aluminum	10/19/2012	131		Yes	Y				50.0	25.0	ug/L
G5-S-100412	A12J138-06	Chromium	10/18/2012	2		Yes	N	U			2.00	0.500	ug/L
G5-S-100412	A12J138-06	Sodium	10/18/2012	10200		Yes	Y				100	50.0	ug/L
G5-S-100412	A12J138-06	Potassium	10/18/2012	2590		Yes	Y				200	50.0	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G5-S-100412	A12J138-06	Aluminum	10/18/2012	50		Yes	N	U			50.0	25.0	ug/L
G5-S-100412	A12J138-06	Magnesium	10/18/2012	19900		Yes	Y				50.0	25.0	ug/L
G5-S-100412	A12J138-06	Nickel	10/18/2012	1.17		Yes	Y	J			2.00	0.500	ug/L
G5-S-100412	A12J138-06	Arsenic	10/18/2012	10.1		Yes	Y				2.00	0.500	ug/L
G5-S-100412	A12J138-06	Copper	10/18/2012	4		Yes	N	U			4.00	1.00	ug/L
G5-S-100412	A12J138-06	Iron	10/18/2012	67100		Yes	Y	D			500	125	ug/L
G5-S-100412	A12J138-06	Manganese	10/18/2012	3510		Yes	Y	D			5.00	2.50	ug/L
G5-S-100412	A12J138-06	Calcium	10/18/2012	53600		Yes	Y	D			500	250	ug/L
G5-S-100412	A12J138-06	Nickel	10/19/2012	1.29		Yes	Y	J			2.00	0.500	ug/L
G5-S-100412	A12J138-06	Magnesium	10/19/2012	19800		Yes	Y				50.0	25.0	ug/L
G5-S-100412	A12J138-06	Aluminum	10/19/2012	39		Yes	Y	J			50.0	25.0	ug/L
G5-S-100412	A12J138-06	Sodium	10/19/2012	10.5		Yes	Y				0.100	0.0500	mg/L
G5-S-100412	A12J138-06	Arsenic	10/19/2012	10.2		Yes	Y				2.00	0.500	ug/L
G5-S-100412	A12J138-06	Chromium	10/19/2012	4		Yes	N	U			4.00	0.500	ug/L
G5-S-100412	A12J138-06	Copper	10/19/2012	2		Yes	N	U			2.00	1.00	ug/L
G5-S-100412	A12J138-06	Potassium	10/19/2012	2550		Yes	Y				200	50.0	ug/L
G5-S-100412	A12J138-06	Calcium	10/19/2012	53900		Yes	Y	D			500	250	ug/L
G5-S-100412	A12J138-06	Manganese	10/19/2012	3590		Yes	Y	D			5.00	2.50	ug/L
G5-S-100412	A12J138-06	Iron	10/19/2012	67400		Yes	Y	D			1000	125	ug/L
RL-1S-100412	A12J138-08	Arsenic	10/18/2012	1.72		Yes	Y	J			2.00	0.500	ug/L
RL-1S-100412	A12J138-08	Aluminum	10/18/2012	134		Yes	Y				50.0	25.0	ug/L
RL-1S-100412	A12J138-08	Mercury	10/18/2012	0.08		Yes	N	U			0.0800	0.0400	ug/L
RL-1S-100412	A12J138-08	Nickel	10/18/2012	2.94		Yes	Y				2.00	0.500	ug/L
RL-1S-100412	A12J138-08	Potassium	10/18/2012	654		Yes	Y				200	50.0	ug/L
RL-1S-100412	A12J138-08	Silver	10/18/2012	1		Yes	N	U			1.00	0.500	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-1S-100412	A12J138-08	Thallium	10/18/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08	Antimony	10/18/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08	Beryllium	10/18/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08	Cadmium	10/18/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08	Chromium	10/18/2012	1.94		Yes	Y	J			2.00	0.500	ug/L
RL-1S-100412	A12J138-08	Copper	10/18/2012	4		Yes	N	U			4.00	1.00	ug/L
RL-1S-100412	A12J138-08	Zinc	10/18/2012	2.92		Yes	Y	J			4.00	2.00	ug/L
RL-1S-100412	A12J138-08	Calcium	10/18/2012	14800		Yes	Y				100	50.0	ug/L
RL-1S-100412	A12J138-08	Manganese	10/18/2012	384		Yes	Y				1.00	0.500	ug/L
RL-1S-100412	A12J138-08	Magnesium	10/18/2012	6940		Yes	Y				50.0	25.0	ug/L
RL-1S-100412	A12J138-08	Iron	10/18/2012	10000		Yes	Y				100	25.0	ug/L
RL-1S-100412	A12J138-08	Selenium	10/18/2012	2		Yes	N	U			2.00	1.00	ug/L
RL-1S-100412	A12J138-08	Lead	10/18/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08	Sodium	10/18/2012	82900		Yes	Y	D			500	250	ug/L
RL-1S-100412	A12J138-08	Selenium	10/19/2012	2		Yes	N	U			2.00	1.00	ug/L
RL-1S-100412	A12J138-08	Mercury	10/19/2012	0.08		Yes	N	U			0.0800	0.0400	ug/L
RL-1S-100412	A12J138-08	Nickel	10/19/2012	3.17		Yes	Y				2.00	0.500	ug/L
RL-1S-100412	A12J138-08	Calcium	10/19/2012	14900		Yes	Y				100	50.0	ug/L
RL-1S-100412	A12J138-08	Zinc	10/19/2012	3.9		Yes	Y	J			4.00	2.00	ug/L
RL-1S-100412	A12J138-08	Copper	10/19/2012	2.4		Yes	Y				2.00	1.00	ug/L
RL-1S-100412	A12J138-08	Chromium	10/19/2012	2		Yes	N	J	U	7	4.00	0.500	ug/L
RL-1S-100412	A12J138-08	Cadmium	10/19/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08	Aluminum	10/19/2012	352		Yes	Y				50.0	25.0	ug/L
RL-1S-100412	A12J138-08	Arsenic	10/19/2012	1.51		Yes	N	J	U	7	2.00	0.500	ug/L
RL-1S-100412	A12J138-08	Antimony	10/19/2012	1		Yes	N	U			1.00	0.500	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-1S-100412	A12J138-08	Potassium	10/19/2012	657		Yes	Y				200	50.0	ug/L
RL-1S-100412	A12J138-08	Thallium	10/19/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08	Silver	10/19/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08	Manganese	10/19/2012	408		Yes	Y				1.00	0.500	ug/L
RL-1S-100412	A12J138-08	Magnesium	10/19/2012	6960		Yes	Y				50.0	25.0	ug/L
RL-1S-100412	A12J138-08	Lead	10/19/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08	Iron	10/19/2012	11800		Yes	Y				200	25.0	ug/L
RL-1S-100412	A12J138-08	Beryllium	10/19/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08	Sodium	10/19/2012	79.3		Yes	Y	D			0.500	0.250	mg/L
RLSW-1-100412	A12J138-05	Chromium	10/18/2012	10		Yes	N	D U			10.0	2.50	ug/L
RLSW-1-100412	A12J138-05	Arsenic	10/18/2012	5.61		Yes	Y	D J			10.0	2.50	ug/L
RLSW-1-100412	A12J138-05	Nickel	10/18/2012	6.28		Yes	Y	D J			10.0	2.50	ug/L
RLSW-1-100412	A12J138-05	Iron	10/18/2012	8200		Yes	Y	D			500	125	ug/L
RLSW-1-100412	A12J138-05	Copper	10/18/2012	20		Yes	N	D U			20.0	5.00	ug/L
RLSW-1-100412	A12J138-05	Manganese	10/18/2012	485		Yes	Y	D			5.00	2.50	ug/L
RLSW-1-100412	A12J138-05	Calcium	10/19/2012	20400		Yes	Y	D			500	250	ug/L
RLSW-1-100412	A12J138-05	Aluminum	10/19/2012	144		Yes	Y	D J			250	125	ug/L
RLSW-1-100412	A12J138-05	Potassium	10/19/2012	1700		Yes	Y	D			500	250	ug/L
RLSW-1-100412	A12J138-05	Sodium	10/19/2012	555000		Yes	Y	D			5000	1250	ug/L
RLSW-1-100412	A12J138-05	Magnesium	10/19/2012	11400		Yes	Y	D			1250	625	ug/L
RLSW-1-100412	A12J138-05	Chromium	10/19/2012	1.94		Yes	N	J	U	7	4.00	0.500	ug/L
RLSW-1-100412	A12J138-05	Calcium	10/19/2012	21100		Yes	Y				100	50.0	ug/L
RLSW-1-100412	A12J138-05	Copper	10/19/2012	1.07		Yes	Y	J			2.00	1.00	ug/L
RLSW-1-100412	A12J138-05	Potassium	10/19/2012	1910		Yes	Y				100	50.0	ug/L
RLSW-1-100412	A12J138-05	Manganese	10/19/2012	481		Yes	Y				1.00	0.500	ug/L

Analytical Method E200.8

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-1-100412	A12J138-05	Iron	10/19/2012	8220		Yes	Y				50.0	25.0	ug/L
RLSW-1-100412	A12J138-05	Aluminum	10/19/2012	170		Yes	Y				50.0	25.0	ug/L
RLSW-1-100412	A12J138-05	Arsenic	10/19/2012	4.99		Yes	Y				2.00	0.500	ug/L
RLSW-1-100412	A12J138-05	Nickel	10/19/2012	3.97		Yes	Y				2.00	0.500	ug/L
RLSW-1-100412	A12J138-05	Sodium	10/19/2012	561		Yes	Y	D			5.00	1.25	mg/L
RLSW-1-100412	A12J138-05	Magnesium	10/19/2012	11500		Yes	Y	D			1250	625	ug/L

Analytical Method E300.0

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-100412	A12J138-02	Sulfate	10/6/2012	1		Yes	N	U			1.00	1.00	mg/L
G1-D-100412	A12J138-02RE1	Chloride (total)	10/8/2012	431		Yes	Y	D			50.0	50.0	mg/L
G1-S-100412	A12J138-01	Chloride (total)	10/6/2012	15.7		Yes	Y				1.00	1.00	mg/L
G1-S-100412	A12J138-01RE1	Sulfate	10/8/2012	333		Yes	Y	D			50.0	50.0	mg/L
G3-D-100412	A12J138-04	Sulfate	10/6/2012	3.38		Yes	Y				1.00	1.00	mg/L
G3-D-100412	A12J138-04RE1	Chloride (total)	10/8/2012	58		Yes	Y	D			5.00	5.00	mg/L
G3-S-100412	A12J138-03	Sulfate	10/6/2012	1		Yes	N	U			1.00	1.00	mg/L
G3-S-100412	A12J138-03RE1	Chloride (total)	10/8/2012	85		Yes	Y	D			5.00	5.00	mg/L
G5-D-100412	A12J138-07	Sulfate	10/6/2012	1		Yes	N	U			1.00	1.00	mg/L
G5-D-100412	A12J138-07	Chloride (total)	10/6/2012	15.2		Yes	Y				1.00	1.00	mg/L
G5-S-100412	A12J138-06	Sulfate	10/6/2012	1		Yes	N	U			1.00	1.00	mg/L
G5-S-100412	A12J138-06	Chloride (total)	10/6/2012	3.93		Yes	Y				1.00	1.00	mg/L
RL-1S-100412	A12J138-08	Chloride (total)	10/6/2012	3.74		Yes	Y				1.00	1.00	mg/L
RL-1S-100412	A12J138-08	Sulfate	10/6/2012	1.5		Yes	Y				1.00	1.00	mg/L
RLSW-1-100412	A12J138-05	Chloride (total)	10/6/2012	9.42		Yes	Y				1.00	1.00	mg/L
RLSW-1-100412	A12J138-05	Sulfate	10/6/2012	20.9		Yes	Y				1.00	1.00	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-100412	A12J138-02	Cyanide, total	10/5/2012	0.105		Yes	Y				0.00500	0.00500	mg/L
G1-D-100412	A12J138-02RE2	Cyanide, total	10/16/2012	0.0898		Yes	Y	D			0.0100	0.0100	mg/L
G1-S-100412	A12J138-01	Cyanide, total	10/5/2012	0.0062		Yes	Y				0.00500	0.00500	mg/L
G1-S-100412	A12J138-01RE2	Cyanide, total	10/16/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
G3-D-100412	A12J138-04	Cyanide, total	10/5/2012	0.0854		Yes	Y				0.00500	0.00500	mg/L
G3-D-100412	A12J138-04	Cyanide, total	10/16/2012	0.0852		Yes	Y				0.00500	0.00500	mg/L
G3-S-100412	A12J138-03	Cyanide, total	10/5/2012	0.0522		Yes	Y				0.00500	0.00500	mg/L
G3-S-100412	A12J138-03	Cyanide, total	10/16/2012	0.0527		Yes	Y				0.00500	0.00500	mg/L
G5-D-100412	A12J138-07	Cyanide, total	10/5/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
G5-D-100412	A12J138-07RE1	Cyanide, total	10/16/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
G5-S-100412	A12J138-06	Cyanide, total	10/5/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
G5-S-100412	A12J138-06RE1	Cyanide, total	10/16/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
RL-1S-100412	A12J138-08	Cyanide, total	10/5/2012	0.0144		Yes	Y				0.00500	0.00500	mg/L
RL-1S-100412	A12J138-08RE1	Cyanide, total	10/16/2012	0.0151		Yes	Y				0.00500	0.00500	mg/L
RLSW-1-100412	A12J138-05	Cyanide, total	10/5/2012	0.121		Yes	Y				0.00500	0.00500	mg/L
RLSW-1-100412	A12J138-05	Cyanide, total	10/16/2012	0.0875		Yes	Y				0.00500	0.00500	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-100412	A12J138-02	Alkalinity, total as calcium carbonate (CaCO3)	10/16/2012	962		Yes	Y				1.00	1.00	mg/L
G1-S-100412	A12J138-01	Alkalinity, total as calcium carbonate (CaCO3)	10/16/2012	569		Yes	Y				1.00	1.00	mg/L
G3-D-100412	A12J138-04	Alkalinity, total as calcium carbonate (CaCO3)	10/16/2012	554		Yes	Y				1.00	1.00	mg/L
G3-S-100412	A12J138-03	Alkalinity, total as calcium carbonate (CaCO3)	10/16/2012	1070		Yes	Y				1.00	1.00	mg/L
G5-D-100412	A12J138-07	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2012	160		Yes	Y				1.00	1.00	mg/L

Analytical Method SM2320B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G5-S-100412	A12J138-06	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2012	240		Yes	Y				1.00	1.00	mg/L
RL-1S-100412	A12J138-08	Alkalinity, total as calcium carbonate (CaCO3)	10/17/2012	230		Yes	Y				1.00	1.00	mg/L
RLSW-1-100412	A12J138-05	Alkalinity, total as calcium carbonate (CaCO3)	10/16/2012	1160		Yes	Y				1.00	1.00	mg/L

Analytical Method SM2540C

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-100412	A12J138-02	Total dissolved solids	10/15/2012	1910		Yes	Y				10.0	10.0	mg/L
G1-S-100412	A12J138-01	Total dissolved solids	10/15/2012	1110		Yes	Y				10.0	10.0	mg/L
G3-D-100412	A12J138-04	Total dissolved solids	10/15/2012	757		Yes	Y				10.0	10.0	mg/L
G3-S-100412	A12J138-03	Total dissolved solids	10/15/2012	1570		Yes	Y				10.0	10.0	mg/L
G5-D-100412	A12J138-07	Total dissolved solids	10/15/2012	313		Yes	Y				10.0	10.0	mg/L
G5-S-100412	A12J138-06	Total dissolved solids	10/15/2012	363		Yes	Y				10.0	10.0	mg/L
RL-1S-100412	A12J138-08	Total dissolved solids	10/15/2012	392		Yes	Y				10.0	10.0	mg/L
RLSW-1-100412	A12J138-05	Total dissolved solids	10/15/2012	1550		Yes	Y				10.0	10.0	mg/L

Analytical Method SM2540D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-100412	A12J138-02	Total suspended solids	10/12/2012	244		Yes	Y				5.00	5.00	mg/L
G1-S-100412	A12J138-01	Total suspended solids	10/12/2012	9		Yes	Y				5.00	5.00	mg/L
G3-D-100412	A12J138-04	Total suspended solids	10/12/2012	122		Yes	Y				5.00	5.00	mg/L
G3-S-100412	A12J138-03	Total suspended solids	10/12/2012	22		Yes	Y				5.00	5.00	mg/L
G5-D-100412	A12J138-07	Total suspended solids	10/12/2012	71		Yes	Y				5.00	5.00	mg/L
G5-S-100412	A12J138-06	Total suspended solids	10/12/2012	106		Yes	Y				5.00	5.00	mg/L
RL-1S-100412	A12J138-08	Total suspended solids	10/12/2012	15		Yes	Y				5.00	5.00	mg/L
RLSW-1-100412	A12J138-05	Total suspended solids	10/12/2012	5		Yes	N	U			5.00	5.00	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-100412	A12J138-02RE1	Cyanide, Weak acid dissociable (WAD)	10/12/2012	0.0354		Yes	Y	D			0.0100	0.0100	mg/L
G1-D-100412	A12J138-02RE2	Cyanide, Weak acid dissociable (WAD)	10/11/2012	0.0428		Yes	Y	D			0.0100	0.0100	mg/L
G1-S-100412	A12J138-01	Cyanide, Weak acid dissociable (WAD)	10/11/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
G1-S-100412	A12J138-01	Cyanide, Weak acid dissociable (WAD)	10/12/2012	0.0105		Yes	Y				0.00500	0.00500	mg/L
G3-D-100412	A12J138-04	Cyanide, Weak acid dissociable (WAD)	10/11/2012	0.0129		Yes	Y				0.00500	0.00500	mg/L
G3-D-100412	A12J138-04	Cyanide, Weak acid dissociable (WAD)	10/12/2012	0.0152		Yes	Y				0.00500	0.00500	mg/L
G3-S-100412	A12J138-03	Cyanide, Weak acid dissociable (WAD)	10/11/2012	0.0119		Yes	Y				0.00500	0.00500	mg/L
G3-S-100412	A12J138-03	Cyanide, Weak acid dissociable (WAD)	10/12/2012	0.0085		Yes	Y				0.00500	0.00500	mg/L
G5-D-100412	A12J138-07	Cyanide, Weak acid dissociable (WAD)	10/11/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
G5-D-100412	A12J138-07	Cyanide, Weak acid dissociable (WAD)	10/12/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
G5-S-100412	A12J138-06	Cyanide, Weak acid dissociable (WAD)	10/11/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
G5-S-100412	A12J138-06	Cyanide, Weak acid dissociable (WAD)	10/12/2012	0.0084		Yes	Y				0.00500	0.00500	mg/L
RL-1S-100412	A12J138-08	Cyanide, Weak acid dissociable (WAD)	10/11/2012	0.008		Yes	Y				0.00500	0.00500	mg/L
RL-1S-100412	A12J138-08	Cyanide, Weak acid dissociable (WAD)	10/12/2012	0.0078		Yes	Y				0.00500	0.00500	mg/L
RLSW-1-100412	A12J138-05	Cyanide, Weak acid dissociable (WAD)	10/11/2012	0.0137		Yes	Y				0.00500	0.00500	mg/L
RLSW-1-100412	A12J138-05	Cyanide, Weak acid dissociable (WAD)	10/12/2012	0.0081		Yes	Y				0.00500	0.00500	mg/L

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-100412	A12J138-02	Fluoride	10/8/2012	0.677		Yes	Y				0.100	0.100	mg/L
G1-D-100412	A12J138-02	Fluoride	10/12/2012	0.554		Yes	Y				0.100	0.100	mg/L
G1-S-100412	A12J138-01	Fluoride	10/8/2012	10.4		Yes	Y				0.100	0.100	mg/L
G1-S-100412	A12J138-01	Fluoride	10/12/2012	9.7		Yes	Y				0.100	0.100	mg/L
G3-D-100412	A12J138-04	Fluoride	10/8/2012	6.43		Yes	Y				0.100	0.100	mg/L
G3-D-100412	A12J138-04	Fluoride	10/12/2012	5.89		Yes	Y				0.100	0.100	mg/L
G3-S-100412	A12J138-03	Fluoride	10/8/2012	30.2		Yes	Y	D			2.50	2.50	mg/L

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G3-S-100412	A12J138-03	Fluoride	10/12/2012	28		Yes	Y	D			0.500	0.500	mg/L
G5-D-100412	A12J138-07	Fluoride	10/8/2012	0.246		Yes	Y				0.100	0.100	mg/L
G5-D-100412	A12J138-07	Fluoride	10/12/2012	0.193		Yes	Y				0.100	0.100	mg/L
G5-S-100412	A12J138-06	Fluoride	10/8/2012	0.223		Yes	Y				0.100	0.100	mg/L
G5-S-100412	A12J138-06	Fluoride	10/12/2012	0.189		Yes	Y				0.100	0.100	mg/L
RL-1S-100412	A12J138-08	Fluoride	10/8/2012	7.82		Yes	Y				0.100	0.100	mg/L
RL-1S-100412	A12J138-08	Fluoride	10/12/2012	7.35		Yes	Y				0.100	0.100	mg/L
RLSW-1-100412	A12J138-05	Fluoride	10/8/2012	56.9		Yes	Y	D			2.50	2.50	mg/L
RLSW-1-100412	A12J138-05	Fluoride	10/12/2012	50.7		Yes	Y	D			0.500	0.500	mg/L

Analytical Method SM4500P

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-100412	A12J138-02	Phosphorus	10/11/2012	1.24		Yes	Y				0.100	0.0100	mg/L
G1-S-100412	A12J138-01	Phosphorus	10/11/2012	1.22		Yes	Y				0.100	0.0100	mg/L
G3-D-100412	A12J138-04	Phosphorus	10/11/2012	0.592		Yes	Y				0.100	0.0100	mg/L
G3-S-100412	A12J138-03	Phosphorus	10/11/2012	2.65		Yes	Y	D			0.200	0.0200	mg/L
G5-D-100412	A12J138-07	Phosphorus	10/11/2012	1.47		Yes	Y				0.100	0.0100	mg/L
G5-S-100412	A12J138-06	Phosphorus	10/11/2012	1.49		Yes	Y				0.100	0.0100	mg/L
RL-1S-100412	A12J138-08	Phosphorus	10/11/2012	0.43		Yes	Y				0.100	0.0100	mg/L
RLSW-1-100412	A12J138-05	Phosphorus	10/11/2012	3.62		Yes	Y	D			0.200	0.0200	mg/L

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-1S-100412	A12J138-08	Aroclor 1254	10/11/2012	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RL-1S-100412	A12J138-08	Aroclor 1262	10/11/2012	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RL-1S-100412	A12J138-08	Aroclor 1242	10/11/2012	0.0189		Yes	N	U			0.0189	0.00943	ug/L
RL-1S-100412	A12J138-08	Aroclor 1248	10/11/2012	0.0189		Yes	N	U			0.0189	0.00943	ug/L

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-1S-100412	A12J138-08	Aroclor 1232	10/11/2012	0.0189	Yes	N	U			0.0189	0.00943	ug/L
RL-1S-100412	A12J138-08	Aroclor 1268	10/11/2012	0.0189	Yes	N	U			0.0189	0.00943	ug/L
RL-1S-100412	A12J138-08	Aroclor 1016	10/11/2012	0.0189	Yes	N	U			0.0189	0.00943	ug/L
RL-1S-100412	A12J138-08	Aroclor 1221	10/11/2012	0.0189	Yes	N	U			0.0189	0.00943	ug/L
RL-1S-100412	A12J138-08	Aroclor 1260	10/11/2012	0.0189	Yes	N	U			0.0189	0.00943	ug/L

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-1S-100412	A12J138-08RE1	Styrene	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	10/6/2012	10	Yes	N	U	UJ	5	10.0	5.00	ug/L
RL-1S-100412	A12J138-08RE1	1,2-Dichloroethane	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RL-1S-100412	A12J138-08RE1	Ethylene dibromide (1,2-Dibromoethane)	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RL-1S-100412	A12J138-08RE1	1,4-Dichlorobenzene	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RL-1S-100412	A12J138-08RE1	4-Chlorotoluene	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	n-Butylbenzene	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	n-Propylbenzene	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RL-1S-100412	A12J138-08RE1	1,3-Dichloropropene, cis-	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	Ethylbenzene	10/6/2012	0.5	Yes	N	U			0.500	0.250	ug/L
RL-1S-100412	A12J138-08RE1	1,2,3-Trichloropropane	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	1,2-Dibromo-3-chloropropane	10/6/2012	5	Yes	N	U			5.00	2.50	ug/L
RL-1S-100412	A12J138-08RE1	tert-Butylbenzene	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	4-Isopropyltoluene (4-Cymene)	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	Carbon disulfide	10/6/2012	10	Yes	N	U			10.0	5.00	ug/L
RL-1S-100412	A12J138-08RE1	Isopropylbenzene (Cumene)	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	1,3,5-Trimethylbenzene (Mesitylene)	10/6/2012	1	Yes	N	U			1.00	0.500	ug/L

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-1S-100412	A12J138-08RE1	1,3-Dichloropropene, trans-	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	o-Xylene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RL-1S-100412	A12J138-08RE1	Bromochloromethane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	Chloroethane	10/6/2012	5		Yes	N	U			5.00	5.00	ug/L
RL-1S-100412	A12J138-08RE1	1,2,4-Trimethylbenzene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	2-Butanone (MEK)	10/6/2012	10		Yes	N	U			10.0	5.00	ug/L
RL-1S-100412	A12J138-08RE1	Dichlorodifluoromethane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	Bromobenzene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RL-1S-100412	A12J138-08RE1	1,1,2-Trichloroethane	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RL-1S-100412	A12J138-08RE1	Trichloroethene (TCE)	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RL-1S-100412	A12J138-08RE1	1,1,2,2-Tetrachloroethane	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RL-1S-100412	A12J138-08RE1	Dibromomethane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	2-Chlorotoluene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	1,2-Dichloropropane	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RL-1S-100412	A12J138-08RE1	Trichlorofluoromethane (Fluorotrichloromethane)	10/6/2012	2		Yes	N	U			2.00	1.00	ug/L
RL-1S-100412	A12J138-08RE1	1,1-Dichloroethene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RL-1S-100412	A12J138-08RE1	1,1-Dichloroethane	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RL-1S-100412	A12J138-08RE1	Bromodichloromethane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	1,2,3-Trichlorobenzene	10/6/2012	2		Yes	N	U			2.00	1.00	ug/L
RL-1S-100412	A12J138-08RE1	Bromoform (Tribromomethane)	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	Dichloromethane (Methylene chloride)	10/6/2012	5		Yes	N	U			5.00	2.50	ug/L
RL-1S-100412	A12J138-08RE1	Vinyl chloride	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RL-1S-100412	A12J138-08RE1	Naphthalene	10/6/2012	2		Yes	N	U			2.00	1.00	ug/L
RL-1S-100412	A12J138-08RE1	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/6/2012	5		Yes	N	U			5.00	2.50	ug/L

Analytical Method SW8260B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-1S-100412	A12J138-08RE1	1,2-Dichlorobenzene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RL-1S-100412	A12J138-08RE1	Acetone	10/6/2012	20		Yes	N	U			20.0	10.0	ug/L
RL-1S-100412	A12J138-08RE1	m,p-Xylene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	1,3-Dichlorobenzene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RL-1S-100412	A12J138-08RE1	Carbon tetrachloride (Tetrachloromethane)	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RL-1S-100412	A12J138-08RE1	Methyl tert-butyl ether (MTBE)	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	Chloromethane	10/6/2012	5		Yes	N	U	UJ	5	5.00	2.50	ug/L
RL-1S-100412	A12J138-08RE1	1,2-Dichloroethene, trans-	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RL-1S-100412	A12J138-08RE1	1,2-Dichloroethene, cis-	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RL-1S-100412	A12J138-08RE1	1,3-Dichloropropane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	1,1-Dichloropropene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	2-Hexanone (Methyl butyl ketone)	10/6/2012	10		Yes	N	U			10.0	5.00	ug/L
RL-1S-100412	A12J138-08RE1	2,2-Dichloropropane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	1,1,1,2-Tetrachloroethane	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RL-1S-100412	A12J138-08RE1	Chloroform	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	sec-Butylbenzene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	Bromomethane (Methyl Bromide)	10/6/2012	5		Yes	N	U	UJ	5	5.00	5.00	ug/L
RL-1S-100412	A12J138-08RE1	1,1,1-Trichloroethane	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RL-1S-100412	A12J138-08RE1	Tetrachloroethene (PCE)	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L
RL-1S-100412	A12J138-08RE1	Dibromochloromethane	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	1,2,4-Trichlorobenzene	10/6/2012	2		Yes	N	U			2.00	1.00	ug/L
RL-1S-100412	A12J138-08RE1	Benzene	10/6/2012	0.25		Yes	N	U			0.250	0.125	ug/L
RL-1S-100412	A12J138-08RE1	Toluene	10/6/2012	1		Yes	N	U			1.00	0.500	ug/L
RL-1S-100412	A12J138-08RE1	Chlorobenzene	10/6/2012	0.5		Yes	N	U			0.500	0.250	ug/L

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-1S-100412	A12J138-08RE1	Acenaphthene	10/10/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
RL-1S-100412	A12J138-08RE1	Fluoranthene	10/10/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
RL-1S-100412	A12J138-08RE1	Pyrene	10/10/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
RL-1S-100412	A12J138-08RE1	Benzo(b)fluoranthene	10/10/2012	0.0309	Yes	N	U			0.0309	0.0155	ug/L
RL-1S-100412	A12J138-08RE1	Dimethyl phthalate	10/10/2012	0.103	Yes	N	U			0.103	0.0515	ug/L
RL-1S-100412	A12J138-08RE1	Di-n-butyl phthalate	10/10/2012	0.26	Yes	Y	J			0.412	0.206	ug/L
RL-1S-100412	A12J138-08RE1	Dibenzofuran	10/10/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
RL-1S-100412	A12J138-08RE1	Diethyl phthalate	10/10/2012	0.103	Yes	N	U			0.103	0.0515	ug/L
RL-1S-100412	A12J138-08RE1	Benzo(g,h,i)perylene	10/10/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
RL-1S-100412	A12J138-08RE1	Benzo(k)fluoranthene	10/10/2012	0.0309	Yes	N	U			0.0309	0.0155	ug/L
RL-1S-100412	A12J138-08RE1	2,4-Dinitrophenol	10/10/2012	0.515	Yes	N	U			0.515	0.258	ug/L
RL-1S-100412	A12J138-08RE1	Phenanthrene	10/10/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
RL-1S-100412	A12J138-08RE1	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	10/10/2012	0.0515	Yes	N	U			0.0515	0.0258	ug/L
RL-1S-100412	A12J138-08RE1	1,2,4-Trichlorobenzene	10/10/2012	0.0515	Yes	N	U			0.0515	0.0258	ug/L
RL-1S-100412	A12J138-08RE1	N-Nitrosodi-N-propylamine	10/10/2012	0.0515	Yes	N	U			0.0515	0.0258	ug/L
RL-1S-100412	A12J138-08RE1	N-Nitrosodimethylamine	10/10/2012	0.0515	Yes	N	U	UJ	10	0.0515	0.0258	ug/L
RL-1S-100412	A12J138-08RE1	Aniline	10/10/2012	0.103	Yes	N	U	UJ	10	0.103	0.0515	ug/L
RL-1S-100412	A12J138-08RE1	2,6-Dinitrotoluene	10/10/2012	0.206	Yes	N	U			0.206	0.103	ug/L
RL-1S-100412	A12J138-08RE1	4-Chloro-3-methylphenol	10/10/2012	0.206	Yes	N	U			0.206	0.103	ug/L
RL-1S-100412	A12J138-08RE1	2,3,4,6-Tetrachlorophenol	10/10/2012	0.103	Yes	N	U			0.103	0.0515	ug/L
RL-1S-100412	A12J138-08RE1	Benzo(a)anthracene	10/10/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
RL-1S-100412	A12J138-08RE1	1,3-Dichlorobenzene	10/10/2012	0.0515	Yes	N	U	UJ	10	0.0515	0.0258	ug/L
RL-1S-100412	A12J138-08RE1	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	10/10/2012	0.515	Yes	N	U			0.515	0.258	ug/L
RL-1S-100412	A12J138-08RE1	bis(2-Chloroisopropyl)ether	10/10/2012	0.0515	Yes	N	U			0.0515	0.0258	ug/L

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-1S-100412	A12J138-08RE1	1,2-Dinitrobenzene	10/10/2012	0.515	Yes	N	U			0.515	0.258	ug/L
RL-1S-100412	A12J138-08RE1	Acenaphthylene	10/10/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
RL-1S-100412	A12J138-08RE1	2,4-Dichlorophenol	10/10/2012	0.103	Yes	N	U			0.103	0.0515	ug/L
RL-1S-100412	A12J138-08RE1	Benzoic acid	10/10/2012	2.58	Yes	N	U			2.58	1.29	ug/L
RL-1S-100412	A12J138-08RE1	Hexachloroethane	10/10/2012	0.0515	Yes	N	U	UJ	10	0.0515	0.0258	ug/L
RL-1S-100412	A12J138-08RE1	4-Chlorophenyl phenyl ether	10/10/2012	0.0515	Yes	N	U			0.0515	0.0258	ug/L
RL-1S-100412	A12J138-08RE1	Hexachlorocyclopentadiene	10/10/2012	0.103	Yes	N	U			0.103	0.0515	ug/L
RL-1S-100412	A12J138-08RE1	Isophorone	10/10/2012	0.0515	Yes	N	U			0.0515	0.0258	ug/L
RL-1S-100412	A12J138-08RE1	Benzo(a)pyrene	10/10/2012	0.0309	Yes	N	U			0.0309	0.0155	ug/L
RL-1S-100412	A12J138-08RE1	Indeno(1,2,3-c,d)pyrene	10/10/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
RL-1S-100412	A12J138-08RE1	Chrysene	10/10/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
RL-1S-100412	A12J138-08RE1	Dibenzo(a,h)anthracene	10/10/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
RL-1S-100412	A12J138-08RE1	2,4,5-Trichlorophenol	10/10/2012	0.103	Yes	N	U			0.103	0.0515	ug/L
RL-1S-100412	A12J138-08RE1	Nitrobenzene	10/10/2012	0.206	Yes	N	U			0.206	0.103	ug/L
RL-1S-100412	A12J138-08RE1	1-Methylnaphthalene	10/10/2012	0.0412	Yes	N	U			0.0412	0.0206	ug/L
RL-1S-100412	A12J138-08RE1	2-Methylnaphthalene	10/10/2012	0.0247	Yes	Y	J			0.0412	0.0206	ug/L
RL-1S-100412	A12J138-08RE1	2-Chloronaphthalene	10/10/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
RL-1S-100412	A12J138-08RE1	3,3'-Dichlorobenzidine	10/10/2012	0.206	Yes	N	U	UJ	5	0.206	0.103	ug/L
RL-1S-100412	A12J138-08RE1	Benzidine	10/10/2012	0.515	Yes	N	U			0.515	0.258	ug/L
RL-1S-100412	A12J138-08RE1	2-Methylphenol (o-Cresol)	10/10/2012	0.0515	Yes	N	U			0.0515	0.0258	ug/L
RL-1S-100412	A12J138-08RE1	2,4-Dinitrotoluene	10/10/2012	0.206	Yes	N	U			0.206	0.103	ug/L
RL-1S-100412	A12J138-08RE1	2-Nitrophenol	10/10/2012	0.206	Yes	N	U			0.206	0.103	ug/L
RL-1S-100412	A12J138-08RE1	2-Chlorophenol	10/10/2012	0.103	Yes	N	U			0.103	0.0515	ug/L
RL-1S-100412	A12J138-08RE1	2,3,5,6-Tetrachlorophenol	10/10/2012	0.103	Yes	N	U			0.103	0.0515	ug/L
RL-1S-100412	A12J138-08RE1	1,3-Dinitrobenzene	10/10/2012	0.515	Yes	N	U			0.515	0.258	ug/L

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-1S-100412	A12J138-08RE1	3-Nitroaniline	10/10/2012	0.412	Yes	N	U	UJ	10	0.412	0.206	ug/L
RL-1S-100412	A12J138-08RE1	Azobenzene	10/10/2012	0.0515	Yes	N	U			0.0515	0.0258	ug/L
RL-1S-100412	A12J138-08RE1	bis(2-Ethylhexyl)adipate	10/10/2012	0.155	Yes	N	U			0.155	0.155	ug/L
RL-1S-100412	A12J138-08RE1	4-Bromophenyl-phenyl ether	10/10/2012	0.0515	Yes	N	U			0.0515	0.0258	ug/L
RL-1S-100412	A12J138-08RE1	Benzyl alcohol	10/10/2012	0.206	Yes	N	U			0.206	0.103	ug/L
RL-1S-100412	A12J138-08RE1	1,4-Dinitrobenzene	10/10/2012	0.515	Yes	N	U			0.515	0.258	ug/L
RL-1S-100412	A12J138-08RE1	4-Nitrophenol	10/10/2012	0.206	Yes	N	U	UJ	10	0.206	0.103	ug/L
RL-1S-100412	A12J138-08RE1	4-Nitroaniline	10/10/2012	0.412	Yes	N	U	UJ	10	0.412	0.206	ug/L
RL-1S-100412	A12J138-08RE1	1,2-Dichlorobenzene	10/10/2012	0.0515	Yes	N	U	UJ	10	0.0515	0.0258	ug/L
RL-1S-100412	A12J138-08RE1	Butylbenzyl phthalate	10/10/2012	1.03	Yes	N	U			1.03	0.515	ug/L
RL-1S-100412	A12J138-08RE1	Hexachlorobenzene	10/10/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
RL-1S-100412	A12J138-08RE1	2-Nitroaniline	10/10/2012	0.412	Yes	N	U	UJ	10	0.412	0.206	ug/L
RL-1S-100412	A12J138-08RE1	2,4,6-Trichlorophenol	10/10/2012	0.103	Yes	N	U			0.103	0.0515	ug/L
RL-1S-100412	A12J138-08RE1	Pentachlorophenol	10/10/2012	0.412	Yes	N	U			0.412	0.206	ug/L
RL-1S-100412	A12J138-08RE1	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	10/10/2012	0.0515	Yes	N	U	UJ	10	0.0515	0.0258	ug/L
RL-1S-100412	A12J138-08RE1	bis(2-Chloroethoxy)methane	10/10/2012	0.0515	Yes	N	U			0.0515	0.0258	ug/L
RL-1S-100412	A12J138-08RE1	bis(2-Chloroethyl)ether	10/10/2012	0.0515	Yes	N	U			0.0515	0.0258	ug/L
RL-1S-100412	A12J138-08RE1	Carbazole	10/10/2012	0.0309	Yes	N	U			0.0309	0.0155	ug/L
RL-1S-100412	A12J138-08RE1	Di-n-octyl phthalate	10/10/2012	0.515	Yes	N	U			0.515	0.515	ug/L
RL-1S-100412	A12J138-08RE1	N-Nitrosodiphenylamine	10/10/2012	0.0515	Yes	N	U			0.0515	0.0258	ug/L
RL-1S-100412	A12J138-08RE1	Bis(2-ethylhexyl)phthalate	10/10/2012	1.95	Yes	Y				0.825	0.515	ug/L
RL-1S-100412	A12J138-08RE1	Anthracene	10/10/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
RL-1S-100412	A12J138-08RE1	2,4-Dimethylphenol	10/10/2012	0.103	Yes	N	U	UJ	10	0.103	0.0515	ug/L
RL-1S-100412	A12J138-08RE1	Pyridine	10/10/2012	0.206	Yes	N	U	UJ	10	0.206	0.103	ug/L
RL-1S-100412	A12J138-08RE1	Phenol	10/10/2012	0.412	Yes	N	U	UJ	10	0.412	0.206	ug/L

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RL-1S-100412	A12J138-08RE1	4-Chloroaniline	10/10/2012	0.0515	Yes	N	U	UJ	10	0.0515	0.0258	ug/L
RL-1S-100412	A12J138-08RE1	1,4-Dichlorobenzene	10/10/2012	0.0515	Yes	N	U	UJ	10	0.0515	0.0258	ug/L
RL-1S-100412	A12J138-08RE1	Fluorene	10/10/2012	0.0206	Yes	N	U			0.0206	0.0103	ug/L
RL-1S-100412	A12J138-08RE2	Naphthalene	10/12/2012	0.0218	Yes	Y	J			0.0426	0.0213	ug/L

LDC Report# 29157B4

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Millennium Bulk Terminals

Collection Date: October 19 through October 24, 2012

LDC Report Date: February 11, 2013

Matrix: Soil

Parameters: Barium

Validation Level: Stage 2B

Laboratory: APEX Laboratories, LLC

Sample Delivery Group (SDG): A12L002

Sample Identification

AQ-BMD-01-2-5
AQ-BMD-02-1.5-5.5
AQ-BMD-03-2-8
AQ-BMD-04-1-7
AQ-BMD-05-1-6
AQ-BMD-06-1.5-5.5
AQ-ECA-01-2-5
AQ-ECA-02-1-5
AQ-ECA-03-1-7
AQ-BMD-08-2-4
AQ-BMD-08-2-4-B
AQ-BMP-03-2-16
AQ-BMP-05-1.5-15.5
AQ-BMP-01-2-16
AQ-BMP-02-1-15
AQ-WMP-01-2.5-7.5
AQ-WMP-02-2-8
AQ-WMP-04-2-8
AQ-BMD-02-1.5-5.5MS
AQ-BMD-02-1.5-5.5DUP
AQ-WMP-04-2-8MS

Introduction

This data review covers 21 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW846 Method 6020A for Barium.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No barium was found in the initial, continuing and preparation blanks.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this method.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Barium - Data Qualification Summary - SDG A12L002

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Barium - Laboratory Blank Data Qualification Summary - SDG A12L002

No Sample Data Qualified in this SDG

LDC #: 29157B4

SDG #: A12L002

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/31/13

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: Barium (EPA SW846 Method 6020) A

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/19-24/12
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	A	MS
VII.	Duplicate Sample Analysis	A	Dup
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil

1	AQ-BMD-01-2-5	11	AQ-BMD-08-2-4(~~8~~) -13	21	AQ-WMP-04-2-8MS	31	
2	AQ-BMD-02-1.5-5.5	12	AQ-BMP-03-2-16	22		32	
3	AQ-BMD-03-2-8	13	AQ-BMP-05-1.5-15.5	23		33	
4	AQ-BMD-04-1-7	14	AQ-BMP-01-2-16	24		34	
5	AQ-BMD-05-1-6	15	AQ-BMP-02-1-15	25		35	
6	AQ-BMD-06-1.5-5.5	16	AQ-WMP-01-2.5-7.5	26		36	
7	AQ-ECA-01-2-5	17	AQ-WMP-02-2-8	27		37	
8	AQ-ECA-02-1-5	18	AQ-WMP-04-2-8	28		38	
9	AQ-ECA-03-1-7	19	AQ-BMD-02-1.5-5.5MS	29		39	
10	AQ-BMD-08-2-4(~~8~~)	20	AQ-BMD-02-1.5-5.5DUP	30		40	

Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Millennium Bulk Terminals

Collection Date: October 19 through October 24, 2012

LDC Report Date: February 11, 2013

Matrix: Soil

Parameters: Total Solids

Validation Level: Stage 2B

Laboratory: APEX Laboratories, LLC

Sample Delivery Group (SDG): A12L002

Sample Identification

AQ-BMD-01-2-5
AQ-BMD-02-1.5-5.5
AQ-BMD-03-2-8
AQ-BMD-04-1-7
AQ-BMD-05-1-6
AQ-BMD-06-1.5-5.5
AQ-ECA-01-2-5
AQ-ECA-02-1-5
AQ-ECA-03-1-7
AQ-BMD-08-2-4
AQ-BMD-08-2-4-B
AQ-BMP-03-2-16
AQ-BMP-05-1.5-15.5
AQ-BMP-01-2-16
AQ-BMP-02-1-15
AQ-WMP-01-2.5-7.5
AQ-WMP-02-2-8
AQ-WMP-04-2-8
AQ-BMP-02-1-15DUP

Introduction

This data review covers 19 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per APEX SOP for Total Solids.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blank analysis was not required by the method.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analysis were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were not required by the method.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

X. Field Duplicates

No field blanks were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Total Solids - Data Qualification Summary - SDG A12L002

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Total Solids - Laboratory Blank Data Qualification Summary - SDG A12L002

No Sample Data Qualified in this SDG

LDC #: 29157B6

SDG #: A12L002

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 2/11/13

Page: 1 of 1

Reviewer: OR

2nd Reviewer: [illegible]

METHOD: Total Solids (~~SM2540G~~ APEX SOP)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/19-24/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	N	Not required
V	Matrix Spike/Matrix Spike Duplicates	N	↓
VI.	Duplicates	A	DUP
VII.	Laboratory control samples	N	Not required
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ~~Sediment~~ or Soil

1	AQ-BMD-01-2-5	11	AQ-BMD-08-2-4~~(b)~~ -13	21		31	
2	AQ-BMD-02-1.5-5.5	12	AQ-BMP-03-2-16	22		32	
3	AQ-BMD-03-2-8	13	AQ-BMP-05-1.5-15.5	23		33	
4	AQ-BMD-04-1-7	14	AQ-BMP-01-2-16	24		34	
5	AQ-BMD-05-1-6	15	AQ-BMP-02-1-15	25		35	
6	AQ-BMD-06-1.5-5.5	16	AQ-WMP-01-2.5-7.5	26		36	
7	AQ-ECA-01-2-5	17	AQ-WMP-02-2-8	27		37	
8	AQ-ECA-02-1-5	18	AQ-WMP-04-2-8	28		38	
9	AQ-ECA-03-1-7	19	(~~X~~ 15) DUP	29		39	
10	AQ-BMD-08-2-4~~(a)~~	20		30		40	

Notes:

Analytical Method APEXsolids

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-01-2-5	A12L002-01	Total solids	12/4/2012	72.4	Yes	Y				1.00	1.00	pct
AQ-BMD-02-1.5-5.5	A12L002-02	Total solids	12/4/2012	75.8	Yes	Y				1.00	1.00	pct
AQ-BMD-03-2-8	A12L002-03	Total solids	12/4/2012	68.4	Yes	Y				1.00	1.00	pct
AQ-BMD-04-1-7	A12L002-04	Total solids	12/4/2012	75.8	Yes	Y				1.00	1.00	pct
AQ-BMD-05-1-6	A12L002-05	Total solids	12/4/2012	74.8	Yes	Y				1.00	1.00	pct
AQ-BMD-06-1.5-5.5	A12L002-06	Total solids	12/4/2012	74.3	Yes	Y				1.00	1.00	pct
AQ-BMD-08-2-4	A12L002-10	Total solids	12/4/2012	59.1	Yes	Y				1.00	1.00	pct
AQ-BMD-08-2-4-B	A12L002-11	Total solids	12/4/2012	63.9	Yes	Y				1.00	1.00	pct
AQ-BMP-01-2-16	A12L002-14	Total solids	12/4/2012	59.1	Yes	Y				1.00	1.00	pct
AQ-BMP-02-1-15	A12L002-15	Total solids	12/4/2012	74.1	Yes	Y				1.00	1.00	pct
AQ-BMP-03-2-16	A12L002-12	Total solids	12/4/2012	61.6	Yes	Y				1.00	1.00	pct
AQ-BMP-05-1.5-15.5	A12L002-13	Total solids	12/4/2012	71.3	Yes	Y				1.00	1.00	pct
AQ-ECA-01-2-5	A12L002-07	Total solids	12/4/2012	56.3	Yes	Y				1.00	1.00	pct
AQ-ECA-02-1-5	A12L002-08	Total solids	12/4/2012	62.5	Yes	Y				1.00	1.00	pct
AQ-ECA-03-1-7	A12L002-09	Total solids	12/4/2012	69.7	Yes	Y				1.00	1.00	pct
AQ-WMP-01-2.5-7.5	A12L002-16	Total solids	12/4/2012	59	Yes	Y				1.00	1.00	pct
AQ-WMP-02-2-8	A12L002-17	Total solids	12/4/2012	60.8	Yes	Y				1.00	1.00	pct
AQ-WMP-04-2-8	A12L002-18	Total solids	12/4/2012	63.8	Yes	Y				1.00	1.00	pct

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-01-2-5	A12L002-01	Barium	12/6/2012	105	Yes	Y	D			1.43	0.715	mg/kg
AQ-BMD-02-1.5-5.5	A12L002-02	Barium	12/6/2012	120	Yes	Y	D			1.39	0.696	mg/kg
AQ-BMD-03-2-8	A12L002-03	Barium	12/6/2012	132	Yes	Y	D			1.53	0.766	mg/kg
AQ-BMD-04-1-7	A12L002-04	Barium	12/6/2012	119	Yes	Y	D			1.29	0.644	mg/kg
AQ-BMD-05-1-6	A12L002-05	Barium	12/6/2012	115	Yes	Y	D			1.37	0.683	mg/kg

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-BMD-06-1.5-5.5	A12L002-06	Barium	12/6/2012	126	Yes	Y	D			1.45	0.727	mg/kg
AQ-BMD-08-2-4	A12L002-10	Barium	12/6/2012	175	Yes	Y	D			1.76	0.878	mg/kg
AQ-BMD-08-2-4-B	A12L002-11	Barium	12/6/2012	156	Yes	Y	D			1.64	0.818	mg/kg
AQ-BMP-01-2-16	A12L002-14	Barium	12/6/2012	58.8	Yes	Y	D			1.85	0.926	mg/kg
AQ-BMP-02-1-15	A12L002-15	Barium	12/6/2012	93.2	Yes	Y	D			1.42	0.712	mg/kg
AQ-BMP-03-2-16	A12L002-12	Barium	12/6/2012	218	Yes	Y	D			1.60	0.802	mg/kg
AQ-BMP-05-1.5-15.5	A12L002-13	Barium	12/6/2012	100	Yes	Y	D			1.49	0.744	mg/kg
AQ-ECA-01-2-5	A12L002-07	Barium	12/6/2012	144	Yes	Y	D			1.85	0.923	mg/kg
AQ-ECA-02-1-5	A12L002-08	Barium	12/6/2012	122	Yes	Y	D			1.73	0.864	mg/kg
AQ-ECA-03-1-7	A12L002-09	Barium	12/6/2012	117	Yes	Y	D			1.45	0.723	mg/kg
AQ-WMP-01-2.5-7.5	A12L002-16	Barium	12/6/2012	17.7	Yes	Y	D			1.83	0.917	mg/kg
AQ-WMP-02-2-8	A12L002-17	Barium	12/6/2012	34.2	Yes	Y	D			1.76	0.879	mg/kg
AQ-WMP-04-2-8	A12L002-18	Barium	12/6/2012	24.2	Yes	Y	D			1.68	0.839	mg/kg

LDC Report# 29157C2b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 3, 2012
LDC Report Date:	February 8, 2013
Matrix:	Water
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L049

Sample Identification

G2-S-120312
G2-D-120312
G2-D-120312-D

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
1212141-LCS/D (All samples in SDG A12L049)	1-Methylnaphthalene 2-Methylnaphthalene Naphthalene	55 (60-140) 53 (60-140) 47 (60-140)	54 (60-140) 50 (60-140) 44 (60-140)	- - -	J (all detects) UJ (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to LCS %R problems, data were qualified as estimated in three samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

Samples G2-D-120312 and G2-D-120312-D were identified as field duplicates. No polynuclear aromatic hydrocarbons were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	G2-D-120312	G2-D-120312-D	
Fluorene	0.0281	0.0329	16
Anthracene	0.111	0.137	21
Fluoranthene	0.0633	0.0634	0
Pyrene	0.0559	0.0553	1
Benzo(a)anthracene	0.0469	0.0509	8
Chrysene	0.0421	0.0402	5
Benzo(b+k)fluoranthenes	0.0892	0.0804	10
Benzo(a)pyrene	0.0329	0.0287	14
Indeno(1,2,3-cd)pyrene	0.0305	0.0276	10
Benzo(g,h,i)perylene	0.0307	0.0282	8

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A12L049

SDG	Sample	Compound	Flag	A or P	Reason
A12L049	G2-S-120312 G2-D-120312 G2-D-120312-D	1-Methylnaphthalene 2-Methylnaphthalene Naphthalene	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A12L049

No Sample Data Qualified in this SDG

LDC #: 29157C2b **VALIDATION COMPLETENESS WORKSHEET** Date: 8/7/13
SDG #: A12L049 Stage 2B Page: 1 of 1
Laboratory: APEX Laboratories, LLC Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/3/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	A	~~tcv~~/ccv ≤ 20 icv ≤ 30
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	SW	LCS ID
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	~~SW~~	~~D = 2,3~~ D=2,3
XVII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:
water

1	G2-S-120312	11	1212141.	21		31	
2	G2-D-120312	12		22		32	
3	G2-D-120312-D	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1-Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU.
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 29157 C2b

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?

Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		1212141-lcs/D	TTT	55 (60-140)	54 (60-140)	( )	All	J/UJ/P
			W	53 ( )	50 ( )	( )	↓	↓
			S	47 ( )	44 ( )	( )	↓	↓
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		

LDC#: 29157c2b

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: EF
2nd Reviewer: [illegible]

METHOD: GC/MS PAH (EPA SW 846 Method 8270C-SIM)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD
	2	3	
Fluorene	0.0281	0.0329	16
Anthracene	0.111	0.137	21
Fluoranthene	0.0633	0.0634	0
Pyrene	0.0559	0.0553	1
Benzo(a)anthracene	0.0469	0.0509	8
Chrysene	0.0421	0.0402	5
Benzo(b+k)fluoranthenes	0.0892	0.0804	10
Benzo(a)pyrene	0.0329	0.0287	14
Indeno(1,2,3-cd)pyrene	0.0305	0.0276	10
Benzo(g,h,i)perylene	0.0307	0.0282	8

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 3, 2012
LDC Report Date:	February 1, 2013
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L049

Sample Identification

G1-S-120312
G1-D-120312
G1-D-120312-D
G1-S-120312MS
G1-S-120312DUP

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 335.4 for Total Cyanide and Dissolved Cyanide, Standard Method 4500-CN-I-E for Weak Acid Dissociable Cyanide and Dissolved Weak Acid Dissociable Cyanide, and ASTM D4282 for Free Cyanide and Dissolved Free Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

X. Field Duplicates

Samples G1-D-120312 and G1-D-120312-D were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD
	G1-D-120312	G1-D-120312-D	
Total cyanide	0.0764	0.299	119
Weak acid dissociable cyanide	0.0166	0.0166	0
Free cyanide	0.00480	0.00510	6
Dissolved cyanide	0.0583	0.0686	16
Dissolved Weak acid dissociable cyanide	0.0154	0.0192	22
Dissolved free cyanide	0.00350	0.00660	61

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A12L049

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A12L049

No Sample Data Qualified in this SDG

LDC #: 29157C6

SDG #: A12L049

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/31/13

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: (Analyte) Total Cyanide, Dissolved Cyande (EPA Method 335.4), WAD Cyanide, Dissolved WAD Cyanide (EPA ~~SW846 Method 9013M~~/SM4500–CN-I-E), Free Cyanide, Dissolved Free Cyanide (ASTM D4282),

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/3/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	A	MS
VI.	Duplicates	A	Dup
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	SW	(2,3)
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	G1-S-120312	11		21		31	
2	G1-D-120312	12		22		32	
3	G1-D-120312-D	13		23		33	
4	G1-S-120312MS	14		24		34	
5	G1-S-120312DUP	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: ~~29099 6~~ 29157C6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer: ✓

All circled methods are applicable to each sample.

Sample ID	Parameter
1-3	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 WAD CN Free CN Diss CN Diss WAD CN Diss Free CN
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
QC-4	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Free CN Diss CN Diss WAD CN Diss Free CN
5	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 Free CN Diss CN Diss WAD CN Diss Free CN
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

LDC# 29157C6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: CA
2nd Reviewer: [illegible]

Inorganics: Method See Cover

Analyte	Concentration (mg/L)		RPD
	2	3	
Total Cyanide	0.0764	0.299	119
WAD Cyanide	0.0166	0.0166	0
Free Cyanide	0.00480	0.00510	6
Dissolved Cyanide	0.0583	0.0686	16
Dissolved WAD Cyanide	0.0154	0.0192	22
Dissolved Free Cyanide	0.00350	0.00660	61

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Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-120312	A12L049-02	Cyanide, free	12/5/2012	0.0048	Yes	Y	J			0.00500	0.00200	mg/L
G1-D-120312	A12L049-02	Cyanide, free	12/5/2012	0.0035	Yes	Y	J			0.00500	0.00200	mg/L
G1-D-120312-D	A12L049-03	Cyanide, free	12/5/2012	0.0066	Yes	Y				0.00500	0.00200	mg/L
G1-D-120312-D	A12L049-03	Cyanide, free	12/5/2012	0.0051	Yes	Y				0.00500	0.00200	mg/L
G1-S-120312	A12L049-01	Cyanide, free	12/5/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L
G1-S-120312	A12L049-01	Cyanide, free	12/5/2012	0.005	Yes	N	U			0.00500	0.00200	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-120312	A12L049-02	Cyanide, total	12/10/2012	0.0583	Yes	Y				0.00500	0.00500	mg/L
G1-D-120312	A12L049-02RE2	Cyanide, total	12/6/2012	0.0764	Yes	Y	D			0.0100	0.0100	mg/L
G1-D-120312-D	A12L049-03	Cyanide, total	12/10/2012	0.0686	Yes	Y				0.00500	0.00500	mg/L
G1-D-120312-D	A12L049-03RE2	Cyanide, total	12/6/2012	0.299	Yes	Y	D			0.0100	0.0100	mg/L
G1-S-120312	A12L049-01	Cyanide, total	12/6/2012	0.0287	Yes	Y				0.00500	0.00500	mg/L
G1-S-120312	A12L049-01	Cyanide, total	12/10/2012	0.0259	Yes	Y				0.00500	0.00500	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G1-D-120312	A12L049-02	Cyanide, Weak acid dissociable (WAD)	12/10/2012	0.0166	Yes	Y	D			0.0100	0.0100	mg/L
G1-D-120312	A12L049-02	Cyanide, Weak acid dissociable (WAD)	12/10/2012	0.0154	Yes	Y	D			0.0100	0.0100	mg/L
G1-D-120312-D	A12L049-03	Cyanide, Weak acid dissociable (WAD)	12/10/2012	0.0166	Yes	Y	D			0.0100	0.0100	mg/L
G1-D-120312-D	A12L049-03	Cyanide, Weak acid dissociable (WAD)	12/10/2012	0.0192	Yes	Y	D			0.0100	0.0100	mg/L
G1-S-120312	A12L049-01	Cyanide, Weak acid dissociable (WAD)	12/10/2012	0.0088	Yes	Y				0.00500	0.00500	mg/L
G1-S-120312	A12L049-01	Cyanide, Weak acid dissociable (WAD)	12/10/2012	0.0052	Yes	Y				0.00500	0.00500	mg/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-D-120312	A12L049-05	Dibenzofuran	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-D-120312	A12L049-05	Dibenzo(a,h)anthracene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
G2-D-120312	A12L049-05	Benzo(a)pyrene	12/7/2012	0.0329	Yes	Y	J			0.0374	0.0187	ug/L
G2-D-120312	A12L049-05	Acenaphthylene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
G2-D-120312	A12L049-05	Benzo(g,h,i)perylene	12/7/2012	0.0307	Yes	Y	J			0.0374	0.0187	ug/L
G2-D-120312	A12L049-05	Phenanthrene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
G2-D-120312	A12L049-05	Pyrene	12/7/2012	0.0559	Yes	Y				0.0374	0.0187	ug/L
G2-D-120312	A12L049-05	Indeno(1,2,3-c,d)pyrene	12/7/2012	0.0305	Yes	Y	J			0.0374	0.0187	ug/L
G2-D-120312	A12L049-05	Acenaphthene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
G2-D-120312	A12L049-05	Fluoranthene	12/7/2012	0.0633	Yes	Y				0.0374	0.0187	ug/L
G2-D-120312	A12L049-05	Fluorene	12/7/2012	0.0281	Yes	Y	J			0.0374	0.0187	ug/L
G2-D-120312	A12L049-05	1-Methylnaphthalene	12/7/2012	0.0748	Yes	N	U	UJ	10	0.0748	0.0374	ug/L
G2-D-120312	A12L049-05	Naphthalene	12/7/2012	0.0748	Yes	N	U	UJ	10	0.0748	0.0374	ug/L
G2-D-120312	A12L049-05	2-Methylnaphthalene	12/7/2012	0.0748	Yes	N	U	UJ	10	0.0748	0.0374	ug/L
G2-D-120312	A12L049-05	Benzo(b,k)fluoranthene	12/7/2012	0.0892	Yes	Y				0.0748	0.0374	ug/L
G2-D-120312	A12L049-05	Benzo(a)anthracene	12/7/2012	0.0469	Yes	Y				0.0374	0.0187	ug/L
G2-D-120312	A12L049-05	Chrysene	12/7/2012	0.0421	Yes	Y				0.0374	0.0187	ug/L
G2-D-120312	A12L049-05	Anthracene	12/7/2012	0.111	Yes	Y				0.0374	0.0187	ug/L
G2-D-120312-D	A12L049-06	Benzo(a)pyrene	12/7/2012	0.0287	Yes	Y	J			0.0374	0.0187	ug/L
G2-D-120312-D	A12L049-06	Benzo(g,h,i)perylene	12/7/2012	0.0282	Yes	Y	J			0.0374	0.0187	ug/L
G2-D-120312-D	A12L049-06	Indeno(1,2,3-c,d)pyrene	12/7/2012	0.0276	Yes	Y	J			0.0374	0.0187	ug/L
G2-D-120312-D	A12L049-06	Fluoranthene	12/7/2012	0.0634	Yes	Y				0.0374	0.0187	ug/L
G2-D-120312-D	A12L049-06	Chrysene	12/7/2012	0.0402	Yes	Y				0.0374	0.0187	ug/L
G2-D-120312-D	A12L049-06	Dibenzo(a,h)anthracene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
G2-D-120312-D	A12L049-06	Benzo(a)anthracene	12/7/2012	0.0509	Yes	Y				0.0374	0.0187	ug/L
G2-D-120312-D	A12L049-06	Acenaphthene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-D-120312-D	A12L049-06	Phenanthrene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
G2-D-120312-D	A12L049-06	Fluorene	12/7/2012	0.0329	Yes	Y	J			0.0374	0.0187	ug/L
G2-D-120312-D	A12L049-06	Dibenzofuran	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
G2-D-120312-D	A12L049-06	Acenaphthylene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
G2-D-120312-D	A12L049-06	1-Methylnaphthalene	12/7/2012	0.0748	Yes	N	U	UJ	10	0.0748	0.0374	ug/L
G2-D-120312-D	A12L049-06	Anthracene	12/7/2012	0.137	Yes	Y				0.0374	0.0187	ug/L
G2-D-120312-D	A12L049-06	Pyrene	12/7/2012	0.0553	Yes	Y				0.0374	0.0187	ug/L
G2-D-120312-D	A12L049-06	Benzo(b,k)fluoranthene	12/7/2012	0.0804	Yes	Y				0.0748	0.0374	ug/L
G2-D-120312-D	A12L049-06	2-Methylnaphthalene	12/7/2012	0.0748	Yes	N	U	UJ	10	0.0748	0.0374	ug/L
G2-D-120312-D	A12L049-06	Naphthalene	12/7/2012	0.0748	Yes	N	U	UJ	10	0.0748	0.0374	ug/L
G2-S-120312	A12L049-04	Acenaphthene	12/7/2012	0.0734	Yes	Y				0.0374	0.0187	ug/L
G2-S-120312	A12L049-04	Benzo(a)anthracene	12/7/2012	0.071	Yes	Y				0.0374	0.0187	ug/L
G2-S-120312	A12L049-04	Anthracene	12/7/2012	0.216	Yes	Y				0.0374	0.0187	ug/L
G2-S-120312	A12L049-04	Phenanthrene	12/7/2012	0.119	Yes	Y				0.0374	0.0187	ug/L
G2-S-120312	A12L049-04	Indeno(1,2,3-c,d)pyrene	12/7/2012	0.0193	Yes	Y	J			0.0374	0.0187	ug/L
G2-S-120312	A12L049-04	Benzo(a)pyrene	12/7/2012	0.019	Yes	Y	J			0.0374	0.0187	ug/L
G2-S-120312	A12L049-04	Chrysene	12/7/2012	0.0733	Yes	Y				0.0374	0.0187	ug/L
G2-S-120312	A12L049-04	Fluorene	12/7/2012	0.0841	Yes	Y				0.0374	0.0187	ug/L
G2-S-120312	A12L049-04	Acenaphthylene	12/7/2012	0.033	Yes	Y	J			0.0374	0.0187	ug/L
G2-S-120312	A12L049-04	Fluoranthene	12/7/2012	0.299	Yes	Y				0.0374	0.0187	ug/L
G2-S-120312	A12L049-04	Dibenzo(a,h)anthracene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
G2-S-120312	A12L049-04	Naphthalene	12/7/2012	0.0764	Yes	Y		J	10	0.0748	0.0374	ug/L
G2-S-120312	A12L049-04	Benzo(g,h,i)perylene	12/7/2012	0.0207	Yes	Y	J			0.0374	0.0187	ug/L
G2-S-120312	A12L049-04	Pyrene	12/7/2012	0.201	Yes	Y				0.0374	0.0187	ug/L
G2-S-120312	A12L049-04	1-Methylnaphthalene	12/7/2012	0.0748	Yes	N	U	UJ	10	0.0748	0.0374	ug/L

SDG: A12L049

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
G2-S-120312	A12L049-04	2-Methylnaphthalene	12/7/2012	0.0748	Yes	N	U	UJ	10	0.0748	0.0374	ug/L
G2-S-120312	A12L049-04	Benzo(b,k)fluoranthene	12/7/2012	0.0763	Yes	Y				0.0748	0.0374	ug/L
G2-S-120312	A12L049-04	Dibenzofuran	12/7/2012	0.0285	Yes	Y	J			0.0374	0.0187	ug/L

LDC Report# 29157D2b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 4, 2012
LDC Report Date:	February 8, 2013
Matrix:	Water
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L076

Sample Identification

RLSW-3-120412
RB-120412

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
1212141-LCS/D (All samples in SDG A12L076)	1-Methylnaphthalene 2-Methylnaphthalene Naphthalene	55 (60-140) 53 (60-140) 47 (60-140)	54 (60-140) 50 (60-140) 44 (60-140)	- - -	J (all detects) UJ (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to LCS %R problems, data were qualified as estimated in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

Sample RB-120412 was identified as a rinsate blank. No polynuclear aromatic hydrocarbon contaminants were found with the following exceptions:

Blank ID	Compound	Concentration (ug/L)
RB-120412	Naphthalene	0.0527

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A12L076

SDG	Sample	Compound	Flag	A or P	Reason
A12L076	RLSW-3-120412 RB-120412	1-Methylnaphthalene 2-Methylnaphthalene Naphthalene	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A12L076

No Sample Data Qualified in this SDG

LDC #: 29157D2b **VALIDATION COMPLETENESS WORKSHEET** Date: 2/7/13
SDG #: A12L076 Stage 2B Page: 1 of 1
Laboratory: APEX Laboratories, LLC Reviewer: A
2nd Reviewer: V

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/4/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV ≤ 30 CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client specific
VIII.	Laboratory control samples	SW	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	RB = 2

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

	Water						
1	RLSW-3-120412	11	1212141.	21		31	
2	RB-120412	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 29157D2b

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?

Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		121214l-los lp	TTT	55 (60-140)	54 (60-140)	( )	All	J/UJ/P
			W	53 ( )	50 ( )	( )		
			S	47 ( )	44 ( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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ftLDC #: 29157 D26

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?
Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 12/4/12
Field blank type: (circle one) Field Blank / Rinsate / Other: RB Associated Samples: None ~~1 (ND)~~

Compound	Blank ID	Sample Identification								
	2									
S	0.0527									
CRQL										

Blank units:_____ **Associated sample units:**_____
Sampling date:_____
Field blank type: (circle one) Field Blank / Rinsate / Other:_____ Associated Samples:_____

Compound	Blank ID	Sample Identification								
CRQL										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 4, 2012
LDC Report Date:	February 1, 2013
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L076

Sample Identification

RB-120412
RB-120412MS
RB-120412DUP

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 335.4 for Total Cyanide and Dissolved Cyanide, Standard Method 4500-CN-I-E for Weak Acid Dissociable Cyanide and Dissolved Weak Acid Dissociable Cyanide, and ASTM D4282 for Free Cyanide and Dissolved Free Cyanide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

Sample RB-120412 was identified as a rinsate blank. No contaminant concentrations were found with the following exceptions:

Blank ID	Analyte	Concentration (mg/L)
RB-120412	Dissolved free cyanide	0.00620

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A12L076

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A12L076

No Sample Data Qualified in this SDG

LDC #: 29157D6

SDG #: A12L076

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/31/13

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: (Analyte) Total Cyanide, Dissolved Cyande (EPA Method 335.4), WAD Cyanide, Dissolved WAD Cyanide (EPA ~~SW846 Method 9013M~~/SM4500–CN-I-E), Free Cyanide, Dissolved Free Cyanide (ASTM D4282),

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/4/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	A	MS
VI.	Duplicates	A	Dup
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI.	Field blanks	SW	RB=1

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	RB-120412	11		21		31	
2	RB-120412MS	12		22		32	
3	RB-120412DUP	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 29157D6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Reviewer: CR

2nd reviewer: ✓

All circled methods are applicable to each sample.

Sample ID	Parameter
1	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 WAD CN Free CN Diss CN Diss WAD CN Diss Free CN
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
QC: 2	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
3	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

LDC #: 29157D6
SDG #: —

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: Inorganics, EPA Method see cover

Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target anlytes detected in the field blanks?

Sample: 1 Field Blank / Trip Blank / Rinsate (circle one) Blk

Analyte	Concentration Units (mg/L)
Dissolved Free Cyanide	0.00620

Sample: _____ Field Blank / Trip Blank / Rinsate (circle one)

Analyte	Concentration Units ( )

LDC Report# 29157D8

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 4, 2012
LDC Report Date:	February 8, 2013
Matrix:	Water
Parameters:	Diesel Range Organics
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L076

Sample Identification

SSA6-MW-01-120412
RB-120412
SSA6-MW-01-120412SGC
RB-120412SGC

Samples appended with SGC were analyzed with Silica Gel Cleanup

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method NWTPH-Dx for Diesel Range Organics.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 15.0%.

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 15.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic contaminants were found in the method blanks.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XII. Field Duplicates

No field duplicates were identified in this SDG.

XIII. Field Blanks

Samples RB-120412 and RB-120412SGT were identified as rinsates. No diesel range organic contaminants were found.

Millennium Bulk Terminals
Diesel Range Organics - Data Qualification Summary - SDG A12L076

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Diesel Range Organics - Laboratory Blank Data Qualification Summary - SDG A12L076

No Sample Data Qualified in this SDG

LDC #: 29157D8

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 02/04/2013

SDG #: A12L076

Page: 1 of 1

Laboratory: Apex Laboratories, LLC

Reviewer: SW

2nd Reviewer: [illegible]

METHOD: GC Diesel Range Organics (NWTPH-Dx)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/04/2012
II	Initial calibration	A	RSD ≤ ~~20~~ 15
III.	Calibration verification/ICV	A	ICV/CCV ≤ ~~20~~ 15
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	CS
VII.	Laboratory control samples	A	LCS / LCSD
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	A ~~SW~~	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	ND	R = 2, 4

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: WATER

+ 1 2	SSA6-MW-01-120412	11		21		31 1	1212141-BLK3
− 2 1	RB-120412	12		22		32 2	1212154-BLK1
− 3	SSA6-MW-01-120412SGf	13		23		33	1212141-BLK2
− 4	RB-120412SGc	14		24		34	1212154-BLK2
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: Samples appended with SGc were analyzed with Silica Gel ~~Treatment~~ Cleanup

Analytical Method D4282-02

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RB-120412	A12L076-04	Cyanide, free	12/5/2012	0.005		Yes	N	U			0.00500	0.00200	mg/L
RB-120412	A12L076-04	Cyanide, free	12/5/2012	0.0062		Yes	Y				0.00500	0.00200	mg/L

Analytical Method E335.4

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RB-120412	A12L076-04	Cyanide, total	12/6/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
RB-120412	A12L076-04	Cyanide, total	12/10/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L

Analytical Method NWTPHDx

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RB-120412	A12L076-04	Diesel Range Hydrocarbons	12/7/2012	0.234		Yes	N	D U			0.234	0.117	mg/L
RB-120412	A12L076-04	Oil	12/7/2012	0.467		Yes	N	D U			0.467	0.234	mg/L
RB-120412	A12L076-04	Oil	12/8/2012	0.374		Yes	N	D U			0.374	0.187	mg/L
RB-120412	A12L076-04	Diesel Range Hydrocarbons	12/8/2012	0.187		Yes	N	D U			0.187	0.0935	mg/L
SSA6-MW-01-120412	A12L076-03	Diesel Range Hydrocarbons	12/7/2012	1.76		Yes	Y				0.187	0.0935	mg/L
SSA6-MW-01-120412	A12L076-03	Oil	12/7/2012	0.467		Yes	N	U			0.467	0.234	mg/L
SSA6-MW-01-120412	A12L076-03	Oil	12/7/2012	0.621		Yes	Y				0.374	0.187	mg/L
SSA6-MW-01-120412	A12L076-03	Diesel Range Hydrocarbons	12/7/2012	0.234		Yes	N	U			0.234	0.117	mg/L

Analytical Method SM4500CNI

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RB-120412	A12L076-04	Cyanide, Weak acid dissociable (WAD)	12/10/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L
RB-120412	A12L076-04	Cyanide, Weak acid dissociable (WAD)	12/10/2012	0.005		Yes	N	U			0.00500	0.00500	mg/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RB-120412	A12L076-04	1-Methylnaphthalene	12/7/2012	0.0748		Yes	N	U	UJ	10	0.0748	0.0374	ug/L
RB-120412	A12L076-04	Benzo(g,h,i)perylene	12/7/2012	0.0374		Yes	N	U			0.0374	0.0187	ug/L
RB-120412	A12L076-04	Acenaphthene	12/7/2012	0.0374		Yes	N	U			0.0374	0.0187	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RB-120412	A12L076-04	Benzo(a)anthracene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RB-120412	A12L076-04	Dibenzo(a,h)anthracene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RB-120412	A12L076-04	Fluorene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RB-120412	A12L076-04	Benzo(a)pyrene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RB-120412	A12L076-04	Naphthalene	12/7/2012	0.0527	Yes	Y	J	J	10	0.0748	0.0374	ug/L
RB-120412	A12L076-04	Chrysene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RB-120412	A12L076-04	Acenaphthylene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RB-120412	A12L076-04	Benzo(k)fluoranthene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RB-120412	A12L076-04	Fluoranthene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RB-120412	A12L076-04	Dibenzofuran	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RB-120412	A12L076-04	Indeno(1,2,3-c,d)pyrene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RB-120412	A12L076-04	Phenanthrene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RB-120412	A12L076-04	2-Methylnaphthalene	12/7/2012	0.0748	Yes	N	U	UJ	10	0.0748	0.0374	ug/L
RB-120412	A12L076-04	Pyrene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RB-120412	A12L076-04	Anthracene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RB-120412	A12L076-04	Benzo(b)fluoranthene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RLSW-3-120412	A12L076-02	Dibenzo(a,h)anthracene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RLSW-3-120412	A12L076-02	Pyrene	12/7/2012	0.0248	Yes	Y	J			0.0374	0.0187	ug/L
RLSW-3-120412	A12L076-02	Dibenzofuran	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RLSW-3-120412	A12L076-02	Benzo(g,h,i)perylene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RLSW-3-120412	A12L076-02	Benzo(a)anthracene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RLSW-3-120412	A12L076-02	Indeno(1,2,3-c,d)pyrene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RLSW-3-120412	A12L076-02	Benzo(a)pyrene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RLSW-3-120412	A12L076-02	Chrysene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RLSW-3-120412	A12L076-02	Acenaphthylene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
RLSW-3-120412	A12L076-02	Benzo(k)fluoranthene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RLSW-3-120412	A12L076-02	Fluoranthene	12/7/2012	0.0428	Yes	Y				0.0374	0.0187	ug/L
RLSW-3-120412	A12L076-02	Benzo(b)fluoranthene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RLSW-3-120412	A12L076-02	Acenaphthene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RLSW-3-120412	A12L076-02	Naphthalene	12/7/2012	0.0748	Yes	N	U	UJ	10	0.0748	0.0374	ug/L
RLSW-3-120412	A12L076-02	1-Methylnaphthalene	12/7/2012	0.0748	Yes	N	U	UJ	10	0.0748	0.0374	ug/L
RLSW-3-120412	A12L076-02	Fluorene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RLSW-3-120412	A12L076-02	Phenanthrene	12/7/2012	0.0374	Yes	N	U			0.0374	0.0187	ug/L
RLSW-3-120412	A12L076-02	2-Methylnaphthalene	12/7/2012	0.0748	Yes	N	U	UJ	10	0.0748	0.0374	ug/L
RLSW-3-120412	A12L076-02	Anthracene	12/7/2012	0.0405	Yes	Y				0.0374	0.0187	ug/L

LDC Report# 29157E2b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 17 through October 18, 2012
LDC Report Date:	February 13, 2013
Matrix:	Soil
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L107

Sample Identification

AQ-FSL-01-0-12
AQ-ILF-02-0-12
AQ-ILF-02-0-12MS
AQ-ILF-02-0-12DL

Introduction

This data review covers 4 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
AQ-FSL-01-0-12	All TCL compounds	50	14	J (all detects) R (all non-detects)	P
AQ-ILF-02-0-12 AQ-ILF-02-0-12MS AQ-ILF-02-0-12DL	All TCL compounds	51	14	J (all detects) R (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. Surrogate recoveries (%R) were not within QC limits for samples AQ-FSL-01-0-12 and AQ-ILF-02-0-12. Since the samples were diluted out, no data were qualified.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were not within the QC limits. Since the samples were diluted out, no data were qualified.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

All compound quantitations were within validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
AQ-ILF-02-0-12	Benzo(g,h,i)perylene	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
AQ-ILF-02-0-12	Benzo(g,h,i)perylene Dibenzo(a,h)anthracene	R R	A

Due to extraction holding time, data were qualified as estimated in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be rejected (R) are unusable for all purposes. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A12L107

SDG	Sample	Compound	Flag	A or P	Reason
A12L107	AQ-FSL-01-0-12 AQ-ILF-02-0-12 AQ-ILF-02-0-12DL	All TCL compounds	J (all detects) R (all non-detects)	P	Technical holding time
A12L107	AQ-ILF-02-0-12	Benzo(g,h,i)perylene	J (all detects)	A	Compound quantitation (exceeded range)
A12L107	AQ-ILF-02-0-12	Benzo(g,h,i)perylene Dibenzo(a,h)anthracene	R	A	Overall assessment of data

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A12L107

No Sample Data Qualified in this SDG

LDC #: 29157E2b **VALIDATION COMPLETENESS WORKSHEET** Date: 2/7/13
SDG #: A12L107 Stage 2B Page: 1 of 1
Laboratory: APEX Laboratories, LLC Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 10/17 – 10/18/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	A	IW ≤ 30 CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	SW	MS only
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	SW	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

		SOIL						
1	1	AQ-FSL-01-0-12	11	1212143	21		31	
2	2	AQ-ILF-02-0-12	12		22		32	
	3	#2MS	13		23		33	
	4	# 2BL	14		24		34	
	5		15		25		35	
	6		16		26		36	
	7		17		27		37	
	8		18		28		38	
	9		19		29		39	
	10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1-Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU. Benzo(b+k) fluoranthene
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 29157E26

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Page: 1 of 1
Reviewer: FT
2nd Reviewer: L

All circled dates have exceeded the technical holding times.
Y N N/A Were all cooler temperatures within validation criteria?

METHOD : GC/MS BNA (EPA SW 846 Method 8270)

Sample ID	Matrix	Preserved	Sampling Date	Extraction date	Analysis date	Total # of Days	Qualifier
1	SOIL		10/18/12	12/07/12	12/07/12	50	J/R/P
2,3,4	SOIL		10/17/12	↓	↓	51	↓

TECHNICAL HOLDING TIME CRITERIA

Water: Extracted within 7 days, analyzed within 40 days.
Soil: Extracted within 14 days, analyzed within 40 days.

LDC #: 29157E 2b

VALIDATION FINDINGS WORKSHEET
Surrogate Recovery

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were percent recoveries (%R) for surrogates within QC limits?
Y N N/A If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?
Y N N/A If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

#	Date	Sample ID	Surrogate	%R (Limits)	Qualifications
		1	TPH	189 (30-120)	no qual 20x DL
				( )	
				( )	
				( )	
				( )	
				( )	
		2	↓	122 (↓)	↓
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

* QC limits are advisory	QC Limits (Soil)	QC Limits (Water)		QC Limits (Soil)	QC Limits (Water)
S1 (NBZ) = Nitrobenzene-d5	23-120	35-114	S5 (2FP)= 2-Fluorophenol	25-121	21-100
S2 (FBP) = 2-Fluorobiphenyl	30-115	43-116	S6 (TBP) = 2,4,6-Tribromophenol	19-122	10-123
S3 (TPH) = Terphenyl-d14	18-137	33-141	S7 (2CP) = 2-Chlorophenol-d4	20-130*	33-110*
S4 (PHL) = Phenol-d5	24-113	10-94	S8 (DCB) = 1,2-Dichlorobenzene-d4	20-130*	16-110*

LDC #: 29157E2b

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: FT
2nd Reviewer: L

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

Y N N/A Was a MS/MSD analyzed every 20 samples of each matrix?

Y N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		3	general	%R outside limits		( )	2	no qual 20x DL
				(see following pages		( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8270D (SIM)

AQ-ILF-02-0-12

Laboratory:	Apex Laboratories	SDG:	A12L107
Client:	Anchor QEA, LLC Tigard	Project:	Former Reynolds Metals Reduction Plant RI/FS
Matrix:	Soil		
Batch:	1212143	Laboratory ID:	1212143-MS1
Preparation:	EPA 3546	Initial/Final:	11.38 g / 5 mL
Source Sample Name:	AQ-ILF-02-0-12		

no qual 20x DL

COMPOUND	SPIKE ADDED (ug/kg dry)	SAMPLE CONCENTRATION (ug/kg dry)	MS CONCENTRATION (ug/kg dry)		MS % REC. (*=Out)	QC LIMITS REC.
Acenaphthene	845	15400	31800	GG	1940 *	45 - 125
Acenaphthylene	845	344	1370	DD	122	45 - 125
Anthracene	845	21000	36400	YV	1820 *	55 - 125
Benz(a)anthracene	845	141000	132000	CCC	-1050 *	50 - 125
Benzo(a)pyrene	845	214000	201000	III	-1500 *	50 - 125
Benzo(b)fluoranthene	845	402000	371000	GGG	-3750 *	45 - 125
Benzo(k)fluoranthene	845	86600	379000	HHH	34600 *	45 - 125
Benzo(b+k)fluoranthene(s)	1690	489000	459000	UUU	-1770 *	45 - 125
Benzo(g,h,i)perylene	845	146000	136000	LLL	-1110 *	40 - 125
Chrysene	845	236000	217000	DDD	-2300 *	55 - 125
Dibenz(a,h)anthracene	845	42100	40100	KKK	-235 *	40 - 125
Dibenzofuran	845	8190	17800	JJ	1140 *	50 - 125
Fluoranthene	845	202000	205000	YY	326 *	55 - 125
Fluorene	845	9340	20800	NN	1360 *	20 - 125
Indeno(1,2,3-cd)pyrene	845	143000	134000	JJJ	-1030 *	40 - 125
1-Methylnaphthalene	845	1650	4610	TTT	350 *	45 - 125
2-Methylnaphthalene	845	2350	5970	VV	428 *	45 - 125
Naphthalene	845	2790	7120	S	512 *	40 - 125
Phenanthrene	845	73000	122000	UU	5750 *	50 - 125
Pyrene	845	204000	195000	ZZ	-1170 *	45 - 125

LDC #: 29157E2b

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and RLs

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?

Y N N/A Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Date	compound ~~Sample ID~~	Finding	Associated Samples	Qualifications
		LLL	x'd cal Range	2	J/A det

Comments: See sample calculation verification worksheet for recalculations

LDC #: 29157E2b

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

(Y) N N/A   Was the overall quality and usability of the data acceptable?

#	Date	Compound	Finding	Associated Samples	Qualifications
		LLL	x'd cal Range	2	R/A
		KKK	re-runs has	2	R/A
			higher result		

Comments: ______

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 17 through October 18, 2012
LDC Report Date:	February 11, 2013
Matrix:	Soil
Parameters:	Total Solids
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L107

Sample Identification

AQ-ILF-03-0-12
AQ-IFL-05-0-14
AQ-FSL-01-0-12
AQ-ILF-02-0-12

Introduction

This data review covers 4 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per APEX SOP for Total Solids.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blank analysis was not required by the method.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analysis were not required by the method.

VI. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were not required by the method.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

X. Field Duplicates

No field blanks were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A12L076

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A12L076

No Sample Data Qualified in this SDG

LDC #: 29157E6

SDG #: A12L107

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 2/11/13

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: Total Solids (~~SM2540G~~ APEX SOP)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/17-18/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	N	Not required
V	Matrix Spike/Matrix Spike Duplicates	N	
VI.	Duplicates	N	CS
VII.	Laboratory control samples	N	Not required
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ~~sediment~~ Soil

1	AQ-ILF-03-0-12	11		21		31	
2	AQ-IFL-05-0-14	12		22		32	
3	AQ-FSL-01-0-12	13		23		33	
4	AQ-ILF-02-0-12	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC Report# 29157E8

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	October 17 through October 18, 2012
LDC Report Date:	February 5, 2013
Matrix:	Soil
Parameters:	Diesel Range Organics
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L107

Sample Identification

AQ-ILF-03-0-12
AQ-ILF-05-0-14
AQ-ILF-05-0-14DUP

Introduction

This data review covers 3 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method NWTPH-Dx for Diesel Range Organics.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
AQ-ILF-03-0-12	All TCL compounds	54	14	J (all detects) R (all non-detects)	P
AQ-ILF-05-0-14	All TCL compounds	53	14	J (all detects) R (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 15.0%.

III. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 15.0% for all compounds.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic contaminants were found in the method blanks.

V. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Target Compound Identification

Raw data were not reviewed for this SDG.

IX. Compound Quantitation

Raw data were not reviewed for this SDG.

X. System Performance

Raw data were not reviewed for this SDG.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to extraction holding time problems, data were qualified as estimated in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XII. Field Duplicates

No field duplicates were identified in this SDG.

XIII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Diesel Range Organics - Data Qualification Summary - SDG A12L107

SDG	Sample	Compound	Flag	A or P	Reason
A12L107	AQ-ILF-03-0-12 AQ-ILF-05-0-14	All TCL compounds	J (all detects) R (all non-detects)	P	Technical holding times

Millennium Bulk Terminals
Diesel Range Organics - Laboratory Blank Data Qualification Summary - SDG A12L107

No Sample Data Qualified in this SDG

LDC #: 29157E8

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 02/01/2013

SDG #: A12L107

Page: 1 of 1

Laboratory: Apex Laboratories, LLC

Reviewer: SW

2nd Reviewer: [illegible]

METHOD: GC Diesel Range Organics(NWTPH-Dx With Silica Gel Cleanup)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	SW	Sampling dates: 10/17/2012 - 10/18/2012
II	Initial calibration	A	RSD ≤ ~~20~~ 15
III.	Calibration verification/ICV	A	icv/ccv ≤ ~~20~~ 15
IV.	Blanks	A	
V	Surrogate recovery	A	
VI.	Matrix spike/Matrix spike duplicates	N	CS
VII.	Laboratory control samples / LD	A / A	LCS
VIII.	Target compound identification	N	
IX.	Compound quantitation/RL/LOQ/LODs	A ~~N~~ SW	
X.	System Performance	N	
XI.	Overall assessment of data	A	
XII.	Field duplicates	N	
XIII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

Soil

~~1~~ 1	AQ-ILF-03-0-12	11		21		31	1212193-BLK1
~~2~~ 2	AQ-ILF-05-0-14	12		22		32	
3	AQ-ILF-05-0-14DUP	13		23		33	
4	ILF	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 29157E8

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Reviewer: SW
2nd Reviewer: [illegible]

All circled dates have exceeded the technical holding times.
(Y) N N/A Were all cooler temperatures within validation criteria?

METHOD : X GC __ HPLC (EPA _____)

Sample ID	Matrix	Preserved	Sampling Date	Extraction date	Analysis date	Total # of Days	Qualifier
1	Soil		10/17/12	12/10/12		54	J/~~UJ~~/P
	↓						↓
2			10/18/12	12/10/12		53	

TECHNICAL HOLDING TIME CRITERIA

VOLATILES:
- Water unpreserved: Aromatic within 7 days, non-aromatic within 14 days of sample collection.
- Water preserved: Both within 14 days of sample collection.
- Soils: Both within 14 days of sample collection.

EXTRACTABLES:
- Water: Extracted within 7 days, analyzed within 40 days.
- Soil: Extracted within 14 days, analyzed within 40 days.

Analytical Method APEXsolids

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-01-0-12	A12L107-01	Total solids	12/7/2012	75.2		Yes	Y				1.00	1.00	pct
AQ-IFL-05-0-14	A12L107-04	Total solids	12/7/2012	84.1		Yes	Y				1.00	1.00	pct
AQ-ILF-02-0-12	A12L107-02	Total solids	12/7/2012	83.2		Yes	Y				1.00	1.00	pct
AQ-ILF-03-0-12	A12L107-03	Total solids	12/7/2012	83.7		Yes	Y				1.00	1.00	pct

Analytical Method NWTPHDx

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-IFL-05-0-14	A12L107-04	Oil	12/11/2012	4780		Yes	Y	D	J	1	541	271	mg/kg
AQ-IFL-05-0-14	A12L107-04	Diesel Range Hydrocarbons	12/11/2012	920		Yes	Y	D	J	1	271	135	mg/kg
AQ-ILF-03-0-12	A12L107-03	Oil	12/10/2012	4020		Yes	Y	D	J	1	518	259	mg/kg
AQ-ILF-03-0-12	A12L107-03	Diesel Range Hydrocarbons	12/10/2012	994		Yes	Y	D	J	1	259	130	mg/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-01-0-12	A12L107-01	2-Methylnaphthalene	12/7/2012	95700		Yes	Y	D	J	1	247	123	ug/kg
AQ-FSL-01-0-12	A12L107-01	1-Methylnaphthalene	12/7/2012	73300		Yes	Y	D	J	1	247	123	ug/kg
AQ-FSL-01-0-12	A12L107-01	Dibenzo(a,h)anthracene	12/7/2012	31100		Yes	Y	D	J	1	247	123	ug/kg
AQ-FSL-01-0-12	A12L107-01	Acenaphthylene	12/7/2012	9830		Yes	Y	D	J	1	247	123	ug/kg
AQ-FSL-01-0-12	A12L107-01RE1	Anthracene	12/7/2012	604000		Yes	Y	D	J	1	12300	6170	ug/kg
AQ-FSL-01-0-12	A12L107-01RE1	Dibenzofuran	12/7/2012	352000		Yes	Y	D	J	1	12300	6170	ug/kg
AQ-FSL-01-0-12	A12L107-01RE1	Fluoranthene	12/7/2012	1500000		Yes	Y	D	J	1	12300	6170	ug/kg
AQ-FSL-01-0-12	A12L107-01RE1	Fluorene	12/7/2012	550000		Yes	Y	D	J	1	12300	6170	ug/kg
AQ-FSL-01-0-12	A12L107-01RE1	Indeno(1,2,3-c,d)pyrene	12/7/2012	142000		Yes	Y	D	J	1	12300	6170	ug/kg
AQ-FSL-01-0-12	A12L107-01RE1	Naphthalene	12/7/2012	147000		Yes	Y	D	J	1	12300	6170	ug/kg
AQ-FSL-01-0-12	A12L107-01RE1	Phenanthrene	12/7/2012	1780000		Yes	Y	D	J	1	12300	6170	ug/kg
AQ-FSL-01-0-12	A12L107-01RE1	Pyrene	12/7/2012	1110000		Yes	Y	D	J	1	12300	6170	ug/kg
AQ-FSL-01-0-12	A12L107-01RE1	Acenaphthene	12/7/2012	1030000		Yes	Y	D	J	1	12300	6170	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-FSL-01-0-12	A12L107-01RE1	Benzo(b,k)fluoranthene	12/7/2012	561000	Yes	Y	D	J	1	24700	12300	ug/kg
AQ-FSL-01-0-12	A12L107-01RE1	Benzo(g,h,i)perylene	12/7/2012	145000	Yes	Y	D	J	1	12300	6170	ug/kg
AQ-FSL-01-0-12	A12L107-01RE1	Chrysene	12/7/2012	476000	Yes	Y	D	J	1	12300	6170	ug/kg
AQ-FSL-01-0-12	A12L107-01RE1	Benzo(a)anthracene	12/7/2012	247000	Yes	Y	D	J	1	12300	6170	ug/kg
AQ-FSL-01-0-12	A12L107-01RE1	Benzo(a)pyrene	12/7/2012	189000	Yes	Y	D	J	1	12300	6170	ug/kg
AQ-ILF-02-0-12	A12L107-02	Dibenzo(a,h)anthracene	12/7/2012	42100	No	Y	D	R	22	235	117	ug/kg
AQ-ILF-02-0-12	A12L107-02	Anthracene	12/7/2012	21000	Yes	Y	D	J	1	235	117	ug/kg
AQ-ILF-02-0-12	A12L107-02	Acenaphthene	12/7/2012	15400	Yes	Y	D	J	1	235	117	ug/kg
AQ-ILF-02-0-12	A12L107-02	Fluorene	12/7/2012	9340	Yes	Y	D	J	1	235	117	ug/kg
AQ-ILF-02-0-12	A12L107-02	Acenaphthylene	12/7/2012	344	Yes	Y	D	J	1	235	117	ug/kg
AQ-ILF-02-0-12	A12L107-02	Benzo(g,h,i)perylene	12/7/2012	146000	No	Y	D	R	22	235	117	ug/kg
AQ-ILF-02-0-12	A12L107-02	Naphthalene	12/7/2012	2790	Yes	Y	D	J	1	235	117	ug/kg
AQ-ILF-02-0-12	A12L107-02	2-Methylnaphthalene	12/7/2012	2350	Yes	Y	D	J	1	235	117	ug/kg
AQ-ILF-02-0-12	A12L107-02	Dibenzofuran	12/7/2012	8190	Yes	Y	D	J	1	235	117	ug/kg
AQ-ILF-02-0-12	A12L107-02	1-Methylnaphthalene	12/7/2012	1650	Yes	Y	D	J	1	235	117	ug/kg
AQ-ILF-02-0-12	A12L107-02	Phenanthrene	12/7/2012	73000	Yes	Y	D	J	1	235	117	ug/kg
AQ-ILF-02-0-12	A12L107-02RE1	Pyrene	12/7/2012	285000	Yes	Y	D	J	1	11700	5870	ug/kg
AQ-ILF-02-0-12	A12L107-02RE1	Benzo(a)anthracene	12/7/2012	181000	Yes	Y	D	J	1	11700	5870	ug/kg
AQ-ILF-02-0-12	A12L107-02RE1	Benzo(a)pyrene	12/7/2012	271000	Yes	Y	D	J	1	11700	5870	ug/kg
AQ-ILF-02-0-12	A12L107-02RE1	Benzo(b,k)fluoranthene	12/7/2012	690000	Yes	Y	D	J	1	23500	11700	ug/kg
AQ-ILF-02-0-12	A12L107-02RE1	Indeno(1,2,3-c,d)pyrene	12/7/2012	208000	Yes	Y	D	J	1	11700	5870	ug/kg
AQ-ILF-02-0-12	A12L107-02RE1	Fluoranthene	12/7/2012	288000	Yes	Y	D	J	1	11700	5870	ug/kg
AQ-ILF-02-0-12	A12L107-02RE1	Benzo(g,h,i)perylene	12/7/2012	209000	Yes	Y	D	J	1	11700	5870	ug/kg
AQ-ILF-02-0-12	A12L107-02RE1	Chrysene	12/7/2012	335000	Yes	Y	D	J	1	11700	5870	ug/kg
AQ-ILF-02-0-12	A12L107-02RE1	Dibenzo(a,h)anthracene	12/7/2012	59300	Yes	Y	D	J	1	11700	5870	ug/kg

LDC Report# 29157F2a

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 10, 2012
LDC Report Date:	February 8, 2013
Matrix:	Sediment
Parameters:	Semivolatiles
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L200

Sample Identification

AQ-SS-14-10
AQ-SS-10-10
AQ-SS-09-10
AQ-SS-04-10
AQ-SS-09-10DUP

Introduction

This data review covers 5 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270D for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
12/18/12	4-Nitroaniline	26.1	All samples in SDG A12L200	J (all detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) were reviewed for each matrix as applicable. Percent recoveries (%R) were not within QC limits. Since there were no associated samples, no data were qualified.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Analyte	RPD (Limits)	Difference (Limits)	Flag	A or P
AQ-SS-09-10DUP (AQ-SS-09-10)	Acenaphthene	76 (≤35)	-	J (all detects)	A
	Anthracene	82 (≤35)	-	J (all detects)	
	Benzo(a)anthracene	86 (≤35)	-	J (all detects)	
	Benzo(a)pyrene	85 (≤35)	-	J (all detects)	
	Benzo(b)fluoranthene	79 (≤35)	-	J (all detects)	
	Benzo(k)fluoranthene	82 (≤35)	-	J (all detects)	
	Benzo(g,h,i)perylene	82 (≤35)	-	J (all detects)	
	Chrysene	70 (≤35)	-	J (all detects)	
	Dibenzo(a,h)anthracene	91 (≤35)	-	J (all detects)	
	Fluoranthene	87 (≤35)	-	J (all detects)	
	Fluorene	-	1910 ug/Kg (≤1046)	J (all detects)	
	Indeno(1,2,3-cd)pyrene	84 (≤35)	-	J (all detects)	
	Phenanthrene	88 (≤35)	-	J (all detects)	
	Pyrene	89 (≤35)	-	J (all detects)	
	Carbazole	-	3570 ug/Kg (≤1568)	J (all detects)	

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to Duplicate RPD and difference problems, data were qualified as estimated in one sample.

No data were qualified due to high calibration %D, the associated results were non-detected.

The quality control criteria reviewed were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Semivolatiles - Data Qualification Summary - SDG A12L200

SDG	Sample	Compound	Flag	A or P	Reason
A12L200	AQ-SS-14-10 AQ-SS-10-10 AQ-SS-09-10 AQ-SS-04-10	4-Nitroaniline	J (all detects)	A	Continuing calibration (%D)
A12L200	AQ-SS-09-10	Acenaphthene Anthracene Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(g,h,i)perylene Chrysene Dibenzo(a,h)anthracene Fluoranthene Indeno(1,2,3-cd)pyrene Phenanthrene Pyrene	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A	Duplicate sample analysis (RPD)
A12L200	AQ-SS-09-10	Fluorene Carbazole	J (all detects) J (all detects)	A	Duplicate sample analysis (difference)

Millennium Bulk Terminals
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG A12L200

No Sample Data Qualified in this SDG

LDC #: 29157F2a

SDG #: A12L200

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 2/7/13

Page: 1 of 1

Reviewer: B

2nd Reviewer: V

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/10/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20, r^2
IV.	Continuing calibration/ICV	SW	ICV ≤ 30, CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates /DUP	SW/SW	A12L258-01 MS ~~MD~~ (NO Ass sample)
VIII.	Laboratory control samples A	~~SW~~	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Sediments

1	AQ-SS-14-10	11	1212357	21		31	
2	AQ-SS-10-10	12		22		32	
3	AQ-SS-09-10	13		23		33	
4	AQ-SS-04-10	14		24		34	
5	AQ-SS-09-10DUP	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1-Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU. Benzo(b+k) fluoranthene
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 29157F2a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ≤20 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: <20.0%)	Finding RRF (Limit: >0.05)	Associated Samples	Qualifications
+	12/18/12	E121812O2 CCV	DO	26.1		All	J/A det

CONCAL.2S

LDC#: 29157F2a

VALIDATION FINDINGS WORKSHEET
Laboratory Duplicates

Page: 1 of 1
Reviewer: EJ
2nd Reviewer: ✓

METHOD: GC MS Svoa (EPA SW 846 Method 8270D)

Y N NA Were lab duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the lab duplicate pairs?

Compound	Concentration (ug/Kg)		RPD (≤35%)	Difference (ug/Kg)	Limits (ug/Kg)	Qualifications (Parent Only)
	3	5				
GG	4690	10500	76	~~5810~~		J/A det
VV	3330	7950	82	4620		J/A det
CCC	16000	39900	86	23900		J/A det
III	24100	59800	85	35700		J/A det
GGG	33400	77000	79	43600		J/A det
HHH	11000	26400	82	15400		J/A det
~~UUU~~	~~44600~~	~~112000~~	~~86~~	~~67400~~		~~J/A det~~
LLL	17400	41700	82	24300		J/A det
DDD	25800	53600	70	27800		J/A det
KKK	2960	7870	91	4910		J/A det
YY	30000	76600	87	~~46600~~		J/A det
NN	1540	3450		1910	≤1046	J/A det
JJJ	16200	39700	84	~~23500~~		J/A det
UU	11900	30700	88	18800		J/A det
ZZ	28200	73800	89	45600		J/A det
WW	1360	4930		3570	≤1568	J/A det
JJ	596	1030		434	≤1046	–

V:\FIELD DUPLICATES\29157F2a.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 10, 2012
LDC Report Date:	February 1, 2013
Matrix:	Sediment
Parameters:	Metals
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L200

Sample Identification

AQ-SS-14-10
AQ-SS-10-10
AQ-SS-09-10
AQ-SS-04-10
AQ-SS-04-10MS
AQ-SS-04-10DUP

Introduction

This data review covers 6 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW846 Method 6020A for Metals. The metals analyzed were Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Silver, and Zinc.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this method.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Metals - Data Qualification Summary - SDG A12L200

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Metals - Laboratory Blank Data Qualification Summary - SDG A12L200

No Sample Data Qualified in this SDG

LDC #: 29157F4

SDG #: A12L200

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/31/13

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: Metals (EPA SW846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/10/12
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	A	MS
VII.	Duplicate Sample Analysis	A	Dup (Hg OK by diff.)
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: sediment

1	AQ-SS-14-10	11		21		31	
2	AQ-SS-10-10	12		22		32	
3	AQ-SS-09-10	13		23		33	
4	AQ-SS-04-10	14		24		34	
5	AQ-SS-04-10MS	15		25		35	
6	AQ-SS-04-10DUP	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 29157F4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: CR
2nd reviewer: ✓

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-4		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
QC:5,6		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____

Comments: Mercury by CVAA if performed

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 10, 2012
LDC Report Date:	February 1, 2013
Matrix:	Sediment
Parameters:	Wet Chemistry
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L200

Sample Identification

AQ-SS-14-10
AQ-SS-10-10
AQ-SS-09-10
AQ-SS-04-10
AQ-SS-14-10DUP

Introduction

This data review covers 5 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2540G for Total Solids and PSEP and Standard Method 5310B modified for Total Organic Carbon.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analysis were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A12L200

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A12L200

No Sample Data Qualified in this SDG

LDC #: 29157F6

SDG #: A12L200

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/31/13

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: Total Solids (SM2540G), Total Organic Carbon (SM5310B)mod PSEP

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/10/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	N	Not required
VI.	Duplicates	A	Dup
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: sediment

1	AQ-SS-14-10	11		21		31	
2	AQ-SS-10-10	12		22		32	
3	AQ-SS-09-10	13		23		33	
4	AQ-SS-04-10	14		24		34	
5	AQ-SS-14-10DUP	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 09157F6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Reviewer: CR
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Parameter
1-4	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 TS
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
QCS	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 TS
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

Analytical Method APEXsolids

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-04-10	A12L200-08	Total solids	12/20/2012	73.1	Yes	Y				1.00	1.00	pct
AQ-SS-09-10	A12L200-05	Total solids	12/20/2012	68.1	Yes	Y				1.00	1.00	pct
AQ-SS-10-10	A12L200-03	Total solids	12/20/2012	62.1	Yes	Y				1.00	1.00	pct
AQ-SS-14-10	A12L200-01	Total solids	12/20/2012	74.1	Yes	Y				1.00	1.00	pct

Analytical Method SM2540G

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-04-10	A12L200-08	Total solids	12/20/2012	73.1	Yes	Y				1.00	1.00	pct
AQ-SS-09-10	A12L200-05	Total solids	12/20/2012	68.1	Yes	Y				1.00	1.00	pct
AQ-SS-10-10	A12L200-03	Total solids	12/20/2012	62.1	Yes	Y				1.00	1.00	pct
AQ-SS-14-10	A12L200-01	Total solids	12/20/2012	74.1	Yes	Y				1.00	1.00	pct

Analytical Method SM5310B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-04-10	A12L200-08	Total organic carbon	12/20/2012	0.14	Yes	Y				0.020	0.010	pct
AQ-SS-09-10	A12L200-05	Total organic carbon	12/20/2012	1.4	Yes	Y				0.020	0.010	pct
AQ-SS-10-10	A12L200-03	Total organic carbon	12/20/2012	0.84	Yes	Y				0.020	0.010	pct
AQ-SS-14-10	A12L200-01	Total organic carbon	12/20/2012	0.3	Yes	Y				0.020	0.010	pct

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-04-10	A12L200-08	Lead	12/21/2012	1.41	Yes	Y	D			0.729	0.365	mg/kg
AQ-SS-04-10	A12L200-08	Arsenic	12/21/2012	0.773	Yes	Y	D J			1.46	0.365	mg/kg
AQ-SS-04-10	A12L200-08	Chromium	12/21/2012	6.99	Yes	Y	D			1.46	0.729	mg/kg
AQ-SS-04-10	A12L200-08	Copper	12/21/2012	14.8	Yes	Y	D			1.46	0.729	mg/kg
AQ-SS-04-10	A12L200-08	Zinc	12/21/2012	26.7	Yes	Y	D			2.92	1.46	mg/kg
AQ-SS-04-10	A12L200-08	Silver	12/21/2012	0.729	Yes	N	D U			0.729	0.365	mg/kg
AQ-SS-04-10	A12L200-08	Mercury	12/21/2012	0.105	Yes	Y	D			0.0583	0.0292	mg/kg

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-04-10	A12L200-08	Cadmium	12/21/2012	0.729	Yes	N	D U			0.729	0.365	mg/kg
AQ-SS-09-10	A12L200-05	Cadmium	12/21/2012	0.762	Yes	N	D U			0.762	0.381	mg/kg
AQ-SS-09-10	A12L200-05	Lead	12/21/2012	14.7	Yes	Y	D			0.762	0.381	mg/kg
AQ-SS-09-10	A12L200-05	Mercury	12/21/2012	0.281	Yes	Y	D			0.0609	0.0305	mg/kg
AQ-SS-09-10	A12L200-05	Arsenic	12/21/2012	2.8	Yes	Y	D			1.52	0.381	mg/kg
AQ-SS-09-10	A12L200-05	Chromium	12/21/2012	14	Yes	Y	D			1.52	0.762	mg/kg
AQ-SS-09-10	A12L200-05	Copper	12/21/2012	33.6	Yes	Y	D			1.52	0.762	mg/kg
AQ-SS-09-10	A12L200-05	Zinc	12/21/2012	60	Yes	Y	D			3.05	1.52	mg/kg
AQ-SS-09-10	A12L200-05	Silver	12/21/2012	0.762	Yes	N	D U			0.762	0.381	mg/kg
AQ-SS-10-10	A12L200-03	Cadmium	12/21/2012	0.535	Yes	Y	D J			0.810	0.405	mg/kg
AQ-SS-10-10	A12L200-03	Copper	12/21/2012	154	Yes	Y	D			1.62	0.810	mg/kg
AQ-SS-10-10	A12L200-03	Chromium	12/21/2012	22.5	Yes	Y	D			1.62	0.810	mg/kg
AQ-SS-10-10	A12L200-03	Zinc	12/21/2012	61.8	Yes	Y	D			3.24	1.62	mg/kg
AQ-SS-10-10	A12L200-03	Lead	12/21/2012	5.73	Yes	Y	D			0.810	0.405	mg/kg
AQ-SS-10-10	A12L200-03	Arsenic	12/21/2012	4.62	Yes	Y	D			1.62	0.405	mg/kg
AQ-SS-10-10	A12L200-03	Mercury	12/21/2012	0.202	Yes	Y	D			0.0648	0.0324	mg/kg
AQ-SS-10-10	A12L200-03	Silver	12/21/2012	0.81	Yes	N	D U			0.810	0.405	mg/kg
AQ-SS-14-10	A12L200-01	Mercury	12/21/2012	0.0538	Yes	N	D U			0.0538	0.0269	mg/kg
AQ-SS-14-10	A12L200-01	Lead	12/21/2012	1.92	Yes	Y	D			0.672	0.336	mg/kg
AQ-SS-14-10	A12L200-01	Cadmium	12/21/2012	0.672	Yes	N	D U			0.672	0.336	mg/kg
AQ-SS-14-10	A12L200-01	Silver	12/21/2012	0.672	Yes	N	D U			0.672	0.336	mg/kg
AQ-SS-14-10	A12L200-01	Chromium	12/21/2012	6.07	Yes	Y	D			1.34	0.672	mg/kg
AQ-SS-14-10	A12L200-01	Copper	12/21/2012	12.3	Yes	Y	D			1.34	0.672	mg/kg
AQ-SS-14-10	A12L200-01	Zinc	12/21/2012	26.7	Yes	Y	D			2.69	1.34	mg/kg
AQ-SS-14-10	A12L200-01	Arsenic	12/21/2012	1.47	Yes	Y	D			1.34	0.336	mg/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-04-10	A12L200-08	Chrysene	12/18/2012	4.06		Yes	Y	J			4.49	2.25	ug/kg
AQ-SS-04-10	A12L200-08	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	12/18/2012	11.2		Yes	N	U			11.2	5.62	ug/kg
AQ-SS-04-10	A12L200-08	Dibenzofuran	12/18/2012	4.49		Yes	N	U			4.49	2.25	ug/kg
AQ-SS-04-10	A12L200-08	Benzo(g,h,i)perylene	12/18/2012	2.28		Yes	Y	J			4.49	2.25	ug/kg
AQ-SS-04-10	A12L200-08	Indeno(1,2,3-c,d)pyrene	12/18/2012	2.33		Yes	Y	J			4.49	2.25	ug/kg
AQ-SS-04-10	A12L200-08	Benzo(b)fluoranthene	12/18/2012	6.13		Yes	Y				4.49	2.25	ug/kg
AQ-SS-04-10	A12L200-08	Fluoranthene	12/18/2012	4.26		Yes	Y	J			4.49	2.25	ug/kg
AQ-SS-04-10	A12L200-08	Benzo(k)fluoranthene	12/18/2012	4.49		Yes	N	U			4.49	2.25	ug/kg
AQ-SS-04-10	A12L200-08	Benzo(a)pyrene	12/18/2012	5.1		Yes	Y				4.49	2.25	ug/kg
AQ-SS-04-10	A12L200-08	Dibenzo(a,h)anthracene	12/18/2012	4.49		Yes	N	U			4.49	2.25	ug/kg
AQ-SS-04-10	A12L200-08	Dimethyl phthalate	12/18/2012	22.5		Yes	N	U			22.5	11.2	ug/kg
AQ-SS-04-10	A12L200-08	Benzo(a)anthracene	12/18/2012	3.89		Yes	Y	J			4.49	2.25	ug/kg
AQ-SS-04-10	A12L200-08	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	12/18/2012	112		Yes	N	U			112	56.2	ug/kg
AQ-SS-04-10	A12L200-08	1,4-Dichlorobenzene	12/18/2012	11.2		Yes	N	U			11.2	5.62	ug/kg
AQ-SS-04-10	A12L200-08	1,3-Dichlorobenzene	12/18/2012	11.2		Yes	N	U			11.2	5.62	ug/kg
AQ-SS-04-10	A12L200-08	Acenaphthylene	12/18/2012	4.49		Yes	N	U			4.49	2.25	ug/kg
AQ-SS-04-10	A12L200-08	bis(2-Chloroethoxy)methane	12/18/2012	11.2		Yes	N	U			11.2	5.62	ug/kg
AQ-SS-04-10	A12L200-08	2,3,4,6-Tetrachlorophenol	12/18/2012	22.5		Yes	N	U			22.5	11.2	ug/kg
AQ-SS-04-10	A12L200-08	2,4-Dinitrophenol	12/18/2012	112		Yes	N	U			112	56.2	ug/kg
AQ-SS-04-10	A12L200-08	4-Nitroaniline	12/18/2012	89.9		Yes	N	U			89.9	44.9	ug/kg
AQ-SS-04-10	A12L200-08	4-Nitrophenol	12/18/2012	44.9		Yes	N	U			44.9	22.5	ug/kg
AQ-SS-04-10	A12L200-08	Benzyl alcohol	12/18/2012	22.5		Yes	N	U			22.5	11.2	ug/kg
AQ-SS-04-10	A12L200-08	4-Bromophenyl-phenyl ether	12/18/2012	11.2		Yes	N	U			11.2	5.62	ug/kg
AQ-SS-04-10	A12L200-08	2,4-Dimethylphenol	12/18/2012	22.5		Yes	N	U			22.5	11.2	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-04-10	A12L200-08	Phenol	12/18/2012	5.95	Yes	Y	J			8.99	4.49	ug/kg
AQ-SS-04-10	A12L200-08	bis(2-Chloroethyl)ether	12/18/2012	11.2	Yes	N	U			11.2	5.62	ug/kg
AQ-SS-04-10	A12L200-08	Pyrene	12/18/2012	3.93	Yes	Y	J			4.49	2.25	ug/kg
AQ-SS-04-10	A12L200-08	Bis(2-ethylhexyl)phthalate	12/18/2012	89.9	Yes	N	U			89.9	44.9	ug/kg
AQ-SS-04-10	A12L200-08	Di-n-octyl phthalate	12/18/2012	89.9	Yes	N	U			89.9	44.9	ug/kg
AQ-SS-04-10	A12L200-08	Hexachlorobenzene	12/18/2012	4.49	Yes	N	U			4.49	2.25	ug/kg
AQ-SS-04-10	A12L200-08	Anthracene	12/18/2012	4.49	Yes	N	U			4.49	2.25	ug/kg
AQ-SS-04-10	A12L200-08	1,2,4-Trichlorobenzene	12/18/2012	11.2	Yes	N	U			11.2	5.62	ug/kg
AQ-SS-04-10	A12L200-08	2,4-Dichlorophenol	12/18/2012	22.5	Yes	N	U			22.5	11.2	ug/kg
AQ-SS-04-10	A12L200-08	2,4-Dinitrotoluene	12/18/2012	44.9	Yes	N	U			44.9	22.5	ug/kg
AQ-SS-04-10	A12L200-08	4-Chloroaniline	12/18/2012	11.2	Yes	N	U			11.2	5.62	ug/kg
AQ-SS-04-10	A12L200-08	2-Methylphenol (o-Cresol)	12/18/2012	11.2	Yes	N	U			11.2	5.62	ug/kg
AQ-SS-04-10	A12L200-08	Pentachlorophenol	12/18/2012	89.9	Yes	N	U			89.9	44.9	ug/kg
AQ-SS-04-10	A12L200-08	2,4,6-Trichlorophenol	12/18/2012	22.5	Yes	N	U			22.5	11.2	ug/kg
AQ-SS-04-10	A12L200-08	2-Nitroaniline	12/18/2012	89.9	Yes	N	U			89.9	44.9	ug/kg
AQ-SS-04-10	A12L200-08	2-Nitrophenol	12/18/2012	44.9	Yes	N	U			44.9	22.5	ug/kg
AQ-SS-04-10	A12L200-08	1-Methylnaphthalene	12/18/2012	8.99	Yes	N	U			8.99	4.49	ug/kg
AQ-SS-04-10	A12L200-08	3-Nitroaniline	12/18/2012	89.9	Yes	N	U			89.9	44.9	ug/kg
AQ-SS-04-10	A12L200-08	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	12/18/2012	11.2	Yes	N	U			11.2	5.62	ug/kg
AQ-SS-04-10	A12L200-08	3,3'-Dichlorobenzidine	12/18/2012	44.9	Yes	N	U			44.9	22.5	ug/kg
AQ-SS-04-10	A12L200-08	Naphthalene	12/18/2012	8.99	Yes	N	U			8.99	4.49	ug/kg
AQ-SS-04-10	A12L200-08	1,2-Dichlorobenzene	12/18/2012	11.2	Yes	N	U			11.2	5.62	ug/kg
AQ-SS-04-10	A12L200-08	2-Chlorophenol	12/18/2012	22.5	Yes	N	U			22.5	11.2	ug/kg
AQ-SS-04-10	A12L200-08	2,4,5-Trichlorophenol	12/18/2012	22.5	Yes	N	U			22.5	11.2	ug/kg
AQ-SS-04-10	A12L200-08	Nitrobenzene	12/18/2012	44.9	Yes	N	U			44.9	22.5	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-04-10	A12L200-08	4-Chloro-3-methylphenol	12/18/2012	44.9	Yes	N	U			44.9	22.5	ug/kg
AQ-SS-04-10	A12L200-08	bis(2-Chloroisopropyl)ether	12/18/2012	11.2	Yes	N	U			11.2	5.62	ug/kg
AQ-SS-04-10	A12L200-08	2-Methylnaphthalene	12/18/2012	8.99	Yes	N	U			8.99	4.49	ug/kg
AQ-SS-04-10	A12L200-08	4-Chlorophenyl phenyl ether	12/18/2012	11.2	Yes	N	U			11.2	5.62	ug/kg
AQ-SS-04-10	A12L200-08	2,6-Dinitrotoluene	12/18/2012	44.9	Yes	N	U			44.9	22.5	ug/kg
AQ-SS-04-10	A12L200-08	Aniline	12/18/2012	22.5	Yes	N	U			22.5	11.2	ug/kg
AQ-SS-04-10	A12L200-08	2-Chloronaphthalene	12/18/2012	4.49	Yes	N	U			4.49	2.25	ug/kg
AQ-SS-04-10	A12L200-08	Carbazole	12/18/2012	6.74	Yes	N	U			6.74	3.37	ug/kg
AQ-SS-04-10	A12L200-08	N-Nitrosodi-N-propylamine	12/18/2012	11.2	Yes	N	U			11.2	5.62	ug/kg
AQ-SS-04-10	A12L200-08	Hexachloroethane	12/18/2012	11.2	Yes	N	U			11.2	5.62	ug/kg
AQ-SS-04-10	A12L200-08	N-Nitrosodimethylamine	12/18/2012	11.2	Yes	N	U			11.2	5.62	ug/kg
AQ-SS-04-10	A12L200-08	Hexachlorocyclopentadiene	12/18/2012	22.5	Yes	N	U			22.5	11.2	ug/kg
AQ-SS-04-10	A12L200-08	Butylbenzyl phthalate	12/18/2012	89.9	Yes	N	U			89.9	44.9	ug/kg
AQ-SS-04-10	A12L200-08	Isophorone	12/18/2012	11.2	Yes	N	U			11.2	5.62	ug/kg
AQ-SS-04-10	A12L200-08	Acenaphthene	12/18/2012	4.49	Yes	N	U			4.49	2.25	ug/kg
AQ-SS-04-10	A12L200-08	Diethyl phthalate	12/18/2012	22.5	Yes	N	U			22.5	11.2	ug/kg
AQ-SS-04-10	A12L200-08	Di-n-butyl phthalate	12/18/2012	22.5	Yes	N	U			22.5	11.2	ug/kg
AQ-SS-04-10	A12L200-08	Phenanthrene	12/18/2012	4.49	Yes	N	U			4.49	2.25	ug/kg
AQ-SS-04-10	A12L200-08	Fluorene	12/18/2012	4.49	Yes	N	U			4.49	2.25	ug/kg
AQ-SS-04-10	A12L200-08	N-Nitrosodiphenylamine	12/18/2012	11.2	Yes	N	U			11.2	5.62	ug/kg
AQ-SS-04-10	A12L200-08	Benzoic acid	12/18/2012	562	Yes	N	U			562	281	ug/kg
AQ-SS-09-10	A12L200-05	Isophorone	12/18/2012	1220	Yes	N	D U			1220	612	ug/kg
AQ-SS-09-10	A12L200-05	Acenaphthene	12/18/2012	4690	Yes	Y	D	J	9	489	245	ug/kg
AQ-SS-09-10	A12L200-05	Diethyl phthalate	12/18/2012	2450	Yes	N	D U			2450	1220	ug/kg
AQ-SS-09-10	A12L200-05	Phenanthrene	12/18/2012	11900	Yes	Y	D	J	9	489	245	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-09-10	A12L200-05	Butylbenzyl phthalate	12/18/2012	9790	Yes	N	D U			9790	4890	ug/kg
AQ-SS-09-10	A12L200-05	Hexachlorocyclopentadiene	12/18/2012	2450	Yes	N	D U			2450	1220	ug/kg
AQ-SS-09-10	A12L200-05	Di-n-butyl phthalate	12/18/2012	2450	Yes	N	D U			2450	1220	ug/kg
AQ-SS-09-10	A12L200-05	4-Chlorophenyl phenyl ether	12/18/2012	1220	Yes	N	D U			1220	612	ug/kg
AQ-SS-09-10	A12L200-05	Hexachloroethane	12/18/2012	1220	Yes	N	D U			1220	612	ug/kg
AQ-SS-09-10	A12L200-05	Benzoic acid	12/18/2012	61200	Yes	N	D U			61200	30600	ug/kg
AQ-SS-09-10	A12L200-05	N-Nitrosodi-N-propylamine	12/18/2012	1220	Yes	N	D U			1220	612	ug/kg
AQ-SS-09-10	A12L200-05	N-Nitrosodimethylamine	12/18/2012	1220	Yes	N	D U			1220	612	ug/kg
AQ-SS-09-10	A12L200-05	2,6-Dinitrotoluene	12/18/2012	4890	Yes	N	D U			4890	2450	ug/kg
AQ-SS-09-10	A12L200-05	N-Nitrosodiphenylamine	12/18/2012	1220	Yes	N	D U			1220	612	ug/kg
AQ-SS-09-10	A12L200-05	Aniline	12/18/2012	2450	Yes	N	D U			2450	1220	ug/kg
AQ-SS-09-10	A12L200-05	1,2-Dichlorobenzene	12/18/2012	1220	Yes	N	D U			1220	612	ug/kg
AQ-SS-09-10	A12L200-05	Dibenzo(a,h)anthracene	12/18/2012	2960	Yes	Y	D	J	9	489	245	ug/kg
AQ-SS-09-10	A12L200-05	2-Nitroaniline	12/18/2012	9790	Yes	N	D U			9790	4890	ug/kg
AQ-SS-09-10	A12L200-05	4-Chloro-3-methylphenol	12/18/2012	4890	Yes	N	D U			4890	2450	ug/kg
AQ-SS-09-10	A12L200-05	1-Methylnaphthalene	12/18/2012	979	Yes	N	D U			979	489	ug/kg
AQ-SS-09-10	A12L200-05	Naphthalene	12/18/2012	979	Yes	N	D U			979	489	ug/kg
AQ-SS-09-10	A12L200-05	2-Methylnaphthalene	12/18/2012	979	Yes	N	D U			979	489	ug/kg
AQ-SS-09-10	A12L200-05	2-Chloronaphthalene	12/18/2012	489	Yes	N	D U			489	245	ug/kg
AQ-SS-09-10	A12L200-05	2-Nitrophenol	12/18/2012	4890	Yes	N	D U			4890	2450	ug/kg
AQ-SS-09-10	A12L200-05	2-Methylphenol (o-Cresol)	12/18/2012	1220	Yes	N	D U			1220	612	ug/kg
AQ-SS-09-10	A12L200-05	Fluorene	12/18/2012	1540	Yes	Y	D	J	9	489	245	ug/kg
AQ-SS-09-10	A12L200-05	2-Chlorophenol	12/18/2012	2450	Yes	N	D U			2450	1220	ug/kg
AQ-SS-09-10	A12L200-05	2,4,5-Trichlorophenol	12/18/2012	2450	Yes	N	D U			2450	1220	ug/kg
AQ-SS-09-10	A12L200-05	Nitrobenzene	12/18/2012	4890	Yes	N	D U			4890	2450	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-09-10	A12L200-05	3-Nitroaniline	12/18/2012	9790	Yes	N	D U			9790	4890	ug/kg
AQ-SS-09-10	A12L200-05	Pentachlorophenol	12/18/2012	9790	Yes	N	D U			9790	4890	ug/kg
AQ-SS-09-10	A12L200-05	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	12/18/2012	1220	Yes	N	D U			1220	612	ug/kg
AQ-SS-09-10	A12L200-05	Carbazole	12/18/2012	1360	Yes	Y	D	J	9	734	367	ug/kg
AQ-SS-09-10	A12L200-05	3,3'-Dichlorobenzidine	12/18/2012	4890	Yes	N	D U			4890	2450	ug/kg
AQ-SS-09-10	A12L200-05	Dibenzofuran	12/18/2012	596	Yes	Y	D			489	245	ug/kg
AQ-SS-09-10	A12L200-05	Chrysene	12/18/2012	25800	Yes	Y	D	J	9	489	245	ug/kg
AQ-SS-09-10	A12L200-05	Anthracene	12/18/2012	3330	Yes	Y	D	J	9	489	245	ug/kg
AQ-SS-09-10	A12L200-05	1,2,4-Trichlorobenzene	12/18/2012	1220	Yes	N	D U			1220	612	ug/kg
AQ-SS-09-10	A12L200-05	2,4-Dichlorophenol	12/18/2012	2450	Yes	N	D U			2450	1220	ug/kg
AQ-SS-09-10	A12L200-05	2,4-Dinitrotoluene	12/18/2012	4890	Yes	N	D U			4890	2450	ug/kg
AQ-SS-09-10	A12L200-05	Pyrene	12/18/2012	28200	Yes	Y	D	J	9	489	245	ug/kg
AQ-SS-09-10	A12L200-05	Acenaphthylene	12/18/2012	489	Yes	N	D U			489	245	ug/kg
AQ-SS-09-10	A12L200-05	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	12/18/2012	1220	Yes	N	D U			1220	612	ug/kg
AQ-SS-09-10	A12L200-05	Di-n-octyl phthalate	12/18/2012	9790	Yes	N	D U			9790	4890	ug/kg
AQ-SS-09-10	A12L200-05	Benzo(g,h,i)perylene	12/18/2012	17400	Yes	Y	D	J	9	489	245	ug/kg
AQ-SS-09-10	A12L200-05	Indeno(1,2,3-c,d)pyrene	12/18/2012	16200	Yes	Y	D	J	9	489	245	ug/kg
AQ-SS-09-10	A12L200-05	2,3,4,6-Tetrachlorophenol	12/18/2012	2450	Yes	N	D U			2450	1220	ug/kg
AQ-SS-09-10	A12L200-05	Benzo(b)fluoranthene	12/18/2012	33400	Yes	Y	D	J	9	489	245	ug/kg
AQ-SS-09-10	A12L200-05	1,3-Dichlorobenzene	12/18/2012	1220	Yes	N	D U			1220	612	ug/kg
AQ-SS-09-10	A12L200-05	Fluoranthene	12/18/2012	30000	Yes	Y	D	J	9	489	245	ug/kg
AQ-SS-09-10	A12L200-05	Benzo(k)fluoranthene	12/18/2012	11000	Yes	Y	D	J	9	489	245	ug/kg
AQ-SS-09-10	A12L200-05	Dimethyl phthalate	12/18/2012	2450	Yes	N	D U			2450	1220	ug/kg
AQ-SS-09-10	A12L200-05	2,4-Dimethylphenol	12/18/2012	2450	Yes	N	D U			2450	1220	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-09-10	A12L200-05	Benzo(a)anthracene	12/18/2012	16000	Yes	Y	D	J	9	489	245	ug/kg
AQ-SS-09-10	A12L200-05	2,4,6-Trichlorophenol	12/18/2012	2450	Yes	N	D U			2450	1220	ug/kg
AQ-SS-09-10	A12L200-05	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	12/18/2012	12200	Yes	N	D U			12200	6120	ug/kg
AQ-SS-09-10	A12L200-05	4-Nitroaniline	12/18/2012	9790	Yes	N	D U			9790	4890	ug/kg
AQ-SS-09-10	A12L200-05	2,4-Dinitrophenol	12/18/2012	12200	Yes	N	D U			12200	6120	ug/kg
AQ-SS-09-10	A12L200-05	Benzo(a)pyrene	12/18/2012	24100	Yes	Y	D	J	9	489	245	ug/kg
AQ-SS-09-10	A12L200-05	4-Nitrophenol	12/18/2012	4890	Yes	N	D U			4890	2450	ug/kg
AQ-SS-09-10	A12L200-05	Hexachlorobenzene	12/18/2012	489	Yes	N	D U			489	245	ug/kg
AQ-SS-09-10	A12L200-05	4-Bromophenyl-phenyl ether	12/18/2012	1220	Yes	N	D U			1220	612	ug/kg
AQ-SS-09-10	A12L200-05	bis(2-Chloroisopropyl)ether	12/18/2012	1220	Yes	N	D U			1220	612	ug/kg
AQ-SS-09-10	A12L200-05	1,4-Dichlorobenzene	12/18/2012	1220	Yes	N	D U			1220	612	ug/kg
AQ-SS-09-10	A12L200-05	4-Chloroaniline	12/18/2012	1220	Yes	N	D U			1220	612	ug/kg
AQ-SS-09-10	A12L200-05	Phenol	12/18/2012	979	Yes	N	D U			979	489	ug/kg
AQ-SS-09-10	A12L200-05	bis(2-Chloroethyl)ether	12/18/2012	1220	Yes	N	D U			1220	612	ug/kg
AQ-SS-09-10	A12L200-05	bis(2-Chloroethoxy)methane	12/18/2012	1220	Yes	N	D U			1220	612	ug/kg
AQ-SS-09-10	A12L200-05	Bis(2-ethylhexyl)phthalate	12/18/2012	9790	Yes	N	D U			9790	4890	ug/kg
AQ-SS-09-10	A12L200-05	Benzyl alcohol	12/18/2012	2450	Yes	N	D U			2450	1220	ug/kg
AQ-SS-10-10	A12L200-03	Diethyl phthalate	12/18/2012	24.8	Yes	N	U			24.8	12.4	ug/kg
AQ-SS-10-10	A12L200-03	2-Nitroaniline	12/18/2012	99.1	Yes	N	U			99.1	49.5	ug/kg
AQ-SS-10-10	A12L200-03	Hexachlorobenzene	12/18/2012	4.95	Yes	N	U			4.95	2.48	ug/kg
AQ-SS-10-10	A12L200-03	3-Nitroaniline	12/18/2012	99.1	Yes	N	U			99.1	49.5	ug/kg
AQ-SS-10-10	A12L200-03	Nitrobenzene	12/18/2012	49.5	Yes	N	U			49.5	24.8	ug/kg
AQ-SS-10-10	A12L200-03	2,4,5-Trichlorophenol	12/18/2012	24.8	Yes	N	U			24.8	12.4	ug/kg
AQ-SS-10-10	A12L200-03	2-Chlorophenol	12/18/2012	24.8	Yes	N	U			24.8	12.4	ug/kg
AQ-SS-10-10	A12L200-03	1,2-Dichlorobenzene	12/18/2012	12.4	Yes	N	U			12.4	6.19	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-10-10	A12L200-03	2-Methylphenol (o-Cresol)	12/18/2012	12.4		Yes	N	U			12.4	6.19	ug/kg
AQ-SS-10-10	A12L200-03	3,3'-Dichlorobenzidine	12/18/2012	49.5		Yes	N	U			49.5	24.8	ug/kg
AQ-SS-10-10	A12L200-03	2-Chloronaphthalene	12/18/2012	4.95		Yes	N	U			4.95	2.48	ug/kg
AQ-SS-10-10	A12L200-03	2-Methylnaphthalene	12/18/2012	9.91		Yes	N	U			9.91	4.95	ug/kg
AQ-SS-10-10	A12L200-03	Naphthalene	12/18/2012	9.91		Yes	N	U			9.91	4.95	ug/kg
AQ-SS-10-10	A12L200-03	Isophorone	12/18/2012	12.4		Yes	N	U			12.4	6.19	ug/kg
AQ-SS-10-10	A12L200-03	2-Nitrophenol	12/18/2012	49.5		Yes	N	U			49.5	24.8	ug/kg
AQ-SS-10-10	A12L200-03	4-Chlorophenyl phenyl ether	12/18/2012	12.4		Yes	N	U			12.4	6.19	ug/kg
AQ-SS-10-10	A12L200-03	2,4,6-Trichlorophenol	12/18/2012	24.8		Yes	N	U			24.8	12.4	ug/kg
AQ-SS-10-10	A12L200-03	Pentachlorophenol	12/18/2012	99.1		Yes	N	U			99.1	49.5	ug/kg
AQ-SS-10-10	A12L200-03	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	12/18/2012	12.4		Yes	N	U			12.4	6.19	ug/kg
AQ-SS-10-10	A12L200-03	Carbazole	12/18/2012	7.43		Yes	N	U			7.43	3.72	ug/kg
AQ-SS-10-10	A12L200-03	Fluorene	12/18/2012	4.95		Yes	N	U			4.95	2.48	ug/kg
AQ-SS-10-10	A12L200-03	N-Nitrosodiphenylamine	12/18/2012	12.4		Yes	N	U			12.4	6.19	ug/kg
AQ-SS-10-10	A12L200-03	Butylbenzyl phthalate	12/18/2012	99.1		Yes	N	U			99.1	49.5	ug/kg
AQ-SS-10-10	A12L200-03	Phenanthrene	12/18/2012	5.07		Yes	Y				4.95	2.48	ug/kg
AQ-SS-10-10	A12L200-03	Di-n-butyl phthalate	12/18/2012	24.8		Yes	N	U			24.8	12.4	ug/kg
AQ-SS-10-10	A12L200-03	Acenaphthene	12/18/2012	4.95		Yes	N	U			4.95	2.48	ug/kg
AQ-SS-10-10	A12L200-03	Hexachlorocyclopentadiene	12/18/2012	24.8		Yes	N	U			24.8	12.4	ug/kg
AQ-SS-10-10	A12L200-03	1-Methylnaphthalene	12/18/2012	9.91		Yes	N	U			9.91	4.95	ug/kg
AQ-SS-10-10	A12L200-03	bis(2-Chloroethoxy)methane	12/18/2012	12.4		Yes	N	U			12.4	6.19	ug/kg
AQ-SS-10-10	A12L200-03	Benzo(g,h,i)perylene	12/18/2012	6.95		Yes	Y				4.95	2.48	ug/kg
AQ-SS-10-10	A12L200-03	Dibenzofuran	12/18/2012	4.95		Yes	N	U			4.95	2.48	ug/kg
AQ-SS-10-10	A12L200-03	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	12/18/2012	12.4		Yes	N	U			12.4	6.19	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-10-10	A12L200-03	Dimethyl phthalate	12/18/2012	24.8	Yes	N	U			24.8	12.4	ug/kg
AQ-SS-10-10	A12L200-03	Pyrene	12/18/2012	11.6	Yes	Y				4.95	2.48	ug/kg
AQ-SS-10-10	A12L200-03	2,4-Dinitrotoluene	12/18/2012	49.5	Yes	N	U			49.5	24.8	ug/kg
AQ-SS-10-10	A12L200-03	2,4-Dichlorophenol	12/18/2012	24.8	Yes	N	U			24.8	12.4	ug/kg
AQ-SS-10-10	A12L200-03	Anthracene	12/18/2012	4.95	Yes	N	U			4.95	2.48	ug/kg
AQ-SS-10-10	A12L200-03	1,2,4-Trichlorobenzene	12/18/2012	12.4	Yes	N	U			12.4	6.19	ug/kg
AQ-SS-10-10	A12L200-03	Bis(2-ethylhexyl)phthalate	12/18/2012	99.1	Yes	N	U			99.1	49.5	ug/kg
AQ-SS-10-10	A12L200-03	Fluoranthene	12/18/2012	12.2	Yes	Y				4.95	2.48	ug/kg
AQ-SS-10-10	A12L200-03	bis(2-Chloroethyl)ether	12/18/2012	12.4	Yes	N	U			12.4	6.19	ug/kg
AQ-SS-10-10	A12L200-03	Phenol	12/18/2012	7.16	Yes	Y	J			9.91	4.95	ug/kg
AQ-SS-10-10	A12L200-03	4-Chloroaniline	12/18/2012	12.4	Yes	N	U			12.4	6.19	ug/kg
AQ-SS-10-10	A12L200-03	1,4-Dichlorobenzene	12/18/2012	12.4	Yes	N	U			12.4	6.19	ug/kg
AQ-SS-10-10	A12L200-03	2,4-Dimethylphenol	12/18/2012	24.8	Yes	N	U			24.8	12.4	ug/kg
AQ-SS-10-10	A12L200-03	4-Bromophenyl-phenyl ether	12/18/2012	12.4	Yes	N	U			12.4	6.19	ug/kg
AQ-SS-10-10	A12L200-03	Benzyl alcohol	12/18/2012	24.8	Yes	N	U			24.8	12.4	ug/kg
AQ-SS-10-10	A12L200-03	4-Nitrophenol	12/18/2012	49.5	Yes	N	U			49.5	24.8	ug/kg
AQ-SS-10-10	A12L200-03	Di-n-octyl phthalate	12/18/2012	99.1	Yes	N	U			99.1	49.5	ug/kg
AQ-SS-10-10	A12L200-03	4-Nitroaniline	12/18/2012	99.1	Yes	N	U			99.1	49.5	ug/kg
AQ-SS-10-10	A12L200-03	Benzoic acid	12/18/2012	619	Yes	N	U			619	310	ug/kg
AQ-SS-10-10	A12L200-03	N-Nitrosodi-N-propylamine	12/18/2012	12.4	Yes	N	U			12.4	6.19	ug/kg
AQ-SS-10-10	A12L200-03	N-Nitrosodimethylamine	12/18/2012	12.4	Yes	N	U			12.4	6.19	ug/kg
AQ-SS-10-10	A12L200-03	Aniline	12/18/2012	24.8	Yes	N	U			24.8	12.4	ug/kg
AQ-SS-10-10	A12L200-03	2,6-Dinitrotoluene	12/18/2012	49.5	Yes	N	U			49.5	24.8	ug/kg
AQ-SS-10-10	A12L200-03	4-Chloro-3-methylphenol	12/18/2012	49.5	Yes	N	U			49.5	24.8	ug/kg
AQ-SS-10-10	A12L200-03	2,3,4,6-Tetrachlorophenol	12/18/2012	24.8	Yes	N	U			24.8	12.4	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-10-10	A12L200-03	Benzo(a)anthracene	12/18/2012	8.12	Yes	Y				4.95	2.48	ug/kg
AQ-SS-10-10	A12L200-03	Indeno(1,2,3-c,d)pyrene	12/18/2012	7.59	Yes	Y				4.95	2.48	ug/kg
AQ-SS-10-10	A12L200-03	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	12/18/2012	124	Yes	N	U			124	61.9	ug/kg
AQ-SS-10-10	A12L200-03	Benzo(b)fluoranthene	12/18/2012	14.7	Yes	Y				4.95	2.48	ug/kg
AQ-SS-10-10	A12L200-03	Dibenzo(a,h)anthracene	12/18/2012	4.95	Yes	N	U			4.95	2.48	ug/kg
AQ-SS-10-10	A12L200-03	2,4-Dinitrophenol	12/18/2012	124	Yes	N	U			124	61.9	ug/kg
AQ-SS-10-10	A12L200-03	Benzo(a)pyrene	12/18/2012	13.4	Yes	Y				4.95	2.48	ug/kg
AQ-SS-10-10	A12L200-03	bis(2-Chloroisopropyl)ether	12/18/2012	12.4	Yes	N	U			12.4	6.19	ug/kg
AQ-SS-10-10	A12L200-03	Chrysene	12/18/2012	8.5	Yes	Y				4.95	2.48	ug/kg
AQ-SS-10-10	A12L200-03	Acenaphthylene	12/18/2012	4.95	Yes	N	U			4.95	2.48	ug/kg
AQ-SS-10-10	A12L200-03	Benzo(k)fluoranthene	12/18/2012	4.46	Yes	Y	J			4.95	2.48	ug/kg
AQ-SS-10-10	A12L200-03	Hexachloroethane	12/18/2012	12.4	Yes	N	U			12.4	6.19	ug/kg
AQ-SS-10-10	A12L200-03	1,3-Dichlorobenzene	12/18/2012	12.4	Yes	N	U			12.4	6.19	ug/kg
AQ-SS-14-10	A12L200-01RE1	N-Nitrosodiphenylamine	12/18/2012	10.3	Yes	N	U			10.3	5.14	ug/kg
AQ-SS-14-10	A12L200-01RE1	4-Chlorophenyl phenyl ether	12/18/2012	10.3	Yes	N	U			10.3	5.14	ug/kg
AQ-SS-14-10	A12L200-01RE1	2,3,4,6-Tetrachlorophenol	12/18/2012	20.6	Yes	N	U			20.6	10.3	ug/kg
AQ-SS-14-10	A12L200-01RE1	Fluorene	12/18/2012	4.11	Yes	N	U			4.11	2.06	ug/kg
AQ-SS-14-10	A12L200-01RE1	Butylbenzyl phthalate	12/18/2012	82.2	Yes	N	U			82.2	41.1	ug/kg
AQ-SS-14-10	A12L200-01RE1	Di-n-butyl phthalate	12/18/2012	20.6	Yes	N	U			20.6	10.3	ug/kg
AQ-SS-14-10	A12L200-01RE1	Diethyl phthalate	12/18/2012	20.6	Yes	N	U			20.6	10.3	ug/kg
AQ-SS-14-10	A12L200-01RE1	Acenaphthene	12/18/2012	4.11	Yes	N	U			4.11	2.06	ug/kg
AQ-SS-14-10	A12L200-01RE1	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	12/18/2012	10.3	Yes	N	U			10.3	5.14	ug/kg
AQ-SS-14-10	A12L200-01RE1	Hexachlorocyclopentadiene	12/18/2012	20.6	Yes	N	U			20.6	10.3	ug/kg
AQ-SS-14-10	A12L200-01RE1	Pentachlorophenol	12/18/2012	82.2	Yes	N	U			82.2	41.1	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-14-10	A12L200-01RE1	Hexachloroethane	12/18/2012	10.3	Yes	N	U			10.3	5.14	ug/kg
AQ-SS-14-10	A12L200-01RE1	Benzoic acid	12/18/2012	514	Yes	N	U			514	257	ug/kg
AQ-SS-14-10	A12L200-01RE1	N-Nitrosodi-N-propylamine	12/18/2012	10.3	Yes	N	U			10.3	5.14	ug/kg
AQ-SS-14-10	A12L200-01RE1	N-Nitrosodimethylamine	12/18/2012	10.3	Yes	N	U			10.3	5.14	ug/kg
AQ-SS-14-10	A12L200-01RE1	4-Nitroaniline	12/18/2012	82.2	Yes	N	U			82.2	41.1	ug/kg
AQ-SS-14-10	A12L200-01RE1	2,6-Dinitrotoluene	12/18/2012	41.1	Yes	N	U			41.1	20.6	ug/kg
AQ-SS-14-10	A12L200-01RE1	Isophorone	12/18/2012	10.3	Yes	N	U			10.3	5.14	ug/kg
AQ-SS-14-10	A12L200-01RE1	2-Chloronaphthalene	12/18/2012	4.11	Yes	N	U			4.11	2.06	ug/kg
AQ-SS-14-10	A12L200-01RE1	Phenanthrene	12/18/2012	5.35	Yes	Y				4.11	2.06	ug/kg
AQ-SS-14-10	A12L200-01RE1	3-Nitroaniline	12/18/2012	82.2	Yes	N	U			82.2	41.1	ug/kg
AQ-SS-14-10	A12L200-01RE1	Nitrobenzene	12/18/2012	41.1	Yes	N	U			41.1	20.6	ug/kg
AQ-SS-14-10	A12L200-01RE1	2,4,5-Trichlorophenol	12/18/2012	20.6	Yes	N	U			20.6	10.3	ug/kg
AQ-SS-14-10	A12L200-01RE1	2-Chlorophenol	12/18/2012	20.6	Yes	N	U			20.6	10.3	ug/kg
AQ-SS-14-10	A12L200-01RE1	1,2-Dichlorobenzene	12/18/2012	10.3	Yes	N	U			10.3	5.14	ug/kg
AQ-SS-14-10	A12L200-01RE1	Carbazole	12/18/2012	6.17	Yes	N	U			6.17	3.08	ug/kg
AQ-SS-14-10	A12L200-01RE1	3,3'-Dichlorobenzidine	12/18/2012	41.1	Yes	N	U			41.1	20.6	ug/kg
AQ-SS-14-10	A12L200-01RE1	4-Chloro-3-methylphenol	12/18/2012	41.1	Yes	N	U			41.1	20.6	ug/kg
AQ-SS-14-10	A12L200-01RE1	2-Methylnaphthalene	12/18/2012	8.22	Yes	N	U			8.22	4.11	ug/kg
AQ-SS-14-10	A12L200-01RE1	Naphthalene	12/18/2012	8.22	Yes	N	U			8.22	4.11	ug/kg
AQ-SS-14-10	A12L200-01RE1	1-Methylnaphthalene	12/18/2012	8.22	Yes	N	U			8.22	4.11	ug/kg
AQ-SS-14-10	A12L200-01RE1	2-Nitrophenol	12/18/2012	41.1	Yes	N	U			41.1	20.6	ug/kg
AQ-SS-14-10	A12L200-01RE1	2-Nitroaniline	12/18/2012	82.2	Yes	N	U			82.2	41.1	ug/kg
AQ-SS-14-10	A12L200-01RE1	2,4,6-Trichlorophenol	12/18/2012	20.6	Yes	N	U			20.6	10.3	ug/kg
AQ-SS-14-10	A12L200-01RE1	2-Methylphenol (o-Cresol)	12/18/2012	10.3	Yes	N	U			10.3	5.14	ug/kg
AQ-SS-14-10	A12L200-01RE1	bis(2-Chloroethyl)ether	12/18/2012	10.3	Yes	N	U			10.3	5.14	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-14-10	A12L200-01RE1	Benzo(a)anthracene	12/18/2012	3.64	Yes	Y	J			4.11	2.06	ug/kg
AQ-SS-14-10	A12L200-01RE1	2,4-Dichlorophenol	12/18/2012	20.6	Yes	N	U			20.6	10.3	ug/kg
AQ-SS-14-10	A12L200-01RE1	Aniline	12/18/2012	20.6	Yes	N	U			20.6	10.3	ug/kg
AQ-SS-14-10	A12L200-01RE1	Anthracene	12/18/2012	4.11	Yes	N	U			4.11	2.06	ug/kg
AQ-SS-14-10	A12L200-01RE1	Hexachlorobenzene	12/18/2012	4.11	Yes	N	U			4.11	2.06	ug/kg
AQ-SS-14-10	A12L200-01RE1	Di-n-octyl phthalate	12/18/2012	82.2	Yes	N	U			82.2	41.1	ug/kg
AQ-SS-14-10	A12L200-01RE1	Pyrene	12/18/2012	9.67	Yes	Y				4.11	2.06	ug/kg
AQ-SS-14-10	A12L200-01RE1	bis(2-Chloroethoxy)methane	12/18/2012	10.3	Yes	N	U			10.3	5.14	ug/kg
AQ-SS-14-10	A12L200-01RE1	2,4-Dinitrotoluene	12/18/2012	41.1	Yes	N	U			41.1	20.6	ug/kg
AQ-SS-14-10	A12L200-01RE1	Phenol	12/18/2012	15.5	Yes	Y				8.22	4.11	ug/kg
AQ-SS-14-10	A12L200-01RE1	4-Chloroaniline	12/18/2012	10.3	Yes	N	U			10.3	5.14	ug/kg
AQ-SS-14-10	A12L200-01RE1	1,4-Dichlorobenzene	12/18/2012	10.3	Yes	N	U			10.3	5.14	ug/kg
AQ-SS-14-10	A12L200-01RE1	2,4-Dimethylphenol	12/18/2012	20.6	Yes	N	U			20.6	10.3	ug/kg
AQ-SS-14-10	A12L200-01RE1	4-Bromophenyl-phenyl ether	12/18/2012	10.3	Yes	N	U			10.3	5.14	ug/kg
AQ-SS-14-10	A12L200-01RE1	Benzyl alcohol	12/18/2012	20.6	Yes	N	U			20.6	10.3	ug/kg
AQ-SS-14-10	A12L200-01RE1	4-Nitrophenol	12/18/2012	41.1	Yes	N	U			41.1	20.6	ug/kg
AQ-SS-14-10	A12L200-01RE1	Bis(2-ethylhexyl)phthalate	12/18/2012	82.2	Yes	N	U			82.2	41.1	ug/kg
AQ-SS-14-10	A12L200-01RE1	bis(2-Chloroisopropyl)ether	12/18/2012	10.3	Yes	N	U			10.3	5.14	ug/kg
AQ-SS-14-10	A12L200-01RE1	1,3-Dichlorobenzene	12/18/2012	10.3	Yes	N	U			10.3	5.14	ug/kg
AQ-SS-14-10	A12L200-01RE1	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	12/18/2012	103	Yes	N	U			103	51.4	ug/kg
AQ-SS-14-10	A12L200-01RE1	Dibenzo(a,h)anthracene	12/18/2012	4.11	Yes	N	U			4.11	2.06	ug/kg
AQ-SS-14-10	A12L200-01RE1	1,2,4-Trichlorobenzene	12/18/2012	10.3	Yes	N	U			10.3	5.14	ug/kg
AQ-SS-14-10	A12L200-01RE1	Benzo(a)pyrene	12/18/2012	4.66	Yes	Y				4.11	2.06	ug/kg
AQ-SS-14-10	A12L200-01RE1	Dimethyl phthalate	12/18/2012	20.6	Yes	N	U			20.6	10.3	ug/kg
AQ-SS-14-10	A12L200-01RE1	Chrysene	12/18/2012	9.75	Yes	Y				4.11	2.06	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-14-10	A12L200-01RE1	Acenaphthylene	12/18/2012	4.11	Yes	N	U			4.11	2.06	ug/kg
AQ-SS-14-10	A12L200-01RE1	Benzo(k)fluoranthene	12/18/2012	4.11	Yes	N	U			4.11	2.06	ug/kg
AQ-SS-14-10	A12L200-01RE1	Fluoranthene	12/18/2012	10.7	Yes	Y				4.11	2.06	ug/kg
AQ-SS-14-10	A12L200-01RE1	Benzo(b)fluoranthene	12/18/2012	7.92	Yes	Y				4.11	2.06	ug/kg
AQ-SS-14-10	A12L200-01RE1	Indeno(1,2,3-c,d)pyrene	12/18/2012	2.59	Yes	Y	J			4.11	2.06	ug/kg
AQ-SS-14-10	A12L200-01RE1	Benzo(g,h,i)perylene	12/18/2012	2.68	Yes	Y	J			4.11	2.06	ug/kg
AQ-SS-14-10	A12L200-01RE1	Dibenzofuran	12/18/2012	4.11	Yes	N	U			4.11	2.06	ug/kg
AQ-SS-14-10	A12L200-01RE1	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	12/18/2012	64.7	Yes	Y				10.3	5.14	ug/kg
AQ-SS-14-10	A12L200-01RE1	2,4-Dinitrophenol	12/18/2012	103	Yes	N	U			103	51.4	ug/kg

LDC Report# 29157G2a

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 12, 2012
LDC Report Date:	February 8, 2013
Matrix:	Sediment
Parameters:	Semivolatiles
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L258

Sample Identification

AQ-SS-03-10
AQ-SS-03-10MS

Introduction

This data review covers 2 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270D for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
12/18/12	4-Nitroaniline	26.1	All samples in SDG A12L258	J (all detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were not within the QC limits. Since the samples were diluted out, no data were qualified.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Relative percent differences (RPD) were not within QC limits. Since there were no associated samples, no data were qualified.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

No data were qualified due to high calibration %D, the associated results were non-detected.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Semivolatiles - Data Qualification Summary - SDG A12L258

SDG	Sample	Compound	Flag	A or P	Reason
A12L258	AQ-SS-03-10	4-Nitroaniline	J (all detects)	A	Continuing calibration (%D)

Millennium Bulk Terminals
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG A12L258

No Sample Data Qualified in this SDG

LDC #: 29157G2a

SDG #: A12L258

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 2/7/13

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/12/12
II.	GC/MS Instrument performance check	A	%
III.	Initial calibration	A	% RSD ≤ 20, r²
IV.	Continuing calibration/ICV	SW	ICV ≤ 30, CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	MS only
VII.	Matrix spike/Matrix spike duplicates / DUP	SW / SW	A12L200-5 DUP no ASS sample
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

sediment

1	AQ-SS-03-10	11	1212357	21		31	
2	AQ-SS-03-10MS	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1-Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU.
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 29157G2a

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: FT

2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?

Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?

Y N N/A Were all %D and RRFs within the validation criteria of ≤20 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤20.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	12/18/12	E12181202 CCV	00	26.1		All	J/A det

CONCAL.2S

LDC #: 29157G2a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

Y N N/A Was a MS/MSD analyzed every 20 samples of each matrix?

Y N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		2	several	% R (outside	limit)	( )	1	no qual 4X DL
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 12, 2012
LDC Report Date:	February 1, 2013
Matrix:	Sediment
Parameters:	Metals
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L258

Sample Identification

AQ-SS-03-10

Introduction

This data review covers one sediment sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW846 Method 6020A for Metals. The metals analyzed were Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Silver, and Zinc.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this method.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Metals - Data Qualification Summary - SDG A12L258

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Metals - Laboratory Blank Data Qualification Summary - SDG A12L258

No Sample Data Qualified in this SDG

LDC #: 29157G4

SDG #: A12L258

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/31/13

Page: 1 of 1

Reviewer: CL

2nd Reviewer: [illegible]

METHOD: Metals (EPA SW846 Method 6020) A

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/12/12
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	A	MS (A12L200)
VII.	Duplicate Sample Analysis	A	Dup ↓
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: sediment

1	AQ-SS-03-10	11		21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 24115/64

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: CR
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____

Comments: Mercury by CVAA if performed

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 12, 2012
LDC Report Date:	February 14, 2013
Matrix:	Sediment
Parameters:	Wet Chemistry
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L258

Sample Identification

AQ-SS-03-10

Introduction

This data review covers one sediment sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2540G for Total Solids and PSEP and Standard Method 5310B modified for Total Organic Carbon.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analysis were not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

X. Field Duplicates

No field blanks were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A12L58

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A12L58

No Sample Data Qualified in this SDG

LDC #: 29157G6

SDG #: A12L258

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 1/31/13

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: Total Solids (SM2540G), Total Organic Carbon (SM5310B) PSEP/mod

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/12/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	N	Not required
VI.	Duplicates	A	DUP (A12L200)
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Sediment

1	AQ-SS-03-10	11		21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 2915766

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Reviewer: CR
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Parameter
1	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 TS
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

Analytical Method APEXsolids

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-03-10	A12L258-01	Total solids	12/20/2012	56.9	Yes	Y				1.00	1.00	pct

Analytical Method SM2540G

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-03-10	A12L258-01	Total solids	12/20/2012	56.9	Yes	Y				1.00	1.00	pct

Analytical Method SM5310B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-03-10	A12L258-01	Total organic carbon	12/20/2012	2.4	Yes	Y				0.020	0.010	pct

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-03-10	A12L258-01	Arsenic	12/21/2012	6.48	Yes	Y	D			1.84	0.461	mg/kg
AQ-SS-03-10	A12L258-01	Zinc	12/21/2012	63.3	Yes	Y	D			3.68	1.84	mg/kg
AQ-SS-03-10	A12L258-01	Copper	12/21/2012	35.6	Yes	Y	D			1.84	0.921	mg/kg
AQ-SS-03-10	A12L258-01	Silver	12/21/2012	0.921	Yes	N	D U			0.921	0.461	mg/kg
AQ-SS-03-10	A12L258-01	Mercury	12/21/2012	0.0593	Yes	Y	D J			0.0737	0.0368	mg/kg
AQ-SS-03-10	A12L258-01	Lead	12/21/2012	7.63	Yes	Y	D			0.921	0.461	mg/kg
AQ-SS-03-10	A12L258-01	Chromium	12/21/2012	25.2	Yes	Y	D			1.84	0.921	mg/kg
AQ-SS-03-10	A12L258-01	Cadmium	12/21/2012	0.599	Yes	Y	D J			0.921	0.461	mg/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-03-10	A12L258-01	N-Nitrosodi-N-propylamine	12/18/2012	14.5	Yes	N	U			14.5	7.27	ug/kg
AQ-SS-03-10	A12L258-01	Butylbenzyl phthalate	12/18/2012	116	Yes	N	U			116	58.2	ug/kg
AQ-SS-03-10	A12L258-01	Phenanthrene	12/18/2012	5.82	Yes	N	U			5.82	2.91	ug/kg
AQ-SS-03-10	A12L258-01	Di-n-butyl phthalate	12/18/2012	29.1	Yes	N	U			29.1	14.5	ug/kg
AQ-SS-03-10	A12L258-01	Diethyl phthalate	12/18/2012	29.1	Yes	N	U			29.1	14.5	ug/kg
AQ-SS-03-10	A12L258-01	Acenaphthene	12/18/2012	5.82	Yes	N	U			5.82	2.91	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-03-10	A12L258-01	Isophorone	12/18/2012	14.5		Yes	N	U			14.5	7.27	ug/kg
AQ-SS-03-10	A12L258-01	Hexachlorocyclopentadiene	12/18/2012	29.1		Yes	N	U			29.1	14.5	ug/kg
AQ-SS-03-10	A12L258-01	4-Chlorophenyl phenyl ether	12/18/2012	14.5		Yes	N	U			14.5	7.27	ug/kg
AQ-SS-03-10	A12L258-01	N-Nitrosodiphenylamine	12/18/2012	14.5		Yes	N	U			14.5	7.27	ug/kg
AQ-SS-03-10	A12L258-01	Benzoic acid	12/18/2012	727		Yes	N	U			727	364	ug/kg
AQ-SS-03-10	A12L258-01	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	12/18/2012	14.5		Yes	N	U			14.5	7.27	ug/kg
AQ-SS-03-10	A12L258-01	N-Nitrosodimethylamine	12/18/2012	14.5		Yes	N	U			14.5	7.27	ug/kg
AQ-SS-03-10	A12L258-01	Aniline	12/18/2012	29.1		Yes	N	U			29.1	14.5	ug/kg
AQ-SS-03-10	A12L258-01	2,6-Dinitrotoluene	12/18/2012	58.2		Yes	N	U			58.2	29.1	ug/kg
AQ-SS-03-10	A12L258-01	Hexachloroethane	12/18/2012	14.5		Yes	N	U			14.5	7.27	ug/kg
AQ-SS-03-10	A12L258-01	Naphthalene	12/18/2012	11.6		Yes	N	U			11.6	5.82	ug/kg
AQ-SS-03-10	A12L258-01	3-Nitroaniline	12/18/2012	116		Yes	N	U			116	58.2	ug/kg
AQ-SS-03-10	A12L258-01	Nitrobenzene	12/18/2012	58.2		Yes	N	U			58.2	29.1	ug/kg
AQ-SS-03-10	A12L258-01	2,4,5-Trichlorophenol	12/18/2012	29.1		Yes	N	U			29.1	14.5	ug/kg
AQ-SS-03-10	A12L258-01	2-Chlorophenol	12/18/2012	29.1		Yes	N	U			29.1	14.5	ug/kg
AQ-SS-03-10	A12L258-01	1,2-Dichlorobenzene	12/18/2012	14.5		Yes	N	U			14.5	7.27	ug/kg
AQ-SS-03-10	A12L258-01	2-Methylphenol (o-Cresol)	12/18/2012	14.5		Yes	N	U			14.5	7.27	ug/kg
AQ-SS-03-10	A12L258-01	3,3'-Dichlorobenzidine	12/18/2012	58.2		Yes	N	U			58.2	29.1	ug/kg
AQ-SS-03-10	A12L258-01	Fluorene	12/18/2012	5.82		Yes	N	U			5.82	2.91	ug/kg
AQ-SS-03-10	A12L258-01	2-Methylnaphthalene	12/18/2012	11.6		Yes	N	U			11.6	5.82	ug/kg
AQ-SS-03-10	A12L258-01	4-Chloro-3-methylphenol	12/18/2012	58.2		Yes	N	U			58.2	29.1	ug/kg
AQ-SS-03-10	A12L258-01	1-Methylnaphthalene	12/18/2012	11.6		Yes	N	U			11.6	5.82	ug/kg
AQ-SS-03-10	A12L258-01	2-Nitrophenol	12/18/2012	58.2		Yes	N	U			58.2	29.1	ug/kg
AQ-SS-03-10	A12L258-01	2-Nitroaniline	12/18/2012	116		Yes	N	U			116	58.2	ug/kg
AQ-SS-03-10	A12L258-01	2,4,6-Trichlorophenol	12/18/2012	29.1		Yes	N	U			29.1	14.5	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-03-10	A12L258-01	Pentachlorophenol	12/18/2012	116	Yes	N	U			116	58.2	ug/kg
AQ-SS-03-10	A12L258-01	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	12/18/2012	145	Yes	N	U			145	72.7	ug/kg
AQ-SS-03-10	A12L258-01	Carbazole	12/18/2012	8.73	Yes	N	U			8.73	4.36	ug/kg
AQ-SS-03-10	A12L258-01	2-Chloronaphthalene	12/18/2012	5.82	Yes	N	U			5.82	2.91	ug/kg
AQ-SS-03-10	A12L258-01	4-Chloroaniline	12/18/2012	14.5	Yes	N	U			14.5	7.27	ug/kg
AQ-SS-03-10	A12L258-01	1,2,4-Trichlorobenzene	12/18/2012	14.5	Yes	N	U			14.5	7.27	ug/kg
AQ-SS-03-10	A12L258-01	Anthracene	12/18/2012	5.82	Yes	N	U			5.82	2.91	ug/kg
AQ-SS-03-10	A12L258-01	Hexachlorobenzene	12/18/2012	5.82	Yes	N	U			5.82	2.91	ug/kg
AQ-SS-03-10	A12L258-01	Di-n-octyl phthalate	12/18/2012	116	Yes	N	U			116	58.2	ug/kg
AQ-SS-03-10	A12L258-01	Bis(2-ethylhexyl)phthalate	12/18/2012	116	Yes	N	U			116	58.2	ug/kg
AQ-SS-03-10	A12L258-01	bis(2-Chloroethoxy)methane	12/18/2012	14.5	Yes	N	U			14.5	7.27	ug/kg
AQ-SS-03-10	A12L258-01	Benzo(a)anthracene	12/18/2012	5.82	Yes	N	U			5.82	2.91	ug/kg
AQ-SS-03-10	A12L258-01	Phenol	12/18/2012	6.75	Yes	Y	J			11.6	5.82	ug/kg
AQ-SS-03-10	A12L258-01	Pyrene	12/18/2012	5.82	Yes	N	U			5.82	2.91	ug/kg
AQ-SS-03-10	A12L258-01	1,4-Dichlorobenzene	12/18/2012	14.5	Yes	N	U			14.5	7.27	ug/kg
AQ-SS-03-10	A12L258-01	2,4-Dimethylphenol	12/18/2012	29.1	Yes	N	U			29.1	14.5	ug/kg
AQ-SS-03-10	A12L258-01	4-Bromophenyl-phenyl ether	12/18/2012	14.5	Yes	N	U			14.5	7.27	ug/kg
AQ-SS-03-10	A12L258-01	Benzyl alcohol	12/18/2012	29.1	Yes	N	U			29.1	14.5	ug/kg
AQ-SS-03-10	A12L258-01	4-Nitrophenol	12/18/2012	58.2	Yes	N	U			58.2	29.1	ug/kg
AQ-SS-03-10	A12L258-01	4-Nitroaniline	12/18/2012	116	Yes	N	U			116	58.2	ug/kg
AQ-SS-03-10	A12L258-01	bis(2-Chloroethyl)ether	12/18/2012	14.5	Yes	N	U			14.5	7.27	ug/kg
AQ-SS-03-10	A12L258-01	Fluoranthene	12/18/2012	5.82	Yes	N	U			5.82	2.91	ug/kg
AQ-SS-03-10	A12L258-01	1,3-Dichlorobenzene	12/18/2012	14.5	Yes	N	U			14.5	7.27	ug/kg
AQ-SS-03-10	A12L258-01	Dibenzo(a,h)anthracene	12/18/2012	5.82	Yes	N	U			5.82	2.91	ug/kg
AQ-SS-03-10	A12L258-01	2,4-Dinitrophenol	12/18/2012	145	Yes	N	U			145	72.7	ug/kg

Analytical Method SW8270D

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-03-10	A12L258-01	Benzo(a)pyrene	12/18/2012	5.82	Yes	N	U			5.82	2.91	ug/kg
AQ-SS-03-10	A12L258-01	bis(2-Chloroisopropyl)ether	12/18/2012	14.5	Yes	N	U			14.5	7.27	ug/kg
AQ-SS-03-10	A12L258-01	Chrysene	12/18/2012	5.82	Yes	N	U			5.82	2.91	ug/kg
AQ-SS-03-10	A12L258-01	2,4-Dichlorophenol	12/18/2012	29.1	Yes	N	U			29.1	14.5	ug/kg
AQ-SS-03-10	A12L258-01	Benzo(k)fluoranthene	12/18/2012	5.82	Yes	N	U			5.82	2.91	ug/kg
AQ-SS-03-10	A12L258-01	2,4-Dinitrotoluene	12/18/2012	58.2	Yes	N	U			58.2	29.1	ug/kg
AQ-SS-03-10	A12L258-01	Benzo(b)fluoranthene	12/18/2012	5.82	Yes	N	U			5.82	2.91	ug/kg
AQ-SS-03-10	A12L258-01	Indeno(1,2,3-c,d)pyrene	12/18/2012	5.82	Yes	N	U			5.82	2.91	ug/kg
AQ-SS-03-10	A12L258-01	Benzo(g,h,i)perylene	12/18/2012	5.82	Yes	N	U			5.82	2.91	ug/kg
AQ-SS-03-10	A12L258-01	Dibenzofuran	12/18/2012	5.82	Yes	N	U			5.82	2.91	ug/kg
AQ-SS-03-10	A12L258-01	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	12/18/2012	14.5	Yes	N	U			14.5	7.27	ug/kg
AQ-SS-03-10	A12L258-01	Dimethyl phthalate	12/18/2012	29.1	Yes	N	U			29.1	14.5	ug/kg
AQ-SS-03-10	A12L258-01	2,3,4,6-Tetrachlorophenol	12/18/2012	29.1	Yes	N	U			29.1	14.5	ug/kg
AQ-SS-03-10	A12L258-01	Acenaphthylene	12/18/2012	5.82	Yes	N	U			5.82	2.91	ug/kg

Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

Anchor Environmental, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101
ATTN: Ms. Cindy Fields

February 15, 2013

SUBJECT: Millennium Bulk Terminals, Data Validation

Dear Ms. Fields,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on February 4, 2013. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 29179:

SDG #	Fraction
A12L233/VW48 A12L259/VW49 A12L294/VW87	Polynuclear Aromatic Hydrocarbons, Polychlorinated Biphenyls, Aluminum, Wet Chemistry

The data validation was performed under Stage 2B guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Ming-Hwa Hwang
Project Manager/Senior Chemist

L:\Anchor\Millennium-Reynolds\29179COV.wpd

Attachment 1

Stage 2B EDD

LDC #29179 (Anchor Environmental-Seattle WA /Millennium Bulk Terminals)

LDC	SDG#	DATE REC'D	(3) DATE DUE	PAH (8270D-SIM)		PCB (8082A)		Al (6020)		F (4500-F-C)		T.CN- (335.4)		NH3-N (4500-NH3)		TOC (5310B)		TS (2540G/SOP)		P.Total Solids (2540B)		Grain Size (D422)		S= (376.2)													
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	A12L233/VW48	02/04/13	02/26/13	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8												
B	A12L259/VW49	02/04/13	02/26/13	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10												
C	A12L294/VW87	02/04/13	02/26/13	0	9	0	9	0	9	0	9	0	9	0	9	0	9	0	9	0	9	0	9	0	9												
Total	A/MH			0	27	0	27	0	27	0	27	0	27	0	27	0	27	0	27	0	27	0	27	0	27	0	0	0	0	0	0	0	0	0	0	0	297

Shaded cells indicate Stage 4 validation (all other cells are Stage 2B validation). These sample counts do not include MS, MSD, or DUP's.

LDC Report# 29179A2b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 10 through December 11, 2012
LDC Report Date:	February 14, 2013
Matrix:	Sediment
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L233

Sample Identification

MBTL12-SS-01-02
MBTL12-SS-09-02
MBTL12-SS-09-10
MBTL12-SS-10-02
MBTL12-SS-10-10
MBTL12-SS-01-10
MBTL12-SS-02-02
MBTL12-SS-02-10
MBTL12-SS-01-02DUP

Introduction

This data review covers 9 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. Surrogate recoveries (%R) were not within QC limits for sample MBTL12-SS-09-10. Since the sample was diluted out, no data were qualified.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A12L233

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A12L233

No Sample Data Qualified in this SDG

LDC #: 29179A2b

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

SDG #: A12L233

Laboratory: APEX Laboratories, LLC

Date: 2/13/13

Page: 1 of 1

Reviewer: EJ

2nd Reviewer: [illegible]

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/10 - 12/11/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV ≤ 30 CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates /DUP	~~A~~ A	~~client specified~~ MS only A12L294-09 MS
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

sediment

1	MBTL12-SS-01-02	11	12/24/13	21		31	
2	MBTL12-SS-09-02	12		22		32	
3	MBTL12-SS-09-10	13		23		33	
4	MBTL12-SS-10-02	14		24		34	
5	MBTL12-SS-10-10	15		25		35	
6	MBTL12-SS-01-10	16		26		36	
7	MBTL12-SS-02-02	17		27		37	
8	MBTL12-SS-02-10	18		28		38	
9	MBTL12-SS-01-02DUP	19		29		39	
10		20		30		40	

LDC #: 29179A2b

VALIDATION FINDINGS WORKSHEET
Surrogate Recovery

Page: 1 of 1
Reviewer: PJ
2nd Reviewer: L

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were percent recoveries (%R) for surrogates within QC limits?
Y N N/A If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?
Y N N/A If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

#	Date	Sample ID	Surrogate	%R (Limits)	Qualifications
	12/19/12	3	TPH	125 (30-120)	no qual 50X DL
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
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				( )	
				( )	

* QC limits are advisory	QC Limits (Soil)	QC Limits (Water)		QC Limits (Soil)	QC Limits (Water)
S1 (NBZ) = Nitrobenzene-d5	23-120	35-114	S5 (2FP)= 2-Fluorophenol	25-121	21-100
S2 (FBP) = 2-Fluorobiphenyl	30-115	43-116	S6 (TBP) = 2,4,6-Tribromophenol	19-122	10-123
S3 (TPH) = Terphenyl-d14	18-137	33-141	S7 (2CP) = 2-Chlorophenol-d4	20-130*	33-110*
S4 (PHL) = Phenol-d5	24-113	10-94	S8 (DCB) = 1,2-Dichlorobenzene-d4	20-130*	16-110*

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 10 through December 11, 2012
LDC Report Date:	February 14, 2013
Matrix:	Sediment
Parameters:	Polychlorinated Biphenyls
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L233

Sample Identification

MBTL12-SS-01-02
MBTL12-SS-09-02
MBTL12-SS-09-10
MBTL12-SS-10-02
MBTL12-SS-10-10
MBTL12-SS-01-10
MBTL12-SS-02-02
MBTL12-SS-02-10
MBTL12-SS-01-02DUP
MBTL12-SS-02-10MS

Introduction

This data review covers 10 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082A for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	%R (Limits)	Affected Compound	Flag	A or P
MBTL12-SS-02-10MS (MBTL12-SS-02-10)	Aroclor-1260	55 (60-130)	Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268	J (all detects) UJ (all non-detects)	A

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

Raw data were not reviewed for this SDG.

XIII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS %R problems, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XV. Field Duplicates

No field duplicates were identified in this SDG.

XVI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polychlorinated Biphenyls - Data Qualification Summary - SDG A12L233

SDG	Sample	Compound	Flag	A or P	Reason
A12L233	MBTL12-SS-02-10	Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268	J (all detects) UJ (all non-detects)	A	Matrix spike (%R)

Millennium Bulk Terminals
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG A12L233

No Sample Data Qualified in this SDG

LDC #: 29179A3b

SDG #: A12233

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 02/08/2013

Page: 1 of 1

Reviewer: SW

2nd Reviewer: [illegible]

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/10/2012 - 12/11/2012
II.	GC/ECD Instrument Performance Check	N	
III.	Initial calibration	A	RSD ≤ 20
IV.	Continuing calibration/ICV	A	icv / ccv ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates / ~~D~~ up	~~A~~ SW	MS only
VIII.	Laboratory control samples / ~~LD~~	A ~~FND~~	LCS
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	N	
XIII.	Compound quantitation/RL/LOQ/LODs	N	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

~~Soil~~ Sediment

− 1	MBTL12-SS-01-02	11		21		31	1212265-BLK 1
+ 2	MBTL12-SS-09-02	12		22		32	
+ 3	MBTL12-SS-09-10	13		23		33	
+ 4	MBTL12-SS-10-02	14		24		34	
− 5	MBTL12-SS-10-10	15		25		35	
− 6	MBTL12-SS-01-10	16		26		36	
− 7	MBTL12-SS-02-02	17		27		37	
− 8	MBTL12-SS-02-10	18		28		38	
− 9	MBTL12-SS-01-02DUP	19		29		39	
10	MBTL12-SS-02-10MS	20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: Pesticide/PCBs (EPA SW 846 Method 8081/8082)

A. alpha-BHC	I. Dieldrin	Q. Endrin ketone	Y. Aroclor-1242	GG. Chlordane
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Aroclor-1248	HH. Chlordane (Technical)
C. delta-BHC	K. Endrin	S. alpha-Chlordane	AA. Aroclor-1254	II. oxy-Chlordane
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ. Mirex
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. 2,4'-DDD	KK.
F. Aldrin	N. Endosulfan sulfate	V. Aroclor-1016	DD. 2,4'-DDE	LL.
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE. 2,4'-DDT	MM.
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF. Hexachlorobenzene	NN.

Notes:

LDC #: 29179A3b

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: SW
2nd Reviewer: Q

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?
Y N N/A Was a MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?
Y N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		10	AROCLOR 1260	55 (60-130)	( )	( )	8	J/UJ/A *
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		*QUAL: Y, Z, AA, BB,
				( )	( )	( )		AROCLOR-1262,
				( )	( )	( )		AROCLOR-1268
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 10 through December 11, 2012
LDC Report Date:	February 8, 2013
Matrix:	Sediment
Parameters:	Aluminum
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L233

Sample Identification

MBTL12-SS-01-02
MBTL12-SS-09-02
MBTL12-SS-09-10
MBTL12-SS-10-02
MBTL12-SS-10-10
MBTL12-SS-01-10
MBTL12-SS-02-02
MBTL12-SS-02-10
MBTL12-SS-10-02MS
MBTL12-SS-10-02DUP

Introduction

This data review covers 10 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW846 Method 6020A for Aluminum.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No aluminum was found in the initial, continuing and preparation blanks.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this method.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Aluminum - Data Qualification Summary - SDG A12L233

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Aluminum - Laboratory Blank Data Qualification Summary - SDG A12L233

No Sample Data Qualified in this SDG

LDC #: 29179A4

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 2/5/13

SDG #: A12L233

Page: 1 of 1

Laboratory: APEX Laboratories, LLC

Reviewer:

2nd Reviewer:

METHOD: ~~Metals~~ Aluminum (EPA SW846 Method ~~200.7/200.8~~ 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/10-11/12
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	A	MS
VII.	Duplicate Sample Analysis	A	Dup
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	Not performed
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Sediment

1	MBTL12-SS-01-02	11		21		31	
2	MBTL12-SS-09-02	12		22		32	
3	MBTL12-SS-09-10	13		23		33	
4	MBTL12-SS-10-02	14		24		34	
5	MBTL12-SS-10-10	15		25		35	
6	MBTL12-SS-01-10	16		26		36	
7	MBTL12-SS-02-02	17		27		37	
8	MBTL12-SS-02-10	18		28		38	
9	MBTL12-SS-10-02MS	19		29		39	
10	MBTL12-SS-10-02DUP	20		30		40	

Notes: Samples appended with "F" were analyzed as dissolved.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 10 through December 11, 2012
LDC Report Date:	February 8, 2013
Matrix:	Sediment
Parameters:	Wet Chemistry
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC/Analytical Resources, Inc.
Sample Delivery Group (SDG):	A12L233/VW48

Sample Identification

MBTL12-SS-01-02
MBTL12-SS-09-02
MBTL12-SS-09-10
MBTL12-SS-10-02
MBTL12-SS-10-10
MBTL12-SS-01-10
MBTL12-SS-02-02
MBTL12-SS-02-10
MBTL12-SS-01-02MS
MBTL12-SS-01-02DUP
MBTL12-SS-02-10DUP
MBTL12-SS-01-02TRP

Introduction

This data review covers 12 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 4500-NH3-F for Ammonia as Nitrogen, Standard Method 4500-F-C for Fluoride, EPA SW 846 Method 9014 for Total Cyanide, PSEP and Standard Method 5310B Modified for Total Organic Carbon, Standard Method 2540G and APEX SOP for Total Solids, Standard Method 2540B for Preserved Total Solids, ASTM Method D422M for Grain Size, and EPA Method 376.2 for Total Sulfide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
MBTL12-SS-05-10MS (All samples in SDG A12L233/VW48)	Fluoride	63 (75-125)	J (all detects) UJ (all non-detects)	A

VI. Duplicates/Triplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

Triplicate (TRP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS %R problems, data were qualified as estimated in eight samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

No field blanks were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A12L233/VW48

SDG	Sample	Analyte	Flag	A or P	Reason
A12L233/VW48	MBTL12-SS-01-02 MBTL12-SS-09-02 MBTL12-SS-09-10 MBTL12-SS-10-02 MBTL12-SS-10-10 MBTL12-SS-01-10 MBTL12-SS-02-02 MBTL12-SS-02-10	Fluoride	J (all detects) UJ (all non-detects)	A	Matrix spike (%R)

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A12L233/VW48

No Sample Data Qualified in this SDG

LDC #: 29179A6 **VALIDATION COMPLETENESS WORKSHEET** Date: 2/5/13

SDG #: A12L233 / VW48 Stage 2B Page: 1 of 1

Laboratory: APEX Laboratories, LLC/Analytical Resources, Inc. Reviewer: CL

2nd Reviewer: ✓

METHOD: Ammonia as Nitrogen (SM4500-NH3) F, Fluoride (SM4500-F-C) APEX SOP. Total Cyanide(EPA SW846 Method 9014), Total Organic Carbon (SM5310B) mod. Total Solids (SM2540G) D/G, Grain Size (ASTM D422) m, Total Sulfide ~~PSEP~~ PSEP (EPA Method 376.2) Percent TS (SM 2540B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/10-11/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	SW	MS
VI.	Duplicates / Triplicate	A	Dup, Trp
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Sediment

1	MBTL12-SS-01-02	11	MBTL12-SS-02-10DUP	21		31	
2	MBTL12-SS-09-02	12	(XX 1) TRP	22		32	
3	MBTL12-SS-09-10	13		23		33	
4	MBTL12-SS-10-02	14		24		34	
5	MBTL12-SS-10-10	15		25		35	
6	MBTL12-SS-01-10	16		26		36	
7	MBTL12-SS-02-02	17		27		37	
8	MBTL12-SS-02-10	18		28		38	
9	MBTL12-SS-01-02MS	19		29		39	
10	MBTL12-SS-01-02DUP	20		30		40	

Notes:

LDC #: 29179A6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Reviewer: CR

2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Parameter
1-8	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 TS S^{2-} Grain Size
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
DUP:9	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 S^{2-}
10	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 TS S^{2-}
11	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 TS
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

LDC #: 29129A6

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: OR
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125 (85-115% for Method 300.0)? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
		MBTL12-SS-05-10	MS	F	63	All	J/UJ/A
		CA12294					

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Millennium Bulk Terminals

Collection Date: December 12, 2012

LDC Report Date: February 14, 2013

Matrix: Sediment

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2B

Laboratory: APEX Laboratories, LLC

Sample Delivery Group (SDG): A12L259

Sample Identification

MBTL12-SS-04-02
MBTL12-SS-04-10
MBTL12-SS-08-02
MBTL12-SS-08-10
MBTL12-SS-07-02
MBTL12-SS-07-10
MBTL12-SS-03-02
MBTL12-SS-03-10
MBTL12-SS-06-02
MBTL12-SS-06-10
MBTL12-SS-04-02DUP
MBTL12-SS-06-10MS

Introduction

This data review covers 12 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XVI. Field Duplicates

Samples MBTL12-SS-04-10 and MBTL12-SS-54-10 (from SDG A12L294) were identified as field duplicates. No polynuclear aromatic hydrocarbons were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD
	MBTL12-SS-04-10	MBTL12-SS-54-10	
Benzo(a)anthracene	15.4U	18.1	200
Benzo(a)pyrene	15.4U	9.98	200
Benzo(b+k)fluoranthene	30.8U	24.1	200
Chrysene	15.4U	17.4	200
Fluoranthene	9.86	14.4	37
Naphthalene	15.4U	7.25	200
Phenanthrene	15.4U	7.96	200
Pyrene	7.72	23.8	102

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A12L259

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A12L259

No Sample Data Qualified in this SDG

LDC #: 29179B2b **VALIDATION COMPLETENESS WORKSHEET** Date: 2/13/13
SDG #: A12L259 Stage 2B Page: 1 of 1
Laboratory: APEX Laboratories, LLC Reviewer: EJ
2nd Reviewer: ✓

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/12/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV ≤ 30 CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates /DMP	A/A	A12L294-09 MS only
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 2, MBTL 12-SS-54-10 (SDG A12L294)
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

Sediment

1 -1	MBTL12-SS-04-02	11	MBTL12-SS-04-02DUP	21 -1	1212448	31	
2 +1	MBTL12-SS-04-10	12	MBTL12-SS-06-10MS	22 -2	1212413	32	
3 +1	MBTL12-SS-08-02	13		23		33	
4 +1	MBTL12-SS-08-10	14		24		34	
5 +1	MBTL12-SS-07-02	15		25		35	
6 +1	MBTL12-SS-07-10	16		26		36	
7 -2	MBTL12-SS-03-02	17		27		37	
8 -2	MBTL12-SS-03-10	18		28		38	
9 -2	MBTL12-SS-06-02	19		29		39	
10 -1	MBTL12-SS-06-10	20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1-Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU. Benzo(b+k) ~~fluoranthenes~~ fluoranthene
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC#: 29179B2b

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: EJ
2nd Reviewer: ✓

METHOD: GC/MS PAH (EPA SW 846 Method 8270D-SIM)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/Kg)		RPD
	MBTL 12-SS-54-10	2	
CCC	18.1	15.4U	200
III	9.98	15.4U	200
UUU	24.1	30.8U	200
DDD	17.4	15.4U	200
YY	14.4	9.86	37
S	7.25	15.4U	200
UU	7.96	15.4U	200
ZZ	23.8	7.72	102

V:\FIELD DUPLICATES\templates\29179B2b.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 12, 2012
LDC Report Date:	February 14, 2013
Matrix:	Sediment
Parameters:	Polychlorinated Biphenyls
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L259

Sample Identification

MBTL12-SS-04-02
MBTL12-SS-04-10
MBTL12-SS-08-02
MBTL12-SS-08-10
MBTL12-SS-07-02
MBTL12-SS-07-10
MBTL12-SS-03-02
MBTL12-SS-03-10
MBTL12-SS-06-02
MBTL12-SS-06-10
MBTL12-SS-04-02DUP

Introduction

This data review covers 11 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082A for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
MBTL12-SS-04-02DUP	Decachlorobiphenyl	52 (55-130)	All TCL compounds	J (all detects) UJ (all non-detects)	A
MBTL12-SS-04-02	Decachlorobiphenyl	50 (55-130)	All TCL compounds	J (all detects) UJ (all non-detects)	A

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

Raw data were not reviewed for this SDG.

XIII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to surrogate %R problems, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XV. Field Duplicates

Samples MBTL12-SS-04-10 and MBLT12-SS-54-10 (from SDG A12L294) were identified as field duplicates. No polychlorinated biphenyls were detected in any of the samples.

XVI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polychlorinated Biphenyls - Data Qualification Summary - SDG A12L259

SDG	Sample	Compound	Flag	A or P	Reason
A12L259	MBTL12-SS-04-02	All TCL compounds	J (all detects) UJ (all non-detects)	A	Surrogate spikes (%R)

Millennium Bulk Terminals
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG A12L259

No Sample Data Qualified in this SDG

LDC #: 29179B3b

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 02/08/2013

SDG #: A12L259

Page: 1 of 1

Laboratory: APEX Laboratories, LLC

Reviewer: SW

2nd Reviewer: [illegible]

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/12/2012
II.	GC/ECD Instrument Performance Check	N	
III.	Initial calibration	A	RSD ≤ 20
IV.	Continuing calibration/ICV	A	icv/ccv ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	~~A~~ SW	
VII.	Matrix spike/Matrix spike duplicates / DUP	N/A	CS
VIII.	Laboratory control samples / LD	A/~~ND~~	LCS
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	N	
XIII.	Compound quantitation/RL/LOQ/LODs	N	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	ND	D = 2 + MBTL 12-SS-54-10 (SDG A12L294)
XVI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: soil sediment.

− 1	MBTL12-SS-04-02	− 11	MBTL12-SS-04-02DUP	21		31	1212363-BLK1
− 2	MBTL12-SS-04-10	12		22		32	
− 3	MBTL12-SS-08-02	13		23		33	
+ 4	MBTL12-SS-08-10	14		24		34	
+ 5	MBTL12-SS-07-02	15		25		35	
− 6	MBTL12-SS-07-10	16		26		36	
− 7	MBTL12-SS-03-02	17		27		37	
− 8	MBTL12-SS-03-10	18		28		38	
− 9	MBTL12-SS-06-02	19		29		39	
− 10	MBTL12-SS-06-10	20		30		40	

LDC #: 29179B36

VALIDATION FINDINGS WORKSHEET
Surrogate Spikes

Reviewer: SW
2nd Reviewer: [illegible]

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)
Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were surrogates spiked into all samples, standards and blanks?
Y N N/A Did all surrogate percent recoveries (%R) meet the QC limits?

#	Date	Sample ID	Column	Surrogate Compound	%R (Limits)	Qualifications
		11		DCB	52 (55-130)	J/UJ / A
				↓	(↓)	↓
		1		↓	50 (↓)	↓
					( )	
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					( )	
					( )	
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(DCB) Decachlorobiphenyl
(TCMX) Tetrachloro-m-xylene

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 12, 2012
LDC Report Date:	February 5, 2013
Matrix:	Sediment
Parameters:	Aluminum
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L259

Sample Identification

MBTL12-SS-04-02
MBTL12-SS-04-10
MBTL12-SS-08-02
MBTL12-SS-08-10
MBTL12-SS-07-02
MBTL12-SS-07-10
MBTL12-SS-03-02
MBTL12-SS-03-10
MBTL12-SS-06-02
MBTL12-SS-06-10
MBTL12-SS-06-10MS

Introduction

This data review covers 11 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW846 Method 6020A for Aluminum.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No aluminum was found in the initial, continuing and preparation blanks.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this method.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

Samples MBTL12-SS-54-10 (from SDG A12L294) and MBTL12-SS-04-10 were identified as field duplicates. No aluminum was detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD
	MBTL12-SS-04-10	MBTL12-SS-54-10	
Aluminum	10000	8990	11

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Aluminum - Data Qualification Summary - SDG A12L259

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Aluminum - Laboratory Blank Data Qualification Summary - SDG A12L259

No Sample Data Qualified in this SDG

LDC #: 29179B4

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 2/5/13

SDG #: A12L259

Page: 1 of 1

Laboratory: APEX Laboratories, LLC

Reviewer:

2nd Reviewer:

METHOD: ~~Metals~~ Aluminum (EPA SW846 Method ~~200.7/200.8~~ 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/12/12
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	A	MS
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	Not performed
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	SW	(2, MBTL12-SS-54-10 (A12L294))
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Sediment

1	MBTL12-SS-04-02	11	MBTL12-SS-06-10MS	21		31	
2	MBTL12-SS-04-10	12		22		32	
3	MBTL12-SS-08-02	13		23		33	
4	MBTL12-SS-08-10	14		24		34	
5	MBTL12-SS-07-02	15		25		35	
6	MBTL12-SS-07-10	16		26		36	
7	MBTL12-SS-03-02	17		27		37	
8	MBTL12-SS-03-10	18		28		38	
9	MBTL12-SS-06-02	19		29		39	
10	MBTL12-SS-06-10	20		30		40	

Notes: Samples appended with "F" were analyzed as dissolved.

LDC#: 29179B4

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer: 2nd Reviewer:

METHOD: Metals (EPA Method 6010B/7000)

Analyte	Concentration (mg/Kg)		RPD
	2	MBTL 12-SS-54-10	
Aluminum	10000	8990	11

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 12, 2012
LDC Report Date:	February 5, 2013
Matrix:	Sediment
Parameters:	Wet Chemistry
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC/Analytical Resources, Inc.
Sample Delivery Group (SDG):	A12L259/VW49

Sample Identification

MBTL12-SS-04-02
MBTL12-SS-04-10
MBTL12-SS-08-02
MBTL12-SS-08-10
MBTL12-SS-07-02
MBTL12-SS-07-10
MBTL12-SS-03-02
MBTL12-SS-03-10
MBTL12-SS-06-02
MBTL12-SS-06-10
MBTL12-SS-08-02MS
MBTL12-SS-08-02DUP
MBTL12-SS-06-10MS
MBTL12-SS-06-10DUP
MBTL12-SS-04-02MS
MBTL12-SS-04-02DUP
MBTL12-SS-04-02TRP

Introduction

This data review covers 17 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 4500-NH3-F for Ammonia as Nitrogen, Standard Method 4500-F-C for Fluoride, EPA SW 846 Method 9014 for Total Cyanide, PSEP and Standard Method 5310B Modified for Total Organic Carbon, Standard Method 2540G and APEX SOP for Total Solids, Standard Method 2540B for Preserved Total Solids, ASTM Method D422M for Grain Size, and EPA Method 376.2 for Total Sulfide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Analyte	RPD (Limits)	Flag	A or P
MBTL12-SS-04-02DUP (All samples in SDG A12L259/VW49)	Total solids	23 (≤20)	J (all detects) UJ (all non-detects)	A

Triplicate (TRP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to duplicate RPD problems, data were qualified as estimated in ten samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples MBLT12-SS-54-10 (from SDG A12L294/VW87) and MBTL12-SS-04-10 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration		RPD
	MBTL12-SS-04-10	MBLT12-SS-54-10	
Ammonia as nitrogen	18.7 mg/Kg	23.7 mg/Kg	24
Cyanide	0.363 mg/Kg	0.357 mg/Kg	2
Fluoride	187 mg/Kg	182 mg/Kg	3
Sulfide	1.5 mg/Kg	1.94 mg/Kg	26
Total organic carbon	1.1 %	0.8%	32
Total Solids	64.1%	65.9%	3
Preserved Total Solids	66.4%	65.5%	1

Grain Size	Percent Retained		RPD
	MBTL12-SS-04-10	MBLT12-SS-54-10	
Sieve #4	0.28	0.04	150
Sieve #10	0.11	0.15	31
Sieve #20	0.17	0.06	96

Grain Size	Percent Retained		RPD
	MBTL12-SS-04-10	MBLT12-SS-54-10	
Sieve # 40	0.21	0.16	27
Sieve #60	0.44	0.44	0
Sieve #100	13.19	12.96	2
Sieve #140	20.39	20.28	1
Sieve #200	16.58	17.29	4
Sieve #230	5.4	5.4	0
Clay	14.2	14.3	1
Slit	34.4	34.3	0

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A12L259/VW49

SDG	Sample	Analyte	Flag	A or P	Reason
A12L259/ VW49	MBTL12-SS-04-02 MBTL12-SS-04-10 MBTL12-SS-08-02 MBTL12-SS-08-10 MBTL12-SS-07-02 MBTL12-SS-07-10 MBTL12-SS-03-02 MBTL12-SS-03-10 MBTL12-SS-06-02 MBTL12-SS-06-10	Total solids	J (all detects) UJ (all non-detects)	A	Duplicate sample analysis (RPD)

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A12L259/VW49

No Sample Data Qualified in this SDG

LDC #: 29179B6 **VALIDATION COMPLETENESS WORKSHEET** Date: 2/5/13

SDG #: A12L259/VW49 Stage 2B Page: 1 of 1

Laboratory: APEX Laboratories, LLC/Analytical Resources, Inc. Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: Ammonia as Nitrogen (SM4500-NH3), Fluoride (SM4500-F-C) Total Cyanide(EPA SW846 Method 9014), Total Organic Carbon (SM5310B). Total Solids (SM2540G), Grain Size (ASTM D422), Total Sulfide ~~PSEP~~(EPA Method 376.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/12/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	A	MS
VI.	Duplicates / Triplicate	SW	Dup, Trp (S^{2-} (#17) ok by diff)
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	SW	(2, MBLT12-SS-04-10 (A12L294)) VW87
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: sediment

1	MBTL12-SS-04-02	~~11~~	~~MBTL12-SS-04-02DUP~~	21		31	
2	MBTL12-SS-04-10	12	MBTL12-SS-08-02MS	22		32	
3	MBTL12-SS-08-02	13	MBTL12-SS-08-02DUP	23		33	
4	MBTL12-SS-08-10	14	MBTL12-SS-06-10MS	24		34	
5	MBTL12-SS-07-02	15	MBTL12-SS-06-10DUP	25		35	
6	MBTL12-SS-07-10	16	(#1) MS	26		36	
7	MBTL12-SS-03-02	17	DUP	27		37	
8	MBTL12-SS-03-10	18	TRP	28		38	
9	MBTL12-SS-06-02	19		29		39	
10	MBTL12-SS-06-10	20		30		40	

Notes:

LDC #: 29179B6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Reviewer: CR
2nd reviewer: V

All circled methods are applicable to each sample.

Sample ID	Parameter
1-10	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 TS S^{2-} Grain Size
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
RE:#	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
12	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
13	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
14	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
15	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
16	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 S^{2-}
17	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 TS S^{2-}
18	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 TS
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

LDC #: 29179B6

VALIDATION FINDINGS WORKSHEET
Duplicate Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method see cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a duplicate sample analyzed for each matrix in this SDG?

Y N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for water and ≤ 35% for soil samples (≤ 10% for Method 300.0)? If no, see qualification below. A control limit of ±CRDL (±2X CRDL for soil) was used for samples that were ≤5X the CRDL, including when only one of the duplicate sample values were ≤5X the CRDL. If field blanks were used for laboratory duplicates, see overall assessment.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Duplicate ID	Matrix	Analyte	RPD (Limits)	Associated Samples	Qualifications
		17	S	Total Solids	23 (≤20)	All	J/UJ/A

Comments:

LDC# 29179B6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

Inorganics: Method See Cover

Analyte	Concentration (mg/Kg)		RPD
	2	MBLT 12-SS-54-10	
Ammonia as N	18.7	23.7	24
Cyanide	0.363	0.357	2
Fluoride	187	182	3
Sulfide	1.5	1.94	26
TOC (%)	1.1	0.8	32
Total Solids (%)	64.1	65.9	3
Preserved Total Solids (%)	66.4	65.5	1

Grain Size	Percent retained		RPD
	2	MBLT 12-SS-54-10	
Sieve #4	0.28	0.04	150
Sieve #10	0.11	0.15	31
Sieve #20	0.17	0.06	96
Sieve # 40	0.21	0.16	27
Sieve #60	0.44	0.44	0
Sieve #100	13.19	12.96	2
Sieve #140	20.39	20.28	1
Sieve #200	16.58	17.29	4
Sieve #230	5.4	5.4	0
Clay	14.2	14.3	1
Slit	34.4	34.3	0

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Millennium Bulk Terminals

Collection Date: December 12 through December 13, 2012

LDC Report Date: February 14, 2013

Matrix: Sediment

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2B

Laboratory: APEX Laboratories, LLC

Sample Delivery Group (SDG): A12L294

Sample Identification

MBTL12-SS-54-10
MBTL12-SS-11-02
MBTL12-SS-11-10
MBTL12-SS-12-02
MBTL12-SS-12-10
MBTL12-SS-13-02
MBTL12-SS-13-10
MBTL12-SS-05-02
MBTL12-SS-05-10
MBTL12-SS-05-10MS

Introduction

This data review covers 10 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XVI. Field Duplicates

Samples MBTL12-SS-54-10 and MBTL12-SS-04-10 (from SDG A12L259) were identified as field duplicates. No polynuclear aromatic hydrocarbons were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD
	MBTL12-SS-54-10	MBTL12-SS-04-10	
Benzo(a)anthracene	18.1	15.4U	200

Compound	Concentration (ug/Kg)		RPD
	MBTL12-SS-54-10	MBTL12-SS-04-10	
Benzo(a)pyrene	9.98	15.4U	200
Benzo(b+k)fluoranthene	24.1	30.8U	200
Chrysene	17.4	15.4U	200
Fluoranthene	14.4	9.86	37
Naphthalene	7.25	15.4U	200
Phenanthrene	7.96	15.4U	200
Pyrene	23.8	7.72	102

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A12L294

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A12L294

No Sample Data Qualified in this SDG

LDC #: 29179C2b **VALIDATION COMPLETENESS WORKSHEET** Date: 2/13/13
SDG #: A12L294 Stage 2B Page: 1 of 1
Laboratory: APEX Laboratories, LLC Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/12 – 12/13/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV ≤ 30 CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	✓
XVI.	Field duplicates	SW	D = 1, 9 MBTL 12-SS-04-10 (SDG A12L259)
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:
sediment

1	MBTL12-SS-54-10	11	12124/3	21		31	
2	MBTL12-SS-11-02	12		22		32	
3	MBTL12-SS-11-10	13		23		33	
4	MBTL12-SS-12-02	14		24		34	
5	MBTL12-SS-12-10	15		25		35	
6	MBTL12-SS-13-02	16		26		36	
7	MBTL12-SS-13-10	17		27		37	
8	MBTL12-SS-05-02	18		28		38	
9	MBTL12-SS-05-10	19		29		39	
10	MBTL12-SS-05-10MS	20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1-Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU. Benzo(b+k)fluoranthenes
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC#: 29179C2b

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS PAH (EPA SW 846 Method 8270D-SIM)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/Kg)		RPD
	1	MBTL 12-SS-04-10	
CCC	18.1	15.4U	200
III	9.98	15.4U	200
UUU	24.1	30.8U	200
DDD	17.4	15.4U	200
YY	14.4	9.86	37
S	7.25	15.4U	200
UU	7.96	15.4U	200
ZZ	23.8	7.72	102

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LDC Report# 29179C3b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 12 through December 13, 2012
LDC Report Date:	February 14, 2013
Matrix:	Sediment
Parameters:	Polychlorinated Biphenyls
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L294

Sample Identification

MBTL12-SS-54-10
MBTL12-SS-11-02
MBTL12-SS-11-10
MBTL12-SS-12-02
MBTL12-SS-12-10
MBTL12-SS-13-02
MBTL12-SS-13-10
MBTL12-SS-05-02
MBTL12-SS-05-10
MBTL12-SS-05-10MS

Introduction

This data review covers 10 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082A for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

Raw data were not reviewed for this SDG.

XIII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XV. Field Duplicates

No field duplicates were identified in this SDG.

XVI. Field Blanks

Samples MBTL12-SS-54-10 and MBLT12-SS-04-10 (from SDG A12L259) were identified as field duplicates. No polychlorinated biphenyls were detected in any of the samples.

Millennium Bulk Terminals
Polychlorinated Biphenyls - Data Qualification Summary - SDG A12L294

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG A12L294

No Sample Data Qualified in this SDG

LDC #: 29179C3b

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 02/08/2013

SDG #: A12L294

Page: 1 of 1

Laboratory: APEX Laboratories, LLC

Reviewer: SW

2nd Reviewer: Q

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/12/2012 - 12/13/2012
II.	GC/ECD Instrument Performance Check	N	
III.	Initial calibration	A	RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	MS ONLY
VIII.	Laboratory control samples	A	LCS
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	N	
XIII.	Compound quantitation/RL/LOQ/LODs	N	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	ND	D = 1 + MBTL 12-SS-04-10 (SDG A12L259)
XVI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Soil Sediment

− 1	MBTL12-SS-54-10	11		21		31	1212363-BLK1
− 2	MBTL12-SS-11-02	12		22		32	
− 3	MBTL12-SS-11-10	13		23		33	
+ 4	MBTL12-SS-12-02	14		24		34	
+ 5	MBTL12-SS-12-10	15		25		35	
− 6	MBTL12-SS-13-02	16		26		36	
+ 7	MBTL12-SS-13-10	17		27		37	
− 8	MBTL12-SS-05-02	18		28		38	
− 9	MBTL12-SS-05-10	19		29		39	
10	MBTL12-SS-05-10MS	20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 12 through December 13, 2012
LDC Report Date:	February 5, 2013
Matrix:	Sediment
Parameters:	Aluminum
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L294

Sample Identification

MBTL12-SS-54-10
MBTL12-SS-11-02
MBTL12-SS-11-10
MBTL12-SS-12-02
MBTL12-SS-12-10
MBTL12-SS-13-02
MBTL12-SS-13-10
MBTL12-SS-05-02
MBTL12-SS-05-10
MBTL12-SS-05-10MS

Introduction

This data review covers 10 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW846 Method 6020A for Aluminum.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No aluminum was found in the initial, continuing and preparation blanks.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this method.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

Samples MBTL12-SS-04-10 (from SDG A12L259) and MBTL12-SS-54-10 were identified as field duplicates. No aluminum was detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD
	MBTL12-SS-04-10	MBTL12-SS-54-10	
Aluminum	10000	8990	11

XV. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Aluminum - Data Qualification Summary - SDG A12L294

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Aluminum - Laboratory Blank Data Qualification Summary - SDG A12L294

No Sample Data Qualified in this SDG

LDC #: 29179C4

VALIDATION COMPLETENESS WORKSHEET

Date: 2/5/13

SDG #: A12L294

Stage 2B

Page: 1 of 1

Laboratory: APEX Laboratories, LLC

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: ~~Metals~~ Aluminum (EPA SW846 Method ~~200.7/200.8~~ 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/12-13/12
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	A	MS
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	SW	(1, MBTL12-SS-04-10 (A12L259))
XV	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: sediment

1	MBTL12-SS-54-10	11		21		31	
2	MBTL12-SS-11-02	12		22		32	
3	MBTL12-SS-11-10	13		23		33	
4	MBTL12-SS-12-02	14		24		34	
5	MBTL12-SS-12-10	15		25		35	
6	MBTL12-SS-13-02	16		26		36	
7	MBTL12-SS-13-10	17		27		37	
8	MBTL12-SS-05-02	18		28		38	
9	MBTL12-SS-05-10	19		29		39	
10	MBTL12-SS-05-10MS	20		30		40	

Notes: Samples appended with "F" were analyzed as dissolved.

LDC#: 29179C4

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: Metals (EPA Method 6010B/7000)

Analyte	Concentration (mg/Kg)		RPD
	MBTL 12-SS-04-10	1	
Aluminum	10000	8990	11

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 12 through December 13, 2012
LDC Report Date:	February 5, 2013
Matrix:	Sediment
Parameters:	Wet Chemistry
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC/Analytical Resources, Inc.
Sample Delivery Group (SDG):	A12L294/VW87

Sample Identification

MBTL12-SS-54-10
MBTL12-SS-11-02
MBTL12-SS-11-10
MBTL12-SS-12-02
MBTL12-SS-12-10
MBTL12-SS-13-02
MBTL12-SS-13-10
MBTL12-SS-05-02
MBTL12-SS-05-10
MBTL12-SS-54-10MS
MBTL12-SS-54-10DUP
MBTL12-SS-05-10MS
MBTL12-SS-05-10DUP
MBTL12-SS-11-02MS
MBTL12-SS-11-02DUP
MBTL12-SS-54-10TRP

Introduction

This data review covers 16 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 4500-NH3-F for Ammonia as Nitrogen, Standard Method 4500-F-C for Fluoride, EPA SW 846 Method 9014 for Total Cyanide, PSEP and Standard Method 5310B Modified for Total Organic Carbon, Standard Method 2540G and APEX SOP for Total Solids, Standard Method 2540B for Preserved Total Solids, ASTM Method D422M for Grain Size, and EPA Method 376.2 for Total Sulfide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
MBTL12-SS-05-10MS (All samples in SDG A12L294/VW87)	Fluoride	63 (75-125)	J (all detects) UJ (all non-detects)	A

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

Triplicate (TRP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS %R problems, data were qualified as estimated in nine samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples MBTL12-SS-04-10 (from SDF A12L259/VW49) and MBTL12-SS-54-10 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration		RPD
	MBTL12-SS-04-10	MBTL12-SS-54-10	
Ammonia as nitrogen	18.7 mg/Kg	23.7 mg/Kg	24
Cyanide	0.363 mg/Kg	0.357 mg/Kg	2
Fluoride	187 mg/Kg	182 mg/Kg	3
Sulfide	1.5 mg/Kg	1.94 mg/Kg	26
Total organic carbon	1.1 %	0.8%	32
Total Solids	64.1%	65.9%	3
Preserved Total Solids	66.4%	65.5%	1

Grain Size	Percent Retained		RPD
	MBTL12-SS-04-10	MBTL12-SS-54-10	
Sieve #4	0.28	0.04	150
Sieve #10	0.11	0.15	31
Sieve #20	0.17	0.06	96

Grain Size	Percent Retained		RPD
	MBTL12-SS-04-10	MBTL12-SS-54-10	
Sieve # 40	0.21	0.16	27
Sieve #60	0.44	0.44	0
Sieve #100	13.19	12.96	2
Sieve #140	20.39	20.28	1
Sieve #200	16.58	17.29	4
Sieve #230	5.4	5.4	0
Clay	14.2	14.3	1
Slit	34.4	34.3	0

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A12L294/VW87

SDG	Sample	Analyte	Flag	A or P	Reason
A12L294/ VW87	MBTL12-SS-54-10 MBTL12-SS-11-02 MBTL12-SS-11-10 MBTL12-SS-12-02 MBTL12-SS-12-10 MBTL12-SS-13-02 MBTL12-SS-13-10 MBTL12-SS-05-02 MBTL12-SS-05-10	Fluoride	J (all detects) UJ (all non-detects)	A	Matrix spike (%R)

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A12L294/VW87

No Sample Data Qualified in this SDG

LDC #: 29179C6

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 2/5/13

SDG #: A12L294/VW87

Page: 1 of 1

Laboratory: APEX Laboratories, LLC/Analytical Resources, Inc.

Reviewer: [illegible]

2nd Reviewer: W

METHOD: Ammonia as Nitrogen (SM4500-NH3), Fluoride (SM4500-F-C) Total Cyanide(EPA SW846 Method 9014), Total Organic Carbon (SM5310B). Total Solids (SM2540G), Grain Size (ASTM D422), Total Sulfide ~~PSEP~~(EPA Method 376.2)

PSEP / mon ~~B/G~~ APEX SOP m Preserved TS (SM 2540 B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/12-13/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	SW	MS
VI.	Duplicates /Triplicates	A	Dup, Trp
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	~~SW~~ N	C1, MBTL 12-SS-04-10 (A12L294/VW87 49)
XI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: sediment

1	MBTL12-SS-54-10	11	MBTL12-SS-54-10DUP	21		31	
2	MBTL12-SS-11-02	12	MBTL12-SS-05-10MS	22		32	
3	MBTL12-SS-11-10	13	MBTL12-SS-05-10DUP	23		33	
4	MBTL12-SS-12-02	14	(#2) MS	24		34	
5	MBTL12-SS-12-10	15	(#2) Dup	25		35	
6	MBTL12-SS-13-02	16	(#1) TRP	26		36	
7	MBTL12-SS-13-10	17		27		37	
8	MBTL12-SS-05-02	18		28		38	
9	MBTL12-SS-05-10	19		29		39	
10	MBTL12-SS-54-10MS	20		30		40	

Notes:

LDC #: 29179C6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Reviewer: CR
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Parameter
1-9	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 TS S^{2-} Grain Size
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
10	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
11	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 TS
12	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
13	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
14	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 S^{2-}
15	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 S^{2-}
16	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4 TS
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

LDC #: 29194

VALIDATION FINDINGS WORKSHEET
Matrix Spike Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Inorganics, Method see cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125 (85-115% for Method 300.0)? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Matrix Spike ID	Matrix	Analyte	%R	Associated Samples	Qualifications
		12	S	F	63	All	J/UJ/A

Comments:

LDC# 29179C6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

Inorganics: Method See Cover

Analyte	Concentration (mg/Kg)		RPD
	MBLT 12-SS-04-10	1	
Ammonia as N	18.7	23.7	24
Cyanide	0.363	0.357	2
Fluoride	187	182	3
Sulfide	1.5	1.94	26
TOC (%)	1.1	0.8	32
Total Solids (%)	64.1	65.9	3
Preserved Total Solids (%)	66.4	65.5	1

Grain Size	Percent retained		RPD
	MBLT 12-SS-04-10	1	
Sieve #4	0.28	0.04	150
Sieve #10	0.11	0.15	31
Sieve #20	0.17	0.06	96
Sieve # 40	0.21	0.16	27
Sieve #60	0.44	0.44	0
Sieve #100	13.19	12.96	2
Sieve #140	20.39	20.28	1
Sieve #200	16.58	17.29	4
Sieve #230	5.4	5.4	0
Clay	14.2	14.3	1
Slit	34.4	34.3	0

Millennium Bulk Terminals - LDC# 29179

SDG: A12L233

Analytical Method APEXsolids

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-01-02	A12L233-01	Total solids	12/21/2012	71.1	Yes	Y				1.00	1.00	pct
MBTL12-SS-01-10	A12L233-06	Total solids	12/21/2012	57.8	Yes	Y				1.00	1.00	pct
MBTL12-SS-02-02	A12L233-07	Total solids	12/21/2012	70.6	Yes	Y				1.00	1.00	pct
MBTL12-SS-02-10	A12L233-08	Total solids	12/21/2012	57.6	Yes	Y				1.00	1.00	pct
MBTL12-SS-09-02	A12L233-02	Total solids	12/21/2012	67.9	Yes	Y				1.00	1.00	pct
MBTL12-SS-09-10	A12L233-03	Total solids	12/21/2012	69.5	Yes	Y				1.00	1.00	pct
MBTL12-SS-10-02	A12L233-04	Total solids	12/21/2012	75.3	Yes	Y				1.00	1.00	pct
MBTL12-SS-10-10	A12L233-05	Total solids	12/21/2012	70.6	Yes	Y				1.00	1.00	pct

Analytical Method D422M

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-01-02	A12L233-01	Percent retained 106 micron sieve (#140)	12/28/2012	27.23	Yes	Y						pct
MBTL12-SS-01-02	A12L233-01	Percent retained 150 micron sieve (#100)	12/28/2012	20.87	Yes	Y						pct
MBTL12-SS-01-02	A12L233-01	Percent retained 4750 micron sieve (#4)	12/28/2012	1.18	Yes	Y						pct
MBTL12-SS-01-02	A12L233-01	Percent retained 250 micron sieve (#60)	12/28/2012	0.99	Yes	Y						pct
MBTL12-SS-01-02	A12L233-01	Percent retained 2000 micron sieve (#10)	12/28/2012	0.63	Yes	Y						pct
MBTL12-SS-01-02	A12L233-01	Percent retained 425 micron sieve (#40)	12/28/2012	0.13	Yes	Y						pct
MBTL12-SS-01-02	A12L233-01	Silt	12/28/2012	22.1	Yes	Y						pct
MBTL12-SS-01-02	A12L233-01	Clay	12/28/2012	2.9	Yes	Y						pct
MBTL12-SS-01-02	A12L233-01	Percent retained 850 micron sieve (#20)	12/28/2012	0.2	Yes	Y						pct
MBTL12-SS-01-02	A12L233-01	Percent retained 75 micron sieve (#200)	12/28/2012	23.7	Yes	Y						pct
MBTL12-SS-01-02	A12L233-01	Percent retained 63 micron sieve (#230)	12/28/2012	6.87	Yes	Y						pct
MBTL12-SS-01-10	A12L233-06	Percent retained 63 micron sieve (#230)	12/28/2012	3.96	Yes	Y						pct

SDG: A12L233

Analytical Method D422M

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-01-10	A12L233-06	Percent retained 75 micron sieve (#200)	12/28/2012	8.54		Yes	Y						pct
MBTL12-SS-01-10	A12L233-06	Percent retained 850 micron sieve (#20)	12/28/2012	1.67		Yes	Y						pct
MBTL12-SS-01-10	A12L233-06	Clay	12/28/2012	17.5		Yes	Y						pct
MBTL12-SS-01-10	A12L233-06	Percent retained 150 micron sieve (#100)	12/28/2012	5.53		Yes	Y						pct
MBTL12-SS-01-10	A12L233-06	Silt	12/28/2012	53.2		Yes	Y						pct
MBTL12-SS-01-10	A12L233-06	Percent retained 106 micron sieve (#140)	12/28/2012	8.14		Yes	Y						pct
MBTL12-SS-01-10	A12L233-06	Percent retained 250 micron sieve (#60)	12/28/2012	0.93		Yes	Y						pct
MBTL12-SS-01-10	A12L233-06	Percent retained 2000 micron sieve (#10)	12/28/2012	1.35		Yes	Y						pct
MBTL12-SS-01-10	A12L233-06	Percent retained 4750 micron sieve (#4)	12/28/2012	2.09		Yes	Y						pct
MBTL12-SS-01-10	A12L233-06	Percent retained 425 micron sieve (#40)	12/28/2012	1.07		Yes	Y						pct
MBTL12-SS-02-02	A12L233-07	Percent retained 2000 micron sieve (#10)	12/28/2012	0.35		Yes	Y						pct
MBTL12-SS-02-02	A12L233-07	Percent retained 75 micron sieve (#200)	12/28/2012	26.74		Yes	Y						pct
MBTL12-SS-02-02	A12L233-07	Percent retained 150 micron sieve (#100)	12/28/2012	17.08		Yes	Y						pct
MBTL12-SS-02-02	A12L233-07	Percent retained 250 micron sieve (#60)	12/28/2012	0.5		Yes	Y						pct
MBTL12-SS-02-02	A12L233-07	Percent retained 425 micron sieve (#40)	12/28/2012	0.11		Yes	Y						pct
MBTL12-SS-02-02	A12L233-07	Percent retained 4750 micron sieve (#4)	12/28/2012	0.32		Yes	Y						pct
MBTL12-SS-02-02	A12L233-07	Percent retained 63 micron sieve (#230)	12/28/2012	7.62		Yes	Y						pct
MBTL12-SS-02-02	A12L233-07	Percent retained 106 micron sieve (#140)	12/28/2012	30.19		Yes	Y						pct
MBTL12-SS-02-02	A12L233-07	Silt	12/28/2012	21.1		Yes	Y						pct
MBTL12-SS-02-02	A12L233-07	Percent retained 850 micron sieve (#20)	12/28/2012	0.1		Yes	Y						pct
MBTL12-SS-02-02	A12L233-07	Clay	12/28/2012	3.6		Yes	Y						pct
MBTL12-SS-02-10	A12L233-08	Clay	12/28/2012	20.4		Yes	Y						pct
MBTL12-SS-02-10	A12L233-08	Percent retained 850 micron sieve (#20)	12/28/2012	0.25		Yes	Y						pct

SDG: A12L233

Analytical Method D422M

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-02-10	A12L233-08	Percent retained 250 micron sieve (#60)	12/28/2012	0.98		Yes	Y						pct
MBTL12-SS-02-10	A12L233-08	Silt	12/28/2012	35.3		Yes	Y						pct
MBTL12-SS-02-10	A12L233-08	Percent retained 106 micron sieve (#140)	12/28/2012	16.42		Yes	Y						pct
MBTL12-SS-02-10	A12L233-08	Percent retained 150 micron sieve (#100)	12/28/2012	11.09		Yes	Y						pct
MBTL12-SS-02-10	A12L233-08	Percent retained 2000 micron sieve (#10)	12/28/2012	0.45		Yes	Y						pct
MBTL12-SS-02-10	A12L233-08	Percent retained 4750 micron sieve (#4)	12/28/2012	0.73		Yes	Y						pct
MBTL12-SS-02-10	A12L233-08	Percent retained 425 micron sieve (#40)	12/28/2012	0.47		Yes	Y						pct
MBTL12-SS-02-10	A12L233-08	Percent retained 63 micron sieve (#230)	12/28/2012	4.35		Yes	Y						pct
MBTL12-SS-02-10	A12L233-08	Percent retained 75 micron sieve (#200)	12/28/2012	13.97		Yes	Y						pct
MBTL12-SS-09-02	A12L233-02	Clay	12/28/2012	3.8		Yes	Y						pct
MBTL12-SS-09-02	A12L233-02	Percent retained 106 micron sieve (#140)	12/28/2012	24.13		Yes	Y						pct
MBTL12-SS-09-02	A12L233-02	Percent retained 150 micron sieve (#100)	12/28/2012	11.42		Yes	Y						pct
MBTL12-SS-09-02	A12L233-02	Percent retained 2000 micron sieve (#10)	12/28/2012	0.43		Yes	Y						pct
MBTL12-SS-09-02	A12L233-02	Percent retained 250 micron sieve (#60)	12/28/2012	1.49		Yes	Y						pct
MBTL12-SS-09-02	A12L233-02	Percent retained 425 micron sieve (#40)	12/28/2012	0.54		Yes	Y						pct
MBTL12-SS-09-02	A12L233-02	Percent retained 4750 micron sieve (#4)	12/28/2012	0.35		Yes	Y						pct
MBTL12-SS-09-02	A12L233-02	Percent retained 63 micron sieve (#230)	12/28/2012	8.98		Yes	Y						pct
MBTL12-SS-09-02	A12L233-02	Percent retained 850 micron sieve (#20)	12/28/2012	0.21		Yes	Y						pct
MBTL12-SS-09-02	A12L233-02	Silt	12/28/2012	32.4		Yes	Y						pct
MBTL12-SS-09-02	A12L233-02	Percent retained 75 micron sieve (#200)	12/28/2012	25.27		Yes	Y						pct
MBTL12-SS-09-10	A12L233-03	Percent retained 63 micron sieve (#230)	12/28/2012	7.46		Yes	Y						pct
MBTL12-SS-09-10	A12L233-03	Silt	12/28/2012	29.4		Yes	Y						pct
MBTL12-SS-09-10	A12L233-03	Clay	12/28/2012	4		Yes	Y						pct

SDG: A12L233

Analytical Method D422M

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-09-10	A12L233-03	Percent retained 75 micron sieve (#200)	12/28/2012	20.77		Yes	Y						pct
MBTL12-SS-09-10	A12L233-03	Percent retained 4750 micron sieve (#4)	12/28/2012	0.9		Yes	Y						pct
MBTL12-SS-09-10	A12L233-03	Percent retained 425 micron sieve (#40)	12/28/2012	2.06		Yes	Y						pct
MBTL12-SS-09-10	A12L233-03	Percent retained 250 micron sieve (#60)	12/28/2012	3.53		Yes	Y						pct
MBTL12-SS-09-10	A12L233-03	Percent retained 2000 micron sieve (#10)	12/28/2012	0.89		Yes	Y						pct
MBTL12-SS-09-10	A12L233-03	Percent retained 150 micron sieve (#100)	12/28/2012	15.97		Yes	Y						pct
MBTL12-SS-09-10	A12L233-03	Percent retained 106 micron sieve (#140)	12/28/2012	21.12		Yes	Y						pct
MBTL12-SS-09-10	A12L233-03	Percent retained 850 micron sieve (#20)	12/28/2012	1.33		Yes	Y						pct
MBTL12-SS-10-02	A12L233-04	Percent retained 425 micron sieve (#40)	12/28/2012	11.95		Yes	Y						pct
MBTL12-SS-10-02	A12L233-04	Silt	12/28/2012	18		Yes	Y						pct
MBTL12-SS-10-02	A12L233-04	Percent retained 106 micron sieve (#140)	12/28/2012	18.15		Yes	Y						pct
MBTL12-SS-10-02	A12L233-04	Percent retained 150 micron sieve (#100)	12/28/2012	14.15		Yes	Y						pct
MBTL12-SS-10-02	A12L233-04	Percent retained 2000 micron sieve (#10)	12/28/2012	1.23		Yes	Y						pct
MBTL12-SS-10-02	A12L233-04	Percent retained 250 micron sieve (#60)	12/28/2012	14.32		Yes	Y						pct
MBTL12-SS-10-02	A12L233-04	Percent retained 4750 micron sieve (#4)	12/28/2012	3.16		Yes	Y						pct
MBTL12-SS-10-02	A12L233-04	Percent retained 75 micron sieve (#200)	12/28/2012	15.69		Yes	Y						pct
MBTL12-SS-10-02	A12L233-04	Percent retained 63 micron sieve (#230)	12/28/2012	5.19		Yes	Y						pct
MBTL12-SS-10-02	A12L233-04	Clay	12/28/2012	1.8		Yes	Y						pct
MBTL12-SS-10-02	A12L233-04	Percent retained 850 micron sieve (#20)	12/28/2012	1.56		Yes	Y						pct
MBTL12-SS-10-10	A12L233-05	Silt	12/28/2012	21		Yes	Y						pct
MBTL12-SS-10-10	A12L233-05	Percent retained 150 micron sieve (#100)	12/28/2012	11.44		Yes	Y						pct
MBTL12-SS-10-10	A12L233-05	Percent retained 250 micron sieve (#60)	12/28/2012	16.37		Yes	Y						pct

Analytical Method D422M

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-10-10	A12L233-05	Percent retained 425 micron sieve (#40)	12/28/2012	13.41		Yes	Y						pct
MBTL12-SS-10-10	A12L233-05	Percent retained 4750 micron sieve (#4)	12/28/2012	1.89		Yes	Y						pct
MBTL12-SS-10-10	A12L233-05	Percent retained 2000 micron sieve (#10)	12/28/2012	0.83		Yes	Y						pct
MBTL12-SS-10-10	A12L233-05	Percent retained 63 micron sieve (#230)	12/28/2012	4.02		Yes	Y						pct
MBTL12-SS-10-10	A12L233-05	Percent retained 75 micron sieve (#200)	12/28/2012	11.8		Yes	Y						pct
MBTL12-SS-10-10	A12L233-05	Percent retained 850 micron sieve (#20)	12/28/2012	3.22		Yes	Y						pct
MBTL12-SS-10-10	A12L233-05	Clay	12/28/2012	7.3		Yes	Y						pct
MBTL12-SS-10-10	A12L233-05	Percent retained 106 micron sieve (#140)	12/28/2012	12.8		Yes	Y						pct

Analytical Method Plumb 1981

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-01-02	A12L233-01	Ammonia as nitrogen	12/15/2012	1.8		Yes	Y	D			0.705	0.352	mg/kg
MBTL12-SS-01-10	A12L233-06	Ammonia as nitrogen	12/15/2012	21.6		Yes	Y	D			0.865	0.433	mg/kg
MBTL12-SS-02-02	A12L233-07	Ammonia as nitrogen	12/15/2012	0.739		Yes	Y	D			0.704	0.352	mg/kg
MBTL12-SS-02-10	A12L233-08	Ammonia as nitrogen	12/15/2012	27.3		Yes	Y	D			0.872	0.436	mg/kg
MBTL12-SS-09-02	A12L233-02	Ammonia as nitrogen	12/15/2012	1.95		Yes	Y	D			0.734	0.367	mg/kg
MBTL12-SS-09-10	A12L233-03	Ammonia as nitrogen	12/15/2012	8.92		Yes	Y	D			0.720	0.360	mg/kg
MBTL12-SS-10-02	A12L233-04	Ammonia as nitrogen	12/15/2012	1.99		Yes	Y	D			0.664	0.332	mg/kg
MBTL12-SS-10-10	A12L233-05	Ammonia as nitrogen	12/15/2012	5.1		Yes	Y	D			0.709	0.354	mg/kg

Analytical Method SM2540G

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-01-02	A12L233-01	Total solids	12/21/2012	71.1		Yes	Y				1.00	1.00	pct
MBTL12-SS-01-10	A12L233-06	Total solids	12/21/2012	57.8		Yes	Y				1.00	1.00	pct
MBTL12-SS-02-02	A12L233-07	Total solids	12/21/2012	70.6		Yes	Y				1.00	1.00	pct
MBTL12-SS-02-10	A12L233-08	Total solids	12/21/2012	57.6		Yes	Y				1.00	1.00	pct

Analytical Method SM2540G

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-09-02	A12L233-02	Total solids	12/21/2012	67.9		Yes	Y				1.00	1.00	pct
MBTL12-SS-09-10	A12L233-03	Total solids	12/21/2012	69.5		Yes	Y				1.00	1.00	pct
MBTL12-SS-10-02	A12L233-04	Total solids	12/21/2012	75.3		Yes	Y				1.00	1.00	pct
MBTL12-SS-10-10	A12L233-05	Total solids	12/21/2012	70.6		Yes	Y				1.00	1.00	pct

Analytical Method SM4500CNE

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-01-02	A12L233-01	Cyanide, total	12/19/2012	0.31		Yes	N	U			0.310	0.310	mg/kg
MBTL12-SS-01-10	A12L233-06	Cyanide, total	12/19/2012	0.375		Yes	N	U			0.375	0.375	mg/kg
MBTL12-SS-02-02	A12L233-07	Cyanide, total	12/19/2012	0.309		Yes	N	U			0.309	0.309	mg/kg
MBTL12-SS-02-10	A12L233-08	Cyanide, total	12/19/2012	0.426		Yes	N	U			0.426	0.426	mg/kg
MBTL12-SS-09-02	A12L233-02	Cyanide, total	12/19/2012	0.499		Yes	Y				0.357	0.357	mg/kg
MBTL12-SS-09-10	A12L233-03	Cyanide, total	12/19/2012	2.2		Yes	Y				0.340	0.340	mg/kg
MBTL12-SS-10-02	A12L233-04	Cyanide, total	12/19/2012	0.315		Yes	N	U			0.315	0.315	mg/kg
MBTL12-SS-10-10	A12L233-05	Cyanide, total	12/19/2012	0.353		Yes	N	U			0.353	0.353	mg/kg

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-01-02	A12L233-01	Fluoride	12/18/2012	217		Yes	Y		J	8	27.2	27.2	mg/kg
MBTL12-SS-01-10	A12L233-06	Fluoride	12/18/2012	359		Yes	Y		J	8	33.1	33.1	mg/kg
MBTL12-SS-02-02	A12L233-07	Fluoride	12/18/2012	190		Yes	Y		J	8	26.0	26.0	mg/kg
MBTL12-SS-02-10	A12L233-08	Fluoride	12/18/2012	296		Yes	Y		J	8	32.6	32.6	mg/kg
MBTL12-SS-09-02	A12L233-02	Fluoride	12/18/2012	365		Yes	Y		J	8	28.3	28.3	mg/kg
MBTL12-SS-09-10	A12L233-03	Fluoride	12/18/2012	890		Yes	Y		J	8	26.8	26.8	mg/kg
MBTL12-SS-10-02	A12L233-04	Fluoride	12/18/2012	194		Yes	Y		J	8	26.7	26.7	mg/kg
MBTL12-SS-10-10	A12L233-05	Fluoride	12/18/2012	311		Yes	Y		J	8	28.3	28.3	mg/kg

SDG: A12L233

Analytical Method	SM5310B											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
MBTL12-SS-01-02	A12L233-01	Total organic carbon	12/18/2012	0.22	Yes	Y				0.020	0.010	pct
MBTL12-SS-01-10	A12L233-06	Total organic carbon	12/18/2012	1.6	Yes	Y				0.020	0.010	pct
MBTL12-SS-02-02	A12L233-07	Total organic carbon	12/18/2012	0.27	Yes	Y				0.020	0.010	pct
MBTL12-SS-02-10	A12L233-08	Total organic carbon	12/18/2012	2.3	Yes	Y				0.020	0.010	pct
MBTL12-SS-09-02	A12L233-02	Total organic carbon	12/18/2012	0.54	Yes	Y				0.020	0.010	pct
MBTL12-SS-09-10	A12L233-03	Total organic carbon	12/18/2012	1.3	Yes	Y				0.020	0.010	pct
MBTL12-SS-10-02	A12L233-04	Total organic carbon	12/18/2012	0.27	Yes	Y				0.020	0.010	pct
MBTL12-SS-10-10	A12L233-05	Total organic carbon	12/18/2012	1.4	Yes	Y				0.020	0.010	pct

Analytical Method	SW6020A											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
MBTL12-SS-01-02	A12L233-01	Aluminum	12/20/2012	3130	Yes	Y	D			37.1	18.5	mg/kg
MBTL12-SS-01-10	A12L233-06	Aluminum	12/20/2012	14000	Yes	Y	D			44.9	22.4	mg/kg
MBTL12-SS-02-02	A12L233-07	Aluminum	12/20/2012	4080	Yes	Y	D			37.0	18.5	mg/kg
MBTL12-SS-02-10	A12L233-08	Aluminum	12/20/2012	14400	Yes	Y	D			46.4	23.2	mg/kg
MBTL12-SS-09-02	A12L233-02	Aluminum	12/20/2012	5440	Yes	Y	D			35.9	17.9	mg/kg
MBTL12-SS-09-10	A12L233-03	Aluminum	12/20/2012	8150	Yes	Y	D			38.4	19.2	mg/kg
MBTL12-SS-10-02	A12L233-04	Aluminum	12/20/2012	3320	Yes	Y	D			31.9	16.0	mg/kg
MBTL12-SS-10-10	A12L233-05	Aluminum	12/20/2012	5930	Yes	Y	D			38.7	19.4	mg/kg

Analytical Method	SW8082A											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
MBTL12-SS-01-02	A12L233-01	Aroclor 1254	12/13/2012	5.19	Yes	N	U			5.19	2.59	ug/kg
MBTL12-SS-01-02	A12L233-01	Aroclor 1232	12/13/2012	5.19	Yes	N	U			5.19	2.59	ug/kg
MBTL12-SS-01-02	A12L233-01	Aroclor 1221	12/13/2012	5.19	Yes	N	U			5.19	2.59	ug/kg
MBTL12-SS-01-02	A12L233-01	Aroclor 1268	12/13/2012	5.19	Yes	N	U			5.19	2.59	ug/kg
MBTL12-SS-01-02	A12L233-01	Aroclor 1016	12/13/2012	5.19	Yes	N	U			5.19	2.59	ug/kg

SDG: A12L233

Analytical Method	SW8082A												
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-01-02	A12L233-01	Aroclor 1262	12/13/2012	5.19		Yes	N	U			5.19	2.59	ug/kg
MBTL12-SS-01-02	A12L233-01	Aroclor 1248	12/13/2012	5.19		Yes	N	U			5.19	2.59	ug/kg
MBTL12-SS-01-02	A12L233-01	Aroclor 1242	12/13/2012	5.19		Yes	N	U			5.19	2.59	ug/kg
MBTL12-SS-01-02	A12L233-01	Aroclor 1260	12/13/2012	5.19		Yes	N	U			5.19	2.59	ug/kg
MBTL12-SS-01-10	A12L233-06	Aroclor 1242	12/13/2012	6.86		Yes	N	U			6.86	3.43	ug/kg
MBTL12-SS-01-10	A12L233-06	Aroclor 1260	12/13/2012	6.86		Yes	N	U			6.86	3.43	ug/kg
MBTL12-SS-01-10	A12L233-06	Aroclor 1248	12/13/2012	6.86		Yes	N	U			6.86	3.43	ug/kg
MBTL12-SS-01-10	A12L233-06	Aroclor 1232	12/13/2012	6.86		Yes	N	U			6.86	3.43	ug/kg
MBTL12-SS-01-10	A12L233-06	Aroclor 1221	12/13/2012	6.86		Yes	N	U			6.86	3.43	ug/kg
MBTL12-SS-01-10	A12L233-06	Aroclor 1268	12/13/2012	6.86		Yes	N	U			6.86	3.43	ug/kg
MBTL12-SS-01-10	A12L233-06	Aroclor 1254	12/13/2012	6.86		Yes	N	U			6.86	3.43	ug/kg
MBTL12-SS-01-10	A12L233-06	Aroclor 1016	12/13/2012	6.86		Yes	N	U			6.86	3.43	ug/kg
MBTL12-SS-01-10	A12L233-06	Aroclor 1262	12/13/2012	6.86		Yes	N	U			6.86	3.43	ug/kg
MBTL12-SS-02-02	A12L233-07	Aroclor 1221	12/13/2012	5.22		Yes	N	U			5.22	2.61	ug/kg
MBTL12-SS-02-02	A12L233-07	Aroclor 1242	12/13/2012	5.22		Yes	N	U			5.22	2.61	ug/kg
MBTL12-SS-02-02	A12L233-07	Aroclor 1268	12/13/2012	5.22		Yes	N	U			5.22	2.61	ug/kg
MBTL12-SS-02-02	A12L233-07	Aroclor 1248	12/13/2012	5.22		Yes	N	U			5.22	2.61	ug/kg
MBTL12-SS-02-02	A12L233-07	Aroclor 1254	12/13/2012	5.22		Yes	N	U			5.22	2.61	ug/kg
MBTL12-SS-02-02	A12L233-07	Aroclor 1262	12/13/2012	5.22		Yes	N	U			5.22	2.61	ug/kg
MBTL12-SS-02-02	A12L233-07	Aroclor 1232	12/13/2012	5.22		Yes	N	U			5.22	2.61	ug/kg
MBTL12-SS-02-02	A12L233-07	Aroclor 1016	12/13/2012	5.22		Yes	N	U			5.22	2.61	ug/kg
MBTL12-SS-02-02	A12L233-07	Aroclor 1260	12/13/2012	5.22		Yes	N	U			5.22	2.61	ug/kg
MBTL12-SS-02-10	A12L233-08	Aroclor 1260	12/13/2012	6.94		Yes	N	U	UJ	8	6.94	3.47	ug/kg
MBTL12-SS-02-10	A12L233-08	Aroclor 1262	12/13/2012	6.94		Yes	N	U	UJ	8	6.94	3.47	ug/kg
MBTL12-SS-02-10	A12L233-08	Aroclor 1016	12/13/2012	6.94		Yes	N	U			6.94	3.47	ug/kg

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-02-10	A12L233-08	Aroclor 1242	12/13/2012	6.94	Yes	N	U	UJ	8	6.94	3.47	ug/kg
MBTL12-SS-02-10	A12L233-08	Aroclor 1248	12/13/2012	6.94	Yes	N	U	UJ	8	6.94	3.47	ug/kg
MBTL12-SS-02-10	A12L233-08	Aroclor 1232	12/13/2012	6.94	Yes	N	U			6.94	3.47	ug/kg
MBTL12-SS-02-10	A12L233-08	Aroclor 1221	12/13/2012	6.94	Yes	N	U			6.94	3.47	ug/kg
MBTL12-SS-02-10	A12L233-08	Aroclor 1268	12/13/2012	6.94	Yes	N	U	UJ	8	6.94	3.47	ug/kg
MBTL12-SS-02-10	A12L233-08	Aroclor 1254	12/13/2012	6.94	Yes	N	U	UJ	8	6.94	3.47	ug/kg
MBTL12-SS-09-02	A12L233-02	Aroclor 1262	12/13/2012	5.87	Yes	N	U			5.87	2.94	ug/kg
MBTL12-SS-09-02	A12L233-02	Aroclor 1268	12/13/2012	5.87	Yes	N	U			5.87	2.94	ug/kg
MBTL12-SS-09-02	A12L233-02	Aroclor 1016	12/13/2012	5.87	Yes	N	U			5.87	2.94	ug/kg
MBTL12-SS-09-02	A12L233-02	Aroclor 1221	12/13/2012	5.87	Yes	N	U			5.87	2.94	ug/kg
MBTL12-SS-09-02	A12L233-02	Aroclor 1232	12/13/2012	5.87	Yes	N	U			5.87	2.94	ug/kg
MBTL12-SS-09-02	A12L233-02	Aroclor 1260	12/13/2012	54.7	Yes	Y				5.87	2.94	ug/kg
MBTL12-SS-09-02	A12L233-02	Aroclor 1254	12/13/2012	105	Yes	Y				5.87	2.94	ug/kg
MBTL12-SS-09-02	A12L233-02	Aroclor 1242	12/13/2012	5.87	Yes	N	U			5.87	2.94	ug/kg
MBTL12-SS-09-02	A12L233-02	Aroclor 1248	12/13/2012	103	Yes	Y				5.87	2.94	ug/kg
MBTL12-SS-09-10	A12L233-03RE1	Aroclor 1221	12/13/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg
MBTL12-SS-09-10	A12L233-03RE1	Aroclor 1242	12/13/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg
MBTL12-SS-09-10	A12L233-03RE1	Aroclor 1262	12/13/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg
MBTL12-SS-09-10	A12L233-03RE1	Aroclor 1016	12/13/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg
MBTL12-SS-09-10	A12L233-03RE1	Aroclor 1232	12/13/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg
MBTL12-SS-09-10	A12L233-03RE1	Aroclor 1268	12/13/2012	56.9	Yes	N	D U			56.9	28.5	ug/kg
MBTL12-SS-09-10	A12L233-03RE1	Aroclor 1254	12/13/2012	577	Yes	Y	D			56.9	28.5	ug/kg
MBTL12-SS-09-10	A12L233-03RE1	Aroclor 1260	12/13/2012	220	Yes	Y	D			56.9	28.5	ug/kg
MBTL12-SS-09-10	A12L233-03RE1	Aroclor 1248	12/13/2012	1650	Yes	Y	D			56.9	28.5	ug/kg
MBTL12-SS-10-02	A12L233-04	Aroclor 1262	12/13/2012	4.93	Yes	N	U			4.93	2.47	ug/kg

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-10-02	A12L233-04	Aroclor 1016	12/13/2012	4.93	Yes	N	U			4.93	2.47	ug/kg
MBTL12-SS-10-02	A12L233-04	Aroclor 1248	12/13/2012	8.85	Yes	Y				4.93	2.47	ug/kg
MBTL12-SS-10-02	A12L233-04	Aroclor 1232	12/13/2012	4.93	Yes	N	U			4.93	2.47	ug/kg
MBTL12-SS-10-02	A12L233-04	Aroclor 1221	12/13/2012	4.93	Yes	N	U			4.93	2.47	ug/kg
MBTL12-SS-10-02	A12L233-04	Aroclor 1268	12/13/2012	4.93	Yes	N	U			4.93	2.47	ug/kg
MBTL12-SS-10-02	A12L233-04	Aroclor 1254	12/13/2012	5.95	Yes	Y				4.93	2.47	ug/kg
MBTL12-SS-10-02	A12L233-04	Aroclor 1260	12/13/2012	7.88	Yes	Y				4.93	2.47	ug/kg
MBTL12-SS-10-02	A12L233-04	Aroclor 1242	12/13/2012	4.93	Yes	N	U			4.93	2.47	ug/kg
MBTL12-SS-10-10	A12L233-05	Aroclor 1232	12/13/2012	5.19	Yes	N	U			5.19	2.60	ug/kg
MBTL12-SS-10-10	A12L233-05	Aroclor 1221	12/13/2012	5.19	Yes	N	U			5.19	2.60	ug/kg
MBTL12-SS-10-10	A12L233-05	Aroclor 1268	12/13/2012	5.19	Yes	N	U			5.19	2.60	ug/kg
MBTL12-SS-10-10	A12L233-05	Aroclor 1254	12/13/2012	5.19	Yes	N	U			5.19	2.60	ug/kg
MBTL12-SS-10-10	A12L233-05	Aroclor 1260	12/13/2012	5.19	Yes	N	U			5.19	2.60	ug/kg
MBTL12-SS-10-10	A12L233-05	Aroclor 1016	12/13/2012	5.19	Yes	N	U			5.19	2.60	ug/kg
MBTL12-SS-10-10	A12L233-05	Aroclor 1262	12/13/2012	5.19	Yes	N	U			5.19	2.60	ug/kg
MBTL12-SS-10-10	A12L233-05	Aroclor 1248	12/13/2012	5.19	Yes	N	U			5.19	2.60	ug/kg
MBTL12-SS-10-10	A12L233-05	Aroclor 1242	12/13/2012	5.19	Yes	N	U			5.19	2.60	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-01-02	A12L233-01	Phenanthrene	12/19/2012	13.2	Yes	N	U			13.2	6.60	ug/kg
MBTL12-SS-01-02	A12L233-01	Acenaphthylene	12/19/2012	13.2	Yes	N	U			13.2	6.60	ug/kg
MBTL12-SS-01-02	A12L233-01	Chrysene	12/19/2012	13.2	Yes	N	U			13.2	6.60	ug/kg
MBTL12-SS-01-02	A12L233-01	Benzo(k)fluoranthene	12/19/2012	13.2	Yes	N	U			13.2	6.60	ug/kg
MBTL12-SS-01-02	A12L233-01	Acenaphthene	12/19/2012	13.2	Yes	N	U			13.2	6.60	ug/kg
MBTL12-SS-01-02	A12L233-01	2-Methylnaphthalene	12/19/2012	13.2	Yes	N	U			13.2	6.60	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-01-02	A12L233-01	Fluorene	12/19/2012	13.2	Yes	N	U			13.2	6.60	ug/kg
MBTL12-SS-01-02	A12L233-01	1-Methylnaphthalene	12/19/2012	13.2	Yes	N	U			13.2	6.60	ug/kg
MBTL12-SS-01-02	A12L233-01	Naphthalene	12/19/2012	13.2	Yes	N	U			13.2	6.60	ug/kg
MBTL12-SS-01-02	A12L233-01	Benzo(a)anthracene	12/19/2012	13.2	Yes	N	U			13.2	6.60	ug/kg
MBTL12-SS-01-02	A12L233-01	Benzo(a)pyrene	12/19/2012	13.2	Yes	N	U			13.2	6.60	ug/kg
MBTL12-SS-01-02	A12L233-01	Anthracene	12/19/2012	13.2	Yes	N	U			13.2	6.60	ug/kg
MBTL12-SS-01-02	A12L233-01	Pyrene	12/19/2012	13.2	Yes	N	U			13.2	6.60	ug/kg
MBTL12-SS-01-02	A12L233-01	Dibenzofuran	12/19/2012	13.2	Yes	N	U			13.2	6.60	ug/kg
MBTL12-SS-01-02	A12L233-01	Benzo(g,h,i)perylene	12/19/2012	13.2	Yes	N	U			13.2	6.60	ug/kg
MBTL12-SS-01-02	A12L233-01	Indeno(1,2,3-c,d)pyrene	12/19/2012	13.2	Yes	N	U			13.2	6.60	ug/kg
MBTL12-SS-01-02	A12L233-01	Benzo(b)fluoranthene	12/19/2012	13.2	Yes	N	U			13.2	6.60	ug/kg
MBTL12-SS-01-02	A12L233-01	Dibenzo(a,h)anthracene	12/19/2012	13.2	Yes	N	U			13.2	6.60	ug/kg
MBTL12-SS-01-02	A12L233-01	Fluoranthene	12/19/2012	7.59	Yes	Y	J			13.2	6.60	ug/kg
MBTL12-SS-01-10	A12L233-06	Anthracene	12/19/2012	16.8	Yes	N	U			16.8	8.38	ug/kg
MBTL12-SS-01-10	A12L233-06	Chrysene	12/19/2012	16.8	Yes	N	U			16.8	8.38	ug/kg
MBTL12-SS-01-10	A12L233-06	Naphthalene	12/19/2012	16.8	Yes	N	U			16.8	8.38	ug/kg
MBTL12-SS-01-10	A12L233-06	Indeno(1,2,3-c,d)pyrene	12/19/2012	16.8	Yes	N	U			16.8	8.38	ug/kg
MBTL12-SS-01-10	A12L233-06	Acenaphthene	12/19/2012	16.8	Yes	N	U			16.8	8.38	ug/kg
MBTL12-SS-01-10	A12L233-06	Phenanthrene	12/19/2012	16.8	Yes	N	U			16.8	8.38	ug/kg
MBTL12-SS-01-10	A12L233-06	Benzo(g,h,i)perylene	12/19/2012	16.8	Yes	N	U			16.8	8.38	ug/kg
MBTL12-SS-01-10	A12L233-06	1-Methylnaphthalene	12/19/2012	16.8	Yes	N	U			16.8	8.38	ug/kg
MBTL12-SS-01-10	A12L233-06	Fluorene	12/19/2012	16.8	Yes	N	U			16.8	8.38	ug/kg
MBTL12-SS-01-10	A12L233-06	Benzo(a)pyrene	12/19/2012	16.8	Yes	N	U			16.8	8.38	ug/kg
MBTL12-SS-01-10	A12L233-06	Dibenzo(a,h)anthracene	12/19/2012	16.8	Yes	N	U			16.8	8.38	ug/kg
MBTL12-SS-01-10	A12L233-06	Dibenzofuran	12/19/2012	16.8	Yes	N	U			16.8	8.38	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-01-10	A12L233-06	2-Methylnaphthalene	12/19/2012	16.8	Yes	N	U			16.8	8.38	ug/kg
MBTL12-SS-01-10	A12L233-06	Benzo(b)fluoranthene	12/19/2012	16.8	Yes	N	U			16.8	8.38	ug/kg
MBTL12-SS-01-10	A12L233-06	Benzo(a)anthracene	12/19/2012	16.8	Yes	N	U			16.8	8.38	ug/kg
MBTL12-SS-01-10	A12L233-06	Acenaphthylene	12/19/2012	16.8	Yes	N	U			16.8	8.38	ug/kg
MBTL12-SS-01-10	A12L233-06	Fluoranthene	12/19/2012	16.8	Yes	N	U			16.8	8.38	ug/kg
MBTL12-SS-01-10	A12L233-06	Pyrene	12/19/2012	16.8	Yes	N	U			16.8	8.38	ug/kg
MBTL12-SS-01-10	A12L233-06	Benzo(k)fluoranthene	12/19/2012	16.8	Yes	N	U			16.8	8.38	ug/kg
MBTL12-SS-02-02	A12L233-07	Indeno(1,2,3-c,d)pyrene	12/19/2012	12.2	Yes	Y	J			14.1	7.07	ug/kg
MBTL12-SS-02-02	A12L233-07	Benzo(a)anthracene	12/19/2012	80	Yes	Y				14.1	7.07	ug/kg
MBTL12-SS-02-02	A12L233-07	Acenaphthene	12/19/2012	14.1	Yes	N	U			14.1	7.07	ug/kg
MBTL12-SS-02-02	A12L233-07	Phenanthrene	12/19/2012	14.1	Yes	N	U			14.1	7.07	ug/kg
MBTL12-SS-02-02	A12L233-07	Benzo(b,k)fluoranthene	12/19/2012	77.5	Yes	Y				28.3	14.1	ug/kg
MBTL12-SS-02-02	A12L233-07	Benzo(g,h,i)perylene	12/19/2012	9.2	Yes	Y	J			14.1	7.07	ug/kg
MBTL12-SS-02-02	A12L233-07	Dibenzofuran	12/19/2012	14.1	Yes	N	U			14.1	7.07	ug/kg
MBTL12-SS-02-02	A12L233-07	Fluoranthene	12/19/2012	158	Yes	Y				14.1	7.07	ug/kg
MBTL12-SS-02-02	A12L233-07	Acenaphthylene	12/19/2012	14.1	Yes	N	U			14.1	7.07	ug/kg
MBTL12-SS-02-02	A12L233-07	Naphthalene	12/19/2012	14.1	Yes	N	U			14.1	7.07	ug/kg
MBTL12-SS-02-02	A12L233-07	2-Methylnaphthalene	12/19/2012	14.1	Yes	N	U			14.1	7.07	ug/kg
MBTL12-SS-02-02	A12L233-07	Chrysene	12/19/2012	43.6	Yes	Y				14.1	7.07	ug/kg
MBTL12-SS-02-02	A12L233-07	Pyrene	12/19/2012	136	Yes	Y				14.1	7.07	ug/kg
MBTL12-SS-02-02	A12L233-07	Benzo(a)pyrene	12/19/2012	35.4	Yes	Y				14.1	7.07	ug/kg
MBTL12-SS-02-02	A12L233-07	Anthracene	12/19/2012	8.25	Yes	Y	J			14.1	7.07	ug/kg
MBTL12-SS-02-02	A12L233-07	Fluorene	12/19/2012	14.1	Yes	N	U			14.1	7.07	ug/kg
MBTL12-SS-02-02	A12L233-07	1-Methylnaphthalene	12/19/2012	14.1	Yes	N	U			14.1	7.07	ug/kg
MBTL12-SS-02-02	A12L233-07	Dibenzo(a,h)anthracene	12/19/2012	14.1	Yes	N	U			14.1	7.07	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-02-10	A12L233-08	Benzo(k)fluoranthene	12/19/2012	16.6	Yes	N	U			16.6	8.31	ug/kg
MBTL12-SS-02-10	A12L233-08	Acenaphthylene	12/19/2012	16.6	Yes	N	U			16.6	8.31	ug/kg
MBTL12-SS-02-10	A12L233-08	Fluoranthene	12/19/2012	16.6	Yes	N	U			16.6	8.31	ug/kg
MBTL12-SS-02-10	A12L233-08	Benzo(b)fluoranthene	12/19/2012	16.6	Yes	N	U			16.6	8.31	ug/kg
MBTL12-SS-02-10	A12L233-08	Indeno(1,2,3-c,d)pyrene	12/19/2012	16.6	Yes	N	U			16.6	8.31	ug/kg
MBTL12-SS-02-10	A12L233-08	Benzo(g,h,i)perylene	12/19/2012	16.6	Yes	N	U			16.6	8.31	ug/kg
MBTL12-SS-02-10	A12L233-08	Dibenzofuran	12/19/2012	16.6	Yes	N	U			16.6	8.31	ug/kg
MBTL12-SS-02-10	A12L233-08	Pyrene	12/19/2012	16.6	Yes	N	U			16.6	8.31	ug/kg
MBTL12-SS-02-10	A12L233-08	Chrysene	12/19/2012	16.6	Yes	N	U			16.6	8.31	ug/kg
MBTL12-SS-02-10	A12L233-08	Acenaphthene	12/19/2012	16.6	Yes	N	U			16.6	8.31	ug/kg
MBTL12-SS-02-10	A12L233-08	Dibenzo(a,h)anthracene	12/19/2012	16.6	Yes	N	U			16.6	8.31	ug/kg
MBTL12-SS-02-10	A12L233-08	Anthracene	12/19/2012	16.6	Yes	N	U			16.6	8.31	ug/kg
MBTL12-SS-02-10	A12L233-08	Benzo(a)pyrene	12/19/2012	16.6	Yes	N	U			16.6	8.31	ug/kg
MBTL12-SS-02-10	A12L233-08	Phenanthrene	12/19/2012	16.6	Yes	N	U			16.6	8.31	ug/kg
MBTL12-SS-02-10	A12L233-08	Fluorene	12/19/2012	16.6	Yes	N	U			16.6	8.31	ug/kg
MBTL12-SS-02-10	A12L233-08	1-Methylnaphthalene	12/19/2012	16.6	Yes	N	U			16.6	8.31	ug/kg
MBTL12-SS-02-10	A12L233-08	Naphthalene	12/19/2012	16.6	Yes	N	U			16.6	8.31	ug/kg
MBTL12-SS-02-10	A12L233-08	2-Methylnaphthalene	12/19/2012	16.6	Yes	N	U			16.6	8.31	ug/kg
MBTL12-SS-02-10	A12L233-08	Benzo(a)anthracene	12/19/2012	16.6	Yes	N	U			16.6	8.31	ug/kg
MBTL12-SS-09-02	A12L233-02	Indeno(1,2,3-c,d)pyrene	12/19/2012	6690	Yes	Y	D			272	136	ug/kg
MBTL12-SS-09-02	A12L233-02	Pyrene	12/19/2012	13000	Yes	Y	D			272	136	ug/kg
MBTL12-SS-09-02	A12L233-02	Benzo(b,k)fluoranthene	12/19/2012	17500	Yes	Y	D			544	272	ug/kg
MBTL12-SS-09-02	A12L233-02	Dibenzofuran	12/19/2012	356	Yes	Y	D			272	136	ug/kg
MBTL12-SS-09-02	A12L233-02	Fluoranthene	12/19/2012	14100	Yes	Y	D			272	136	ug/kg
MBTL12-SS-09-02	A12L233-02	Acenaphthylene	12/19/2012	272	Yes	N	D U			272	136	ug/kg

SDG: A12L233

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-09-02	A12L233-02	Chrysene	12/19/2012	10900	Yes	Y	D			272	136	ug/kg
MBTL12-SS-09-02	A12L233-02	Benzo(a)pyrene	12/19/2012	9850	Yes	Y	D			272	136	ug/kg
MBTL12-SS-09-02	A12L233-02	Dibenzo(a,h)anthracene	12/19/2012	1390	Yes	Y	D			272	136	ug/kg
MBTL12-SS-09-02	A12L233-02	Benzo(a)anthracene	12/19/2012	7400	Yes	Y	D			272	136	ug/kg
MBTL12-SS-09-02	A12L233-02	Acenaphthene	12/19/2012	3260	Yes	Y	D			272	136	ug/kg
MBTL12-SS-09-02	A12L233-02	1-Methylnaphthalene	12/19/2012	272	Yes	N	D U			272	136	ug/kg
MBTL12-SS-09-02	A12L233-02	Phenanthrene	12/19/2012	5030	Yes	Y	D			272	136	ug/kg
MBTL12-SS-09-02	A12L233-02	Fluorene	12/19/2012	969	Yes	Y	D			272	136	ug/kg
MBTL12-SS-09-02	A12L233-02	Benzo(g,h,i)perylene	12/19/2012	6610	Yes	Y	D			272	136	ug/kg
MBTL12-SS-09-02	A12L233-02	Naphthalene	12/19/2012	272	Yes	N	D U			272	136	ug/kg
MBTL12-SS-09-02	A12L233-02	2-Methylnaphthalene	12/19/2012	272	Yes	N	D U			272	136	ug/kg
MBTL12-SS-09-02	A12L233-02	Anthracene	12/19/2012	1930	Yes	Y	D			272	136	ug/kg
MBTL12-SS-09-10	A12L233-03	Benzo(a)pyrene	12/19/2012	89300	Yes	Y	D			686	343	ug/kg
MBTL12-SS-09-10	A12L233-03	Anthracene	12/19/2012	20400	Yes	Y	D			686	343	ug/kg
MBTL12-SS-09-10	A12L233-03	Pyrene	12/19/2012	119000	Yes	Y	D			686	343	ug/kg
MBTL12-SS-09-10	A12L233-03	Dibenzofuran	12/19/2012	3040	Yes	Y	D			686	343	ug/kg
MBTL12-SS-09-10	A12L233-03	Benzo(g,h,i)perylene	12/19/2012	57000	Yes	Y	D			686	343	ug/kg
MBTL12-SS-09-10	A12L233-03	Indeno(1,2,3-c,d)pyrene	12/19/2012	59800	Yes	Y	D			686	343	ug/kg
MBTL12-SS-09-10	A12L233-03	Fluoranthene	12/19/2012	130000	Yes	Y	D			686	343	ug/kg
MBTL12-SS-09-10	A12L233-03	Chrysene	12/19/2012	83800	Yes	Y	D			686	343	ug/kg
MBTL12-SS-09-10	A12L233-03	Dibenzo(a,h)anthracene	12/19/2012	12300	Yes	Y	D			686	343	ug/kg
MBTL12-SS-09-10	A12L233-03	Benzo(a)anthracene	12/19/2012	66800	Yes	Y	D			686	343	ug/kg
MBTL12-SS-09-10	A12L233-03	Acenaphthene	12/19/2012	19000	Yes	Y	D			686	343	ug/kg
MBTL12-SS-09-10	A12L233-03	Phenanthrene	12/19/2012	56000	Yes	Y	D			686	343	ug/kg
MBTL12-SS-09-10	A12L233-03	1-Methylnaphthalene	12/19/2012	427	Yes	Y	D J			686	343	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-09-10	A12L233-03	Naphthalene	12/19/2012	628	Yes	Y	D J			686	343	ug/kg
MBTL12-SS-09-10	A12L233-03	2-Methylnaphthalene	12/19/2012	445	Yes	Y	D J			686	343	ug/kg
MBTL12-SS-09-10	A12L233-03	Benzo(b,k)fluoranthene	12/19/2012	143000	Yes	Y	D			1370	686	ug/kg
MBTL12-SS-09-10	A12L233-03	Acenaphthylene	12/19/2012	686	Yes	N	D U			686	343	ug/kg
MBTL12-SS-09-10	A12L233-03	Fluorene	12/19/2012	7500	Yes	Y	D			686	343	ug/kg
MBTL12-SS-10-02	A12L233-04	Benzo(g,h,i)perylene	12/19/2012	135	Yes	Y				12.4	6.21	ug/kg
MBTL12-SS-10-02	A12L233-04	Benzo(a)pyrene	12/19/2012	191	Yes	Y				12.4	6.21	ug/kg
MBTL12-SS-10-02	A12L233-04	Chrysene	12/19/2012	160	Yes	Y				12.4	6.21	ug/kg
MBTL12-SS-10-02	A12L233-04	Anthracene	12/19/2012	19.5	Yes	Y				12.4	6.21	ug/kg
MBTL12-SS-10-02	A12L233-04	Dibenzo(a,h)anthracene	12/19/2012	26.8	Yes	Y				12.4	6.21	ug/kg
MBTL12-SS-10-02	A12L233-04	Dibenzofuran	12/19/2012	12.4	Yes	N	U			12.4	6.21	ug/kg
MBTL12-SS-10-02	A12L233-04	Benzo(b,k)fluoranthene	12/19/2012	331	Yes	Y				24.8	12.4	ug/kg
MBTL12-SS-10-02	A12L233-04	Indeno(1,2,3-c,d)pyrene	12/19/2012	131	Yes	Y				12.4	6.21	ug/kg
MBTL12-SS-10-02	A12L233-04	Fluoranthene	12/19/2012	158	Yes	Y				12.4	6.21	ug/kg
MBTL12-SS-10-02	A12L233-04	Pyrene	12/19/2012	163	Yes	Y				12.4	6.21	ug/kg
MBTL12-SS-10-02	A12L233-04	Benzo(a)anthracene	12/19/2012	134	Yes	Y				12.4	6.21	ug/kg
MBTL12-SS-10-02	A12L233-04	Acenaphthylene	12/19/2012	12.4	Yes	N	U			12.4	6.21	ug/kg
MBTL12-SS-10-02	A12L233-04	2-Methylnaphthalene	12/19/2012	12.4	Yes	N	U			12.4	6.21	ug/kg
MBTL12-SS-10-02	A12L233-04	Naphthalene	12/19/2012	12.4	Yes	N	U			12.4	6.21	ug/kg
MBTL12-SS-10-02	A12L233-04	1-Methylnaphthalene	12/19/2012	12.4	Yes	N	U			12.4	6.21	ug/kg
MBTL12-SS-10-02	A12L233-04	Fluorene	12/19/2012	12.4	Yes	N	U			12.4	6.21	ug/kg
MBTL12-SS-10-02	A12L233-04	Phenanthrene	12/19/2012	58.5	Yes	Y				12.4	6.21	ug/kg
MBTL12-SS-10-02	A12L233-04	Acenaphthene	12/19/2012	12.7	Yes	Y				12.4	6.21	ug/kg
MBTL12-SS-10-10	A12L233-05	Indeno(1,2,3-c,d)pyrene	12/19/2012	13.1	Yes	Y	J			13.3	6.67	ug/kg
MBTL12-SS-10-10	A12L233-05	2-Methylnaphthalene	12/19/2012	13.3	Yes	N	U			13.3	6.67	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-10-10	A12L233-05	Benzo(b,k)fluoranthene	12/19/2012	51.2	Yes	Y				26.7	13.3	ug/kg
MBTL12-SS-10-10	A12L233-05	Benzo(a)anthracene	12/19/2012	15.8	Yes	Y				13.3	6.67	ug/kg
MBTL12-SS-10-10	A12L233-05	Benzo(a)pyrene	12/19/2012	13.7	Yes	Y				13.3	6.67	ug/kg
MBTL12-SS-10-10	A12L233-05	Benzo(g,h,i)perylene	12/19/2012	12.9	Yes	Y	J			13.3	6.67	ug/kg
MBTL12-SS-10-10	A12L233-05	Dibenzofuran	12/19/2012	13.3	Yes	N	U			13.3	6.67	ug/kg
MBTL12-SS-10-10	A12L233-05	Fluoranthene	12/19/2012	19.7	Yes	Y				13.3	6.67	ug/kg
MBTL12-SS-10-10	A12L233-05	Dibenzo(a,h)anthracene	12/19/2012	13.3	Yes	N	U			13.3	6.67	ug/kg
MBTL12-SS-10-10	A12L233-05	Chrysene	12/19/2012	35	Yes	Y				13.3	6.67	ug/kg
MBTL12-SS-10-10	A12L233-05	Anthracene	12/19/2012	13.3	Yes	N	U			13.3	6.67	ug/kg
MBTL12-SS-10-10	A12L233-05	Acenaphthylene	12/19/2012	13.3	Yes	N	U			13.3	6.67	ug/kg
MBTL12-SS-10-10	A12L233-05	Pyrene	12/19/2012	17.9	Yes	Y				13.3	6.67	ug/kg
MBTL12-SS-10-10	A12L233-05	Naphthalene	12/19/2012	13.3	Yes	N	U			13.3	6.67	ug/kg
MBTL12-SS-10-10	A12L233-05	Acenaphthene	12/19/2012	13.3	Yes	N	U			13.3	6.67	ug/kg
MBTL12-SS-10-10	A12L233-05	Phenanthrene	12/19/2012	13.3	Yes	N	U			13.3	6.67	ug/kg
MBTL12-SS-10-10	A12L233-05	Fluorene	12/19/2012	13.3	Yes	N	U			13.3	6.67	ug/kg
MBTL12-SS-10-10	A12L233-05	1-Methylnaphthalene	12/19/2012	13.3	Yes	N	U			13.3	6.67	ug/kg

Analytical Method APEXsolids

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-03-02	A12L259-07	Total solids	12/21/2012	63.4		Yes	Y		J	9	1.00	1.00	pct
MBTL12-SS-03-10	A12L259-08	Total solids	12/21/2012	56.7		Yes	Y		J	9	1.00	1.00	pct
MBTL12-SS-04-02	A12L259-01	Total solids	12/21/2012	53.8		Yes	Y		J	9	1.00	1.00	pct
MBTL12-SS-04-10	A12L259-02	Total solids	12/21/2012	64.1		Yes	Y		J	9	1.00	1.00	pct
MBTL12-SS-06-02	A12L259-09	Total solids	12/21/2012	55.3		Yes	Y		J	9	1.00	1.00	pct
MBTL12-SS-06-10	A12L259-10	Total solids	12/21/2012	59.7		Yes	Y		J	9	1.00	1.00	pct
MBTL12-SS-07-02	A12L259-05	Total solids	12/21/2012	63.1		Yes	Y		J	9	1.00	1.00	pct
MBTL12-SS-07-10	A12L259-06	Total solids	12/21/2012	67.6		Yes	Y		J	9	1.00	1.00	pct
MBTL12-SS-08-02	A12L259-03	Total solids	12/21/2012	69		Yes	Y		J	9	1.00	1.00	pct
MBTL12-SS-08-10	A12L259-04	Total solids	12/21/2012	70		Yes	Y		J	9	1.00	1.00	pct

Analytical Method D422M

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-03-02	A12L259-07	Silt	1/3/2013	32.1		Yes	Y						pct
MBTL12-SS-03-02	A12L259-07	Clay	1/3/2013	11.1		Yes	Y						pct
MBTL12-SS-03-02	A12L259-07	Percent retained 2000 micron sieve (#10)	1/3/2013	0.18		Yes	Y						pct
MBTL12-SS-03-02	A12L259-07	Percent retained 4750 micron sieve (#4)	1/3/2013	0.08		Yes	Y						pct
MBTL12-SS-03-02	A12L259-07	Percent retained 850 micron sieve (#20)	1/3/2013	0.55		Yes	Y						pct
MBTL12-SS-03-02	A12L259-07	Percent retained 250 micron sieve (#60)	1/3/2013	1.59		Yes	Y						pct
MBTL12-SS-03-02	A12L259-07	Percent retained 75 micron sieve (#200)	1/3/2013	20.18		Yes	Y						pct
MBTL12-SS-03-02	A12L259-07	Percent retained 150 micron sieve (#100)	1/3/2013	13.49		Yes	Y						pct
MBTL12-SS-03-02	A12L259-07	Percent retained 106 micron sieve (#140)	1/3/2013	19.56		Yes	Y						pct
MBTL12-SS-03-02	A12L259-07	Percent retained 63 micron sieve (#230)	1/3/2013	7.04		Yes	Y						pct
MBTL12-SS-03-02	A12L259-07	Percent retained 425 micron sieve (#40)	1/3/2013	1.25		Yes	Y						pct
MBTL12-SS-03-10	A12L259-08	Clay	1/3/2013	47.8		Yes	Y						pct

Analytical Method D422M

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-03-10	A12L259-08	Percent retained 850 micron sieve (#20)	1/3/2013	0.19		Yes	Y						pct
MBTL12-SS-03-10	A12L259-08	Silt	1/3/2013	41.7		Yes	Y						pct
MBTL12-SS-03-10	A12L259-08	Percent retained 75 micron sieve (#200)	1/3/2013	3.27		Yes	Y						pct
MBTL12-SS-03-10	A12L259-08	Percent retained 2000 micron sieve (#10)	1/3/2013	0.08		Yes	Y						pct
MBTL12-SS-03-10	A12L259-08	Percent retained 106 micron sieve (#140)	1/3/2013	3.31		Yes	Y						pct
MBTL12-SS-03-10	A12L259-08	Percent retained 150 micron sieve (#100)	1/3/2013	2.43		Yes	Y						pct
MBTL12-SS-03-10	A12L259-08	Percent retained 63 micron sieve (#230)	1/3/2013	1.25		Yes	Y						pct
MBTL12-SS-03-10	A12L259-08	Percent retained 4750 micron sieve (#4)	1/3/2013	0		Yes	Y						pct
MBTL12-SS-03-10	A12L259-08	Percent retained 425 micron sieve (#40)	1/3/2013	0.54		Yes	Y						pct
MBTL12-SS-03-10	A12L259-08	Percent retained 250 micron sieve (#60)	1/3/2013	0.59		Yes	Y						pct
MBTL12-SS-04-02	A12L259-01	Percent retained 75 micron sieve (#200)	1/3/2013	3.66		Yes	Y						pct
MBTL12-SS-04-02	A12L259-01	Percent retained 106 micron sieve (#140)	1/3/2013	3.49		Yes	Y						pct
MBTL12-SS-04-02	A12L259-01	Silt	1/3/2013	51.3		Yes	Y						pct
MBTL12-SS-04-02	A12L259-01	Percent retained 850 micron sieve (#20)	1/3/2013	0.52		Yes	Y						pct
MBTL12-SS-04-02	A12L259-01	Percent retained 63 micron sieve (#230)	1/3/2013	1.51		Yes	Y						pct
MBTL12-SS-04-02	A12L259-01	Percent retained 150 micron sieve (#100)	1/3/2013	3.07		Yes	Y						pct
MBTL12-SS-04-02	A12L259-01	Percent retained 2000 micron sieve (#10)	1/3/2013	0.38		Yes	Y						pct
MBTL12-SS-04-02	A12L259-01	Percent retained 250 micron sieve (#60)	1/3/2013	0.92		Yes	Y						pct
MBTL12-SS-04-02	A12L259-01	Percent retained 4750 micron sieve (#4)	1/3/2013	0.84		Yes	Y						pct
MBTL12-SS-04-02	A12L259-01	Percent retained 425 micron sieve (#40)	1/3/2013	0.82		Yes	Y						pct
MBTL12-SS-04-02	A12L259-01	Clay	1/3/2013	35		Yes	Y						pct
MBTL12-SS-04-10	A12L259-02	Percent retained 4750 micron sieve (#4)	1/3/2013	0.28		Yes	Y						pct
MBTL12-SS-04-10	A12L259-02	Percent retained 425 micron sieve (#40)	1/3/2013	0.21		Yes	Y						pct

SDG: A12L259

Analytical Method D422M

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-04-10	A12L259-02	Percent retained 106 micron sieve (#140)	1/3/2013	20.39		Yes	Y						pct
MBTL12-SS-04-10	A12L259-02	Percent retained 150 micron sieve (#100)	1/3/2013	13.19		Yes	Y						pct
MBTL12-SS-04-10	A12L259-02	Percent retained 2000 micron sieve (#10)	1/3/2013	0.11		Yes	Y						pct
MBTL12-SS-04-10	A12L259-02	Percent retained 63 micron sieve (#230)	1/3/2013	5.4		Yes	Y						pct
MBTL12-SS-04-10	A12L259-02	Percent retained 75 micron sieve (#200)	1/3/2013	16.58		Yes	Y						pct
MBTL12-SS-04-10	A12L259-02	Percent retained 850 micron sieve (#20)	1/3/2013	0.17		Yes	Y						pct
MBTL12-SS-04-10	A12L259-02	Clay	1/3/2013	14.2		Yes	Y						pct
MBTL12-SS-04-10	A12L259-02	Silt	1/3/2013	34.4		Yes	Y						pct
MBTL12-SS-04-10	A12L259-02	Percent retained 250 micron sieve (#60)	1/3/2013	0.44		Yes	Y						pct
MBTL12-SS-06-02	A12L259-09	Percent retained 2000 micron sieve (#10)	1/3/2013	0.13		Yes	Y						pct
MBTL12-SS-06-02	A12L259-09	Percent retained 106 micron sieve (#140)	1/3/2013	7.85		Yes	Y						pct
MBTL12-SS-06-02	A12L259-09	Percent retained 850 micron sieve (#20)	1/3/2013	0.14		Yes	Y						pct
MBTL12-SS-06-02	A12L259-09	Clay	1/3/2013	31.9		Yes	Y						pct
MBTL12-SS-06-02	A12L259-09	Silt	1/3/2013	44.9		Yes	Y						pct
MBTL12-SS-06-02	A12L259-09	Percent retained 63 micron sieve (#230)	1/3/2013	3.3		Yes	Y						pct
MBTL12-SS-06-02	A12L259-09	Percent retained 4750 micron sieve (#4)	1/3/2013	0.06		Yes	Y						pct
MBTL12-SS-06-02	A12L259-09	Percent retained 250 micron sieve (#60)	1/3/2013	1.12		Yes	Y						pct
MBTL12-SS-06-02	A12L259-09	Percent retained 75 micron sieve (#200)	1/3/2013	8.4		Yes	Y						pct
MBTL12-SS-06-02	A12L259-09	Percent retained 150 micron sieve (#100)	1/3/2013	4.57		Yes	Y						pct
MBTL12-SS-06-02	A12L259-09	Percent retained 425 micron sieve (#40)	1/3/2013	0.95		Yes	Y						pct
MBTL12-SS-06-10	A12L259-10	Silt	1/3/2013	50.6		Yes	Y						pct
MBTL12-SS-06-10	A12L259-10	Percent retained 2000 micron sieve (#10)	1/3/2013	0		Yes	Y						pct

Analytical Method D422M

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-06-10	A12L259-10	Percent retained 250 micron sieve (#60)	1/3/2013	0.25		Yes	Y						pct
MBTL12-SS-06-10	A12L259-10	Percent retained 425 micron sieve (#40)	1/3/2013	0.19		Yes	Y						pct
MBTL12-SS-06-10	A12L259-10	Percent retained 4750 micron sieve (#4)	1/3/2013	0		Yes	Y						pct
MBTL12-SS-06-10	A12L259-10	Percent retained 63 micron sieve (#230)	1/3/2013	0.62		Yes	Y						pct
MBTL12-SS-06-10	A12L259-10	Percent retained 75 micron sieve (#200)	1/3/2013	1.55		Yes	Y						pct
MBTL12-SS-06-10	A12L259-10	Clay	1/3/2013	45.1		Yes	Y						pct
MBTL12-SS-06-10	A12L259-10	Percent retained 106 micron sieve (#140)	1/3/2013	1.37		Yes	Y						pct
MBTL12-SS-06-10	A12L259-10	Percent retained 150 micron sieve (#100)	1/3/2013	0.86		Yes	Y						pct
MBTL12-SS-06-10	A12L259-10	Percent retained 850 micron sieve (#20)	1/3/2013	0.04		Yes	Y						pct
MBTL12-SS-07-02	A12L259-05	Percent retained 250 micron sieve (#60)	1/3/2013	0.49		Yes	Y						pct
MBTL12-SS-07-02	A12L259-05	Percent retained 850 micron sieve (#20)	1/3/2013	0.04		Yes	Y						pct
MBTL12-SS-07-02	A12L259-05	Clay	1/3/2013	4.6		Yes	Y						pct
MBTL12-SS-07-02	A12L259-05	Percent retained 75 micron sieve (#200)	1/3/2013	27.3		Yes	Y						pct
MBTL12-SS-07-02	A12L259-05	Silt	1/3/2013	44.2		Yes	Y						pct
MBTL12-SS-07-02	A12L259-05	Percent retained 150 micron sieve (#100)	1/3/2013	5.17		Yes	Y						pct
MBTL12-SS-07-02	A12L259-05	Percent retained 63 micron sieve (#230)	1/3/2013	11.33		Yes	Y						pct
MBTL12-SS-07-02	A12L259-05	Percent retained 106 micron sieve (#140)	1/3/2013	17.7		Yes	Y						pct
MBTL12-SS-07-02	A12L259-05	Percent retained 425 micron sieve (#40)	1/3/2013	0.14		Yes	Y						pct
MBTL12-SS-07-02	A12L259-05	Percent retained 4750 micron sieve (#4)	1/3/2013	0.25		Yes	Y						pct
MBTL12-SS-07-02	A12L259-05	Percent retained 2000 micron sieve (#10)	1/3/2013	0.13		Yes	Y						pct
MBTL12-SS-07-10	A12L259-06	Percent retained 250 micron sieve (#60)	1/3/2013	0.48		Yes	Y						pct
MBTL12-SS-07-10	A12L259-06	Percent retained 4750 micron sieve (#4)	1/3/2013	0.05		Yes	Y						pct
MBTL12-SS-07-10	A12L259-06	Percent retained 63 micron sieve (#230)	1/3/2013	13.42		Yes	Y						pct

Analytical Method D422M

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-07-10	A12L259-06	Percent retained 150 micron sieve (#100)	1/3/2013	3.54		Yes	Y						pct
MBTL12-SS-07-10	A12L259-06	Percent retained 106 micron sieve (#140)	1/3/2013	14.07		Yes	Y						pct
MBTL12-SS-07-10	A12L259-06	Percent retained 2000 micron sieve (#10)	1/3/2013	0.07		Yes	Y						pct
MBTL12-SS-07-10	A12L259-06	Percent retained 75 micron sieve (#200)	1/3/2013	30.6		Yes	Y						pct
MBTL12-SS-07-10	A12L259-06	Percent retained 850 micron sieve (#20)	1/3/2013	0.06		Yes	Y						pct
MBTL12-SS-07-10	A12L259-06	Clay	1/3/2013	3.8		Yes	Y						pct
MBTL12-SS-07-10	A12L259-06	Silt	1/3/2013	47.1		Yes	Y						pct
MBTL12-SS-07-10	A12L259-06	Percent retained 425 micron sieve (#40)	1/3/2013	0.19		Yes	Y						pct
MBTL12-SS-08-02	A12L259-03	Percent retained 4750 micron sieve (#4)	1/3/2013	0.06		Yes	Y						pct
MBTL12-SS-08-02	A12L259-03	Percent retained 106 micron sieve (#140)	1/3/2013	22.36		Yes	Y						pct
MBTL12-SS-08-02	A12L259-03	Percent retained 150 micron sieve (#100)	1/3/2013	8.23		Yes	Y						pct
MBTL12-SS-08-02	A12L259-03	Percent retained 2000 micron sieve (#10)	1/3/2013	0.21		Yes	Y						pct
MBTL12-SS-08-02	A12L259-03	Percent retained 425 micron sieve (#40)	1/3/2013	0.12		Yes	Y						pct
MBTL12-SS-08-02	A12L259-03	Percent retained 63 micron sieve (#230)	1/3/2013	10.33		Yes	Y						pct
MBTL12-SS-08-02	A12L259-03	Percent retained 75 micron sieve (#200)	1/3/2013	29.51		Yes	Y						pct
MBTL12-SS-08-02	A12L259-03	Percent retained 850 micron sieve (#20)	1/3/2013	0.01		Yes	Y						pct
MBTL12-SS-08-02	A12L259-03	Clay	1/3/2013	3.7		Yes	Y						pct
MBTL12-SS-08-02	A12L259-03	Silt	1/3/2013	35.3		Yes	Y						pct
MBTL12-SS-08-02	A12L259-03	Percent retained 250 micron sieve (#60)	1/3/2013	0.49		Yes	Y						pct
MBTL12-SS-08-10	A12L259-04	Percent retained 63 micron sieve (#230)	1/3/2013	8.9		Yes	Y						pct
MBTL12-SS-08-10	A12L259-04	Percent retained 75 micron sieve (#200)	1/3/2013	27.05		Yes	Y						pct
MBTL12-SS-08-10	A12L259-04	Percent retained 850 micron sieve (#20)	1/3/2013	0.03		Yes	Y						pct
MBTL12-SS-08-10	A12L259-04	Percent retained 4750 micron sieve (#4)	1/3/2013	0.16		Yes	Y						pct

Analytical Method D422M

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-08-10	A12L259-04	Percent retained 425 micron sieve (#40)	1/3/2013	0.16		Yes	Y						pct
MBTL12-SS-08-10	A12L259-04	Percent retained 2000 micron sieve (#10)	1/3/2013	0.2		Yes	Y						pct
MBTL12-SS-08-10	A12L259-04	Percent retained 150 micron sieve (#100)	1/3/2013	14		Yes	Y						pct
MBTL12-SS-08-10	A12L259-04	Percent retained 106 micron sieve (#140)	1/3/2013	27.97		Yes	Y						pct
MBTL12-SS-08-10	A12L259-04	Percent retained 250 micron sieve (#60)	1/3/2013	0.89		Yes	Y						pct
MBTL12-SS-08-10	A12L259-04	Clay	1/3/2013	3.7		Yes	Y						pct
MBTL12-SS-08-10	A12L259-04	Silt	1/3/2013	25.8		Yes	Y						pct

Analytical Method Plumb 1981

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-03-02	A12L259-07	Ammonia as nitrogen	12/15/2012	1.96		Yes	Y	D			0.784	0.392	mg/kg
MBTL12-SS-03-10	A12L259-08	Ammonia as nitrogen	12/15/2012	66.2		Yes	Y	D			3.52	1.76	mg/kg
MBTL12-SS-04-02	A12L259-01	Ammonia as nitrogen	12/15/2012	3.71		Yes	Y	D			0.927	0.464	mg/kg
MBTL12-SS-04-10	A12L259-02	Ammonia as nitrogen	12/15/2012	18.7		Yes	Y	D			0.780	0.390	mg/kg
MBTL12-SS-06-02	A12L259-09	Ammonia as nitrogen	12/15/2012	4.07		Yes	Y	D			0.903	0.452	mg/kg
MBTL12-SS-06-10	A12L259-10	Ammonia as nitrogen	12/15/2012	78.1		Yes	Y	D			3.36	1.68	mg/kg
MBTL12-SS-07-02	A12L259-05	Ammonia as nitrogen	12/15/2012	1.78		Yes	Y	D			0.792	0.396	mg/kg
MBTL12-SS-07-10	A12L259-06	Ammonia as nitrogen	12/15/2012	1.44		Yes	Y	D			0.739	0.370	mg/kg
MBTL12-SS-08-02	A12L259-03	Ammonia as nitrogen	12/15/2012	1.52		Yes	Y	D			0.725	0.363	mg/kg
MBTL12-SS-08-10	A12L259-04	Ammonia as nitrogen	12/15/2012	0.959		Yes	Y	D			0.711	0.355	mg/kg

Analytical Method SM2540G

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-03-02	A12L259-07	Total solids	12/21/2012	63.4		Yes	Y		J	9	1.00	1.00	pct
MBTL12-SS-03-10	A12L259-08	Total solids	12/21/2012	56.7		Yes	Y		J	9	1.00	1.00	pct
MBTL12-SS-04-02	A12L259-01	Total solids	12/21/2012	53.8		Yes	Y		J	9	1.00	1.00	pct

Analytical Method SM2540G

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-04-10	A12L259-02	Total solids	12/21/2012	64.1		Yes	Y		J	9	1.00	1.00	pct
MBTL12-SS-06-02	A12L259-09	Total solids	12/21/2012	55.3		Yes	Y		J	9	1.00	1.00	pct
MBTL12-SS-06-10	A12L259-10	Total solids	12/21/2012	59.7		Yes	Y		J	9	1.00	1.00	pct
MBTL12-SS-07-02	A12L259-05	Total solids	12/21/2012	63.1		Yes	Y		J	9	1.00	1.00	pct
MBTL12-SS-07-10	A12L259-06	Total solids	12/21/2012	67.6		Yes	Y		J	9	1.00	1.00	pct
MBTL12-SS-08-02	A12L259-03	Total solids	12/21/2012	69		Yes	Y		J	9	1.00	1.00	pct
MBTL12-SS-08-10	A12L259-04	Total solids	12/21/2012	70		Yes	Y		J	9	1.00	1.00	pct

Analytical Method SM4500CNE

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-03-02	A12L259-07	Cyanide, total	12/21/2012	0.355		Yes	N	U			0.355	0.355	mg/kg
MBTL12-SS-03-10	A12L259-08	Cyanide, total	12/21/2012	0.428		Yes	N	U			0.428	0.428	mg/kg
MBTL12-SS-04-02	A12L259-01	Cyanide, total	12/19/2012	0.803		Yes	N	D U			0.803	0.803	mg/kg
MBTL12-SS-04-10	A12L259-02	Cyanide, total	12/19/2012	0.363		Yes	N	U			0.363	0.363	mg/kg
MBTL12-SS-06-02	A12L259-09	Cyanide, total	12/21/2012	0.438		Yes	N	U			0.438	0.438	mg/kg
MBTL12-SS-06-10	A12L259-10	Cyanide, total	12/21/2012	0.376		Yes	N	U			0.376	0.376	mg/kg
MBTL12-SS-07-02	A12L259-05	Cyanide, total	12/21/2012	0.354		Yes	N	U			0.354	0.354	mg/kg
MBTL12-SS-07-10	A12L259-06	Cyanide, total	12/21/2012	0.327		Yes	N	U			0.327	0.327	mg/kg
MBTL12-SS-08-02	A12L259-03	Cyanide, total	12/21/2012	0.332		Yes	N	U			0.332	0.332	mg/kg
MBTL12-SS-08-10	A12L259-04	Cyanide, total	12/21/2012	0.323		Yes	N	U			0.323	0.323	mg/kg

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-03-02	A12L259-07	Fluoride	12/21/2012	144		Yes	Y				30.8	30.8	mg/kg
MBTL12-SS-03-10	A12L259-08	Fluoride	12/21/2012	329		Yes	Y				35.3	35.3	mg/kg
MBTL12-SS-04-02	A12L259-01	Fluoride	12/21/2012	306		Yes	Y				36.3	36.3	mg/kg
MBTL12-SS-04-10	A12L259-02	Fluoride	12/21/2012	187		Yes	Y				30.0	30.0	mg/kg

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-06-02	A12L259-09	Fluoride	12/21/2012	255		Yes	Y				34.4	34.4	mg/kg
MBTL12-SS-06-10	A12L259-10	Fluoride	12/21/2012	322		Yes	Y				31.6	31.6	mg/kg
MBTL12-SS-07-02	A12L259-05	Fluoride	12/21/2012	134		Yes	Y				31.0	31.0	mg/kg
MBTL12-SS-07-10	A12L259-06	Fluoride	12/21/2012	138		Yes	Y				28.5	28.5	mg/kg
MBTL12-SS-08-02	A12L259-03	Fluoride	12/21/2012	126		Yes	Y				29.0	29.0	mg/kg
MBTL12-SS-08-10	A12L259-04	Fluoride	12/21/2012	117		Yes	Y				27.2	27.2	mg/kg

Analytical Method SM5310B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-03-02	A12L259-07	Total organic carbon	12/20/2012	0.82		Yes	Y				0.020	0.010	pct
MBTL12-SS-03-10	A12L259-08	Total organic carbon	12/20/2012	2.1		Yes	Y				0.020	0.010	pct
MBTL12-SS-04-02	A12L259-01	Total organic carbon	12/19/2012	2		Yes	Y				0.020	0.010	pct
MBTL12-SS-04-10	A12L259-02	Total organic carbon	12/19/2012	1.1		Yes	Y				0.020	0.010	pct
MBTL12-SS-06-02	A12L259-09	Total organic carbon	12/20/2012	1.6		Yes	Y				0.020	0.010	pct
MBTL12-SS-06-10	A12L259-10	Total organic carbon	12/20/2012	1.5		Yes	Y				0.020	0.010	pct
MBTL12-SS-07-02	A12L259-05	Total organic carbon	12/19/2012	0.33		Yes	Y				0.020	0.010	pct
MBTL12-SS-07-10	A12L259-06	Total organic carbon	12/20/2012	0.36		Yes	Y				0.020	0.010	pct
MBTL12-SS-08-02	A12L259-03	Total organic carbon	12/19/2012	0.29		Yes	Y				0.020	0.010	pct
MBTL12-SS-08-10	A12L259-04	Total organic carbon	12/19/2012	0.29		Yes	Y				0.020	0.010	pct

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-03-02	A12L259-07	Aluminum	12/21/2012	6310		Yes	Y	D			38.7	19.3	mg/kg
MBTL12-SS-03-10	A12L259-08	Aluminum	12/21/2012	19000		Yes	Y	D			45.3	22.6	mg/kg
MBTL12-SS-04-02	A12L259-01	Aluminum	12/21/2012	17500		Yes	Y	D			46.5	23.2	mg/kg
MBTL12-SS-04-10	A12L259-02	Aluminum	12/21/2012	10000		Yes	Y	D			40.5	20.2	mg/kg
MBTL12-SS-06-02	A12L259-09	Aluminum	12/21/2012	13300		Yes	Y	D			47.6	23.8	mg/kg

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-06-10	A12L259-10	Aluminum	12/21/2012	18400	Yes	Y	D			45.8	22.9	mg/kg
MBTL12-SS-07-02	A12L259-05	Aluminum	12/21/2012	5420	Yes	Y	D			42.6	21.3	mg/kg
MBTL12-SS-07-10	A12L259-06	Aluminum	12/21/2012	5020	Yes	Y	D			36.7	18.3	mg/kg
MBTL12-SS-08-02	A12L259-03	Aluminum	12/21/2012	4600	Yes	Y	D			38.7	19.4	mg/kg
MBTL12-SS-08-10	A12L259-04	Aluminum	12/21/2012	4120	Yes	Y	D			35.8	17.9	mg/kg

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-03-02	A12L259-07	Aroclor 1262	12/19/2012	6.2	Yes	N	U			6.20	3.10	ug/kg
MBTL12-SS-03-02	A12L259-07	Aroclor 1268	12/19/2012	6.2	Yes	N	U			6.20	3.10	ug/kg
MBTL12-SS-03-02	A12L259-07	Aroclor 1016	12/19/2012	6.2	Yes	N	U			6.20	3.10	ug/kg
MBTL12-SS-03-02	A12L259-07	Aroclor 1221	12/19/2012	6.2	Yes	N	U			6.20	3.10	ug/kg
MBTL12-SS-03-02	A12L259-07	Aroclor 1248	12/19/2012	6.2	Yes	N	U			6.20	3.10	ug/kg
MBTL12-SS-03-02	A12L259-07	Aroclor 1242	12/19/2012	6.2	Yes	N	U			6.20	3.10	ug/kg
MBTL12-SS-03-02	A12L259-07	Aroclor 1254	12/19/2012	6.2	Yes	N	U			6.20	3.10	ug/kg
MBTL12-SS-03-02	A12L259-07	Aroclor 1232	12/19/2012	6.2	Yes	N	U			6.20	3.10	ug/kg
MBTL12-SS-03-02	A12L259-07	Aroclor 1260	12/19/2012	6.2	Yes	N	U			6.20	3.10	ug/kg
MBTL12-SS-03-10	A12L259-08	Aroclor 1248	12/19/2012	6.96	Yes	N	U			6.96	3.48	ug/kg
MBTL12-SS-03-10	A12L259-08	Aroclor 1016	12/19/2012	6.96	Yes	N	U			6.96	3.48	ug/kg
MBTL12-SS-03-10	A12L259-08	Aroclor 1260	12/19/2012	6.96	Yes	N	U			6.96	3.48	ug/kg
MBTL12-SS-03-10	A12L259-08	Aroclor 1254	12/19/2012	6.96	Yes	N	U			6.96	3.48	ug/kg
MBTL12-SS-03-10	A12L259-08	Aroclor 1268	12/19/2012	6.96	Yes	N	U			6.96	3.48	ug/kg
MBTL12-SS-03-10	A12L259-08	Aroclor 1221	12/19/2012	6.96	Yes	N	U			6.96	3.48	ug/kg
MBTL12-SS-03-10	A12L259-08	Aroclor 1232	12/19/2012	6.96	Yes	N	U			6.96	3.48	ug/kg
MBTL12-SS-03-10	A12L259-08	Aroclor 1242	12/19/2012	6.96	Yes	N	U			6.96	3.48	ug/kg
MBTL12-SS-03-10	A12L259-08	Aroclor 1262	12/19/2012	6.96	Yes	N	U			6.96	3.48	ug/kg

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-04-02	A12L259-01	Aroclor 1262	12/19/2012	7.35	Yes	N	U	UJ	13	7.35	3.68	ug/kg
MBTL12-SS-04-02	A12L259-01	Aroclor 1016	12/19/2012	7.35	Yes	N	U	UJ	13	7.35	3.68	ug/kg
MBTL12-SS-04-02	A12L259-01	Aroclor 1248	12/19/2012	7.35	Yes	N	U	UJ	13	7.35	3.68	ug/kg
MBTL12-SS-04-02	A12L259-01	Aroclor 1232	12/19/2012	7.35	Yes	N	U	UJ	13	7.35	3.68	ug/kg
MBTL12-SS-04-02	A12L259-01	Aroclor 1221	12/19/2012	7.35	Yes	N	U	UJ	13	7.35	3.68	ug/kg
MBTL12-SS-04-02	A12L259-01	Aroclor 1268	12/19/2012	7.35	Yes	N	U	UJ	13	7.35	3.68	ug/kg
MBTL12-SS-04-02	A12L259-01	Aroclor 1254	12/19/2012	7.35	Yes	N	U	UJ	13	7.35	3.68	ug/kg
MBTL12-SS-04-02	A12L259-01	Aroclor 1260	12/19/2012	7.35	Yes	N	U	UJ	13	7.35	3.68	ug/kg
MBTL12-SS-04-02	A12L259-01	Aroclor 1242	12/19/2012	7.35	Yes	N	U	UJ	13	7.35	3.68	ug/kg
MBTL12-SS-04-10	A12L259-02	Aroclor 1268	12/19/2012	8	Yes	N	U			8.00	4.00	ug/kg
MBTL12-SS-04-10	A12L259-02	Aroclor 1262	12/19/2012	8	Yes	N	U			8.00	4.00	ug/kg
MBTL12-SS-04-10	A12L259-02	Aroclor 1016	12/19/2012	8	Yes	N	U			8.00	4.00	ug/kg
MBTL12-SS-04-10	A12L259-02	Aroclor 1248	12/19/2012	8	Yes	N	U			8.00	4.00	ug/kg
MBTL12-SS-04-10	A12L259-02	Aroclor 1242	12/19/2012	8	Yes	N	U			8.00	4.00	ug/kg
MBTL12-SS-04-10	A12L259-02	Aroclor 1221	12/19/2012	8	Yes	N	U			8.00	4.00	ug/kg
MBTL12-SS-04-10	A12L259-02	Aroclor 1254	12/19/2012	8	Yes	N	U			8.00	4.00	ug/kg
MBTL12-SS-04-10	A12L259-02	Aroclor 1260	12/19/2012	8	Yes	N	U			8.00	4.00	ug/kg
MBTL12-SS-04-10	A12L259-02	Aroclor 1232	12/19/2012	8	Yes	N	U			8.00	4.00	ug/kg
MBTL12-SS-06-02	A12L259-09	Aroclor 1242	12/19/2012	6.92	Yes	N	U			6.92	3.46	ug/kg
MBTL12-SS-06-02	A12L259-09	Aroclor 1016	12/19/2012	6.92	Yes	N	U			6.92	3.46	ug/kg
MBTL12-SS-06-02	A12L259-09	Aroclor 1268	12/19/2012	6.92	Yes	N	U			6.92	3.46	ug/kg
MBTL12-SS-06-02	A12L259-09	Aroclor 1221	12/19/2012	6.92	Yes	N	U			6.92	3.46	ug/kg
MBTL12-SS-06-02	A12L259-09	Aroclor 1262	12/19/2012	6.92	Yes	N	U			6.92	3.46	ug/kg
MBTL12-SS-06-02	A12L259-09	Aroclor 1232	12/19/2012	6.92	Yes	N	U			6.92	3.46	ug/kg
MBTL12-SS-06-02	A12L259-09	Aroclor 1254	12/19/2012	6.92	Yes	N	U			6.92	3.46	ug/kg

SDG: A12L259

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-06-02	A12L259-09	Aroclor 1260	12/19/2012	6.92	Yes	N	U			6.92	3.46	ug/kg
MBTL12-SS-06-02	A12L259-09	Aroclor 1248	12/19/2012	6.92	Yes	N	U			6.92	3.46	ug/kg
MBTL12-SS-06-10	A12L259-10	Aroclor 1242	12/19/2012	6.69	Yes	N	U			6.69	3.34	ug/kg
MBTL12-SS-06-10	A12L259-10	Aroclor 1260	12/19/2012	6.69	Yes	N	U			6.69	3.34	ug/kg
MBTL12-SS-06-10	A12L259-10	Aroclor 1254	12/19/2012	6.69	Yes	N	U			6.69	3.34	ug/kg
MBTL12-SS-06-10	A12L259-10	Aroclor 1268	12/19/2012	6.69	Yes	N	U			6.69	3.34	ug/kg
MBTL12-SS-06-10	A12L259-10	Aroclor 1221	12/19/2012	6.69	Yes	N	U			6.69	3.34	ug/kg
MBTL12-SS-06-10	A12L259-10	Aroclor 1262	12/19/2012	6.69	Yes	N	U			6.69	3.34	ug/kg
MBTL12-SS-06-10	A12L259-10	Aroclor 1232	12/19/2012	6.69	Yes	N	U			6.69	3.34	ug/kg
MBTL12-SS-06-10	A12L259-10	Aroclor 1248	12/19/2012	6.69	Yes	N	U			6.69	3.34	ug/kg
MBTL12-SS-06-10	A12L259-10	Aroclor 1016	12/19/2012	6.69	Yes	N	U			6.69	3.34	ug/kg
MBTL12-SS-07-02	A12L259-05	Aroclor 1254	12/19/2012	6.27	Yes	N	U			6.27	3.14	ug/kg
MBTL12-SS-07-02	A12L259-05	Aroclor 1262	12/19/2012	6.27	Yes	N	U			6.27	3.14	ug/kg
MBTL12-SS-07-02	A12L259-05	Aroclor 1016	12/19/2012	6.27	Yes	N	U			6.27	3.14	ug/kg
MBTL12-SS-07-02	A12L259-05	Aroclor 1260	12/19/2012	6.27	Yes	N	U			6.27	3.14	ug/kg
MBTL12-SS-07-02	A12L259-05	Aroclor 1248	12/19/2012	3.16	Yes	Y	J			6.27	3.14	ug/kg
MBTL12-SS-07-02	A12L259-05	Aroclor 1232	12/19/2012	6.27	Yes	N	U			6.27	3.14	ug/kg
MBTL12-SS-07-02	A12L259-05	Aroclor 1242	12/19/2012	6.27	Yes	N	U			6.27	3.14	ug/kg
MBTL12-SS-07-02	A12L259-05	Aroclor 1221	12/19/2012	6.27	Yes	N	U			6.27	3.14	ug/kg
MBTL12-SS-07-02	A12L259-05	Aroclor 1268	12/19/2012	6.27	Yes	N	U			6.27	3.14	ug/kg
MBTL12-SS-07-10	A12L259-06	Aroclor 1221	12/19/2012	5.62	Yes	N	U			5.62	2.81	ug/kg
MBTL12-SS-07-10	A12L259-06	Aroclor 1268	12/19/2012	5.62	Yes	N	U			5.62	2.81	ug/kg
MBTL12-SS-07-10	A12L259-06	Aroclor 1254	12/19/2012	5.62	Yes	N	U			5.62	2.81	ug/kg
MBTL12-SS-07-10	A12L259-06	Aroclor 1248	12/19/2012	5.62	Yes	N	U			5.62	2.81	ug/kg
MBTL12-SS-07-10	A12L259-06	Aroclor 1262	12/19/2012	5.62	Yes	N	U			5.62	2.81	ug/kg

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-07-10	A12L259-06	Aroclor 1232	12/19/2012	5.62	Yes	N	U			5.62	2.81	ug/kg
MBTL12-SS-07-10	A12L259-06	Aroclor 1016	12/19/2012	5.62	Yes	N	U			5.62	2.81	ug/kg
MBTL12-SS-07-10	A12L259-06	Aroclor 1242	12/19/2012	5.62	Yes	N	U			5.62	2.81	ug/kg
MBTL12-SS-07-10	A12L259-06	Aroclor 1260	12/19/2012	5.62	Yes	N	U			5.62	2.81	ug/kg
MBTL12-SS-08-02	A12L259-03	Aroclor 1242	12/19/2012	5.64	Yes	N	U			5.64	2.82	ug/kg
MBTL12-SS-08-02	A12L259-03	Aroclor 1260	12/19/2012	5.64	Yes	N	U			5.64	2.82	ug/kg
MBTL12-SS-08-02	A12L259-03	Aroclor 1254	12/19/2012	5.64	Yes	N	U			5.64	2.82	ug/kg
MBTL12-SS-08-02	A12L259-03	Aroclor 1268	12/19/2012	5.64	Yes	N	U			5.64	2.82	ug/kg
MBTL12-SS-08-02	A12L259-03	Aroclor 1221	12/19/2012	5.64	Yes	N	U			5.64	2.82	ug/kg
MBTL12-SS-08-02	A12L259-03	Aroclor 1262	12/19/2012	5.64	Yes	N	U			5.64	2.82	ug/kg
MBTL12-SS-08-02	A12L259-03	Aroclor 1248	12/19/2012	5.64	Yes	N	U			5.64	2.82	ug/kg
MBTL12-SS-08-02	A12L259-03	Aroclor 1232	12/19/2012	5.64	Yes	N	U			5.64	2.82	ug/kg
MBTL12-SS-08-02	A12L259-03	Aroclor 1016	12/19/2012	5.64	Yes	N	U			5.64	2.82	ug/kg
MBTL12-SS-08-10	A12L259-04	Aroclor 1262	12/19/2012	5.44	Yes	N	U			5.44	2.72	ug/kg
MBTL12-SS-08-10	A12L259-04	Aroclor 1016	12/19/2012	5.44	Yes	N	U			5.44	2.72	ug/kg
MBTL12-SS-08-10	A12L259-04	Aroclor 1248	12/19/2012	2.81	Yes	Y	J			5.44	2.72	ug/kg
MBTL12-SS-08-10	A12L259-04	Aroclor 1232	12/19/2012	5.44	Yes	N	U			5.44	2.72	ug/kg
MBTL12-SS-08-10	A12L259-04	Aroclor 1221	12/19/2012	5.44	Yes	N	U			5.44	2.72	ug/kg
MBTL12-SS-08-10	A12L259-04	Aroclor 1268	12/19/2012	5.44	Yes	N	U			5.44	2.72	ug/kg
MBTL12-SS-08-10	A12L259-04	Aroclor 1254	12/19/2012	5.44	Yes	N	U			5.44	2.72	ug/kg
MBTL12-SS-08-10	A12L259-04	Aroclor 1260	12/19/2012	5.44	Yes	N	U			5.44	2.72	ug/kg
MBTL12-SS-08-10	A12L259-04	Aroclor 1242	12/19/2012	5.44	Yes	N	U			5.44	2.72	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-03-02	A12L259-07	1-Methylnaphthalene	12/19/2012	14.6	Yes	N	U			14.6	7.30	ug/kg

SDG: A12L259

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-03-02	A12L259-07	Acenaphthylene	12/19/2012	14.6	Yes	N	U			14.6	7.30	ug/kg
MBTL12-SS-03-02	A12L259-07	Anthracene	12/19/2012	14.6	Yes	N	U			14.6	7.30	ug/kg
MBTL12-SS-03-02	A12L259-07	Pyrene	12/19/2012	14.6	Yes	N	U			14.6	7.30	ug/kg
MBTL12-SS-03-02	A12L259-07	Dibenzofuran	12/19/2012	14.6	Yes	N	U			14.6	7.30	ug/kg
MBTL12-SS-03-02	A12L259-07	Benzo(g,h,i)perylene	12/19/2012	14.6	Yes	N	U			14.6	7.30	ug/kg
MBTL12-SS-03-02	A12L259-07	Indeno(1,2,3-c,d)pyrene	12/19/2012	14.6	Yes	N	U			14.6	7.30	ug/kg
MBTL12-SS-03-02	A12L259-07	Benzo(b)fluoranthene	12/19/2012	14.6	Yes	N	U			14.6	7.30	ug/kg
MBTL12-SS-03-02	A12L259-07	2-Methylnaphthalene	12/19/2012	14.6	Yes	N	U			14.6	7.30	ug/kg
MBTL12-SS-03-02	A12L259-07	Benzo(k)fluoranthene	12/19/2012	14.6	Yes	N	U			14.6	7.30	ug/kg
MBTL12-SS-03-02	A12L259-07	Naphthalene	12/19/2012	14.6	Yes	N	U			14.6	7.30	ug/kg
MBTL12-SS-03-02	A12L259-07	Chrysene	12/19/2012	14.6	Yes	N	U			14.6	7.30	ug/kg
MBTL12-SS-03-02	A12L259-07	Benzo(a)pyrene	12/19/2012	14.6	Yes	N	U			14.6	7.30	ug/kg
MBTL12-SS-03-02	A12L259-07	Dibenzo(a,h)anthracene	12/19/2012	14.6	Yes	N	U			14.6	7.30	ug/kg
MBTL12-SS-03-02	A12L259-07	Benzo(a)anthracene	12/19/2012	14.6	Yes	N	U			14.6	7.30	ug/kg
MBTL12-SS-03-02	A12L259-07	Acenaphthene	12/19/2012	14.6	Yes	N	U			14.6	7.30	ug/kg
MBTL12-SS-03-02	A12L259-07	Phenanthrene	12/19/2012	14.6	Yes	N	U			14.6	7.30	ug/kg
MBTL12-SS-03-02	A12L259-07	Fluorene	12/19/2012	14.6	Yes	N	U			14.6	7.30	ug/kg
MBTL12-SS-03-02	A12L259-07	Fluoranthene	12/19/2012	14.6	Yes	N	U			14.6	7.30	ug/kg
MBTL12-SS-03-10	A12L259-08	Benzo(k)fluoranthene	12/19/2012	17.2	Yes	N	U			17.2	8.60	ug/kg
MBTL12-SS-03-10	A12L259-08	Benzo(a)anthracene	12/19/2012	17.2	Yes	N	U			17.2	8.60	ug/kg
MBTL12-SS-03-10	A12L259-08	Fluorene	12/19/2012	17.2	Yes	N	U			17.2	8.60	ug/kg
MBTL12-SS-03-10	A12L259-08	Phenanthrene	12/19/2012	17.2	Yes	N	U			17.2	8.60	ug/kg
MBTL12-SS-03-10	A12L259-08	Acenaphthene	12/19/2012	17.2	Yes	N	U			17.2	8.60	ug/kg
MBTL12-SS-03-10	A12L259-08	Dibenzo(a,h)anthracene	12/19/2012	17.2	Yes	N	U			17.2	8.60	ug/kg
MBTL12-SS-03-10	A12L259-08	Benzo(a)pyrene	12/19/2012	17.2	Yes	N	U			17.2	8.60	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-03-10	A12L259-08	Naphthalene	12/19/2012	17.2		Yes	N	U			17.2	8.60	ug/kg
MBTL12-SS-03-10	A12L259-08	Acenaphthylene	12/19/2012	17.2		Yes	N	U			17.2	8.60	ug/kg
MBTL12-SS-03-10	A12L259-08	2-Methylnaphthalene	12/19/2012	17.2		Yes	N	U			17.2	8.60	ug/kg
MBTL12-SS-03-10	A12L259-08	Fluoranthene	12/19/2012	17.2		Yes	N	U			17.2	8.60	ug/kg
MBTL12-SS-03-10	A12L259-08	Benzo(b)fluoranthene	12/19/2012	17.2		Yes	N	U			17.2	8.60	ug/kg
MBTL12-SS-03-10	A12L259-08	Indeno(1,2,3-c,d)pyrene	12/19/2012	17.2		Yes	N	U			17.2	8.60	ug/kg
MBTL12-SS-03-10	A12L259-08	Benzo(g,h,i)perylene	12/19/2012	17.2		Yes	N	U			17.2	8.60	ug/kg
MBTL12-SS-03-10	A12L259-08	Dibenzofuran	12/19/2012	17.2		Yes	N	U			17.2	8.60	ug/kg
MBTL12-SS-03-10	A12L259-08	Pyrene	12/19/2012	17.2		Yes	N	U			17.2	8.60	ug/kg
MBTL12-SS-03-10	A12L259-08	Anthracene	12/19/2012	17.2		Yes	N	U			17.2	8.60	ug/kg
MBTL12-SS-03-10	A12L259-08	Chrysene	12/19/2012	17.2		Yes	N	U			17.2	8.60	ug/kg
MBTL12-SS-03-10	A12L259-08	1-Methylnaphthalene	12/19/2012	17.2		Yes	N	U			17.2	8.60	ug/kg
MBTL12-SS-04-02	A12L259-01	Acenaphthylene	12/21/2012	18.4		Yes	N	U			18.4	9.19	ug/kg
MBTL12-SS-04-02	A12L259-01	Benzo(a)pyrene	12/21/2012	18.4		Yes	N	U			18.4	9.19	ug/kg
MBTL12-SS-04-02	A12L259-01	Dibenzo(a,h)anthracene	12/21/2012	18.4		Yes	N	U			18.4	9.19	ug/kg
MBTL12-SS-04-02	A12L259-01	Benzo(a)anthracene	12/21/2012	18.4		Yes	N	U			18.4	9.19	ug/kg
MBTL12-SS-04-02	A12L259-01	Acenaphthene	12/21/2012	18.4		Yes	N	U			18.4	9.19	ug/kg
MBTL12-SS-04-02	A12L259-01	Phenanthrene	12/21/2012	18.4		Yes	N	U			18.4	9.19	ug/kg
MBTL12-SS-04-02	A12L259-01	Fluorene	12/21/2012	18.4		Yes	N	U			18.4	9.19	ug/kg
MBTL12-SS-04-02	A12L259-01	1-Methylnaphthalene	12/21/2012	18.4		Yes	N	U			18.4	9.19	ug/kg
MBTL12-SS-04-02	A12L259-01	2-Methylnaphthalene	12/21/2012	18.4		Yes	N	U			18.4	9.19	ug/kg
MBTL12-SS-04-02	A12L259-01	Chrysene	12/21/2012	18.4		Yes	N	U			18.4	9.19	ug/kg
MBTL12-SS-04-02	A12L259-01	Benzo(k)fluoranthene	12/21/2012	18.4		Yes	N	U			18.4	9.19	ug/kg
MBTL12-SS-04-02	A12L259-01	Indeno(1,2,3-c,d)pyrene	12/21/2012	18.4		Yes	N	U			18.4	9.19	ug/kg
MBTL12-SS-04-02	A12L259-01	Fluoranthene	12/21/2012	18.4		Yes	N	U			18.4	9.19	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-04-02	A12L259-01	Benzo(b)fluoranthene	12/21/2012	18.4	Yes	N	U			18.4	9.19	ug/kg
MBTL12-SS-04-02	A12L259-01	Benzo(g,h,i)perylene	12/21/2012	18.4	Yes	N	U			18.4	9.19	ug/kg
MBTL12-SS-04-02	A12L259-01	Pyrene	12/21/2012	18.4	Yes	N	U			18.4	9.19	ug/kg
MBTL12-SS-04-02	A12L259-01	Anthracene	12/21/2012	18.4	Yes	N	U			18.4	9.19	ug/kg
MBTL12-SS-04-02	A12L259-01	Naphthalene	12/21/2012	18.4	Yes	N	U			18.4	9.19	ug/kg
MBTL12-SS-04-02	A12L259-01	Dibenzofuran	12/21/2012	18.4	Yes	N	U			18.4	9.19	ug/kg
MBTL12-SS-04-10	A12L259-02	Anthracene	12/21/2012	15.4	Yes	N	U			15.4	7.70	ug/kg
MBTL12-SS-04-10	A12L259-02	Dibenzofuran	12/21/2012	15.4	Yes	N	U			15.4	7.70	ug/kg
MBTL12-SS-04-10	A12L259-02	Pyrene	12/21/2012	7.72	Yes	Y	J			15.4	7.70	ug/kg
MBTL12-SS-04-10	A12L259-02	Acenaphthene	12/21/2012	15.4	Yes	N	U			15.4	7.70	ug/kg
MBTL12-SS-04-10	A12L259-02	Benzo(g,h,i)perylene	12/21/2012	15.4	Yes	N	U			15.4	7.70	ug/kg
MBTL12-SS-04-10	A12L259-02	Benzo(b)fluoranthene	12/21/2012	15.4	Yes	N	U			15.4	7.70	ug/kg
MBTL12-SS-04-10	A12L259-02	Fluoranthene	12/21/2012	9.86	Yes	Y	J			15.4	7.70	ug/kg
MBTL12-SS-04-10	A12L259-02	Benzo(k)fluoranthene	12/21/2012	15.4	Yes	N	U			15.4	7.70	ug/kg
MBTL12-SS-04-10	A12L259-02	Acenaphthylene	12/21/2012	15.4	Yes	N	U			15.4	7.70	ug/kg
MBTL12-SS-04-10	A12L259-02	Benzo(a)anthracene	12/21/2012	15.4	Yes	N	U			15.4	7.70	ug/kg
MBTL12-SS-04-10	A12L259-02	1-Methylnaphthalene	12/21/2012	15.4	Yes	N	U			15.4	7.70	ug/kg
MBTL12-SS-04-10	A12L259-02	Benzo(a)pyrene	12/21/2012	15.4	Yes	N	U			15.4	7.70	ug/kg
MBTL12-SS-04-10	A12L259-02	Fluorene	12/21/2012	15.4	Yes	N	U			15.4	7.70	ug/kg
MBTL12-SS-04-10	A12L259-02	2-Methylnaphthalene	12/21/2012	15.4	Yes	N	U			15.4	7.70	ug/kg
MBTL12-SS-04-10	A12L259-02	Phenanthrene	12/21/2012	15.4	Yes	N	U			15.4	7.70	ug/kg
MBTL12-SS-04-10	A12L259-02	Dibenzo(a,h)anthracene	12/21/2012	15.4	Yes	N	U			15.4	7.70	ug/kg
MBTL12-SS-04-10	A12L259-02	Chrysene	12/21/2012	15.4	Yes	N	U			15.4	7.70	ug/kg
MBTL12-SS-04-10	A12L259-02	Indeno(1,2,3-c,d)pyrene	12/21/2012	15.4	Yes	N	U			15.4	7.70	ug/kg
MBTL12-SS-04-10	A12L259-02	Naphthalene	12/21/2012	15.4	Yes	N	U			15.4	7.70	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-06-02	A12L259-09	Fluoranthene	12/19/2012	17.9	Yes	N	U			17.9	8.93	ug/kg
MBTL12-SS-06-02	A12L259-09	Benzo(b)fluoranthene	12/19/2012	17.9	Yes	N	U			17.9	8.93	ug/kg
MBTL12-SS-06-02	A12L259-09	Indeno(1,2,3-c,d)pyrene	12/19/2012	17.9	Yes	N	U			17.9	8.93	ug/kg
MBTL12-SS-06-02	A12L259-09	Benzo(g,h,i)perylene	12/19/2012	17.9	Yes	N	U			17.9	8.93	ug/kg
MBTL12-SS-06-02	A12L259-09	Dibenzofuran	12/19/2012	17.9	Yes	N	U			17.9	8.93	ug/kg
MBTL12-SS-06-02	A12L259-09	Anthracene	12/19/2012	17.9	Yes	N	U			17.9	8.93	ug/kg
MBTL12-SS-06-02	A12L259-09	Benzo(k)fluoranthene	12/19/2012	17.9	Yes	N	U			17.9	8.93	ug/kg
MBTL12-SS-06-02	A12L259-09	Benzo(a)anthracene	12/19/2012	17.9	Yes	N	U			17.9	8.93	ug/kg
MBTL12-SS-06-02	A12L259-09	Pyrene	12/19/2012	17.9	Yes	N	U			17.9	8.93	ug/kg
MBTL12-SS-06-02	A12L259-09	Chrysene	12/19/2012	17.9	Yes	N	U			17.9	8.93	ug/kg
MBTL12-SS-06-02	A12L259-09	Dibenzo(a,h)anthracene	12/19/2012	17.9	Yes	N	U			17.9	8.93	ug/kg
MBTL12-SS-06-02	A12L259-09	Acenaphthene	12/19/2012	17.9	Yes	N	U			17.9	8.93	ug/kg
MBTL12-SS-06-02	A12L259-09	Phenanthrene	12/19/2012	17.9	Yes	N	U			17.9	8.93	ug/kg
MBTL12-SS-06-02	A12L259-09	Fluorene	12/19/2012	17.9	Yes	N	U			17.9	8.93	ug/kg
MBTL12-SS-06-02	A12L259-09	1-Methylnaphthalene	12/19/2012	17.9	Yes	N	U			17.9	8.93	ug/kg
MBTL12-SS-06-02	A12L259-09	Naphthalene	12/19/2012	17.9	Yes	N	U			17.9	8.93	ug/kg
MBTL12-SS-06-02	A12L259-09	Acenaphthylene	12/19/2012	17.9	Yes	N	U			17.9	8.93	ug/kg
MBTL12-SS-06-02	A12L259-09	Benzo(a)pyrene	12/19/2012	17.9	Yes	N	U			17.9	8.93	ug/kg
MBTL12-SS-06-02	A12L259-09	2-Methylnaphthalene	12/19/2012	17.9	Yes	N	U			17.9	8.93	ug/kg
MBTL12-SS-06-10	A12L259-10	Naphthalene	12/21/2012	16.3	Yes	N	U			16.3	8.13	ug/kg
MBTL12-SS-06-10	A12L259-10	Phenanthrene	12/21/2012	16.3	Yes	N	U			16.3	8.13	ug/kg
MBTL12-SS-06-10	A12L259-10	Benzo(k)fluoranthene	12/21/2012	16.3	Yes	N	U			16.3	8.13	ug/kg
MBTL12-SS-06-10	A12L259-10	Acenaphthylene	12/21/2012	16.3	Yes	N	U			16.3	8.13	ug/kg
MBTL12-SS-06-10	A12L259-10	Chrysene	12/21/2012	16.3	Yes	N	U			16.3	8.13	ug/kg
MBTL12-SS-06-10	A12L259-10	Benzo(a)pyrene	12/21/2012	16.3	Yes	N	U			16.3	8.13	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-06-10	A12L259-10	Dibenzo(a,h)anthracene	12/21/2012	16.3	Yes	N	U			16.3	8.13	ug/kg
MBTL12-SS-06-10	A12L259-10	Benzo(a)anthracene	12/21/2012	16.3	Yes	N	U			16.3	8.13	ug/kg
MBTL12-SS-06-10	A12L259-10	2-Methylnaphthalene	12/21/2012	16.3	Yes	N	U			16.3	8.13	ug/kg
MBTL12-SS-06-10	A12L259-10	1-Methylnaphthalene	12/21/2012	16.3	Yes	N	U			16.3	8.13	ug/kg
MBTL12-SS-06-10	A12L259-10	Acenaphthene	12/21/2012	16.3	Yes	N	U			16.3	8.13	ug/kg
MBTL12-SS-06-10	A12L259-10	Dibenzofuran	12/21/2012	16.3	Yes	N	U			16.3	8.13	ug/kg
MBTL12-SS-06-10	A12L259-10	Anthracene	12/21/2012	16.3	Yes	N	U			16.3	8.13	ug/kg
MBTL12-SS-06-10	A12L259-10	Pyrene	12/21/2012	16.3	Yes	N	U			16.3	8.13	ug/kg
MBTL12-SS-06-10	A12L259-10	Benzo(g,h,i)perylene	12/21/2012	16.3	Yes	N	U			16.3	8.13	ug/kg
MBTL12-SS-06-10	A12L259-10	Indeno(1,2,3-c,d)pyrene	12/21/2012	16.3	Yes	N	U			16.3	8.13	ug/kg
MBTL12-SS-06-10	A12L259-10	Fluoranthene	12/21/2012	16.3	Yes	N	U			16.3	8.13	ug/kg
MBTL12-SS-06-10	A12L259-10	Benzo(b)fluoranthene	12/21/2012	16.3	Yes	N	U			16.3	8.13	ug/kg
MBTL12-SS-06-10	A12L259-10	Fluorene	12/21/2012	16.3	Yes	N	U			16.3	8.13	ug/kg
MBTL12-SS-07-02	A12L259-05	Indeno(1,2,3-c,d)pyrene	12/21/2012	15.8	Yes	N	U			15.8	15.8	ug/kg
MBTL12-SS-07-02	A12L259-05	2-Methylnaphthalene	12/21/2012	15.8	Yes	N	U			15.8	7.90	ug/kg
MBTL12-SS-07-02	A12L259-05	Naphthalene	12/21/2012	10.5	Yes	Y	J			15.8	7.90	ug/kg
MBTL12-SS-07-02	A12L259-05	1-Methylnaphthalene	12/21/2012	15.8	Yes	N	U			15.8	7.90	ug/kg
MBTL12-SS-07-02	A12L259-05	Fluorene	12/21/2012	8.03	Yes	Y	J			15.8	7.90	ug/kg
MBTL12-SS-07-02	A12L259-05	Anthracene	12/21/2012	14	Yes	Y	J			15.8	7.90	ug/kg
MBTL12-SS-07-02	A12L259-05	Pyrene	12/21/2012	51.2	Yes	Y				15.8	7.90	ug/kg
MBTL12-SS-07-02	A12L259-05	Dibenzofuran	12/21/2012	15.8	Yes	N	U			15.8	7.90	ug/kg
MBTL12-SS-07-02	A12L259-05	Benzo(g,h,i)perylene	12/21/2012	12	Yes	Y	J			15.8	7.90	ug/kg
MBTL12-SS-07-02	A12L259-05	Chrysene	12/21/2012	33.1	Yes	Y				15.8	7.90	ug/kg
MBTL12-SS-07-02	A12L259-05	Fluoranthene	12/21/2012	65	Yes	Y				15.8	7.90	ug/kg
MBTL12-SS-07-02	A12L259-05	Phenanthrene	12/21/2012	56.1	Yes	Y				15.8	7.90	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-07-02	A12L259-05	Benzo(b,k)fluoranthene	12/21/2012	33.5		Yes	Y				31.6	15.8	ug/kg
MBTL12-SS-07-02	A12L259-05	Acenaphthene	12/21/2012	15.8		Yes	N	U			15.8	7.90	ug/kg
MBTL12-SS-07-02	A12L259-05	Benzo(a)anthracene	12/21/2012	20.4		Yes	Y				15.8	7.90	ug/kg
MBTL12-SS-07-02	A12L259-05	Dibenzo(a,h)anthracene	12/21/2012	15.8		Yes	N	U			15.8	7.90	ug/kg
MBTL12-SS-07-02	A12L259-05	Benzo(a)pyrene	12/21/2012	12.9		Yes	Y	J			15.8	7.90	ug/kg
MBTL12-SS-07-02	A12L259-05	Acenaphthylene	12/21/2012	15.8		Yes	N	U			15.8	7.90	ug/kg
MBTL12-SS-07-10	A12L259-06	2-Methylnaphthalene	12/21/2012	14.3		Yes	N	U			14.3	7.17	ug/kg
MBTL12-SS-07-10	A12L259-06	1-Methylnaphthalene	12/21/2012	14.3		Yes	N	U			14.3	7.17	ug/kg
MBTL12-SS-07-10	A12L259-06	Fluorene	12/21/2012	14.3		Yes	N	U			14.3	7.17	ug/kg
MBTL12-SS-07-10	A12L259-06	Anthracene	12/21/2012	9		Yes	Y	J			14.3	7.17	ug/kg
MBTL12-SS-07-10	A12L259-06	Phenanthrene	12/21/2012	50.8		Yes	Y				14.3	7.17	ug/kg
MBTL12-SS-07-10	A12L259-06	Pyrene	12/21/2012	87.6		Yes	Y				14.3	7.17	ug/kg
MBTL12-SS-07-10	A12L259-06	Dibenzofuran	12/21/2012	14.3		Yes	N	U			14.3	7.17	ug/kg
MBTL12-SS-07-10	A12L259-06	Benzo(g,h,i)perylene	12/21/2012	19.7		Yes	Y				14.3	7.17	ug/kg
MBTL12-SS-07-10	A12L259-06	Indeno(1,2,3-c,d)pyrene	12/21/2012	20.4		Yes	Y				14.3	7.17	ug/kg
MBTL12-SS-07-10	A12L259-06	Fluoranthene	12/21/2012	116		Yes	Y				14.3	7.17	ug/kg
MBTL12-SS-07-10	A12L259-06	Benzo(a)pyrene	12/21/2012	23.1		Yes	Y				14.3	7.17	ug/kg
MBTL12-SS-07-10	A12L259-06	Naphthalene	12/21/2012	14.3		Yes	N	U			14.3	7.17	ug/kg
MBTL12-SS-07-10	A12L259-06	Benzo(b,k)fluoranthene	12/21/2012	70.2		Yes	Y				28.7	14.3	ug/kg
MBTL12-SS-07-10	A12L259-06	Chrysene	12/21/2012	114		Yes	Y				14.3	7.17	ug/kg
MBTL12-SS-07-10	A12L259-06	Dibenzo(a,h)anthracene	12/21/2012	14.3		Yes	N	U			14.3	7.17	ug/kg
MBTL12-SS-07-10	A12L259-06	Benzo(a)anthracene	12/21/2012	30.2		Yes	Y				14.3	7.17	ug/kg
MBTL12-SS-07-10	A12L259-06	Acenaphthene	12/21/2012	14.3		Yes	N	U			14.3	7.17	ug/kg
MBTL12-SS-07-10	A12L259-06	Acenaphthylene	12/21/2012	14.3		Yes	N	U			14.3	7.17	ug/kg
MBTL12-SS-08-02	A12L259-03	Anthracene	12/21/2012	13.9		Yes	N	U			13.9	6.93	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-08-02	A12L259-03	Pyrene	12/21/2012	12	Yes	Y	J			13.9	6.93	ug/kg
MBTL12-SS-08-02	A12L259-03	Dibenzofuran	12/21/2012	13.9	Yes	N	U			13.9	6.93	ug/kg
MBTL12-SS-08-02	A12L259-03	Benzo(g,h,i)perylene	12/21/2012	8.75	Yes	Y	J			13.9	6.93	ug/kg
MBTL12-SS-08-02	A12L259-03	Indeno(1,2,3-c,d)pyrene	12/21/2012	13.9	Yes	N	U			13.9	13.9	ug/kg
MBTL12-SS-08-02	A12L259-03	Fluoranthene	12/21/2012	13.5	Yes	Y	J			13.9	6.93	ug/kg
MBTL12-SS-08-02	A12L259-03	Phenanthrene	12/21/2012	8.94	Yes	Y	J			13.9	6.93	ug/kg
MBTL12-SS-08-02	A12L259-03	Fluorene	12/21/2012	13.9	Yes	N	U			13.9	6.93	ug/kg
MBTL12-SS-08-02	A12L259-03	1-Methylnaphthalene	12/21/2012	13.9	Yes	N	U			13.9	6.93	ug/kg
MBTL12-SS-08-02	A12L259-03	Naphthalene	12/21/2012	13.9	Yes	N	U			13.9	6.93	ug/kg
MBTL12-SS-08-02	A12L259-03	Benzo(a)anthracene	12/21/2012	8.29	Yes	Y	J			13.9	6.93	ug/kg
MBTL12-SS-08-02	A12L259-03	Benzo(b,k)fluoranthene	12/21/2012	16	Yes	Y	J			27.7	13.9	ug/kg
MBTL12-SS-08-02	A12L259-03	Acenaphthylene	12/21/2012	13.9	Yes	N	U			13.9	6.93	ug/kg
MBTL12-SS-08-02	A12L259-03	Dibenzo(a,h)anthracene	12/21/2012	13.9	Yes	N	U			13.9	6.93	ug/kg
MBTL12-SS-08-02	A12L259-03	2-Methylnaphthalene	12/21/2012	13.9	Yes	N	U			13.9	6.93	ug/kg
MBTL12-SS-08-02	A12L259-03	Benzo(a)pyrene	12/21/2012	13.9	Yes	N	U			13.9	6.93	ug/kg
MBTL12-SS-08-02	A12L259-03	Acenaphthene	12/21/2012	13.9	Yes	N	U			13.9	6.93	ug/kg
MBTL12-SS-08-02	A12L259-03	Chrysene	12/21/2012	40.8	Yes	Y				13.9	6.93	ug/kg
MBTL12-SS-08-10	A12L259-04	2-Methylnaphthalene	12/21/2012	13.5	Yes	N	U			13.5	6.74	ug/kg
MBTL12-SS-08-10	A12L259-04	Benzo(b,k)fluoranthene	12/21/2012	84.6	Yes	Y				27.0	13.5	ug/kg
MBTL12-SS-08-10	A12L259-04	Phenanthrene	12/21/2012	13.5	Yes	Y				13.5	6.74	ug/kg
MBTL12-SS-08-10	A12L259-04	Indeno(1,2,3-c,d)pyrene	12/21/2012	13.5	Yes	N	U			13.5	13.5	ug/kg
MBTL12-SS-08-10	A12L259-04	Naphthalene	12/21/2012	13.5	Yes	N	U			13.5	6.74	ug/kg
MBTL12-SS-08-10	A12L259-04	Fluorene	12/21/2012	13.5	Yes	N	U			13.5	6.74	ug/kg
MBTL12-SS-08-10	A12L259-04	1-Methylnaphthalene	12/21/2012	13.5	Yes	N	U			13.5	6.74	ug/kg
MBTL12-SS-08-10	A12L259-04	Acenaphthene	12/21/2012	13.5	Yes	N	U			13.5	6.74	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-08-10	A12L259-04	Chrysene	12/21/2012	57.9		Yes	Y				13.5	6.74	ug/kg
MBTL12-SS-08-10	A12L259-04	Benzo(a)pyrene	12/21/2012	17.9		Yes	Y				13.5	6.74	ug/kg
MBTL12-SS-08-10	A12L259-04	Dibenzo(a,h)anthracene	12/21/2012	13.5		Yes	N	U			13.5	6.74	ug/kg
MBTL12-SS-08-10	A12L259-04	Benzo(a)anthracene	12/21/2012	26.4		Yes	Y				13.5	6.74	ug/kg
MBTL12-SS-08-10	A12L259-04	Fluoranthene	12/21/2012	50.3		Yes	Y				13.5	6.74	ug/kg
MBTL12-SS-08-10	A12L259-04	Benzo(g,h,i)perylene	12/21/2012	11		Yes	Y	J			13.5	6.74	ug/kg
MBTL12-SS-08-10	A12L259-04	Dibenzofuran	12/21/2012	13.5		Yes	N	U			13.5	6.74	ug/kg
MBTL12-SS-08-10	A12L259-04	Pyrene	12/21/2012	49.2		Yes	Y				13.5	6.74	ug/kg
MBTL12-SS-08-10	A12L259-04	Anthracene	12/21/2012	14.4		Yes	Y				13.5	6.74	ug/kg
MBTL12-SS-08-10	A12L259-04	Acenaphthylene	12/21/2012	13.5		Yes	N	U			13.5	6.74	ug/kg

Analytical Method APEXsolids

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-05-02	A12L294-08	Total solids	12/20/2012	67		Yes	Y				1.00	1.00	pct
MBTL12-SS-05-10	A12L294-09	Total solids	12/20/2012	68.4		Yes	Y				1.00	1.00	pct
MBTL12-SS-11-02	A12L294-02	Total solids	12/20/2012	71.8		Yes	Y				1.00	1.00	pct
MBTL12-SS-11-10	A12L294-03	Total solids	12/20/2012	69.2		Yes	Y				1.00	1.00	pct
MBTL12-SS-12-02	A12L294-04	Total solids	12/20/2012	71.9		Yes	Y				1.00	1.00	pct
MBTL12-SS-12-10	A12L294-05	Total solids	12/20/2012	72.8		Yes	Y				1.00	1.00	pct
MBTL12-SS-13-02	A12L294-06	Total solids	12/20/2012	66.6		Yes	Y				1.00	1.00	pct
MBTL12-SS-13-10	A12L294-07	Total solids	12/20/2012	68.8		Yes	Y				1.00	1.00	pct
MBTL12-SS-54-10	A12L294-01	Total solids	12/20/2012	65.9		Yes	Y				1.00	1.00	pct

Analytical Method D422M

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-05-02	A12L294-08	Percent retained 106 micron sieve (#140)	1/9/2013	17.3		Yes	Y						pct
MBTL12-SS-05-02	A12L294-08	Silt	1/9/2013	45		Yes	Y						pct
MBTL12-SS-05-02	A12L294-08	Clay	1/9/2013	3.8		Yes	Y						pct
MBTL12-SS-05-02	A12L294-08	Percent retained 850 micron sieve (#20)	1/9/2013	0.01		Yes	Y						pct
MBTL12-SS-05-02	A12L294-08	Percent retained 75 micron sieve (#200)	1/9/2013	25.98		Yes	Y						pct
MBTL12-SS-05-02	A12L294-08	Percent retained 63 micron sieve (#230)	1/9/2013	11.43		Yes	Y						pct
MBTL12-SS-05-02	A12L294-08	Percent retained 4750 micron sieve (#4)	1/9/2013	0.17		Yes	Y						pct
MBTL12-SS-05-02	A12L294-08	Percent retained 425 micron sieve (#40)	1/9/2013	0.39		Yes	Y						pct
MBTL12-SS-05-02	A12L294-08	Percent retained 250 micron sieve (#60)	1/9/2013	1.05		Yes	Y						pct
MBTL12-SS-05-02	A12L294-08	Percent retained 2000 micron sieve (#10)	1/9/2013	0.15		Yes	Y						pct
MBTL12-SS-05-02	A12L294-08	Percent retained 150 micron sieve (#100)	1/9/2013	6.14		Yes	Y						pct
MBTL12-SS-05-10	A12L294-09	Clay	1/9/2013	3.9		Yes	Y						pct

Analytical Method D422M

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-05-10	A12L294-09	Percent retained 2000 micron sieve (#10)	1/9/2013	0.17		Yes	Y						pct
MBTL12-SS-05-10	A12L294-09	Percent retained 250 micron sieve (#60)	1/9/2013	1.04		Yes	Y						pct
MBTL12-SS-05-10	A12L294-09	Percent retained 150 micron sieve (#100)	1/9/2013	9.3		Yes	Y						pct
MBTL12-SS-05-10	A12L294-09	Percent retained 850 micron sieve (#20)	1/9/2013	0.03		Yes	Y						pct
MBTL12-SS-05-10	A12L294-09	Percent retained 106 micron sieve (#140)	1/9/2013	23.46		Yes	Y						pct
MBTL12-SS-05-10	A12L294-09	Percent retained 75 micron sieve (#200)	1/9/2013	28.18		Yes	Y						pct
MBTL12-SS-05-10	A12L294-09	Percent retained 63 micron sieve (#230)	1/9/2013	9.34		Yes	Y						pct
MBTL12-SS-05-10	A12L294-09	Percent retained 4750 micron sieve (#4)	1/9/2013	0.52		Yes	Y						pct
MBTL12-SS-05-10	A12L294-09	Silt	1/9/2013	33		Yes	Y						pct
MBTL12-SS-05-10	A12L294-09	Percent retained 425 micron sieve (#40)	1/9/2013	0.41		Yes	Y						pct
MBTL12-SS-11-02	A12L294-02	Clay	1/9/2013	3.8		Yes	Y						pct
MBTL12-SS-11-02	A12L294-02	Percent retained 850 micron sieve (#20)	1/9/2013	0.02		Yes	Y						pct
MBTL12-SS-11-02	A12L294-02	Percent retained 63 micron sieve (#230)	1/9/2013	13.28		Yes	Y						pct
MBTL12-SS-11-02	A12L294-02	Percent retained 75 micron sieve (#200)	1/9/2013	27.01		Yes	Y						pct
MBTL12-SS-11-02	A12L294-02	Silt	1/9/2013	54.8		Yes	Y						pct
MBTL12-SS-11-02	A12L294-02	Percent retained 4750 micron sieve (#4)	1/9/2013	0.06		Yes	Y						pct
MBTL12-SS-11-02	A12L294-02	Percent retained 425 micron sieve (#40)	1/9/2013	0.02		Yes	Y						pct
MBTL12-SS-11-02	A12L294-02	Percent retained 250 micron sieve (#60)	1/9/2013	0.15		Yes	Y						pct
MBTL12-SS-11-02	A12L294-02	Percent retained 2000 micron sieve (#10)	1/9/2013	0.17		Yes	Y						pct
MBTL12-SS-11-02	A12L294-02	Percent retained 150 micron sieve (#100)	1/9/2013	1.59		Yes	Y						pct
MBTL12-SS-11-02	A12L294-02	Percent retained 106 micron sieve (#140)	1/9/2013	12.34		Yes	Y						pct
MBTL12-SS-11-10	A12L294-03	Percent retained 63 micron sieve (#230)	1/9/2013	13.95		Yes	Y						pct
MBTL12-SS-11-10	A12L294-03	Clay	1/9/2013	4.2		Yes	Y						pct

Analytical Method D422M

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-11-10	A12L294-03	Percent retained 850 micron sieve (#20)	1/9/2013	0.01		Yes	Y						pct
MBTL12-SS-11-10	A12L294-03	Silt	1/9/2013	41.4		Yes	Y						pct
MBTL12-SS-11-10	A12L294-03	Percent retained 75 micron sieve (#200)	1/9/2013	32.36		Yes	Y						pct
MBTL12-SS-11-10	A12L294-03	Percent retained 425 micron sieve (#40)	1/9/2013	0.02		Yes	Y						pct
MBTL12-SS-11-10	A12L294-03	Percent retained 250 micron sieve (#60)	1/9/2013	0.23		Yes	Y						pct
MBTL12-SS-11-10	A12L294-03	Percent retained 2000 micron sieve (#10)	1/9/2013	0.11		Yes	Y						pct
MBTL12-SS-11-10	A12L294-03	Percent retained 150 micron sieve (#100)	1/9/2013	2.75		Yes	Y						pct
MBTL12-SS-11-10	A12L294-03	Percent retained 106 micron sieve (#140)	1/9/2013	18.48		Yes	Y						pct
MBTL12-SS-11-10	A12L294-03	Percent retained 4750 micron sieve (#4)	1/9/2013	0.4		Yes	Y						pct
MBTL12-SS-12-02	A12L294-04	Percent retained 75 micron sieve (#200)	1/9/2013	21.21		Yes	Y						pct
MBTL12-SS-12-02	A12L294-04	Percent retained 106 micron sieve (#140)	1/9/2013	21.58		Yes	Y						pct
MBTL12-SS-12-02	A12L294-04	Percent retained 150 micron sieve (#100)	1/9/2013	12.51		Yes	Y						pct
MBTL12-SS-12-02	A12L294-04	Percent retained 2000 micron sieve (#10)	1/9/2013	0.67		Yes	Y						pct
MBTL12-SS-12-02	A12L294-04	Percent retained 250 micron sieve (#60)	1/9/2013	5.78		Yes	Y						pct
MBTL12-SS-12-02	A12L294-04	Percent retained 425 micron sieve (#40)	1/9/2013	8.87		Yes	Y						pct
MBTL12-SS-12-02	A12L294-04	Silt	1/9/2013	24.6		Yes	Y						pct
MBTL12-SS-12-02	A12L294-04	Percent retained 63 micron sieve (#230)	1/9/2013	7.42		Yes	Y						pct
MBTL12-SS-12-02	A12L294-04	Percent retained 850 micron sieve (#20)	1/9/2013	2.25		Yes	Y						pct
MBTL12-SS-12-02	A12L294-04	Clay	1/9/2013	2.2		Yes	Y						pct
MBTL12-SS-12-02	A12L294-04	Percent retained 4750 micron sieve (#4)	1/9/2013	0.31		Yes	Y						pct
MBTL12-SS-12-10	A12L294-05	Percent retained 850 micron sieve (#20)	1/9/2013	3.48		Yes	Y						pct
MBTL12-SS-12-10	A12L294-05	Percent retained 4750 micron sieve (#4)	1/9/2013	0.57		Yes	Y						pct
MBTL12-SS-12-10	A12L294-05	Silt	1/9/2013	18.7		Yes	Y						pct

Analytical Method D422M

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-12-10	A12L294-05	Percent retained 106 micron sieve (#140)	1/9/2013	18.2		Yes	Y						pct
MBTL12-SS-12-10	A12L294-05	Percent retained 150 micron sieve (#100)	1/9/2013	16.22		Yes	Y						pct
MBTL12-SS-12-10	A12L294-05	Percent retained 2000 micron sieve (#10)	1/9/2013	0.71		Yes	Y						pct
MBTL12-SS-12-10	A12L294-05	Percent retained 425 micron sieve (#40)	1/9/2013	13.41		Yes	Y						pct
MBTL12-SS-12-10	A12L294-05	Clay	1/9/2013	4.7		Yes	Y						pct
MBTL12-SS-12-10	A12L294-05	Percent retained 63 micron sieve (#230)	1/9/2013	4.5		Yes	Y						pct
MBTL12-SS-12-10	A12L294-05	Percent retained 75 micron sieve (#200)	1/9/2013	15.32		Yes	Y						pct
MBTL12-SS-12-10	A12L294-05	Percent retained 250 micron sieve (#60)	1/9/2013	8.71		Yes	Y						pct
MBTL12-SS-13-02	A12L294-06	Percent retained 2000 micron sieve (#10)	1/9/2013	0.17		Yes	Y						pct
MBTL12-SS-13-02	A12L294-06	Percent retained 4750 micron sieve (#4)	1/9/2013	0		Yes	Y						pct
MBTL12-SS-13-02	A12L294-06	Percent retained 425 micron sieve (#40)	1/9/2013	0.02		Yes	Y						pct
MBTL12-SS-13-02	A12L294-06	Percent retained 250 micron sieve (#60)	1/9/2013	0.22		Yes	Y						pct
MBTL12-SS-13-02	A12L294-06	Percent retained 150 micron sieve (#100)	1/9/2013	1.96		Yes	Y						pct
MBTL12-SS-13-02	A12L294-06	Percent retained 850 micron sieve (#20)	1/9/2013	0.02		Yes	Y						pct
MBTL12-SS-13-02	A12L294-06	Silt	1/9/2013	51.6		Yes	Y						pct
MBTL12-SS-13-02	A12L294-06	Percent retained 75 micron sieve (#200)	1/9/2013	27.92		Yes	Y						pct
MBTL12-SS-13-02	A12L294-06	Clay	1/9/2013	4.6		Yes	Y						pct
MBTL12-SS-13-02	A12L294-06	Percent retained 106 micron sieve (#140)	1/9/2013	13.53		Yes	Y						pct
MBTL12-SS-13-02	A12L294-06	Percent retained 63 micron sieve (#230)	1/9/2013	12.87		Yes	Y						pct
MBTL12-SS-13-10	A12L294-07	Percent retained 106 micron sieve (#140)	1/9/2013	16.45		Yes	Y						pct
MBTL12-SS-13-10	A12L294-07	Percent retained 2000 micron sieve (#10)	1/9/2013	0.1		Yes	Y						pct
MBTL12-SS-13-10	A12L294-07	Silt	1/9/2013	45.6		Yes	Y						pct

Analytical Method D422M

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-13-10	A12L294-07	Clay	1/9/2013	4.5	Yes	Y						pct
MBTL12-SS-13-10	A12L294-07	Percent retained 63 micron sieve (#230)	1/9/2013	12.58	Yes	Y						pct
MBTL12-SS-13-10	A12L294-07	Percent retained 75 micron sieve (#200)	1/9/2013	30.57	Yes	Y						pct
MBTL12-SS-13-10	A12L294-07	Percent retained 150 micron sieve (#100)	1/9/2013	2.51	Yes	Y						pct
MBTL12-SS-13-10	A12L294-07	Percent retained 850 micron sieve (#20)	1/9/2013	0	Yes	Y						pct
MBTL12-SS-13-10	A12L294-07	Percent retained 250 micron sieve (#60)	1/9/2013	0.2	Yes	Y						pct
MBTL12-SS-13-10	A12L294-07	Percent retained 425 micron sieve (#40)	1/9/2013	0.02	Yes	Y						pct
MBTL12-SS-13-10	A12L294-07	Percent retained 4750 micron sieve (#4)	1/9/2013	0	Yes	Y						pct
MBTL12-SS-54-10	A12L294-01	Percent retained 2000 micron sieve (#10)	1/9/2013	0.15	Yes	Y						pct
MBTL12-SS-54-10	A12L294-01	Silt	1/9/2013	34.3	Yes	Y						pct
MBTL12-SS-54-10	A12L294-01	Clay	1/9/2013	14.3	Yes	Y						pct
MBTL12-SS-54-10	A12L294-01	Percent retained 850 micron sieve (#20)	1/9/2013	0.06	Yes	Y						pct
MBTL12-SS-54-10	A12L294-01	Percent retained 75 micron sieve (#200)	1/9/2013	17.29	Yes	Y						pct
MBTL12-SS-54-10	A12L294-01	Percent retained 106 micron sieve (#140)	1/9/2013	20.28	Yes	Y						pct
MBTL12-SS-54-10	A12L294-01	Percent retained 150 micron sieve (#100)	1/9/2013	12.96	Yes	Y						pct
MBTL12-SS-54-10	A12L294-01	Percent retained 250 micron sieve (#60)	1/9/2013	0.44	Yes	Y						pct
MBTL12-SS-54-10	A12L294-01	Percent retained 4750 micron sieve (#4)	1/9/2013	0.04	Yes	Y						pct
MBTL12-SS-54-10	A12L294-01	Percent retained 63 micron sieve (#230)	1/9/2013	5.4	Yes	Y						pct
MBTL12-SS-54-10	A12L294-01	Percent retained 425 micron sieve (#40)	1/9/2013	0.16	Yes	Y						pct

Analytical Method Plumb 1981

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-05-02	A12L294-08	Ammonia as nitrogen	12/19/2012	2.06	Yes	Y	D			0.296	0.148	mg/kg
MBTL12-SS-05-10	A12L294-09	Ammonia as nitrogen	12/19/2012	2.52	Yes	Y	D			0.292	0.146	mg/kg

Analytical Method Plumb 1981

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-11-02	A12L294-02	Ammonia as nitrogen	12/19/2012	2.14	Yes	Y	D			0.276	0.138	mg/kg
MBTL12-SS-11-10	A12L294-03	Ammonia as nitrogen	12/19/2012	1.91	Yes	Y	D			0.286	0.143	mg/kg
MBTL12-SS-12-02	A12L294-04	Ammonia as nitrogen	12/19/2012	2.38	Yes	Y	D			0.277	0.138	mg/kg
MBTL12-SS-12-10	A12L294-05	Ammonia as nitrogen	12/19/2012	3.79	Yes	Y	D			0.271	0.135	mg/kg
MBTL12-SS-13-02	A12L294-06	Ammonia as nitrogen	12/19/2012	2.18	Yes	Y	D			0.299	0.150	mg/kg
MBTL12-SS-13-10	A12L294-07	Ammonia as nitrogen	12/19/2012	2.35	Yes	Y	D			0.290	0.145	mg/kg
MBTL12-SS-54-10	A12L294-01	Ammonia as nitrogen	12/19/2012	23.7	Yes	Y	D			1.50	0.749	mg/kg

Analytical Method SM2540G

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-05-02	A12L294-08	Total solids	12/20/2012	67	Yes	Y				1.00	1.00	pct
MBTL12-SS-05-10	A12L294-09	Total solids	12/20/2012	68.4	Yes	Y				1.00	1.00	pct
MBTL12-SS-11-02	A12L294-02	Total solids	12/20/2012	71.8	Yes	Y				1.00	1.00	pct
MBTL12-SS-11-10	A12L294-03	Total solids	12/20/2012	69.2	Yes	Y				1.00	1.00	pct
MBTL12-SS-12-02	A12L294-04	Total solids	12/20/2012	71.9	Yes	Y				1.00	1.00	pct
MBTL12-SS-12-10	A12L294-05	Total solids	12/20/2012	72.8	Yes	Y				1.00	1.00	pct
MBTL12-SS-13-02	A12L294-06	Total solids	12/20/2012	66.6	Yes	Y				1.00	1.00	pct
MBTL12-SS-13-10	A12L294-07	Total solids	12/20/2012	68.8	Yes	Y				1.00	1.00	pct
MBTL12-SS-54-10	A12L294-01	Total solids	12/20/2012	65.9	Yes	Y				1.00	1.00	pct

Analytical Method SM4500CNE

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-05-02	A12L294-08	Cyanide, total	12/21/2012	0.321	Yes	N	U			0.321	0.321	mg/kg
MBTL12-SS-05-10	A12L294-09	Cyanide, total	12/21/2012	0.335	Yes	N	U			0.335	0.335	mg/kg
MBTL12-SS-11-02	A12L294-02	Cyanide, total	12/21/2012	0.316	Yes	N	U			0.316	0.316	mg/kg
MBTL12-SS-11-10	A12L294-03	Cyanide, total	12/21/2012	0.36	Yes	N	U			0.360	0.360	mg/kg
MBTL12-SS-12-02	A12L294-04	Cyanide, total	12/21/2012	0.313	Yes	N	U			0.313	0.313	mg/kg

Analytical Method SM4500CNE

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-12-10	A12L294-05	Cyanide, total	12/21/2012	0.328		Yes	N	U			0.328	0.328	mg/kg
MBTL12-SS-13-02	A12L294-06	Cyanide, total	12/21/2012	0.365		Yes	N	U			0.365	0.365	mg/kg
MBTL12-SS-13-10	A12L294-07	Cyanide, total	12/21/2012	0.361		Yes	N	U			0.361	0.361	mg/kg
MBTL12-SS-54-10	A12L294-01	Cyanide, total	12/21/2012	0.357		Yes	N	U			0.357	0.357	mg/kg

Analytical Method SM4500FC

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-05-02	A12L294-08	Fluoride	12/21/2012	129		Yes	Y		J	8	29.6	29.6	mg/kg
MBTL12-SS-05-10	A12L294-09	Fluoride	12/21/2012	132		Yes	Y		J	8	28.3	28.3	mg/kg
MBTL12-SS-11-02	A12L294-02	Fluoride	12/21/2012	119		Yes	Y		J	8	26.8	26.8	mg/kg
MBTL12-SS-11-10	A12L294-03	Fluoride	12/21/2012	121		Yes	Y		J	8	27.7	27.7	mg/kg
MBTL12-SS-12-02	A12L294-04	Fluoride	12/21/2012	148		Yes	Y		J	8	26.4	26.4	mg/kg
MBTL12-SS-12-10	A12L294-05	Fluoride	12/21/2012	145		Yes	Y		J	8	25.3	25.3	mg/kg
MBTL12-SS-13-02	A12L294-06	Fluoride	12/21/2012	137		Yes	Y		J	8	29.6	29.6	mg/kg
MBTL12-SS-13-10	A12L294-07	Fluoride	12/21/2012	129		Yes	Y		J	8	28.2	28.2	mg/kg
MBTL12-SS-54-10	A12L294-01	Fluoride	12/21/2012	182		Yes	Y		J	8	27.8	27.8	mg/kg

Analytical Method SM5310B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-05-02	A12L294-08	Total organic carbon	12/21/2012	0.37		Yes	Y				0.020	0.010	pct
MBTL12-SS-05-10	A12L294-09	Total organic carbon	12/21/2012	0.31		Yes	Y				0.020	0.010	pct
MBTL12-SS-11-02	A12L294-02	Total organic carbon	12/20/2012	0.36		Yes	Y				0.020	0.010	pct
MBTL12-SS-11-10	A12L294-03	Total organic carbon	12/20/2012	0.38		Yes	Y				0.020	0.010	pct
MBTL12-SS-12-02	A12L294-04	Total organic carbon	12/20/2012	0.2		Yes	Y				0.020	0.010	pct
MBTL12-SS-12-10	A12L294-05	Total organic carbon	12/21/2012	0.3		Yes	Y				0.020	0.010	pct
MBTL12-SS-13-02	A12L294-06	Total organic carbon	12/21/2012	0.37		Yes	Y				0.020	0.010	pct
MBTL12-SS-13-10	A12L294-07	Total organic carbon	12/21/2012	0.36		Yes	Y				0.020	0.010	pct

Analytical Method SM5310B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-54-10	A12L294-01	Total organic carbon	12/20/2012	0.8		Yes	Y				0.020	0.010	pct

Analytical Method SW6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-05-02	A12L294-08	Aluminum	12/20/2012	5810		Yes	Y	D			38.5	19.3	mg/kg
MBTL12-SS-05-10	A12L294-09	Aluminum	12/20/2012	4980		Yes	Y	D			39.0	19.5	mg/kg
MBTL12-SS-11-02	A12L294-02	Aluminum	12/20/2012	5530		Yes	Y	D			34.4	17.2	mg/kg
MBTL12-SS-11-10	A12L294-03	Aluminum	12/20/2012	4840		Yes	Y	D			36.3	18.1	mg/kg
MBTL12-SS-12-02	A12L294-04	Aluminum	12/20/2012	6380		Yes	Y	D			35.8	17.9	mg/kg
MBTL12-SS-12-10	A12L294-05	Aluminum	12/20/2012	5870		Yes	Y	D			36.0	18.0	mg/kg
MBTL12-SS-13-02	A12L294-06	Aluminum	12/20/2012	5780		Yes	Y	D			41.3	20.6	mg/kg
MBTL12-SS-13-10	A12L294-07	Aluminum	12/20/2012	5380		Yes	Y	D			34.5	17.3	mg/kg
MBTL12-SS-54-10	A12L294-01	Aluminum	12/20/2012	8990		Yes	Y	D			39.0	19.5	mg/kg

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-05-02	A12L294-08	Aroclor 1260	12/19/2012	5.54		Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-05-02	A12L294-08	Aroclor 1016	12/19/2012	5.54		Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-05-02	A12L294-08	Aroclor 1248	12/19/2012	5.54		Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-05-02	A12L294-08	Aroclor 1232	12/19/2012	5.54		Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-05-02	A12L294-08	Aroclor 1221	12/19/2012	5.54		Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-05-02	A12L294-08	Aroclor 1268	12/19/2012	5.54		Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-05-02	A12L294-08	Aroclor 1254	12/19/2012	5.54		Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-05-02	A12L294-08	Aroclor 1262	12/19/2012	5.54		Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-05-02	A12L294-08	Aroclor 1242	12/19/2012	5.54		Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-05-10	A12L294-09	Aroclor 1260	12/19/2012	5.85		Yes	N	U			5.85	2.92	ug/kg
MBTL12-SS-05-10	A12L294-09	Aroclor 1268	12/19/2012	5.85		Yes	N	U			5.85	2.92	ug/kg

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-05-10	A12L294-09	Aroclor 1221	12/19/2012	5.85	Yes	N	U			5.85	2.92	ug/kg
MBTL12-SS-05-10	A12L294-09	Aroclor 1232	12/19/2012	5.85	Yes	N	U			5.85	2.92	ug/kg
MBTL12-SS-05-10	A12L294-09	Aroclor 1248	12/19/2012	5.85	Yes	N	U			5.85	2.92	ug/kg
MBTL12-SS-05-10	A12L294-09	Aroclor 1016	12/19/2012	5.85	Yes	N	U			5.85	2.92	ug/kg
MBTL12-SS-05-10	A12L294-09	Aroclor 1242	12/19/2012	5.85	Yes	N	U			5.85	2.92	ug/kg
MBTL12-SS-05-10	A12L294-09	Aroclor 1254	12/19/2012	5.85	Yes	N	U			5.85	2.92	ug/kg
MBTL12-SS-05-10	A12L294-09	Aroclor 1262	12/19/2012	5.85	Yes	N	U			5.85	2.92	ug/kg
MBTL12-SS-11-02	A12L294-02	Aroclor 1260	12/19/2012	5.54	Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-11-02	A12L294-02	Aroclor 1254	12/19/2012	5.54	Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-11-02	A12L294-02	Aroclor 1016	12/19/2012	5.54	Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-11-02	A12L294-02	Aroclor 1268	12/19/2012	5.54	Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-11-02	A12L294-02	Aroclor 1242	12/19/2012	5.54	Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-11-02	A12L294-02	Aroclor 1262	12/19/2012	5.54	Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-11-02	A12L294-02	Aroclor 1232	12/19/2012	5.54	Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-11-02	A12L294-02	Aroclor 1221	12/19/2012	5.54	Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-11-02	A12L294-02	Aroclor 1248	12/19/2012	5.54	Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-11-10	A12L294-03	Aroclor 1268	12/19/2012	5.67	Yes	N	U			5.67	2.83	ug/kg
MBTL12-SS-11-10	A12L294-03	Aroclor 1221	12/19/2012	5.67	Yes	N	U			5.67	2.83	ug/kg
MBTL12-SS-11-10	A12L294-03	Aroclor 1232	12/19/2012	5.67	Yes	N	U			5.67	2.83	ug/kg
MBTL12-SS-11-10	A12L294-03	Aroclor 1260	12/19/2012	5.67	Yes	N	U			5.67	2.83	ug/kg
MBTL12-SS-11-10	A12L294-03	Aroclor 1248	12/19/2012	5.67	Yes	N	U			5.67	2.83	ug/kg
MBTL12-SS-11-10	A12L294-03	Aroclor 1016	12/19/2012	5.67	Yes	N	U			5.67	2.83	ug/kg
MBTL12-SS-11-10	A12L294-03	Aroclor 1262	12/19/2012	5.67	Yes	N	U			5.67	2.83	ug/kg
MBTL12-SS-11-10	A12L294-03	Aroclor 1254	12/19/2012	5.67	Yes	N	U			5.67	2.83	ug/kg
MBTL12-SS-11-10	A12L294-03	Aroclor 1242	12/19/2012	5.67	Yes	N	U			5.67	2.83	ug/kg

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-12-02	A12L294-04RE1	Aroclor 1248	12/21/2012	3.75		Yes	Y	J			5.34	2.67	ug/kg
MBTL12-SS-12-02	A12L294-04RE1	Aroclor 1232	12/21/2012	5.34		Yes	N	U			5.34	2.67	ug/kg
MBTL12-SS-12-02	A12L294-04RE1	Aroclor 1221	12/21/2012	5.34		Yes	N	U			5.34	2.67	ug/kg
MBTL12-SS-12-02	A12L294-04RE1	Aroclor 1254	12/21/2012	2.69		Yes	Y	J			5.34	2.67	ug/kg
MBTL12-SS-12-02	A12L294-04RE1	Aroclor 1016	12/21/2012	5.34		Yes	N	U			5.34	2.67	ug/kg
MBTL12-SS-12-02	A12L294-04RE1	Aroclor 1268	12/21/2012	5.34		Yes	N	U			5.34	2.67	ug/kg
MBTL12-SS-12-02	A12L294-04RE1	Aroclor 1242	12/21/2012	5.34		Yes	N	U			5.34	2.67	ug/kg
MBTL12-SS-12-02	A12L294-04RE1	Aroclor 1260	12/21/2012	5.34		Yes	N	U			5.34	2.67	ug/kg
MBTL12-SS-12-02	A12L294-04RE1	Aroclor 1262	12/21/2012	5.34		Yes	N	U			5.34	2.67	ug/kg
MBTL12-SS-12-10	A12L294-05	Aroclor 1254	12/19/2012	12.2		Yes	Y				5.48	2.74	ug/kg
MBTL12-SS-12-10	A12L294-05	Aroclor 1260	12/19/2012	8.97		Yes	Y				5.48	2.74	ug/kg
MBTL12-SS-12-10	A12L294-05	Aroclor 1232	12/19/2012	5.48		Yes	N	U			5.48	2.74	ug/kg
MBTL12-SS-12-10	A12L294-05	Aroclor 1221	12/19/2012	5.48		Yes	N	U			5.48	2.74	ug/kg
MBTL12-SS-12-10	A12L294-05	Aroclor 1268	12/19/2012	5.48		Yes	N	U			5.48	2.74	ug/kg
MBTL12-SS-12-10	A12L294-05	Aroclor 1242	12/19/2012	5.48		Yes	N	U			5.48	2.74	ug/kg
MBTL12-SS-12-10	A12L294-05	Aroclor 1248	12/19/2012	17.8		Yes	Y				5.48	2.74	ug/kg
MBTL12-SS-12-10	A12L294-05	Aroclor 1262	12/19/2012	5.48		Yes	N	U			5.48	2.74	ug/kg
MBTL12-SS-12-10	A12L294-05	Aroclor 1016	12/19/2012	5.48		Yes	N	U			5.48	2.74	ug/kg
MBTL12-SS-13-02	A12L294-06	Aroclor 1248	12/19/2012	5.73		Yes	N	U			5.73	2.86	ug/kg
MBTL12-SS-13-02	A12L294-06	Aroclor 1242	12/19/2012	5.73		Yes	N	U			5.73	2.86	ug/kg
MBTL12-SS-13-02	A12L294-06	Aroclor 1016	12/19/2012	5.73		Yes	N	U			5.73	2.86	ug/kg
MBTL12-SS-13-02	A12L294-06	Aroclor 1232	12/19/2012	5.73		Yes	N	U			5.73	2.86	ug/kg
MBTL12-SS-13-02	A12L294-06	Aroclor 1221	12/19/2012	5.73		Yes	N	U			5.73	2.86	ug/kg
MBTL12-SS-13-02	A12L294-06	Aroclor 1268	12/19/2012	5.73		Yes	N	U			5.73	2.86	ug/kg
MBTL12-SS-13-02	A12L294-06	Aroclor 1254	12/19/2012	5.73		Yes	N	U			5.73	2.86	ug/kg

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-13-02	A12L294-06	Aroclor 1260	12/19/2012	5.73		Yes	N	U			5.73	2.86	ug/kg
MBTL12-SS-13-02	A12L294-06	Aroclor 1262	12/19/2012	5.73		Yes	N	U			5.73	2.86	ug/kg
MBTL12-SS-13-10	A12L294-07	Aroclor 1232	12/19/2012	5.54		Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-13-10	A12L294-07	Aroclor 1242	12/19/2012	5.54		Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-13-10	A12L294-07	Aroclor 1221	12/19/2012	5.54		Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-13-10	A12L294-07	Aroclor 1268	12/19/2012	5.54		Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-13-10	A12L294-07	Aroclor 1254	12/19/2012	3.75		Yes	Y	J			5.54	2.77	ug/kg
MBTL12-SS-13-10	A12L294-07	Aroclor 1248	12/19/2012	5.54		Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-13-10	A12L294-07	Aroclor 1262	12/19/2012	5.54		Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-13-10	A12L294-07	Aroclor 1260	12/19/2012	5.54		Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-13-10	A12L294-07	Aroclor 1016	12/19/2012	5.54		Yes	N	U			5.54	2.77	ug/kg
MBTL12-SS-54-10	A12L294-01	Aroclor 1248	12/19/2012	8.57		Yes	N	U			8.57	4.29	ug/kg
MBTL12-SS-54-10	A12L294-01	Aroclor 1268	12/19/2012	8.57		Yes	N	U			8.57	4.29	ug/kg
MBTL12-SS-54-10	A12L294-01	Aroclor 1262	12/19/2012	8.57		Yes	N	U			8.57	4.29	ug/kg
MBTL12-SS-54-10	A12L294-01	Aroclor 1254	12/19/2012	8.57		Yes	N	U			8.57	4.29	ug/kg
MBTL12-SS-54-10	A12L294-01	Aroclor 1242	12/19/2012	8.57		Yes	N	U			8.57	4.29	ug/kg
MBTL12-SS-54-10	A12L294-01	Aroclor 1221	12/19/2012	8.57		Yes	N	U			8.57	4.29	ug/kg
MBTL12-SS-54-10	A12L294-01	Aroclor 1232	12/19/2012	8.57		Yes	N	U			8.57	4.29	ug/kg
MBTL12-SS-54-10	A12L294-01	Aroclor 1016	12/19/2012	8.57		Yes	N	U			8.57	4.29	ug/kg
MBTL12-SS-54-10	A12L294-01	Aroclor 1260	12/19/2012	8.57		Yes	N	U			8.57	4.29	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-05-02	A12L294-08	2-Methylnaphthalene	12/20/2012	14		Yes	N	U			14.0	7.02	ug/kg
MBTL12-SS-05-02	A12L294-08	Benzo(a)anthracene	12/20/2012	7.27		Yes	Y	J			14.0	7.02	ug/kg
MBTL12-SS-05-02	A12L294-08	Acenaphthene	12/20/2012	14		Yes	N	U			14.0	7.02	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-05-02	A12L294-08	Phenanthrene	12/20/2012	7.6	Yes	Y	J			14.0	7.02	ug/kg
MBTL12-SS-05-02	A12L294-08	Fluorene	12/20/2012	14	Yes	N	U			14.0	7.02	ug/kg
MBTL12-SS-05-02	A12L294-08	1-Methylnaphthalene	12/20/2012	14	Yes	N	U			14.0	7.02	ug/kg
MBTL12-SS-05-02	A12L294-08	Benzo(g,h,i)perylene	12/20/2012	14	Yes	N	U			14.0	7.02	ug/kg
MBTL12-SS-05-02	A12L294-08	Benzo(k)fluoranthene	12/20/2012	14	Yes	N	U			14.0	7.02	ug/kg
MBTL12-SS-05-02	A12L294-08	Dibenzo(a,h)anthracene	12/20/2012	14	Yes	N	U			14.0	7.02	ug/kg
MBTL12-SS-05-02	A12L294-08	Naphthalene	12/20/2012	14	Yes	N	U			14.0	7.02	ug/kg
MBTL12-SS-05-02	A12L294-08	Anthracene	12/20/2012	14	Yes	N	U			14.0	7.02	ug/kg
MBTL12-SS-05-02	A12L294-08	Pyrene	12/20/2012	10.1	Yes	Y	J			14.0	7.02	ug/kg
MBTL12-SS-05-02	A12L294-08	Dibenzofuran	12/20/2012	14	Yes	N	U			14.0	7.02	ug/kg
MBTL12-SS-05-02	A12L294-08	Indeno(1,2,3-c,d)pyrene	12/20/2012	14	Yes	N	U			14.0	7.02	ug/kg
MBTL12-SS-05-02	A12L294-08	Benzo(a)pyrene	12/20/2012	14	Yes	N	U			14.0	7.02	ug/kg
MBTL12-SS-05-02	A12L294-08	Fluoranthene	12/20/2012	10.8	Yes	Y	J			14.0	7.02	ug/kg
MBTL12-SS-05-02	A12L294-08	Acenaphthylene	12/20/2012	14	Yes	N	U			14.0	7.02	ug/kg
MBTL12-SS-05-02	A12L294-08	Chrysene	12/20/2012	14	Yes	N	U			14.0	7.02	ug/kg
MBTL12-SS-05-02	A12L294-08	Benzo(b)fluoranthene	12/20/2012	14	Yes	N	U			14.0	7.02	ug/kg
MBTL12-SS-05-10	A12L294-09	Anthracene	12/20/2012	11.2	Yes	Y	J			14.2	7.08	ug/kg
MBTL12-SS-05-10	A12L294-09	Pyrene	12/20/2012	50.7	Yes	Y				14.2	7.08	ug/kg
MBTL12-SS-05-10	A12L294-09	Dibenzofuran	12/20/2012	14.2	Yes	N	U			14.2	7.08	ug/kg
MBTL12-SS-05-10	A12L294-09	Benzo(g,h,i)perylene	12/20/2012	14.2	Yes	N	U			14.2	7.08	ug/kg
MBTL12-SS-05-10	A12L294-09	Indeno(1,2,3-c,d)pyrene	12/20/2012	14.2	Yes	N	U			14.2	7.08	ug/kg
MBTL12-SS-05-10	A12L294-09	Fluoranthene	12/20/2012	65.3	Yes	Y				14.2	7.08	ug/kg
MBTL12-SS-05-10	A12L294-09	Acenaphthylene	12/20/2012	14.2	Yes	N	U			14.2	7.08	ug/kg
MBTL12-SS-05-10	A12L294-09	Chrysene	12/20/2012	24.7	Yes	Y				14.2	7.08	ug/kg
MBTL12-SS-05-10	A12L294-09	Benzo(a)pyrene	12/20/2012	14.2	Yes	N	U			14.2	7.08	ug/kg

SDG: A12L294

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-05-10	A12L294-09	Dibenzo(a,h)anthracene	12/20/2012	14.2	Yes	N	U			14.2	7.08	ug/kg
MBTL12-SS-05-10	A12L294-09	Benzo(a)anthracene	12/20/2012	12.4	Yes	Y	J			14.2	7.08	ug/kg
MBTL12-SS-05-10	A12L294-09	Benzo(b,k)fluoranthene	12/20/2012	16.2	Yes	Y	J			28.3	14.2	ug/kg
MBTL12-SS-05-10	A12L294-09	2-Methylnaphthalene	12/20/2012	14.2	Yes	N	U			14.2	7.08	ug/kg
MBTL12-SS-05-10	A12L294-09	Naphthalene	12/20/2012	14.2	Yes	N	U			14.2	7.08	ug/kg
MBTL12-SS-05-10	A12L294-09	1-Methylnaphthalene	12/20/2012	14.2	Yes	N	U			14.2	7.08	ug/kg
MBTL12-SS-05-10	A12L294-09	Fluorene	12/20/2012	14.2	Yes	N	U			14.2	7.08	ug/kg
MBTL12-SS-05-10	A12L294-09	Phenanthrene	12/20/2012	33.5	Yes	Y				14.2	7.08	ug/kg
MBTL12-SS-05-10	A12L294-09	Acenaphthene	12/20/2012	14.2	Yes	N	U			14.2	7.08	ug/kg
MBTL12-SS-11-02	A12L294-02	1-Methylnaphthalene	12/20/2012	13.9	Yes	N	U			13.9	6.94	ug/kg
MBTL12-SS-11-02	A12L294-02	Indeno(1,2,3-c,d)pyrene	12/20/2012	7.64	Yes	Y	J			13.9	6.94	ug/kg
MBTL12-SS-11-02	A12L294-02	Anthracene	12/20/2012	8.87	Yes	Y	J			13.9	6.94	ug/kg
MBTL12-SS-11-02	A12L294-02	Pyrene	12/20/2012	126	Yes	Y				13.9	6.94	ug/kg
MBTL12-SS-11-02	A12L294-02	Benzo(g,h,i)perylene	12/20/2012	13.9	Yes	N	U			13.9	6.94	ug/kg
MBTL12-SS-11-02	A12L294-02	Fluoranthene	12/20/2012	161	Yes	Y				13.9	6.94	ug/kg
MBTL12-SS-11-02	A12L294-02	Acenaphthylene	12/20/2012	13.9	Yes	N	U			13.9	6.94	ug/kg
MBTL12-SS-11-02	A12L294-02	Chrysene	12/20/2012	51.8	Yes	Y				13.9	6.94	ug/kg
MBTL12-SS-11-02	A12L294-02	Benzo(a)pyrene	12/20/2012	14.7	Yes	Y				13.9	6.94	ug/kg
MBTL12-SS-11-02	A12L294-02	Dibenzo(a,h)anthracene	12/20/2012	13.9	Yes	N	U			13.9	6.94	ug/kg
MBTL12-SS-11-02	A12L294-02	Benzo(b,k)fluoranthene	12/20/2012	40.6	Yes	Y				27.8	13.9	ug/kg
MBTL12-SS-11-02	A12L294-02	2-Methylnaphthalene	12/20/2012	13.9	Yes	N	U			13.9	6.94	ug/kg
MBTL12-SS-11-02	A12L294-02	Acenaphthene	12/20/2012	13.9	Yes	N	U			13.9	6.94	ug/kg
MBTL12-SS-11-02	A12L294-02	Phenanthrene	12/20/2012	44.1	Yes	Y				13.9	6.94	ug/kg
MBTL12-SS-11-02	A12L294-02	Fluorene	12/20/2012	8.55	Yes	Y	J			13.9	6.94	ug/kg
MBTL12-SS-11-02	A12L294-02	Naphthalene	12/20/2012	13.9	Yes	N	U			13.9	6.94	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-11-02	A12L294-02	Benzo(a)anthracene	12/20/2012	40.7		Yes	Y				13.9	6.94	ug/kg
MBTL12-SS-11-02	A12L294-02	Dibenzofuran	12/20/2012	13.9		Yes	N	U			13.9	6.94	ug/kg
MBTL12-SS-11-10	A12L294-03	Acenaphthylene	12/20/2012	13.3		Yes	N	U			13.3	6.63	ug/kg
MBTL12-SS-11-10	A12L294-03	Benzo(a)pyrene	12/20/2012	11.2		Yes	Y	J			13.3	6.63	ug/kg
MBTL12-SS-11-10	A12L294-03	Dibenzo(a,h)anthracene	12/20/2012	13.3		Yes	N	U			13.3	6.63	ug/kg
MBTL12-SS-11-10	A12L294-03	Benzo(a)anthracene	12/20/2012	12.7		Yes	Y	J			13.3	6.63	ug/kg
MBTL12-SS-11-10	A12L294-03	Acenaphthene	12/20/2012	13.3		Yes	N	U			13.3	6.63	ug/kg
MBTL12-SS-11-10	A12L294-03	Phenanthrene	12/20/2012	13		Yes	Y	J			13.3	6.63	ug/kg
MBTL12-SS-11-10	A12L294-03	Fluorene	12/20/2012	13.3		Yes	N	U			13.3	6.63	ug/kg
MBTL12-SS-11-10	A12L294-03	1-Methylnaphthalene	12/20/2012	13.3		Yes	N	U			13.3	6.63	ug/kg
MBTL12-SS-11-10	A12L294-03	2-Methylnaphthalene	12/20/2012	13.3		Yes	N	U			13.3	6.63	ug/kg
MBTL12-SS-11-10	A12L294-03	Indeno(1,2,3-c,d)pyrene	12/20/2012	9.05		Yes	Y	J			13.3	6.63	ug/kg
MBTL12-SS-11-10	A12L294-03	Fluoranthene	12/20/2012	18.4		Yes	Y				13.3	6.63	ug/kg
MBTL12-SS-11-10	A12L294-03	Benzo(b,k)fluoranthene	12/20/2012	27.6		Yes	Y				26.5	13.3	ug/kg
MBTL12-SS-11-10	A12L294-03	Naphthalene	12/20/2012	13.3		Yes	N	U			13.3	6.63	ug/kg
MBTL12-SS-11-10	A12L294-03	Dibenzofuran	12/20/2012	13.3		Yes	N	U			13.3	6.63	ug/kg
MBTL12-SS-11-10	A12L294-03	Pyrene	12/20/2012	17.4		Yes	Y				13.3	6.63	ug/kg
MBTL12-SS-11-10	A12L294-03	Anthracene	12/20/2012	13.3		Yes	N	U			13.3	6.63	ug/kg
MBTL12-SS-11-10	A12L294-03	Chrysene	12/20/2012	29		Yes	Y				13.3	6.63	ug/kg
MBTL12-SS-11-10	A12L294-03	Benzo(g,h,i)perylene	12/20/2012	8.97		Yes	Y	J			13.3	6.63	ug/kg
MBTL12-SS-12-02	A12L294-04	Benzo(a)pyrene	12/20/2012	12700		Yes	Y	D			274	137	ug/kg
MBTL12-SS-12-02	A12L294-04	Anthracene	12/20/2012	1550		Yes	Y	D			274	137	ug/kg
MBTL12-SS-12-02	A12L294-04	Pyrene	12/20/2012	13200		Yes	Y	D			274	137	ug/kg
MBTL12-SS-12-02	A12L294-04	Dibenzofuran	12/20/2012	174		Yes	Y	D J			274	137	ug/kg
MBTL12-SS-12-02	A12L294-04	Benzo(g,h,i)perylene	12/20/2012	8310		Yes	Y	D			274	137	ug/kg

SDG: A12L294

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-12-02	A12L294-04	Indeno(1,2,3-c,d)pyrene	12/20/2012	8580	Yes	Y	D			274	137	ug/kg
MBTL12-SS-12-02	A12L294-04	Fluoranthene	12/20/2012	13200	Yes	Y	D			274	137	ug/kg
MBTL12-SS-12-02	A12L294-04	Acenaphthylene	12/20/2012	274	Yes	N	D U			274	137	ug/kg
MBTL12-SS-12-02	A12L294-04	Chrysene	12/20/2012	9620	Yes	Y	D			274	137	ug/kg
MBTL12-SS-12-02	A12L294-04	Benzo(a)anthracene	12/20/2012	8180	Yes	Y	D			274	137	ug/kg
MBTL12-SS-12-02	A12L294-04	2-Methylnaphthalene	12/20/2012	274	Yes	N	D U			274	137	ug/kg
MBTL12-SS-12-02	A12L294-04	Naphthalene	12/20/2012	274	Yes	N	D U			274	137	ug/kg
MBTL12-SS-12-02	A12L294-04	1-Methylnaphthalene	12/20/2012	274	Yes	N	D U			274	137	ug/kg
MBTL12-SS-12-02	A12L294-04	Fluorene	12/20/2012	400	Yes	Y	D			274	137	ug/kg
MBTL12-SS-12-02	A12L294-04	Phenanthrene	12/20/2012	4360	Yes	Y	D			274	137	ug/kg
MBTL12-SS-12-02	A12L294-04	Acenaphthene	12/20/2012	750	Yes	Y	D			274	137	ug/kg
MBTL12-SS-12-02	A12L294-04	Dibenzo(a,h)anthracene	12/20/2012	1470	Yes	Y	D			274	137	ug/kg
MBTL12-SS-12-02	A12L294-04	Benzo(b,k)fluoranthene	12/20/2012	18600	Yes	Y	D			547	274	ug/kg
MBTL12-SS-12-10	A12L294-05	Benzo(b,k)fluoranthene	12/20/2012	17100	Yes	Y	D			549	275	ug/kg
MBTL12-SS-12-10	A12L294-05	Benzo(a)pyrene	12/20/2012	11900	Yes	Y	D			275	137	ug/kg
MBTL12-SS-12-10	A12L294-05	Dibenzo(a,h)anthracene	12/20/2012	1470	Yes	Y	D			275	137	ug/kg
MBTL12-SS-12-10	A12L294-05	Benzo(a)anthracene	12/20/2012	6520	Yes	Y	D			275	137	ug/kg
MBTL12-SS-12-10	A12L294-05	Acenaphthene	12/20/2012	521	Yes	Y	D			275	137	ug/kg
MBTL12-SS-12-10	A12L294-05	Phenanthrene	12/20/2012	3400	Yes	Y	D			275	137	ug/kg
MBTL12-SS-12-10	A12L294-05	Fluorene	12/20/2012	268	Yes	Y	D J			275	137	ug/kg
MBTL12-SS-12-10	A12L294-05	1-Methylnaphthalene	12/20/2012	275	Yes	N	D U			275	137	ug/kg
MBTL12-SS-12-10	A12L294-05	Naphthalene	12/20/2012	275	Yes	N	D U			275	137	ug/kg
MBTL12-SS-12-10	A12L294-05	Acenaphthylene	12/20/2012	275	Yes	N	D U			275	137	ug/kg
MBTL12-SS-12-10	A12L294-05	2-Methylnaphthalene	12/20/2012	275	Yes	N	D U			275	137	ug/kg
MBTL12-SS-12-10	A12L294-05	Fluoranthene	12/20/2012	8890	Yes	Y	D			275	137	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-12-10	A12L294-05	Chrysene	12/20/2012	7560		Yes	Y	D			275	137	ug/kg
MBTL12-SS-12-10	A12L294-05	Anthracene	12/20/2012	1120		Yes	Y	D			275	137	ug/kg
MBTL12-SS-12-10	A12L294-05	Pyrene	12/20/2012	8750		Yes	Y	D			275	137	ug/kg
MBTL12-SS-12-10	A12L294-05	Dibenzofuran	12/20/2012	275		Yes	N	D U			275	137	ug/kg
MBTL12-SS-12-10	A12L294-05	Benzo(g,h,i)perylene	12/20/2012	7680		Yes	Y	D			275	137	ug/kg
MBTL12-SS-12-10	A12L294-05	Indeno(1,2,3-c,d)pyrene	12/20/2012	8190		Yes	Y	D			275	137	ug/kg
MBTL12-SS-13-02	A12L294-06	Benzo(k)fluoranthene	12/20/2012	14.6		Yes	N	U			14.6	7.32	ug/kg
MBTL12-SS-13-02	A12L294-06	2-Methylnaphthalene	12/20/2012	14.6		Yes	N	U			14.6	7.32	ug/kg
MBTL12-SS-13-02	A12L294-06	Anthracene	12/20/2012	14.6		Yes	N	U			14.6	7.32	ug/kg
MBTL12-SS-13-02	A12L294-06	Pyrene	12/20/2012	15.5		Yes	Y				14.6	7.32	ug/kg
MBTL12-SS-13-02	A12L294-06	Dibenzofuran	12/20/2012	14.6		Yes	N	U			14.6	7.32	ug/kg
MBTL12-SS-13-02	A12L294-06	Benzo(g,h,i)perylene	12/20/2012	14.6		Yes	N	U			14.6	7.32	ug/kg
MBTL12-SS-13-02	A12L294-06	Indeno(1,2,3-c,d)pyrene	12/20/2012	14.6		Yes	N	U			14.6	7.32	ug/kg
MBTL12-SS-13-02	A12L294-06	Fluoranthene	12/20/2012	18.6		Yes	Y				14.6	7.32	ug/kg
MBTL12-SS-13-02	A12L294-06	Acenaphthylene	12/20/2012	14.6		Yes	N	U			14.6	7.32	ug/kg
MBTL12-SS-13-02	A12L294-06	1-Methylnaphthalene	12/20/2012	14.6		Yes	N	U			14.6	7.32	ug/kg
MBTL12-SS-13-02	A12L294-06	Benzo(b)fluoranthene	12/20/2012	14.6		Yes	N	U			14.6	7.32	ug/kg
MBTL12-SS-13-02	A12L294-06	Naphthalene	12/20/2012	14.6		Yes	N	U			14.6	7.32	ug/kg
MBTL12-SS-13-02	A12L294-06	Chrysene	12/20/2012	7.42		Yes	Y	J			14.6	7.32	ug/kg
MBTL12-SS-13-02	A12L294-06	Fluorene	12/20/2012	14.6		Yes	N	U			14.6	7.32	ug/kg
MBTL12-SS-13-02	A12L294-06	Phenanthrene	12/20/2012	14.4		Yes	Y	J			14.6	7.32	ug/kg
MBTL12-SS-13-02	A12L294-06	Acenaphthene	12/20/2012	14.6		Yes	N	U			14.6	7.32	ug/kg
MBTL12-SS-13-02	A12L294-06	Benzo(a)anthracene	12/20/2012	8.42		Yes	Y	J			14.6	7.32	ug/kg
MBTL12-SS-13-02	A12L294-06	Dibenzo(a,h)anthracene	12/20/2012	14.6		Yes	N	U			14.6	7.32	ug/kg
MBTL12-SS-13-02	A12L294-06	Benzo(a)pyrene	12/20/2012	14.6		Yes	N	U			14.6	7.32	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-13-10	A12L294-07	Benzo(b,k)fluoranthene	12/20/2012	33.8		Yes	Y				27.5	13.7	ug/kg
MBTL12-SS-13-10	A12L294-07	Benzo(a)pyrene	12/20/2012	17.6		Yes	Y				13.7	6.86	ug/kg
MBTL12-SS-13-10	A12L294-07	Fluorene	12/20/2012	13.7		Yes	N	U			13.7	6.86	ug/kg
MBTL12-SS-13-10	A12L294-07	Phenanthrene	12/20/2012	14.9		Yes	Y				13.7	6.86	ug/kg
MBTL12-SS-13-10	A12L294-07	Acenaphthene	12/20/2012	13.7		Yes	N	U			13.7	6.86	ug/kg
MBTL12-SS-13-10	A12L294-07	Benzo(a)anthracene	12/20/2012	18.2		Yes	Y				13.7	6.86	ug/kg
MBTL12-SS-13-10	A12L294-07	Anthracene	12/20/2012	13.7		Yes	N	U			13.7	6.86	ug/kg
MBTL12-SS-13-10	A12L294-07	Pyrene	12/20/2012	31.6		Yes	Y				13.7	6.86	ug/kg
MBTL12-SS-13-10	A12L294-07	Dibenzofuran	12/20/2012	13.7		Yes	N	U			13.7	6.86	ug/kg
MBTL12-SS-13-10	A12L294-07	1-Methylnaphthalene	12/20/2012	13.7		Yes	N	U			13.7	6.86	ug/kg
MBTL12-SS-13-10	A12L294-07	Fluoranthene	12/20/2012	36		Yes	Y				13.7	6.86	ug/kg
MBTL12-SS-13-10	A12L294-07	Benzo(g,h,i)perylene	12/20/2012	13.1		Yes	Y	J			13.7	6.86	ug/kg
MBTL12-SS-13-10	A12L294-07	Dibenzo(a,h)anthracene	12/20/2012	13.7		Yes	N	U			13.7	6.86	ug/kg
MBTL12-SS-13-10	A12L294-07	Naphthalene	12/20/2012	13.7		Yes	N	U			13.7	6.86	ug/kg
MBTL12-SS-13-10	A12L294-07	2-Methylnaphthalene	12/20/2012	13.7		Yes	N	U			13.7	6.86	ug/kg
MBTL12-SS-13-10	A12L294-07	Acenaphthylene	12/20/2012	13.7		Yes	N	U			13.7	6.86	ug/kg
MBTL12-SS-13-10	A12L294-07	Indeno(1,2,3-c,d)pyrene	12/20/2012	13.1		Yes	Y	J			13.7	6.86	ug/kg
MBTL12-SS-13-10	A12L294-07	Chrysene	12/20/2012	28.6		Yes	Y				13.7	6.86	ug/kg
MBTL12-SS-54-10	A12L294-01	Benzo(g,h,i)perylene	12/20/2012	13.9		Yes	N	U			13.9	6.93	ug/kg
MBTL12-SS-54-10	A12L294-01	Indeno(1,2,3-c,d)pyrene	12/20/2012	13.9		Yes	N	U			13.9	6.93	ug/kg
MBTL12-SS-54-10	A12L294-01	Dibenzofuran	12/20/2012	13.9		Yes	N	U			13.9	6.93	ug/kg
MBTL12-SS-54-10	A12L294-01	Acenaphthylene	12/20/2012	13.9		Yes	N	U			13.9	6.93	ug/kg
MBTL12-SS-54-10	A12L294-01	Chrysene	12/20/2012	17.4		Yes	Y				13.9	6.93	ug/kg
MBTL12-SS-54-10	A12L294-01	Benzo(a)pyrene	12/20/2012	9.98		Yes	Y	J			13.9	6.93	ug/kg
MBTL12-SS-54-10	A12L294-01	Anthracene	12/20/2012	13.9		Yes	N	U			13.9	6.93	ug/kg

SDG: A12L294

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-54-10	A12L294-01	Fluoranthene	12/20/2012	14.4	Yes	Y				13.9	6.93	ug/kg
MBTL12-SS-54-10	A12L294-01	Pyrene	12/20/2012	23.8	Yes	Y				13.9	6.93	ug/kg
MBTL12-SS-54-10	A12L294-01	Acenaphthene	12/20/2012	13.9	Yes	N	U			13.9	6.93	ug/kg
MBTL12-SS-54-10	A12L294-01	Dibenzo(a,h)anthracene	12/20/2012	13.9	Yes	N	U			13.9	6.93	ug/kg
MBTL12-SS-54-10	A12L294-01	Phenanthrene	12/20/2012	7.96	Yes	Y	J			13.9	6.93	ug/kg
MBTL12-SS-54-10	A12L294-01	Fluorene	12/20/2012	13.9	Yes	N	U			13.9	6.93	ug/kg
MBTL12-SS-54-10	A12L294-01	1-Methylnaphthalene	12/20/2012	13.9	Yes	N	U			13.9	6.93	ug/kg
MBTL12-SS-54-10	A12L294-01	Naphthalene	12/20/2012	7.25	Yes	Y	J			13.9	6.93	ug/kg
MBTL12-SS-54-10	A12L294-01	2-Methylnaphthalene	12/20/2012	13.9	Yes	N	U			13.9	6.93	ug/kg
MBTL12-SS-54-10	A12L294-01	Benzo(b,k)fluoranthene	12/20/2012	24.1	Yes	Y	J			27.7	13.9	ug/kg
MBTL12-SS-54-10	A12L294-01	Benzo(a)anthracene	12/20/2012	18.1	Yes	Y				13.9	6.93	ug/kg

SDG: VW48

Analytical Method E376.2

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-01-02	12-24743-VW48A	Sulfide	12/15/2012	1.9	Yes	Y				1.46	0.00750	mg/kg
MBTL12-SS-01-10	12-24748-VW48F	Sulfide	12/15/2012	10.3	Yes	Y				1.74	0.00750	mg/kg
MBTL12-SS-02-02	12-24749-VW48G	Sulfide	12/15/2012	1.52	Yes	N	U			1.52	0.00750	mg/kg
MBTL12-SS-02-10	12-24750-VW48H	Sulfide	12/15/2012	1.8	Yes	N	U			1.80	0.00750	mg/kg
MBTL12-SS-09-02	12-24744-VW48B	Sulfide	12/15/2012	1.93	Yes	Y				1.48	0.00750	mg/kg
MBTL12-SS-09-10	12-24745-VW48C	Sulfide	12/15/2012	1.47	Yes	N	U			1.47	0.00750	mg/kg
MBTL12-SS-10-02	12-24746-VW48D	Sulfide	12/15/2012	11.1	Yes	Y				1.30	0.00750	mg/kg
MBTL12-SS-10-10	12-24747-VW48E	Sulfide	12/15/2012	3.3	Yes	Y				1.67	0.00750	mg/kg

Analytical Method SM2540B-PRES

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-01-02	12-24743-VW48A	Total solids (preserved)	12/18/2012	65.6	Yes	Y				0.01		pct
MBTL12-SS-01-10	12-24748-VW48F	Total solids (preserved)	12/18/2012	55.7	Yes	Y				0.01		pct
MBTL12-SS-02-02	12-24749-VW48G	Total solids (preserved)	12/18/2012	61.5	Yes	Y				0.01		pct
MBTL12-SS-02-10	12-24750-VW48H	Total solids (preserved)	12/18/2012	53.5	Yes	Y				0.01		pct
MBTL12-SS-09-02	12-24744-VW48B	Total solids (preserved)	12/18/2012	62.7	Yes	Y				0.01		pct
MBTL12-SS-09-10	12-24745-VW48C	Total solids (preserved)	12/18/2012	66.2	Yes	Y				0.01		pct
MBTL12-SS-10-02	12-24746-VW48D	Total solids (preserved)	12/18/2012	68.1	Yes	Y				0.01		pct
MBTL12-SS-10-10	12-24747-VW48E	Total solids (preserved)	12/18/2012	54.2	Yes	Y				0.01		pct

Analytical Method E376.2

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-03-02	12-24768-VW49G	Sulfide	12/18/2012	1.78	Yes	N	U			1.78	0.00750	mg/kg
MBTL12-SS-03-10	12-24769-VW49H	Sulfide	12/18/2012	12.2	Yes	Y				1.91	0.00750	mg/kg
MBTL12-SS-04-02	12-24762-VW49A	Sulfide	12/18/2012	2.55	Yes	Y				2.20	0.00750	mg/kg
MBTL12-SS-04-10	12-24763-VW49B	Sulfide	12/18/2012	1.5	Yes	N	U			1.50	0.00750	mg/kg
MBTL12-SS-06-02	12-24770-VW49I	Sulfide	12/18/2012	1.68	Yes	N	U			1.68	0.00750	mg/kg
MBTL12-SS-06-10	12-24771-VW49J	Sulfide	12/18/2012	21.1	Yes	Y				1.98	0.00750	mg/kg
MBTL12-SS-07-02	12-24766-VW49E	Sulfide	12/18/2012	1.54	Yes	N	U			1.54	0.00750	mg/kg
MBTL12-SS-07-10	12-24767-VW49F	Sulfide	12/18/2012	1.57	Yes	N	U			1.57	0.00750	mg/kg
MBTL12-SS-08-02	12-24764-VW49C	Sulfide	12/18/2012	1.55	Yes	N	U			1.55	0.00750	mg/kg
MBTL12-SS-08-10	12-24765-VW49D	Sulfide	12/18/2012	2.35	Yes	Y				1.52	0.00750	mg/kg

Analytical Method SM2540B-PRES

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-03-02	12-24768-VW49G	Total solids (preserved)	12/18/2012	54.5	Yes	Y				0.01		pct
MBTL12-SS-03-10	12-24769-VW49H	Total solids (preserved)	12/18/2012	50.6	Yes	Y				0.01		pct
MBTL12-SS-04-02	12-24762-VW49A	Total solids (preserved)	12/18/2012	45.8	Yes	Y				0.01		pct
MBTL12-SS-04-10	12-24763-VW49B	Total solids (preserved)	12/18/2012	66.4	Yes	Y				0.01		pct
MBTL12-SS-06-02	12-24770-VW49I	Total solids (preserved)	12/18/2012	61	Yes	Y				0.01		pct
MBTL12-SS-06-10	12-24771-VW49J	Total solids (preserved)	12/18/2012	52.3	Yes	Y				0.01		pct
MBTL12-SS-07-02	12-24766-VW49E	Total solids (preserved)	12/18/2012	63.4	Yes	Y				0.01		pct
MBTL12-SS-07-10	12-24767-VW49F	Total solids (preserved)	12/18/2012	62.7	Yes	Y				0.01		pct
MBTL12-SS-08-02	12-24764-VW49C	Total solids (preserved)	12/18/2012	64.1	Yes	Y				0.01		pct
MBTL12-SS-08-10	12-24765-VW49D	Total solids (preserved)	12/18/2012	65.8	Yes	Y				0.01		pct

Analytical Method E376.2

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-05-02	12-25078-VW87H	Sulfide	12/19/2012	1.75		Yes	N	U			1.75	0.00750	mg/kg
MBTL12-SS-05-10	12-25079-VW87I	Sulfide	12/19/2012	1.58		Yes	N	U			1.58	0.00750	mg/kg
MBTL12-SS-11-02	12-25072-VW87B	Sulfide	12/19/2012	1.53		Yes	N	U			1.53	0.00750	mg/kg
MBTL12-SS-11-10	12-25073-VW87C	Sulfide	12/19/2012	1.55		Yes	N	U			1.55	0.00750	mg/kg
MBTL12-SS-12-02	12-25074-VW87D	Sulfide	12/19/2012	1.44		Yes	N	U			1.44	0.00750	mg/kg
MBTL12-SS-12-10	12-25075-VW87E	Sulfide	12/19/2012	1.44		Yes	N	U			1.44	0.00750	mg/kg
MBTL12-SS-13-02	12-25076-VW87F	Sulfide	12/19/2012	1.51		Yes	N	U			1.51	0.00750	mg/kg
MBTL12-SS-13-10	12-25077-VW87G	Sulfide	12/19/2012	1.63		Yes	N	U			1.63	0.00750	mg/kg
MBTL12-SS-54-10	12-25071-VW87A	Sulfide	12/18/2012	1.94		Yes	Y				1.52	0.00750	mg/kg

Analytical Method SM2540B-PRES

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-05-02	12-25078-VW87H	Total solids (preserved)	12/18/2012	57.3		Yes	Y				0.01		pct
MBTL12-SS-05-10	12-25079-VW87I	Total solids (preserved)	12/18/2012	63.6		Yes	Y				0.01		pct
MBTL12-SS-11-02	12-25072-VW87B	Total solids (preserved)	12/18/2012	65.2		Yes	Y				0.01		pct
MBTL12-SS-11-10	12-25073-VW87C	Total solids (preserved)	12/18/2012	63.9		Yes	Y				0.01		pct
MBTL12-SS-12-02	12-25074-VW87D	Total solids (preserved)	12/18/2012	70.4		Yes	Y				0.01		pct
MBTL12-SS-12-10	12-25075-VW87E	Total solids (preserved)	12/18/2012	69.8		Yes	Y				0.01		pct
MBTL12-SS-13-02	12-25076-VW87F	Total solids (preserved)	12/18/2012	64.9		Yes	Y				0.01		pct
MBTL12-SS-13-10	12-25077-VW87G	Total solids (preserved)	12/18/2012	61.2		Yes	Y				0.01		pct
MBTL12-SS-54-10	12-25071-VW87A	Total solids (preserved)	12/18/2012	65.5		Yes	Y				0.01		pct

Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

Anchor Environmental, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101
ATTN: Ms. Cindy Fields

February 15, 2013

SUBJECT: Millennium Bulk Terminals, Data Validation

Dear Ms. Fields,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on February 13, 2013. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 29233:

SDG #	Fraction
31300075 A12L261 A13A229 A13A243	Polychlorinated Biphenyls, Polynuclear Aromatic Hydrocarbons, Polychlorinated Biphenyls, Aluminum, Wet Chemistry, Total Solids

The data validation was performed under Stage 2B guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Ming-Hwa Hwang
Project Manager/Senior Chemist

L:\Anchor\Millennium-Reynolds\29233COV.wpd

1,813 Pages-EX 25% Surcharge 1 WK TAT

Attachment 1

Stage 2B EDD

LDC #29233 (Anchor Environmental-Seattle WA /Millennium Bulk Terminals)

LDC	SDG#	DATE REC'D	(3) DATE DUE	PAH (8270D-SIM)		PCB (8082A)		Al (6020A)		F (4500-F-C)		T.CN- (335.4)		NH3-N (4500-NH3)		TOC (5310B)		S= (376.2)		TSS (2540D)		TS (2540G /SOP)															
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	31300075	02/13/13	02/21/13	-	-	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-														
B	A12L261	02/13/13	02/21/13	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	-	-														
C	A13A229	02/13/13	02/21/13	0	5	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	6														
D	A13A243	02/13/13	02/21/13	1	10	-	-	-	-	-	-	-	-	-	-	0	10	-	-	-	-	0	10														
Total	A/MH			3	15	2	6	2	0	2	0	2	0	2	0	2	10	2	0	2	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	66

Shaded cells indicate Stage 4 validation (all other cells are Stage 2B validation). These sample counts do not include MS, MSD, or DUP's.

29233ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 10 through December 12, 2012
LDC Report Date:	February 14, 2013
Matrix:	Sediment
Parameters:	Polychlorinated Biphenyls
Validation Level:	Stage 2B
Laboratory:	SGS Analytical Perspectives
Sample Delivery Group (SDG):	31300075

Sample Identification

AQ-SS-10-10
AQ-SS-09-10
AQ-SS-03-10
AQ-SS-09-10MS
AQ-SS-09-10MSD

Introduction

This data review covers 5 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082A for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

Raw data were not reviewed for this SDG.

XIII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XV. Field Duplicates

No field duplicates were identified in this SDG.

XVI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polychlorinated Biphenyls - Data Qualification Summary - SDG 31300075

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 31300075

No Sample Data Qualified in this SDG

LDC #: 29233A3b

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 02/14/2013

SDG #: 31300075

Page: 1 of 1

Laboratory: SGS Analytical Pesrrspectives

Reviewer: SW

2nd Reviewer: [illegible]

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/10/2012 - 12/12/2012
II.	GC/ECD Instrument Performance Check	N	
III.	Initial calibration	A	RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	N	
XIII.	Compound quantitation/RL/LOQ/LODs	N	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

SEDIMENT

1	AQ-SS-10-10	11		21		31	105347
2	AQ-SS-09-10	12		22		32	
3	AQ-SS-03-10	13		23		33	
4	AQ-SS-09-10MS	14		24		34	
5	AQ-SS-09-10MSD	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	February 12, 2013
LDC Report Date:	February 14, 2013
Matrix:	Sediment
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L261

Sample Identification

MBTL12-RB
MBTL12-FB

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
1212400LCS/D (All samples in SDG A12L261)	1-Methylnaphthalene 2-Methylnaphthalene Naphthalene	50 (60-140) 48 (60-140) 43 (60-140)	54 (60-140) 52 (60-140) 46 (60-140)	- - -	J (all detects) UJ (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to LCS %R problems, data were qualified as estimated in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A12L261

SDG	Sample	Compound	Flag	A or P	Reason
A12L261	MBTL12-RB MBTL12-FB	1-Methylnaphthalene 2-Methylnaphthalene Naphthalene	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A12L261

No Sample Data Qualified in this SDG

LDC #: 29233B2b **VALIDATION COMPLETENESS WORKSHEET** Date: 2/14/13
SDG #: A12L261 Stage 2B Page: 1 of 1
Laboratory: APEX Laboratories, LLC Reviewer: FZ
2nd Reviewer: ✓

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 2/12/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV ≤ 30 CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	QC sample
VIII.	Laboratory control samples	SW	LCS/D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	RB = 1 FB = 2

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: water

1	MBTL12-RB	11	1212400	21		31	
2	MBTL12-FB	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1-Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU.
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 29233B2b

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?

Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		121240001cs/lcsd	TTT	50 (60-140)	54 (60-140)	( )	All	J/UJ/P
			W	48 (↓)	52 (↓)	( )	↓	↓
			S	43 (↓)	46 (↓)	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 12, 2012
LDC Report Date:	February 15, 2013
Matrix:	Water
Parameters:	Polychlorinated Biphenyls
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L261

Sample Identification

MBTL12-RB
MBTL12-FB

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082A for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

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UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

Raw data were not reviewed for this SDG.

XIII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XV. Field Duplicates

No field duplicates were identified in this SDG.

XVI. Field Blanks

Sample MBTL12-RB was identified as a rinsate blank. No polychlorinated biphenyl contaminants were found.

Sample MBTL12-FB was identified as a field blank. No polychlorinated biphenyl contaminants were found.

Millennium Bulk Terminals
Polychlorinated Biphenyls - Data Qualification Summary - SDG A12L261

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG A12L261

No Sample Data Qualified in this SDG

LDC #: 29233B3b

SDG #: A12L262 1

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 02/14/2013

Page: 1 of 1

Reviewer: SW

2nd Reviewer: [illegible]

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/12/2012
II.	GC/ECD Instrument Performance Check	N	
III.	Initial calibration	A	RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV/CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	CS
VIII.	Laboratory control samples	A	LCS / LCSD
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	N	
XIII.	Compound quantitation/RL/LOQ/LODs	N	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	ND	RB=1, FB=2

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

WATER

1	MBTL12-RB	11		21		31	1212899-BLK-1
2	MBTL12-FB	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 12, 2012
LDC Report Date:	February 14, 2013
Matrix:	Water
Parameters:	Aluminum
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L261

Sample Identification

MBTL12-RB
MBTL12-FB

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW846 Method 6020A for Aluminum.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No aluminum was found in the initial, continuing and preparation blanks.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike Analysis

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XII. Sample Result Verification

Raw data were not reviewed for this method.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

Sample MBTL12-RB was identified as a rinsate blank. No aluminum was found.

Sample MBTL12-FB was identified as a field blank. No aluminum was found.

Millennium Bulk Terminals
Aluminum - Data Qualification Summary - SDG A12L261

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Aluminum - Laboratory Blank Data Qualification Summary - SDG A12L261

No Sample Data Qualified in this SDG

LDC #: 29233B4

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 2/14/13

SDG #: A12L261

Page: 1 of 1

Laboratory: APEX Laboratories, LLC

Reviewer: R

2nd Reviewer: W

METHOD: ~~Metals~~ Aluminum (EPA SW846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/12/12
II.	ICP/MS Tune	A	
III.	Calibration	A	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	N	CS
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not reviewed
X.	Furnace Atomic Absorption QC	N	
XI.	ICP Serial Dilution	N	
XII.	Sample Result Verification	N	
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates	N	
XV	Field Blanks	ND	RB=1 FB=2

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	MBTL12-RB	11		21		31	
2	MBTL12-FB	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: Samples appended with "F" were analyzed as dissolved.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 12, 2012
LDC Report Date:	February 14, 2013
Matrix:	Water
Parameters:	Wet Chemistry
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A12L261

Sample Identification

MBTL12-RB
MBTL12-FB
MBTL12-RBMS
MBTL12-RBDUP

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 4500-NH3 for Ammonia as Nitrogen, Standard Method 4500-F-C for Fluoride, EPA Method 335.4 for Total Cyanide, Standard Method 5310B for Total Organic Carbon, Standard Method 2540D for Total Suspended Solids, and Standard Method 4500S2-D for Total Sulfide.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

Sample MBTL12-RB was identified as a rinsate blank. No contaminant concentrations were found

Sample MBTL12-FB was identified as a field blank. No contaminant concentrations were found

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A12L261

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A12L261

No Sample Data Qualified in this SDG

LDC #: 29233B6

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 2/14/13

SDG #: A12L261

Page: 1 of 1

Laboratory: APEX Laboratories, LLC/

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: Ammonia as Nitrogen (SM4500-NH3), Fluoride (SM4500-F-C) Total Cyanide(EPA ~~SW846 Method 9014~~ 335.4), Total Organic Carbon (SM5310B). Total Suspended Solids (SM2540D), Total Sulfide ~~PSEP(EPA Method 376.2)~~ (SM4500S2-D)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/12/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	A	MS
VI.	Duplicates	A	Dp
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI.	Field blanks	ND	RB=1 FB=2

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	MBTL12-RB	11		21		31	
2	MBTL12-FB	12		22		32	
3	MBTL12-RBMS	13		23		33	
4	MBTL12-RBDUP	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 29723386

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer: V

All circled methods are applicable to each sample.

Sample ID	Parameter
1,2	pH TDS Cl (F) NO_3 NO_2 SO_4 O-PO_4 Alk (CN) (NH_3) TKN (TOC) Cr6+ ClO_4 (TSS) (S^{2-})
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
QC: 3	pH TDS Cl (F) NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN (TOC) Cr6+ ClO_4
4	pH TDS Cl (F) NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN (TOC) Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 11 through December 13, 2012
LDC Report Date:	February 14, 2013
Matrix:	Sediment
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A13A229

Sample Identification

MBTL12-SS-11-10
MBTL12-SS-12-10
MBTL12-SS-13-10
MBTL12-SS-09-10
MBTL12-SS-10-10
MBTL12-SS-11-10DUP
MBTL12-SS-10-10MS

Introduction

This data review covers 7 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) sample was reviewed for each matrix as applicable. Percent recoveries (%R) were not within the QC limits. Since the sample was diluted out, no data were qualified.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Compound	Difference (Limits)	Flag	A or P
MBTL12-SS-11-10DUP (MBTL12-SS-11-10)	Phenanthrene	19.1 ug/Kg (≤18.9)	J (all detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to duplicate difference problems, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A13A229

SDG	Sample	Compound	Flag	A or P	Reason
A13A229	MBTL12-SS-11-10	Phenanthrene	J (all detects)	A	Duplicate sample analysis (Difference)

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A13A229

No Sample Data Qualified in this SDG

LDC #: 29233C2b

SDG #: A13A229

Laboratory: APEX Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 2/14/13

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/11 – 12/13/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV ≤ 30 CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates / DUP	SW/SW	MS only
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

sediment

+ 1	MBTL12-SS-11-10	11	13 0125 7	21		31	
+ 2	MBTL12-SS-12-10	12		22		32	
+ 3	MBTL12-SS-13-10	13		23		33	
+ 4	MBTL12-SS-09-10	14		24		34	
+ 5	MBTL12-SS-10-10	15		25		35	
6	MBTL12-SS-11-10DUP	16		26		36	
7	MBTL12-SS-10-10MS	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1-Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU. Benzo(b+k)fluoranthene
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 29233C2 b

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: FT
2nd Reviewer: ✓

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

Y N N/A Was a MS/MSD analyzed every 20 samples of each matrix?

Y N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		7	general	% R outside	limit ( )	( )	5	no qual 5x PL
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

LDC#: 29233c2b

VALIDATION FINDINGS WORKSHEET
Laboratory **Duplicates**

Page: 1 of 1
Reviewer: 77
2nd Reviewer: ✓

METHOD: GC MS PAH (EPA SW 846 Method 8270D-SIM)

Y N NA Were lab duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the lab duplicate pairs?

Compound	Concentration (ug/Kg)		RPD (≤30%)	Difference (ug/Kg)	Limits (ug/Kg)	Qualifications (Parent Only)
	1	6				
VV	14.5	9.45U		5.05	≤18.9	
CCC	12.0	7.57		4.43	≤18.9	
III	12.4	6.08		6.32	≤18.9	
UUU	42.8	22.7		20.1	≤37.8	
LLL	9.68	6.32		3.36	≤18.9	
DDD	34.9	26.2		8.7	≤18.9	
YY	29.2	16.1		13.1	≤18.9	
NN	4.87	9.45U		4.58	≤18.9	
JJJ	10.1	6.06		4.04	≤18.9	
S	6.09	5.19		0.9	≤18.9	
UU	31.4	12.3		19.1	≤18.9	J/A det
YY	27.2	15.7		11.5	≤18.9	

V:\FIELD DUPLICATES\29233C2b.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 11 through December 12, 2012
LDC Report Date:	February 14, 2013
Matrix:	Sediment
Parameters:	Polychlorinated Biphenyls
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories LLC
Sample Delivery Group (SDG):	A13A229

Sample Identification

MBTL12-SS-03-10
MBTL12-SS-09-10
MBTL12-SS-10-10
MBTL12-SS-03-10DUP

Introduction

This data review covers 4 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082A for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. Surrogate recoveries (%R) were not within QC limits for sample MBTL12-SS-09-10. Since the sample was diluted out, no data were qualified.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

Raw data were not reviewed for this SDG.

XIII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XV. Field Duplicates

No field duplicates were identified in this SDG.

XVI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polychlorinated Biphenyls - Data Qualification Summary - SDG A13A229

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG A13A229

No Sample Data Qualified in this SDG

LDC #: 29233C3b

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 02/14/2013

SDG #: A13A229

Page: 1 of 1

Laboratory: APEX Laboratories, LLC

Reviewer: SW

2nd Reviewer: [illegible]

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/11/2012 - 12/12/2012
II.	GC/ECD Instrument Performance Check	N	
III.	Initial calibration	A	RSD ≤ 20
IV.	Continuing calibration/ICV	A	icv / ccv ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates / LD	N/A	CS
VIII.	Laboratory control samples	A	LCS
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	N	
XIII.	Compound quantitation/RL/LOQ/LODs	N	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

SEDIMENT

1	MBTL12-SS-03-10	11		21		31	1301258 -BLK-1
2	MBTL12-SS-09-10	12		22		32	
3	MBTL12-SS-10-10	13		23		33	
4	MBTL12-SS-03-10DUP	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 29233C3b

VALIDATION FINDINGS WORKSHEET
Surrogate Spikes

Reviewer: SW
2nd Reviewer: [signature]

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)
Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were surrogates spiked into all samples, standards and blanks?
Y (N) N/A Did all surrogate percent recoveries (%R) meet the QC limits?

#	Date	Sample ID	Column	Surrogate Compound	%R (Limits)	Qualifications
		2		DCB	46 (55-130)	NQ (10x)
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
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					( )	
					( )	

(DCB) Decachlorobiphenyl
(TCMX) Tetrachloro-m-xylene

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 11 through December 13, 2012
LDC Report Date:	February 15, 2013
Matrix:	Sediment
Parameters:	Total Solids
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A13A229

Sample Identification

MBTL12-SS-11-10
MBTL12-SS-12-10
MBTL12-SS-13-10
MBTL12-SS-03-10
MBTL12-SS-09-10
MBTL12-SS-10-10
MBTL12-SS-11-10DUP

Introduction

This data review covers 7 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2540G and APEX SOP for Total Solids.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Not applicable to this method.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analysis was not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples

Laboratory control samples were not required for this method.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Total Solids - Data Qualification Summary - SDG A13A229

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Total Solids - Laboratory Blank Data Qualification Summary - SDG A13A229

No Sample Data Qualified in this SDG

LDC #: 29233C6

SDG #: A13A229

Laboratory: APEX Laboratories, LLC/

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 2/14/13

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: Total Solids (SM2540G)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/11-13/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	N	Not required
V	Matrix Spike/Matrix Spike Duplicates	N	
VI.	Duplicates	A	DLR
VII.	Laboratory control samples	N	Not required
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: sediment

1	MBTL12-SS-11-10	11		21		31	
2	MBTL12-SS-12-10	12		22		32	
3	MBTL12-SS-13-10	13		23		33	
4	MBTL12-SS-03-10	14		24		34	
5	MBTL12-SS-09-10	15		25		35	
6	MBTL12-SS-10-10	16		26		36	
7	MBTL12-SS-11-10DUP	17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	January 11, 2013
LDC Report Date:	February 14, 2013
Matrix:	Soil/Water
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A13A243

Sample Identification

AQ-SSA4-24-0-1
AQ-SSA4-24-1-2
AQ-SSA4-25-0-1
AQ-SSA4-25-1-2
AQ-SSA4-26-0-1
AQ-SSA4-26-1-2
AQ-SSA4-76-0-1
AQ-SSA4-76-1-2
AQ-SSA4-27-0-1
AQ-SSA4-27-1-2
AQ-SSA4-RB-011113
AQ-SSA4-24-0-1DUP
AQ-SSA4-27-1-2MS

Introduction

This data review covers 12 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
1301443-MB	1/21/13	Fluoranthene Pyrene	2.38 ug/Kg 5.44 ug/Kg	AQ-SSA4-25-0-1 AQ-SSA4-26-0-1 AQ-SSA4-76-0-1 AQ-SSA4-76-1-2 AQ-SSA4-27-1-2

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) sample was reviewed for each matrix as applicable. Percent recoveries (%R) were not within the QC limits. Since the sample was diluted out, no data were qualified.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

XVI. Field Duplicates

Samples AQ-SSA4-26-0-1 and AQ-SSA4-76-0-1 and samples AQ-SSA4-26-1-2 and AQ-SSA4-76-1-2 were identified as field duplicates. No polynuclear aromatic hydrocarbons were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD
	AQ-SSA4-26-0-1	AQ-SSA4-76-0-1	
Dibenzofuran	2.65	4.32U	200
Phenanthrene	54.2	39.2	32
Acenaphthylene	3.48	2.92	18
Acenaphthene	3.13	2.47	24
Fluorene	2.28	4.32U	200
Anthracene	11.8	8.53	32
Fluoranthene	384	274	33
Pyrene	430	310	32
Benzo(a)anthracene	445	320	33
Chrysene	1470	936	44
Benzo(a)pyrene	913	638	35
Indeno(1,2,3-cd)pyrene	1590	1230	26
Dibenz(a,h)anthracene	405	294	32
Benzo(b+k)fluoranthenes	2880	2070	33

Compound	Concentration (ug/Kg)		RPD
	AQ-SSA4-26-1-2	AQ-SSA4-76-1-2	
Benzo(a)anthracene	4.33U	2.57	200
Chrysene	2.50	3.26	26
Benzo(b+k)fluoranthenes	6.92	8.91	25
Benzo(a)pyrene	4.33U	2.89	200
Indeno(1,2,3-cd)pyrene	4.97	7.84	45
Benzo(g,h,i)perylene	7.92	15.5	65

XVII. Field Blanks

Sample AQ-SSA4-RB-011113 was identified as a rinsate blank. No polynuclear aromatic hydrocarbon contaminants were found

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A13A243

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A13A243

No Sample Data Qualified in this SDG

LDC #: 29233D2b **VALIDATION COMPLETENESS WORKSHEET** Date: 2/14/13
SDG #: A13A243 Stage 2B Page: 1 of 1
Laboratory: APEX Laboratories, LLC Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	Δ	Sampling dates: 1/11/13
II.	GC/MS Instrument performance check	Δ	~~% RSD~~
III.	Initial calibration	Δ	% RSD ≤ 20
IV.	Continuing calibration/ICV	Δ	ICV ≤ 30 CCV ≤ 20
V.	Blanks	SW	
VI.	Surrogate spikes	Δ	
VII.	Matrix spike/Matrix spike duplicates / DUP	SW	
VIII.	Laboratory control samples	Δ	LCS / D
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	Δ	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	Δ	
XVI.	Field duplicates	SW	D = 5, 7 6, 8
XVII.	Field blanks	ND	RB = 11

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:
soil + water

	1 1	AQ-SSA4-24-0-1	11 3	AQ-SSA4-RB-011113 W	21 1	1301478 -	31	
	2 1	AQ-SSA4-24-1-2	12	AQ-SSA4-24-0-1DUP	22 2	1301443 -	32	
3	3 2	AQ-SSA4-25-0-1	13	AQ-SSA4-27-1-2MS	23 3	1301407 -	33	
	4 1	AQ-SSA4-25-1-2	14		24		34	
8	5 2	AQ-SSA4-26-0-1 D1	15		25		35	
	6 1	AQ-SSA4-26-1-2 D	16		26		36	
11	7 2	AQ-SSA4-76-0-1 D1	17		27		37	
12	8 2	AQ-SSA4-76-1-2 D	18		28		38	
14	9 1	AQ-SSA4-27-0-1	19		29		39	
15	10 2	AQ-SSA4-27-1-2	20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1-Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU.
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 29233 pab

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer: FT

2nd Reviewer: ✓

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a method blank analyzed for each matrix?

Y N N/A Was a method blank analyzed for each concentration preparation level?

Y N N/A Was a method blank associated with every sample?

Y N N/A Was the blank contaminated? If yes, please see qualification below.

Blank extraction date: 1/21/13 **Blank analysis date:** 1/21/13

Conc. units: ug/kg Associated Samples: 3, 5, 7, 8, 10 (7JR)

Compound	Blank ID	Sample Identification								
	1301443-MB	5								
YY	2.38		~~2.65~~ / ~~4.05~~ 3.84							
ZZ	5.44									

Blank extraction date:_____ **Blank analysis date:**_____

Conc. units:_____ Associated Samples:_____

Compound	Blank ID	Sample Identification								

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 29233 D2b

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: FT
2nd Reviewer: ✓

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

Y N N/A Was a MS/MSD analyzed every 20 samples of each matrix?

Y N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		13	general	%R out side limit	( )	( )	10	no qual 5XDL
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

LDC#: 29233D2b

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?6

Compound	Concentration (ug/Kg)		RPD	
	5	7		
Dibenzofuran	2.65	4.32U	200	
Phenanthrene	54.2	39.2	32	
Acenaphthylene	3.48	2.92	18	
Acenaphthene	3.13	2.47	24	
Fluorene	2.28	4.32U	200	
Anthracene	11.8	8.53	32	
Fluoranthene	384	274	33	
Pyrene	430	310	32	
Benzo(a)anthracene	445	320	33	
Chrysene	1470	936	44	
Benzo(a)pyrene	913	638	35	
Indeno(1,2,3-cd)pyrene	1590	1230	26	
Dibenz(a,h)anthracene	405	294	32	
Benzo(b+k)fluoranthenes	2880	2070	33	

Compound	Concentration (ug/Kg)		RPD	
	6	8		
Benzo(a)anthracene	4.33U	2.57	200	
Chrysene	2.50	3.26	26	
Benzo(b+k)fluoranthenes	6.92	8.91	25	
Benzo(a)pyrene	4.33U	2.89	200	
Indeno(1,2,3-cd)pyrene	4.97	7.84	45	
Benzo(g,h,i)perylene	7.92	15.5	65	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Millennium Bulk Terminals

Collection Date: January 11, 2013

LDC Report Date: February 14, 2013

Matrix: Soil

Parameters: Wet Chemistry

Validation Level: Stage 2B

Laboratory: APEX Laboratories, LLC

Sample Delivery Group (SDG): A13A243

Sample Identification

AQ-SSA4-24-0-1
AQ-SSA4-24-1-2
AQ-SSA4-25-0-1
AQ-SSA4-25-1-2
AQ-SSA4-26-0-1
AQ-SSA4-26-1-2
AQ-SSA4-76-0-1
AQ-SSA4-76-1-2
AQ-SSA4-27-0-1
AQ-SSA4-27-1-2
AQ-SSA4-24-0-1DUP

Introduction

This data review covers 11 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per PSEP and Standard Method 5310B Modified for Total Organic Carbon and Standard Method 2540G and APEX SOP for Total Solids.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analysis was not required by the method.

VI. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Analyte	Difference (Limits)	Flag	A or P
AQ-SSA4-24-0-1DUP (All samples in SDG A13A243)	Total organic carbon	510 mg/Kg (≤400)	J (all detects) UJ (all non-detects)	A

VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to duplicate difference problems, data were qualified as estimated in ten samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

X. Field Duplicates

Samples AQ-SSA4-26-0-1 and AQ-SSA4-76-0-1 and samples AQ-SSA4-26-1-2 and AQ-SSA4-76-1-2 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration		RPD
	AQ-SSA4-26-0-1	AQ-SSA4-76-0-1	
Total solids	85.5 %	86.2 %	1
Total organic carbon	2300 mg/Kg	1400 mg/Kg	49

Analyte	Concentration (mg/Kg)		RPD
	AQ-SSA4-26-1-2	AQ-SSA4-76-1-2	
Total solids	81.8 %	81.3 %	1
Total organic carbon	300 mg/Kg	330 mg/Kg	10

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Wet Chemistry - Data Qualification Summary - SDG A13A243

SDG	Sample	Analyte	Flag	A or P	Reason
A13A243	AQ-SSA4-24-0-1 AQ-SSA4-24-1-2 AQ-SSA4-25-0-1 AQ-SSA4-25-1-2 AQ-SSA4-26-0-1 AQ-SSA4-26-1-2 AQ-SSA4-76-0-1 AQ-SSA4-76-1-2 AQ-SSA4-27-0-1 AQ-SSA4-27-1-2	Total organic carbon	J (all detects) UJ (all non-detects)	A	Duplicate sample analysis (Difference)

Millennium Bulk Terminals
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG A13A243

No Sample Data Qualified in this SDG

LDC #: 29233D6

SDG #: A13A243

Laboratory: APEX Laboratories, LLC/

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 2/14/13

Page: 1 of 1

Reviewer: AR

2nd Reviewer: ✓

METHOD: Total Organic Carbon (PSEP/SM5310B mod), Total Solids (SM2540G)/APEX SOP

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 1/11/13
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	N	Not required
VI.	Duplicates	SW	Dup
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	(5,7) (6,8)
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ~~AQ~~ Soil

1	AQ-SSA4-24-0-1	11	AQ-SSA4-24-0-1DUP	21		31	
2	AQ-SSA4-24-1-2	12		22		32	
3	AQ-SSA4-25-0-1	13		23		33	
4	AQ-SSA4-25-1-2	14		24		34	
5	AQ-SSA4-26-0-1	15		25		35	
6	AQ-SSA4-26-1-2	16		26		36	
7	AQ-SSA4-76-0-1	17		27		37	
8	AQ-SSA4-76-1-2	18		28		38	
9	AQ-SSA4-27-0-1	19		29		39	
10	AQ-SSA4-27-1-2	20		30		40	

Notes:

LDC #: 29233D6

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: CR
2nd reviewer: W

All circled methods are applicable to each sample.

Sample ID	Parameter
1-10	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN (TOC) Cr6+ ClO_4 TS
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
QC-11	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN (TOC) Cr6+ ClO_4 TS
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

LDC #: 29233D6

VALIDATION FINDINGS WORKSHEET
Duplicate Analysis

Page: 1 of 1
Reviewer: OR
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a duplicate sample analyzed for each matrix in this SDG?

Y N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for water and ≤ 35% for soil samples (≤ 10% for Method 300.0)? If no, see qualification below. A control limit of ±CRDL (±2X CRDL for soil) was used for samples that were ≤5X the CRDL, including when only one of the duplicate sample values were ≤5X the CRDL. If field blanks were used for laboratory duplicates, see overall assessment.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Duplicate ID	Matrix	Analyte	~~RPD~~ Difference (mg/kg) (Limits)	Associated Samples	Qualifications
		11	S	TOC	510 (≤400)	All	J/UJ/A

Comments:

LDC# 29233D6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: OL
2nd Reviewer: [illegible]

Inorganics: Method See Cover

Analyte	Concentration (mg/Kg)		RPD
	5	7	
Total Solids (%)	85.5	86.2	1
TOC	2300	1400	49

Analyte	Concentration (mg/Kg)		RPD
	6	8	
Total Solids (%)	81.8	81.3	1
TOC	300	330	10

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\29233D6.wpd

Millennium Bulk Terminals - LDC#29233

SDG: 31300075

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-03-10	31300075003-A	Aroclor 1268	1/12/2013	2.93	Yes	N	U			2.93	2.93	ug/kg
AQ-SS-03-10	31300075003-A	Aroclor 1221	1/12/2013	4.34	Yes	N	U			4.34	4.34	ug/kg
AQ-SS-03-10	31300075003-A	Aroclor 1232	1/12/2013	2.08	Yes	N	U			2.08	2.08	ug/kg
AQ-SS-03-10	31300075003-A	Aroclor 1248	1/12/2013	2.27	Yes	N	U			2.27	2.27	ug/kg
AQ-SS-03-10	31300075003-A	Aroclor 1016	1/12/2013	1.92	Yes	N	U			1.92	1.92	ug/kg
AQ-SS-03-10	31300075003-A	Aroclor 1262	1/12/2013	1.43	Yes	N	U			1.43	1.43	ug/kg
AQ-SS-03-10	31300075003-A	Aroclor 1242	1/12/2013	1.75	Yes	N	U			1.75	1.75	ug/kg
AQ-SS-03-10	31300075003-A	Aroclor 1254	1/12/2013	3.35	Yes	N	U			3.35	3.35	ug/kg
AQ-SS-03-10	31300075003-A	Aroclor 1260	1/12/2013	1.97	Yes	N	U			1.97	1.97	ug/kg
AQ-SS-09-10	31300075002-A	Aroclor 1268	1/12/2013	2.21	Yes	N	U			2.21	2.21	ug/kg
AQ-SS-09-10	31300075002-A	Aroclor 1242	1/12/2013	1.32	Yes	N	U			1.32	1.32	ug/kg
AQ-SS-09-10	31300075002-A	Aroclor 1262	1/12/2013	1.08	Yes	N	U			1.08	1.08	ug/kg
AQ-SS-09-10	31300075002-A	Aroclor 1016	1/12/2013	1.45	Yes	N	U			1.45	1.45	ug/kg
AQ-SS-09-10	31300075002-A	Aroclor 1248	1/12/2013	124	Yes	Y				1.72	1.72	ug/kg
AQ-SS-09-10	31300075002-A	Aroclor 1221	1/12/2013	3.28	Yes	N	U			3.28	3.28	ug/kg
AQ-SS-09-10	31300075002-A	Aroclor 1254	1/12/2013	106	Yes	Y				2.53	2.53	ug/kg
AQ-SS-09-10	31300075002-A	Aroclor 1260	1/12/2013	55.6	Yes	Y	DPE			1.49	1.49	ug/kg
AQ-SS-09-10	31300075002-A	Aroclor 1232	1/12/2013	1.57	Yes	N	U			1.57	1.57	ug/kg
AQ-SS-10-10	31300075001-A	Aroclor 1016	1/12/2013	1.9	Yes	N	U			1.90	1.90	ug/kg
AQ-SS-10-10	31300075001-A	Aroclor 1268	1/12/2013	2.9	Yes	N	U			2.90	2.90	ug/kg
AQ-SS-10-10	31300075001-A	Aroclor 1242	1/12/2013	1.73	Yes	N	U			1.73	1.73	ug/kg
AQ-SS-10-10	31300075001-A	Aroclor 1262	1/12/2013	1.42	Yes	N	U			1.42	1.42	ug/kg
AQ-SS-10-10	31300075001-A	Aroclor 1221	1/12/2013	4.3	Yes	N	U			4.30	4.30	ug/kg
AQ-SS-10-10	31300075001-A	Aroclor 1248	1/12/2013	2.25	Yes	N	U			2.25	2.25	ug/kg

SDG: 31300075

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-10-10	31300075001-A	Aroclor 1260	1/12/2013	1.96	Yes	N	U			1.96	1.96	ug/kg
AQ-SS-10-10	31300075001-A	Aroclor 1232	1/12/2013	2.06	Yes	N	U			2.06	2.06	ug/kg
AQ-SS-10-10	31300075001-A	Aroclor 1254	1/12/2013	3.32	Yes	N	U			3.32	3.32	ug/kg

SDG: A12L261

Analytical Method	E335.4											
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-FB	A12L261-02	Cyanide, total	12/27/2012	5		Yes	N	U			5.0	2.7	ug/L
MBTL12-RB	A12L261-01	Cyanide, total	12/27/2012	5		Yes	N	U			5.0	2.7	ug/L

Analytical Method	E350.1											
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-FB	A12L261-02	Ammonia as nitrogen	12/17/2012	0.02		Yes	N	U			0.0200	0.0100	mg/L
MBTL12-RB	A12L261-01	Ammonia as nitrogen	12/17/2012	0.02		Yes	N	U			0.0200	0.0100	mg/L

Analytical Method	SM2540D											
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-FB	A12L261-02	Total suspended solids	12/20/2012	5		Yes	N	U			5.00	5.00	mg/L
MBTL12-RB	A12L261-01	Total suspended solids	12/20/2012	5		Yes	N	U			5.00	5.00	mg/L

Analytical Method	SM4500FC											
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-FB	A12L261-02	Fluoride	12/18/2012	0.1		Yes	N	U			0.100	0.100	mg/L
MBTL12-RB	A12L261-01	Fluoride	12/18/2012	0.1		Yes	N	U			0.100	0.100	mg/L

Analytical Method	SM4500S2D											
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-FB	A12L261-02	Sulfide	12/18/2012	0.1		Yes	N	U			0.10	0.012	mg/L
MBTL12-RB	A12L261-01	Sulfide	12/18/2012	0.1		Yes	N	U			0.10	0.012	mg/L

Analytical Method	SM5310B											
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-FB	A12L261-02	Total organic carbon	12/21/2012	2		Yes	N	U			2.00	1.00	mg/L
MBTL12-RB	A12L261-01	Total organic carbon	12/21/2012	2		Yes	N	U			2.00	1.00	mg/L

Analytical Method	SW6020A											
Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-FB	A12L261-02	Aluminum	12/21/2012	50		Yes	N	U			50.0	25.0	ug/L

Analytical Method	SW6020A											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res**	**Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
MBTL12-RB	A12L261-01	Aluminum	12/21/2012	50		Yes	N	U			50.0	25.0	ug/L

Analytical Method	SW8082A											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res**	**Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
MBTL12-FB	A12L261-02	Aroclor 1242	12/21/2012	0.0388		Yes	N	U			0.0388	0.0194	ug/L
MBTL12-FB	A12L261-02	Aroclor 1016	12/21/2012	0.0388		Yes	N	U			0.0388	0.0194	ug/L
MBTL12-FB	A12L261-02	Aroclor 1248	12/21/2012	0.0388		Yes	N	U			0.0388	0.0194	ug/L
MBTL12-FB	A12L261-02	Aroclor 1232	12/21/2012	0.0388		Yes	N	U			0.0388	0.0194	ug/L
MBTL12-FB	A12L261-02	Aroclor 1221	12/21/2012	0.0388		Yes	N	U			0.0388	0.0194	ug/L
MBTL12-FB	A12L261-02	Aroclor 1268	12/21/2012	0.0388		Yes	N	U			0.0388	0.0194	ug/L
MBTL12-FB	A12L261-02	Aroclor 1260	12/21/2012	0.0388		Yes	N	U			0.0388	0.0194	ug/L
MBTL12-FB	A12L261-02	Aroclor 1262	12/21/2012	0.0388		Yes	N	U			0.0388	0.0194	ug/L
MBTL12-FB	A12L261-02	Aroclor 1254	12/21/2012	0.0388		Yes	N	U			0.0388	0.0194	ug/L
MBTL12-RB	A12L261-01	Aroclor 1242	12/21/2012	0.0435		Yes	N	U			0.0435	0.0217	ug/L
MBTL12-RB	A12L261-01	Aroclor 1254	12/21/2012	0.0435		Yes	N	U			0.0435	0.0217	ug/L
MBTL12-RB	A12L261-01	Aroclor 1268	12/21/2012	0.0435		Yes	N	U			0.0435	0.0217	ug/L
MBTL12-RB	A12L261-01	Aroclor 1221	12/21/2012	0.0435		Yes	N	U			0.0435	0.0217	ug/L
MBTL12-RB	A12L261-01	Aroclor 1232	12/21/2012	0.0435		Yes	N	U			0.0435	0.0217	ug/L
MBTL12-RB	A12L261-01	Aroclor 1248	12/21/2012	0.0435		Yes	N	U			0.0435	0.0217	ug/L
MBTL12-RB	A12L261-01	Aroclor 1262	12/21/2012	0.0435		Yes	N	U			0.0435	0.0217	ug/L
MBTL12-RB	A12L261-01	Aroclor 1260	12/21/2012	0.0435		Yes	N	U			0.0435	0.0217	ug/L
MBTL12-RB	A12L261-01	Aroclor 1016	12/21/2012	0.0435		Yes	N	U			0.0435	0.0217	ug/L

Analytical Method	SW8270DSIM											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res**	**Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
MBTL12-FB	A12L261-02	Benzo(a)pyrene	12/19/2012	0.0444		Yes	N	U			0.0444	0.0222	ug/L
MBTL12-FB	A12L261-02	Chrysene	12/19/2012	0.0444		Yes	N	U			0.0444	0.0222	ug/L

SDG: A12L261

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-FB	A12L261-02	2-Methylnaphthalene	12/19/2012	0.0889		Yes	N	U	UJ	10	0.0889	0.0444	ug/L
MBTL12-FB	A12L261-02	Naphthalene	12/19/2012	0.0889		Yes	N	U	UJ	10	0.0889	0.0444	ug/L
MBTL12-FB	A12L261-02	Benzo(g,h,i)perylene	12/19/2012	0.0444		Yes	N	U			0.0444	0.0222	ug/L
MBTL12-FB	A12L261-02	Indeno(1,2,3-c,d)pyrene	12/19/2012	0.0444		Yes	N	U			0.0444	0.0222	ug/L
MBTL12-FB	A12L261-02	Phenanthrene	12/19/2012	0.0444		Yes	N	U			0.0444	0.0222	ug/L
MBTL12-FB	A12L261-02	Acenaphthene	12/19/2012	0.0444		Yes	N	U			0.0444	0.0222	ug/L
MBTL12-FB	A12L261-02	Benzo(b)fluoranthene	12/19/2012	0.0444		Yes	N	U			0.0444	0.0222	ug/L
MBTL12-FB	A12L261-02	Anthracene	12/19/2012	0.0444		Yes	N	U			0.0444	0.0222	ug/L
MBTL12-FB	A12L261-02	Fluoranthene	12/19/2012	0.0444		Yes	N	U			0.0444	0.0222	ug/L
MBTL12-FB	A12L261-02	Dibenzofuran	12/19/2012	0.0444		Yes	N	U			0.0444	0.0222	ug/L
MBTL12-FB	A12L261-02	1-Methylnaphthalene	12/19/2012	0.0889		Yes	N	U	UJ	10	0.0889	0.0444	ug/L
MBTL12-FB	A12L261-02	Benzo(a)anthracene	12/19/2012	0.0444		Yes	N	U			0.0444	0.0222	ug/L
MBTL12-FB	A12L261-02	Dibenzo(a,h)anthracene	12/19/2012	0.0444		Yes	N	U			0.0444	0.0222	ug/L
MBTL12-FB	A12L261-02	Fluorene	12/19/2012	0.0444		Yes	N	U			0.0444	0.0222	ug/L
MBTL12-FB	A12L261-02	Benzo(k)fluoranthene	12/19/2012	0.0444		Yes	N	U			0.0444	0.0222	ug/L
MBTL12-FB	A12L261-02	Acenaphthylene	12/19/2012	0.0444		Yes	N	U			0.0444	0.0222	ug/L
MBTL12-FB	A12L261-02	Pyrene	12/19/2012	0.0444		Yes	N	U			0.0444	0.0222	ug/L
MBTL12-RB	A12L261-01	Anthracene	12/19/2012	0.04		Yes	N	U			0.0400	0.0200	ug/L
MBTL12-RB	A12L261-01	Chrysene	12/19/2012	0.04		Yes	N	U			0.0400	0.0200	ug/L
MBTL12-RB	A12L261-01	Benzo(g,h,i)perylene	12/19/2012	0.04		Yes	N	U			0.0400	0.0200	ug/L
MBTL12-RB	A12L261-01	Dibenzo(a,h)anthracene	12/19/2012	0.04		Yes	N	U			0.0400	0.0200	ug/L
MBTL12-RB	A12L261-01	2-Methylnaphthalene	12/19/2012	0.08		Yes	N	U	UJ	10	0.0800	0.0400	ug/L
MBTL12-RB	A12L261-01	Dibenzofuran	12/19/2012	0.04		Yes	N	U			0.0400	0.0200	ug/L
MBTL12-RB	A12L261-01	Indeno(1,2,3-c,d)pyrene	12/19/2012	0.04		Yes	N	U			0.0400	0.0200	ug/L
MBTL12-RB	A12L261-01	Benzo(b)fluoranthene	12/19/2012	0.04		Yes	N	U			0.0400	0.0200	ug/L

SDG: A12L261

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-RB	A12L261-01	Fluoranthene	12/19/2012	0.04	Yes	N	U			0.0400	0.0200	ug/L
MBTL12-RB	A12L261-01	Benzo(k)fluoranthene	12/19/2012	0.04	Yes	N	U			0.0400	0.0200	ug/L
MBTL12-RB	A12L261-01	Acenaphthylene	12/19/2012	0.04	Yes	N	U			0.0400	0.0200	ug/L
MBTL12-RB	A12L261-01	1-Methylnaphthalene	12/19/2012	0.08	Yes	N	U	UJ	10	0.0800	0.0400	ug/L
MBTL12-RB	A12L261-01	Naphthalene	12/19/2012	0.08	Yes	N	U	UJ	10	0.0800	0.0400	ug/L
MBTL12-RB	A12L261-01	Benzo(a)anthracene	12/19/2012	0.04	Yes	N	U			0.0400	0.0200	ug/L
MBTL12-RB	A12L261-01	Acenaphthene	12/19/2012	0.04	Yes	N	U			0.0400	0.0200	ug/L
MBTL12-RB	A12L261-01	Phenanthrene	12/19/2012	0.04	Yes	N	U			0.0400	0.0200	ug/L
MBTL12-RB	A12L261-01	Pyrene	12/19/2012	0.04	Yes	N	U			0.0400	0.0200	ug/L
MBTL12-RB	A12L261-01	Fluorene	12/19/2012	0.04	Yes	N	U			0.0400	0.0200	ug/L
MBTL12-RB	A12L261-01	Benzo(a)pyrene	12/19/2012	0.04	Yes	N	U			0.0400	0.0200	ug/L

SDG: A13A229

Analytical Method	APEXsolids											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res**	**Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
MBTL12-SS-03-10	A13A229-04	Total solids	1/15/2013	58.1		Yes	Y				1.00	1.00	pct
MBTL12-SS-09-10	A13A229-05	Total solids	1/15/2013	69.7		Yes	Y				1.00	1.00	pct
MBTL12-SS-10-10	A13A229-06	Total solids	1/15/2013	75.6		Yes	Y				1.00	1.00	pct
MBTL12-SS-11-10	A13A229-01	Total solids	1/15/2013	72.5		Yes	Y				1.00	1.00	pct
MBTL12-SS-12-10	A13A229-02	Total solids	1/15/2013	78.2		Yes	Y				1.00	1.00	pct
MBTL12-SS-13-10	A13A229-03	Total solids	1/15/2013	72.4		Yes	Y				1.00	1.00	pct

Analytical Method	SM2540G											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res**	**Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
MBTL12-SS-03-10	A13A229-04	Total solids	1/15/2013	58.1		Yes	Y				1.00	1.00	pct
MBTL12-SS-09-10	A13A229-05	Total solids	1/15/2013	69.7		Yes	Y				1.00	1.00	pct
MBTL12-SS-10-10	A13A229-06	Total solids	1/15/2013	75.6		Yes	Y				1.00	1.00	pct
MBTL12-SS-11-10	A13A229-01	Total solids	1/15/2013	72.5		Yes	Y				1.00	1.00	pct
MBTL12-SS-12-10	A13A229-02	Total solids	1/15/2013	78.2		Yes	Y				1.00	1.00	pct
MBTL12-SS-13-10	A13A229-03	Total solids	1/15/2013	72.4		Yes	Y				1.00	1.00	pct

Analytical Method	SW8082A											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res**	**Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
MBTL12-SS-03-10	A13A229-04RE1	Aroclor 1260	1/14/2013	4.64		Yes	N	U			4.64	2.32	ug/kg
MBTL12-SS-03-10	A13A229-04RE1	Aroclor 1016	1/14/2013	4.64		Yes	N	U			4.64	2.32	ug/kg
MBTL12-SS-03-10	A13A229-04RE1	Aroclor 1262	1/14/2013	4.64		Yes	N	U			4.64	2.32	ug/kg
MBTL12-SS-03-10	A13A229-04RE1	Aroclor 1242	1/14/2013	4.64		Yes	N	U			4.64	2.32	ug/kg
MBTL12-SS-03-10	A13A229-04RE1	Aroclor 1232	1/14/2013	4.64		Yes	N	U			4.64	2.32	ug/kg
MBTL12-SS-03-10	A13A229-04RE1	Aroclor 1221	1/14/2013	4.64		Yes	N	U			4.64	2.32	ug/kg
MBTL12-SS-03-10	A13A229-04RE1	Aroclor 1254	1/14/2013	4.64		Yes	N	U			4.64	2.32	ug/kg
MBTL12-SS-03-10	A13A229-04RE1	Aroclor 1248	1/14/2013	4.64		Yes	N	U			4.64	2.32	ug/kg
MBTL12-SS-03-10	A13A229-04RE1	Aroclor 1268	1/14/2013	4.64		Yes	N	U			4.64	2.32	ug/kg

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-09-10	A13A229-05RE2	Aroclor 1260	1/14/2013	249		Yes	Y	D			38.6	19.3	ug/kg
MBTL12-SS-09-10	A13A229-05RE2	Aroclor 1254	1/14/2013	528		Yes	Y	D			38.6	19.3	ug/kg
MBTL12-SS-09-10	A13A229-05RE2	Aroclor 1268	1/14/2013	38.6		Yes	N	D U			38.6	19.3	ug/kg
MBTL12-SS-09-10	A13A229-05RE2	Aroclor 1221	1/14/2013	38.6		Yes	N	D U			38.6	19.3	ug/kg
MBTL12-SS-09-10	A13A229-05RE2	Aroclor 1232	1/14/2013	38.6		Yes	N	D U			38.6	19.3	ug/kg
MBTL12-SS-09-10	A13A229-05RE2	Aroclor 1248	1/14/2013	38.6		Yes	N	D U			38.6	19.3	ug/kg
MBTL12-SS-09-10	A13A229-05RE2	Aroclor 1262	1/14/2013	38.6		Yes	N	D U			38.6	19.3	ug/kg
MBTL12-SS-09-10	A13A229-05RE2	Aroclor 1242	1/14/2013	502		Yes	Y	D			38.6	19.3	ug/kg
MBTL12-SS-09-10	A13A229-05RE2	Aroclor 1016	1/14/2013	38.6		Yes	N	D U			38.6	19.3	ug/kg
MBTL12-SS-10-10	A13A229-06	Aroclor 1232	1/14/2013	3.57		Yes	N	U			3.57	1.78	ug/kg
MBTL12-SS-10-10	A13A229-06	Aroclor 1260	1/14/2013	3.57		Yes	N	U			3.57	1.78	ug/kg
MBTL12-SS-10-10	A13A229-06	Aroclor 1262	1/14/2013	3.57		Yes	N	U			3.57	1.78	ug/kg
MBTL12-SS-10-10	A13A229-06	Aroclor 1248	1/14/2013	3.57		Yes	N	U			3.57	1.78	ug/kg
MBTL12-SS-10-10	A13A229-06	Aroclor 1221	1/14/2013	3.57		Yes	N	U			3.57	1.78	ug/kg
MBTL12-SS-10-10	A13A229-06	Aroclor 1268	1/14/2013	3.57		Yes	N	U			3.57	1.78	ug/kg
MBTL12-SS-10-10	A13A229-06	Aroclor 1254	1/14/2013	3.57		Yes	N	U			3.57	1.78	ug/kg
MBTL12-SS-10-10	A13A229-06	Aroclor 1016	1/14/2013	3.57		Yes	N	U			3.57	1.78	ug/kg
MBTL12-SS-10-10	A13A229-06	Aroclor 1242	1/14/2013	3.57		Yes	N	U			3.57	1.78	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-09-10	A13A229-05	Dibenzo(a,h)anthracene	1/14/2013	10300		Yes	Y	D			192	95.8	ug/kg
MBTL12-SS-09-10	A13A229-05	Chrysene	1/14/2013	65200		Yes	Y	D			192	95.8	ug/kg
MBTL12-SS-09-10	A13A229-05	Acenaphthylene	1/14/2013	147		Yes	Y	D J			192	95.8	ug/kg
MBTL12-SS-09-10	A13A229-05	Indeno(1,2,3-c,d)pyrene	1/14/2013	49800		Yes	Y	D			192	95.8	ug/kg
MBTL12-SS-09-10	A13A229-05	Benzo(a)anthracene	1/14/2013	52400		Yes	Y	D			192	95.8	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-09-10	A13A229-05	Dibenzofuran	1/14/2013	2550		Yes	Y	D			192	95.8	ug/kg
MBTL12-SS-09-10	A13A229-05	2-Methylnaphthalene	1/14/2013	343		Yes	Y	D			192	95.8	ug/kg
MBTL12-SS-09-10	A13A229-05	Anthracene	1/14/2013	22700		Yes	Y	D			192	95.8	ug/kg
MBTL12-SS-09-10	A13A229-05	Benzo(g,h,i)perylene	1/14/2013	45700		Yes	Y	D			192	95.8	ug/kg
MBTL12-SS-09-10	A13A229-05	Acenaphthene	1/14/2013	14500		Yes	Y	D			192	95.8	ug/kg
MBTL12-SS-09-10	A13A229-05	Phenanthrene	1/14/2013	71600		Yes	Y	D			192	95.8	ug/kg
MBTL12-SS-09-10	A13A229-05	Fluorene	1/14/2013	8310		Yes	Y	D			192	95.8	ug/kg
MBTL12-SS-09-10	A13A229-05	Naphthalene	1/14/2013	769		Yes	Y	D			192	95.8	ug/kg
MBTL12-SS-09-10	A13A229-05	Benzo(b,k)fluoranthene	1/14/2013	125000		Yes	Y	D			383	192	ug/kg
MBTL12-SS-09-10	A13A229-05	1-Methylnaphthalene	1/14/2013	344		Yes	Y	D			192	95.8	ug/kg
MBTL12-SS-09-10	A13A229-05RE1	Pyrene	1/14/2013	296000		Yes	Y	D			4790	2390	ug/kg
MBTL12-SS-09-10	A13A229-05RE1	Fluoranthene	1/14/2013	324000		Yes	Y	D			4790	2390	ug/kg
MBTL12-SS-09-10	A13A229-05RE1	Benzo(a)pyrene	1/14/2013	166000		Yes	Y	D			4790	2390	ug/kg
MBTL12-SS-10-10	A13A229-06	Dibenzofuran	1/14/2013	96.3		Yes	Y	D			44.6	22.3	ug/kg
MBTL12-SS-10-10	A13A229-06	Dibenzo(a,h)anthracene	1/14/2013	662		Yes	Y	D			44.6	22.3	ug/kg
MBTL12-SS-10-10	A13A229-06	Anthracene	1/14/2013	604		Yes	Y	D			44.6	22.3	ug/kg
MBTL12-SS-10-10	A13A229-06	Pyrene	1/14/2013	4700		Yes	Y	D			44.6	22.3	ug/kg
MBTL12-SS-10-10	A13A229-06	Benzo(g,h,i)perylene	1/14/2013	3130		Yes	Y	D			44.6	22.3	ug/kg
MBTL12-SS-10-10	A13A229-06	Fluoranthene	1/14/2013	4750		Yes	Y	D			44.6	22.3	ug/kg
MBTL12-SS-10-10	A13A229-06	Acenaphthylene	1/14/2013	44.6		Yes	N	D U			44.6	22.3	ug/kg
MBTL12-SS-10-10	A13A229-06	Indeno(1,2,3-c,d)pyrene	1/14/2013	3390		Yes	Y	D			44.6	22.3	ug/kg
MBTL12-SS-10-10	A13A229-06	Benzo(a)pyrene	1/14/2013	4950		Yes	Y	D			44.6	22.3	ug/kg
MBTL12-SS-10-10	A13A229-06	Benzo(b,k)fluoranthene	1/14/2013	7210		Yes	Y	D			89.2	44.6	ug/kg
MBTL12-SS-10-10	A13A229-06	Benzo(a)anthracene	1/14/2013	2560		Yes	Y	D			44.6	22.3	ug/kg
MBTL12-SS-10-10	A13A229-06	Acenaphthene	1/14/2013	509		Yes	Y	D			44.6	22.3	ug/kg

Analytical Method	SW8270DSIM											
Sample ID	**Lab Sample ID**	**Chemical Name**	**Anal Date**	**Result**	**Mod Res**	**Report**	**Detect**	**Lab Qual**	**Val Qual**	**Reason**	**RL**	**MDL**	**Units**
MBTL12-SS-10-10	A13A229-06	Phenanthrene	1/14/2013	2040		Yes	Y	D			44.6	22.3	ug/kg
MBTL12-SS-10-10	A13A229-06	Fluorene	1/14/2013	202		Yes	Y	D			44.6	22.3	ug/kg
MBTL12-SS-10-10	A13A229-06	1-Methylnaphthalene	1/14/2013	44.6		Yes	N	D U			44.6	22.3	ug/kg
MBTL12-SS-10-10	A13A229-06	Naphthalene	1/14/2013	80.2		Yes	Y	D			44.6	22.3	ug/kg
MBTL12-SS-10-10	A13A229-06	2-Methylnaphthalene	1/14/2013	33.8		Yes	Y	D J			44.6	22.3	ug/kg
MBTL12-SS-10-10	A13A229-06	Chrysene	1/14/2013	4030		Yes	Y	D			44.6	22.3	ug/kg
MBTL12-SS-11-10	A13A229-01	Dibenzo(a,h)anthracene	1/14/2013	9.4		Yes	N	U			9.40	4.70	ug/kg
MBTL12-SS-11-10	A13A229-01	Phenanthrene	1/14/2013	31.4		Yes	Y		J	9	9.40	4.70	ug/kg
MBTL12-SS-11-10	A13A229-01	Acenaphthene	1/14/2013	9.4		Yes	N	U			9.40	4.70	ug/kg
MBTL12-SS-11-10	A13A229-01	2-Methylnaphthalene	1/14/2013	9.4		Yes	N	U			9.40	4.70	ug/kg
MBTL12-SS-11-10	A13A229-01	Naphthalene	1/14/2013	6.09		Yes	Y	J			9.40	4.70	ug/kg
MBTL12-SS-11-10	A13A229-01	Fluorene	1/14/2013	4.87		Yes	Y	J			9.40	4.70	ug/kg
MBTL12-SS-11-10	A13A229-01	Benzo(a)anthracene	1/14/2013	12		Yes	Y				9.40	4.70	ug/kg
MBTL12-SS-11-10	A13A229-01	Benzo(b,k)fluoranthene	1/14/2013	42.8		Yes	Y				18.8	9.40	ug/kg
MBTL12-SS-11-10	A13A229-01	Benzo(a)pyrene	1/14/2013	12.4		Yes	Y				9.40	4.70	ug/kg
MBTL12-SS-11-10	A13A229-01	Pyrene	1/14/2013	27.2		Yes	Y				9.40	4.70	ug/kg
MBTL12-SS-11-10	A13A229-01	Acenaphthylene	1/14/2013	9.4		Yes	N	U			9.40	4.70	ug/kg
MBTL12-SS-11-10	A13A229-01	Fluoranthene	1/14/2013	29.2		Yes	Y				9.40	4.70	ug/kg
MBTL12-SS-11-10	A13A229-01	Indeno(1,2,3-c,d)pyrene	1/14/2013	10.1		Yes	Y				9.40	4.70	ug/kg
MBTL12-SS-11-10	A13A229-01	Anthracene	1/14/2013	14.5		Yes	Y				9.40	4.70	ug/kg
MBTL12-SS-11-10	A13A229-01	Benzo(g,h,i)perylene	1/14/2013	9.68		Yes	Y				9.40	4.70	ug/kg
MBTL12-SS-11-10	A13A229-01	Dibenzofuran	1/14/2013	9.4		Yes	N	U			9.40	4.70	ug/kg
MBTL12-SS-11-10	A13A229-01	Chrysene	1/14/2013	34.9		Yes	Y				9.40	4.70	ug/kg
MBTL12-SS-11-10	A13A229-01	1-Methylnaphthalene	1/14/2013	9.4		Yes	N	U			9.40	4.70	ug/kg
MBTL12-SS-12-10	A13A229-02	Chrysene	1/14/2013	1550		Yes	Y	D			43.2	21.6	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-12-10	A13A229-02	Acenaphthylene	1/14/2013	43.2		Yes	N	D U			43.2	21.6	ug/kg
MBTL12-SS-12-10	A13A229-02	Fluoranthene	1/14/2013	2790		Yes	Y	D			43.2	21.6	ug/kg
MBTL12-SS-12-10	A13A229-02	Indeno(1,2,3-c,d)pyrene	1/14/2013	1470		Yes	Y	D			43.2	21.6	ug/kg
MBTL12-SS-12-10	A13A229-02	Benzo(g,h,i)perylene	1/14/2013	1340		Yes	Y	D			43.2	21.6	ug/kg
MBTL12-SS-12-10	A13A229-02	Dibenzofuran	1/14/2013	36.8		Yes	Y	D J			43.2	21.6	ug/kg
MBTL12-SS-12-10	A13A229-02	Anthracene	1/14/2013	294		Yes	Y	D			43.2	21.6	ug/kg
MBTL12-SS-12-10	A13A229-02	Dibenzo(a,h)anthracene	1/14/2013	267		Yes	Y	D			43.2	21.6	ug/kg
MBTL12-SS-12-10	A13A229-02	Benzo(a)anthracene	1/14/2013	1250		Yes	Y	D			43.2	21.6	ug/kg
MBTL12-SS-12-10	A13A229-02	Pyrene	1/14/2013	2760		Yes	Y	D			43.2	21.6	ug/kg
MBTL12-SS-12-10	A13A229-02	Benzo(b,k)fluoranthene	1/14/2013	3310		Yes	Y	D			86.5	43.2	ug/kg
MBTL12-SS-12-10	A13A229-02	Phenanthrene	1/14/2013	1020		Yes	Y	D			43.2	21.6	ug/kg
MBTL12-SS-12-10	A13A229-02	Fluorene	1/14/2013	82.1		Yes	Y	D			43.2	21.6	ug/kg
MBTL12-SS-12-10	A13A229-02	1-Methylnaphthalene	1/14/2013	43.2		Yes	N	D U			43.2	21.6	ug/kg
MBTL12-SS-12-10	A13A229-02	Naphthalene	1/14/2013	43.2		Yes	N	D U			43.2	21.6	ug/kg
MBTL12-SS-12-10	A13A229-02	2-Methylnaphthalene	1/14/2013	43.2		Yes	N	D U			43.2	21.6	ug/kg
MBTL12-SS-12-10	A13A229-02	Benzo(a)pyrene	1/14/2013	2150		Yes	Y	D			43.2	21.6	ug/kg
MBTL12-SS-12-10	A13A229-02	Acenaphthene	1/14/2013	167		Yes	Y	D			43.2	21.6	ug/kg
MBTL12-SS-13-10	A13A229-03	Benzo(a)pyrene	1/14/2013	20		Yes	Y				9.29	4.64	ug/kg
MBTL12-SS-13-10	A13A229-03	Dibenzo(a,h)anthracene	1/14/2013	9.29		Yes	N	U			9.29	4.64	ug/kg
MBTL12-SS-13-10	A13A229-03	Benzo(a)anthracene	1/14/2013	14.1		Yes	Y				9.29	4.64	ug/kg
MBTL12-SS-13-10	A13A229-03	Acenaphthene	1/14/2013	9.29		Yes	N	U			9.29	4.64	ug/kg
MBTL12-SS-13-10	A13A229-03	Phenanthrene	1/14/2013	9.01		Yes	Y	J			9.29	4.64	ug/kg
MBTL12-SS-13-10	A13A229-03	Chrysene	1/14/2013	22.6		Yes	Y				9.29	4.64	ug/kg
MBTL12-SS-13-10	A13A229-03	1-Methylnaphthalene	1/14/2013	9.29		Yes	N	U			9.29	4.64	ug/kg
MBTL12-SS-13-10	A13A229-03	Indeno(1,2,3-c,d)pyrene	1/14/2013	15		Yes	Y				9.29	4.64	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
MBTL12-SS-13-10	A13A229-03	Naphthalene	1/14/2013	9.29	Yes	N	U			9.29	4.64	ug/kg
MBTL12-SS-13-10	A13A229-03	2-Methylnaphthalene	1/14/2013	9.29	Yes	N	U			9.29	4.64	ug/kg
MBTL12-SS-13-10	A13A229-03	Fluorene	1/14/2013	9.29	Yes	N	U			9.29	4.64	ug/kg
MBTL12-SS-13-10	A13A229-03	Acenaphthylene	1/14/2013	9.29	Yes	N	U			9.29	4.64	ug/kg
MBTL12-SS-13-10	A13A229-03	Fluoranthene	1/14/2013	31.2	Yes	Y				9.29	4.64	ug/kg
MBTL12-SS-13-10	A13A229-03	Benzo(g,h,i)perylene	1/14/2013	16.5	Yes	Y				9.29	4.64	ug/kg
MBTL12-SS-13-10	A13A229-03	Dibenzofuran	1/14/2013	9.29	Yes	N	U			9.29	4.64	ug/kg
MBTL12-SS-13-10	A13A229-03	Pyrene	1/14/2013	28.5	Yes	Y				9.29	4.64	ug/kg
MBTL12-SS-13-10	A13A229-03	Anthracene	1/14/2013	9.29	Yes	N	U			9.29	4.64	ug/kg
MBTL12-SS-13-10	A13A229-03	Benzo(b,k)fluoranthene	1/14/2013	39.6	Yes	Y				18.6	9.29	ug/kg

Analytical Method APEXsolids

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-24-0-1	A13A243-01	Total solids	1/15/2013	83.1		Yes	Y				1.00	1.00	pct
AQ-SSA4-24-1-2	A13A243-02	Total solids	1/15/2013	81.4		Yes	Y				1.00	1.00	pct
AQ-SSA4-25-0-1	A13A243-05	Total solids	1/15/2013	87.9		Yes	Y				1.00	1.00	pct
AQ-SSA4-25-1-2	A13A243-06	Total solids	1/15/2013	82.5		Yes	Y				1.00	1.00	pct
AQ-SSA4-26-0-1	A13A243-08	Total solids	1/15/2013	85.5		Yes	Y				1.00	1.00	pct
AQ-SSA4-26-1-2	A13A243-09	Total solids	1/15/2013	81.8		Yes	Y				1.00	1.00	pct
AQ-SSA4-27-0-1	A13A243-14	Total solids	1/15/2013	83.6		Yes	Y				1.00	1.00	pct
AQ-SSA4-27-1-2	A13A243-15	Total solids	1/15/2013	86.9		Yes	Y				1.00	1.00	pct
AQ-SSA4-76-0-1	A13A243-11	Total solids	1/15/2013	86.2		Yes	Y				1.00	1.00	pct
AQ-SSA4-76-1-2	A13A243-12	Total solids	1/15/2013	81.3		Yes	Y				1.00	1.00	pct

Analytical Method SM2540G

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-24-0-1	A13A243-01	Total solids	1/15/2013	83.1		Yes	Y				1.00	1.00	pct
AQ-SSA4-24-1-2	A13A243-02	Total solids	1/15/2013	81.4		Yes	Y				1.00	1.00	pct
AQ-SSA4-25-0-1	A13A243-05	Total solids	1/15/2013	87.9		Yes	Y				1.00	1.00	pct
AQ-SSA4-25-1-2	A13A243-06	Total solids	1/15/2013	82.5		Yes	Y				1.00	1.00	pct
AQ-SSA4-26-0-1	A13A243-08	Total solids	1/15/2013	85.5		Yes	Y				1.00	1.00	pct
AQ-SSA4-26-1-2	A13A243-09	Total solids	1/15/2013	81.8		Yes	Y				1.00	1.00	pct
AQ-SSA4-27-0-1	A13A243-14	Total solids	1/15/2013	83.6		Yes	Y				1.00	1.00	pct
AQ-SSA4-27-1-2	A13A243-15	Total solids	1/15/2013	86.9		Yes	Y				1.00	1.00	pct
AQ-SSA4-76-0-1	A13A243-11	Total solids	1/15/2013	86.2		Yes	Y				1.00	1.00	pct
AQ-SSA4-76-1-2	A13A243-12	Total solids	1/15/2013	81.3		Yes	Y				1.00	1.00	pct

Analytical Method SM5310B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-24-0-1	A13A243-01	Total organic carbon	1/16/2013	590		Yes	Y		J	9	200	100	mg/kg

Analytical Method SM5310B

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-24-1-2	A13A243-02	Total organic carbon	1/16/2013	260	Yes	Y		J	9	200	100	mg/kg
AQ-SSA4-25-0-1	A13A243-05	Total organic carbon	1/16/2013	3200	Yes	Y		J	9	200	100	mg/kg
AQ-SSA4-25-1-2	A13A243-06	Total organic carbon	1/16/2013	520	Yes	Y		J	9	200	100	mg/kg
AQ-SSA4-26-0-1	A13A243-08	Total organic carbon	1/16/2013	2300	Yes	Y		J	9	200	100	mg/kg
AQ-SSA4-26-1-2	A13A243-09	Total organic carbon	1/16/2013	300	Yes	Y		J	9	200	100	mg/kg
AQ-SSA4-27-0-1	A13A243-14	Total organic carbon	1/16/2013	860	Yes	Y		J	9	200	100	mg/kg
AQ-SSA4-27-1-2	A13A243-15	Total organic carbon	1/16/2013	4600	Yes	Y		J	9	200	100	mg/kg
AQ-SSA4-76-0-1	A13A243-11	Total organic carbon	1/16/2013	1400	Yes	Y		J	9	200	100	mg/kg
AQ-SSA4-76-1-2	A13A243-12	Total organic carbon	1/16/2013	330	Yes	Y		J	9	200	100	mg/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-24-0-1	A13A243-01RE1	Naphthalene	1/23/2013	8.31	Yes	N	U			8.31	4.16	ug/kg
AQ-SSA4-24-0-1	A13A243-01RE1	Anthracene	1/23/2013	4.16	Yes	N	U			4.16	2.08	ug/kg
AQ-SSA4-24-0-1	A13A243-01RE1	2-Methylnaphthalene	1/23/2013	8.31	Yes	N	U			8.31	4.16	ug/kg
AQ-SSA4-24-0-1	A13A243-01RE1	1-Methylnaphthalene	1/23/2013	8.31	Yes	N	U			8.31	4.16	ug/kg
AQ-SSA4-24-0-1	A13A243-01RE1	Acenaphthylene	1/23/2013	4.16	Yes	N	U			4.16	2.08	ug/kg
AQ-SSA4-24-0-1	A13A243-01RE1	Pyrene	1/23/2013	16	Yes	Y				4.16	2.08	ug/kg
AQ-SSA4-24-0-1	A13A243-01RE1	Dibenzofuran	1/23/2013	4.16	Yes	N	U			4.16	2.08	ug/kg
AQ-SSA4-24-0-1	A13A243-01RE1	Benzo(g,h,i)perylene	1/23/2013	36.1	Yes	Y				4.16	2.08	ug/kg
AQ-SSA4-24-0-1	A13A243-01RE1	Benzo(b,k)fluoranthene	1/23/2013	37.2	Yes	Y				8.31	4.16	ug/kg
AQ-SSA4-24-0-1	A13A243-01RE1	Fluoranthene	1/23/2013	14.1	Yes	Y				4.16	2.08	ug/kg
AQ-SSA4-24-0-1	A13A243-01RE1	Fluorene	1/23/2013	4.16	Yes	N	U			4.16	2.08	ug/kg
AQ-SSA4-24-0-1	A13A243-01RE1	Chrysene	1/23/2013	22.7	Yes	Y				4.16	2.08	ug/kg
AQ-SSA4-24-0-1	A13A243-01RE1	Benzo(a)pyrene	1/23/2013	12.2	Yes	Y				4.16	2.08	ug/kg
AQ-SSA4-24-0-1	A13A243-01RE1	Dibenzo(a,h)anthracene	1/23/2013	4.03	Yes	Y	J			4.16	2.08	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-24-0-1	A13A243-01RE1	Benzo(a)anthracene	1/23/2013	9.23		Yes	Y				4.16	2.08	ug/kg
AQ-SSA4-24-0-1	A13A243-01RE1	Acenaphthene	1/23/2013	4.16		Yes	N	U			4.16	2.08	ug/kg
AQ-SSA4-24-0-1	A13A243-01RE1	Phenanthrene	1/23/2013	4.83		Yes	Y				4.16	2.08	ug/kg
AQ-SSA4-24-0-1	A13A243-01RE1	Indeno(1,2,3-c,d)pyrene	1/23/2013	20.3		Yes	Y				4.16	2.08	ug/kg
AQ-SSA4-24-1-2	A13A243-02RE1	Dibenzo(a,h)anthracene	1/23/2013	4.63		Yes	N	U			4.63	2.31	ug/kg
AQ-SSA4-24-1-2	A13A243-02RE1	2-Methylnaphthalene	1/23/2013	9.25		Yes	N	U			9.25	4.63	ug/kg
AQ-SSA4-24-1-2	A13A243-02RE1	Naphthalene	1/23/2013	9.25		Yes	N	U			9.25	4.63	ug/kg
AQ-SSA4-24-1-2	A13A243-02RE1	1-Methylnaphthalene	1/23/2013	9.25		Yes	N	U			9.25	4.63	ug/kg
AQ-SSA4-24-1-2	A13A243-02RE1	Fluorene	1/23/2013	4.63		Yes	N	U			4.63	2.31	ug/kg
AQ-SSA4-24-1-2	A13A243-02RE1	Dibenzofuran	1/23/2013	4.63		Yes	N	U			4.63	2.31	ug/kg
AQ-SSA4-24-1-2	A13A243-02RE1	Acenaphthene	1/23/2013	4.63		Yes	N	U			4.63	2.31	ug/kg
AQ-SSA4-24-1-2	A13A243-02RE1	Phenanthrene	1/23/2013	4.63		Yes	N	U			4.63	2.31	ug/kg
AQ-SSA4-24-1-2	A13A243-02RE1	Benzo(k)fluoranthene	1/23/2013	4.63		Yes	N	U			4.63	2.31	ug/kg
AQ-SSA4-24-1-2	A13A243-02RE1	Fluoranthene	1/23/2013	4.63		Yes	N	U			4.63	2.31	ug/kg
AQ-SSA4-24-1-2	A13A243-02RE1	Benzo(b)fluoranthene	1/23/2013	4.63		Yes	N	U			4.63	2.31	ug/kg
AQ-SSA4-24-1-2	A13A243-02RE1	Benzo(g,h,i)perylene	1/23/2013	8.07		Yes	Y				4.63	2.31	ug/kg
AQ-SSA4-24-1-2	A13A243-02RE1	Pyrene	1/23/2013	4.63		Yes	N	U			4.63	2.31	ug/kg
AQ-SSA4-24-1-2	A13A243-02RE1	Acenaphthylene	1/23/2013	4.63		Yes	N	U			4.63	2.31	ug/kg
AQ-SSA4-24-1-2	A13A243-02RE1	Chrysene	1/23/2013	4.63		Yes	N	U			4.63	2.31	ug/kg
AQ-SSA4-24-1-2	A13A243-02RE1	Benzo(a)pyrene	1/23/2013	4.63		Yes	N	U			4.63	2.31	ug/kg
AQ-SSA4-24-1-2	A13A243-02RE1	Anthracene	1/23/2013	4.63		Yes	N	U			4.63	2.31	ug/kg
AQ-SSA4-24-1-2	A13A243-02RE1	Benzo(a)anthracene	1/23/2013	4.63		Yes	N	U			4.63	2.31	ug/kg
AQ-SSA4-24-1-2	A13A243-02RE1	Indeno(1,2,3-c,d)pyrene	1/23/2013	3.66		Yes	Y	J			4.63	2.31	ug/kg
AQ-SSA4-25-0-1	A13A243-05	Dibenzo(a,h)anthracene	1/21/2013	2240		Yes	Y	D			20.3	10.1	ug/kg
AQ-SSA4-25-0-1	A13A243-05	1-Methylnaphthalene	1/21/2013	40.6		Yes	N	D U			40.6	20.3	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-25-0-1	A13A243-05	Naphthalene	1/21/2013	40.6		Yes	N	D U			40.6	20.3	ug/kg
AQ-SSA4-25-0-1	A13A243-05	Fluorene	1/21/2013			Yes	N	D U			20.3	10.1	ug/kg
AQ-SSA4-25-0-1	A13A243-05	Phenanthrene	1/21/2013	399		Yes	Y	D			20.3	10.1	ug/kg
AQ-SSA4-25-0-1	A13A243-05	Benzo(a)anthracene	1/21/2013	3480		Yes	Y	D			20.3	10.1	ug/kg
AQ-SSA4-25-0-1	A13A243-05	Benzo(a)pyrene	1/21/2013	7120		Yes	Y	D			20.3	10.1	ug/kg
AQ-SSA4-25-0-1	A13A243-05	Acenaphthylene	1/21/2013	20.3		Yes	N	D U			20.3	10.1	ug/kg
AQ-SSA4-25-0-1	A13A243-05	Fluoranthene	1/21/2013	3080		Yes	Y	D			20.3	10.1	ug/kg
AQ-SSA4-25-0-1	A13A243-05	Indeno(1,2,3-c,d)pyrene	1/21/2013	7090		Yes	Y	D			20.3	10.1	ug/kg
AQ-SSA4-25-0-1	A13A243-05	Dibenzofuran	1/21/2013	16.4		Yes	Y	D J			20.3	10.1	ug/kg
AQ-SSA4-25-0-1	A13A243-05	Pyrene	1/21/2013	3470		Yes	Y	D			20.3	10.1	ug/kg
AQ-SSA4-25-0-1	A13A243-05	Anthracene	1/21/2013	69		Yes	Y	D			20.3	10.1	ug/kg
AQ-SSA4-25-0-1	A13A243-05	2-Methylnaphthalene	1/21/2013	40.6		Yes	N	D U			40.6	20.3	ug/kg
AQ-SSA4-25-0-1	A13A243-05	Acenaphthene	1/21/2013	15.7		Yes	Y	D J			20.3	10.1	ug/kg
AQ-SSA4-25-0-1	A13A243-05RE1	Chrysene	1/22/2013	7690		Yes	Y	D			406	203	ug/kg
AQ-SSA4-25-0-1	A13A243-05RE1	Benzo(b,k)fluoranthene	1/22/2013	17600		Yes	Y	D			811	406	ug/kg
AQ-SSA4-25-0-1	A13A243-05RE1	Benzo(g,h,i)perylene	1/22/2013	8330		Yes	Y	D			406	203	ug/kg
AQ-SSA4-25-1-2	A13A243-06RE1	2-Methylnaphthalene	1/23/2013	9.42		Yes	N	U			9.42	4.71	ug/kg
AQ-SSA4-25-1-2	A13A243-06RE1	Indeno(1,2,3-c,d)pyrene	1/23/2013	28.9		Yes	Y				4.71	2.36	ug/kg
AQ-SSA4-25-1-2	A13A243-06RE1	Dibenzofuran	1/23/2013	4.71		Yes	N	U			4.71	2.36	ug/kg
AQ-SSA4-25-1-2	A13A243-06RE1	Pyrene	1/23/2013	24.2		Yes	Y				4.71	2.36	ug/kg
AQ-SSA4-25-1-2	A13A243-06RE1	Anthracene	1/23/2013	3.29		Yes	Y	J			4.71	2.36	ug/kg
AQ-SSA4-25-1-2	A13A243-06RE1	Benzo(b,k)fluoranthene	1/23/2013	72.4		Yes	Y				9.42	4.71	ug/kg
AQ-SSA4-25-1-2	A13A243-06RE1	Naphthalene	1/23/2013	9.42		Yes	N	U			9.42	4.71	ug/kg
AQ-SSA4-25-1-2	A13A243-06RE1	Dibenzo(a,h)anthracene	1/23/2013	7.14		Yes	Y				4.71	2.36	ug/kg
AQ-SSA4-25-1-2	A13A243-06RE1	Fluoranthene	1/23/2013	24.6		Yes	Y				4.71	2.36	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-25-1-2	A13A243-06RE1	Acenaphthylene	1/23/2013	4.71		Yes	N	U			4.71	2.36	ug/kg
AQ-SSA4-25-1-2	A13A243-06RE1	Benzo(g,h,i)perylene	1/23/2013	33.9		Yes	Y				4.71	2.36	ug/kg
AQ-SSA4-25-1-2	A13A243-06RE1	Benzo(a)pyrene	1/23/2013	27.4		Yes	Y				4.71	2.36	ug/kg
AQ-SSA4-25-1-2	A13A243-06RE1	1-Methylnaphthalene	1/23/2013	9.42		Yes	N	U			9.42	4.71	ug/kg
AQ-SSA4-25-1-2	A13A243-06RE1	Benzo(a)anthracene	1/23/2013	18.3		Yes	Y				4.71	2.36	ug/kg
AQ-SSA4-25-1-2	A13A243-06RE1	Acenaphthene	1/23/2013	4.71		Yes	N	U			4.71	2.36	ug/kg
AQ-SSA4-25-1-2	A13A243-06RE1	Phenanthrene	1/23/2013	9.75		Yes	Y				4.71	2.36	ug/kg
AQ-SSA4-25-1-2	A13A243-06RE1	Fluorene	1/23/2013	4.71		Yes	N	U			4.71	2.36	ug/kg
AQ-SSA4-25-1-2	A13A243-06RE1	Chrysene	1/23/2013	33.1		Yes	Y				4.71	2.36	ug/kg
AQ-SSA4-26-0-1	A13A243-08	Fluorene	1/21/2013	2.28		Yes	Y	J			4.05	2.03	ug/kg
AQ-SSA4-26-0-1	A13A243-08	Benzo(b,k)fluoranthene	1/21/2013	2880		Yes	Y				8.10	4.05	ug/kg
AQ-SSA4-26-0-1	A13A243-08	2-Methylnaphthalene	1/21/2013	8.1		Yes	N	U			8.10	4.05	ug/kg
AQ-SSA4-26-0-1	A13A243-08	Benzo(a)pyrene	1/21/2013	913		Yes	Y				4.05	2.03	ug/kg
AQ-SSA4-26-0-1	A13A243-08	Naphthalene	1/21/2013	8.1		Yes	N	U			8.10	4.05	ug/kg
AQ-SSA4-26-0-1	A13A243-08	1-Methylnaphthalene	1/21/2013	8.1		Yes	N	U			8.10	4.05	ug/kg
AQ-SSA4-26-0-1	A13A243-08	Dibenzofuran	1/21/2013	2.65		Yes	Y	J			4.05	2.03	ug/kg
AQ-SSA4-26-0-1	A13A243-08	Anthracene	1/21/2013	11.8		Yes	Y				4.05	2.03	ug/kg
AQ-SSA4-26-0-1	A13A243-08	Benzo(a)anthracene	1/21/2013	445		Yes	Y				4.05	2.03	ug/kg
AQ-SSA4-26-0-1	A13A243-08	Pyrene	1/21/2013	430		Yes	Y				4.05	2.03	ug/kg
AQ-SSA4-26-0-1	A13A243-08	Phenanthrene	1/21/2013	54.2		Yes	Y				4.05	2.03	ug/kg
AQ-SSA4-26-0-1	A13A243-08	Indeno(1,2,3-c,d)pyrene	1/21/2013	1590		Yes	Y				4.05	2.03	ug/kg
AQ-SSA4-26-0-1	A13A243-08	Fluoranthene	1/21/2013	384		Yes	Y				4.05	2.03	ug/kg
AQ-SSA4-26-0-1	A13A243-08	Acenaphthylene	1/21/2013	3.48		Yes	Y	J			4.05	2.03	ug/kg
AQ-SSA4-26-0-1	A13A243-08	Chrysene	1/21/2013	1470		Yes	Y				4.05	2.03	ug/kg
AQ-SSA4-26-0-1	A13A243-08	Dibenzo(a,h)anthracene	1/21/2013	405		Yes	Y				4.05	2.03	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-26-0-1	A13A243-08	Acenaphthene	1/21/2013	3.13		Yes	Y	J			4.05	2.03	ug/kg
AQ-SSA4-26-0-1	A13A243-08RE1	Benzo(g,h,i)perylene	1/22/2013	2330		Yes	Y	D			81.0	40.5	ug/kg
AQ-SSA4-26-1-2	A13A243-09RE1	Benzo(b,k)fluoranthene	1/23/2013	6.92		Yes	Y	J			8.66	4.33	ug/kg
AQ-SSA4-26-1-2	A13A243-09RE1	2-Methylnaphthalene	1/23/2013	8.66		Yes	N	U			8.66	4.33	ug/kg
AQ-SSA4-26-1-2	A13A243-09RE1	Naphthalene	1/23/2013	8.66		Yes	N	U			8.66	4.33	ug/kg
AQ-SSA4-26-1-2	A13A243-09RE1	1-Methylnaphthalene	1/23/2013	8.66		Yes	N	U			8.66	4.33	ug/kg
AQ-SSA4-26-1-2	A13A243-09RE1	Fluorene	1/23/2013	4.33		Yes	N	U			4.33	2.17	ug/kg
AQ-SSA4-26-1-2	A13A243-09RE1	Benzo(a)pyrene	1/23/2013	4.33		Yes	N	U			4.33	2.17	ug/kg
AQ-SSA4-26-1-2	A13A243-09RE1	Phenanthrene	1/23/2013	4.33		Yes	N	U			4.33	2.17	ug/kg
AQ-SSA4-26-1-2	A13A243-09RE1	Anthracene	1/23/2013	4.33		Yes	N	U			4.33	2.17	ug/kg
AQ-SSA4-26-1-2	A13A243-09RE1	Dibenzofuran	1/23/2013	4.33		Yes	N	U			4.33	2.17	ug/kg
AQ-SSA4-26-1-2	A13A243-09RE1	Acenaphthene	1/23/2013	4.33		Yes	N	U			4.33	2.17	ug/kg
AQ-SSA4-26-1-2	A13A243-09RE1	Pyrene	1/23/2013	4.33		Yes	N	U			4.33	2.17	ug/kg
AQ-SSA4-26-1-2	A13A243-09RE1	Benzo(g,h,i)perylene	1/23/2013	7.92		Yes	Y				4.33	2.17	ug/kg
AQ-SSA4-26-1-2	A13A243-09RE1	Indeno(1,2,3-c,d)pyrene	1/23/2013	4.97		Yes	Y				4.33	2.17	ug/kg
AQ-SSA4-26-1-2	A13A243-09RE1	Fluoranthene	1/23/2013	4.33		Yes	N	U			4.33	2.17	ug/kg
AQ-SSA4-26-1-2	A13A243-09RE1	Acenaphthylene	1/23/2013	4.33		Yes	N	U			4.33	2.17	ug/kg
AQ-SSA4-26-1-2	A13A243-09RE1	Chrysene	1/23/2013	2.5		Yes	Y	J			4.33	2.17	ug/kg
AQ-SSA4-26-1-2	A13A243-09RE1	Dibenzo(a,h)anthracene	1/23/2013	4.33		Yes	N	U			4.33	2.17	ug/kg
AQ-SSA4-26-1-2	A13A243-09RE1	Benzo(a)anthracene	1/23/2013	4.33		Yes	N	U			4.33	2.17	ug/kg
AQ-SSA4-27-0-1	A13A243-14RE1	Dibenzo(a,h)anthracene	1/23/2013	45		Yes	Y				4.30	2.15	ug/kg
AQ-SSA4-27-0-1	A13A243-14RE1	Phenanthrene	1/23/2013	11.8		Yes	Y				4.30	2.15	ug/kg
AQ-SSA4-27-0-1	A13A243-14RE1	Benzo(b,k)fluoranthene	1/23/2013	403		Yes	Y				8.61	4.30	ug/kg
AQ-SSA4-27-0-1	A13A243-14RE1	2-Methylnaphthalene	1/23/2013	8.61		Yes	N	U			8.61	4.30	ug/kg
AQ-SSA4-27-0-1	A13A243-14RE1	Naphthalene	1/23/2013	8.61		Yes	N	U			8.61	4.30	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-27-0-1	A13A243-14RE1	1-Methylnaphthalene	1/23/2013	8.61		Yes	N	U			8.61	4.30	ug/kg
AQ-SSA4-27-0-1	A13A243-14RE1	Fluorene	1/23/2013	4.3		Yes	N	U			4.30	2.15	ug/kg
AQ-SSA4-27-0-1	A13A243-14RE1	Indeno(1,2,3-c,d)pyrene	1/23/2013	197		Yes	Y				4.30	2.15	ug/kg
AQ-SSA4-27-0-1	A13A243-14RE1	Anthracene	1/23/2013	3.24		Yes	Y	J			4.30	2.15	ug/kg
AQ-SSA4-27-0-1	A13A243-14RE1	Pyrene	1/23/2013	57.1		Yes	Y				4.30	2.15	ug/kg
AQ-SSA4-27-0-1	A13A243-14RE1	Acenaphthene	1/23/2013	4.3		Yes	N	U			4.30	2.15	ug/kg
AQ-SSA4-27-0-1	A13A243-14RE1	Benzo(g,h,i)perylene	1/23/2013	262		Yes	Y				4.30	2.15	ug/kg
AQ-SSA4-27-0-1	A13A243-14RE1	Fluoranthene	1/23/2013	51.7		Yes	Y				4.30	2.15	ug/kg
AQ-SSA4-27-0-1	A13A243-14RE1	Acenaphthylene	1/23/2013	4.3		Yes	N	U			4.30	2.15	ug/kg
AQ-SSA4-27-0-1	A13A243-14RE1	Chrysene	1/23/2013	218		Yes	Y				4.30	2.15	ug/kg
AQ-SSA4-27-0-1	A13A243-14RE1	Benzo(a)pyrene	1/23/2013	116		Yes	Y				4.30	2.15	ug/kg
AQ-SSA4-27-0-1	A13A243-14RE1	Benzo(a)anthracene	1/23/2013	61.1		Yes	Y				4.30	2.15	ug/kg
AQ-SSA4-27-0-1	A13A243-14RE1	Dibenzofuran	1/23/2013	4.3		Yes	N	U			4.30	2.15	ug/kg
AQ-SSA4-27-1-2	A13A243-15	Phenanthrene	1/21/2013	150		Yes	Y	D			18.4	9.20	ug/kg
AQ-SSA4-27-1-2	A13A243-15	Anthracene	1/21/2013	67.9		Yes	Y	D			18.4	9.20	ug/kg
AQ-SSA4-27-1-2	A13A243-15	2-Methylnaphthalene	1/21/2013	36.8		Yes	N	D U			36.8	18.4	ug/kg
AQ-SSA4-27-1-2	A13A243-15	Naphthalene	1/21/2013	36.8		Yes	N	D U			36.8	18.4	ug/kg
AQ-SSA4-27-1-2	A13A243-15	1-Methylnaphthalene	1/21/2013	36.8		Yes	N	D U			36.8	18.4	ug/kg
AQ-SSA4-27-1-2	A13A243-15	Fluorene	1/21/2013	9.85		Yes	Y	D J			18.4	9.20	ug/kg
AQ-SSA4-27-1-2	A13A243-15	Fluoranthene	1/21/2013	1480		Yes	Y	D			18.4	9.20	ug/kg
AQ-SSA4-27-1-2	A13A243-15	Benzo(a)anthracene	1/21/2013	3320		Yes	Y	D			18.4	9.20	ug/kg
AQ-SSA4-27-1-2	A13A243-15	Dibenzo(a,h)anthracene	1/21/2013	2080		Yes	Y	D			18.4	9.20	ug/kg
AQ-SSA4-27-1-2	A13A243-15	Benzo(a)pyrene	1/21/2013	6200		Yes	Y	D			18.4	9.20	ug/kg
AQ-SSA4-27-1-2	A13A243-15	Acenaphthylene	1/21/2013	23.9		Yes	Y	D			18.4	9.20	ug/kg
AQ-SSA4-27-1-2	A13A243-15	Acenaphthene	1/21/2013	10.3		Yes	Y	D J			18.4	9.20	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-27-1-2	A13A243-15	Dibenzofuran	1/21/2013	11.3		Yes	Y	D J			18.4	9.20	ug/kg
AQ-SSA4-27-1-2	A13A243-15	Pyrene	1/21/2013	1830		Yes	Y	D			18.4	9.20	ug/kg
AQ-SSA4-27-1-2	A13A243-15RE1	Benzo(g,h,i)perylene	1/22/2013	11700		Yes	Y	D			368	184	ug/kg
AQ-SSA4-27-1-2	A13A243-15RE1	Indeno(1,2,3-c,d)pyrene	1/22/2013	8530		Yes	Y	D			368	184	ug/kg
AQ-SSA4-27-1-2	A13A243-15RE1	Chrysene	1/22/2013	16600		Yes	Y	D			368	184	ug/kg
AQ-SSA4-27-1-2	A13A243-15RE1	Benzo(b,k)fluoranthene	1/22/2013	18400		Yes	Y	D			736	368	ug/kg
AQ-SSA4-76-0-1	A13A243-11	Phenanthrene	1/21/2013	39.2		Yes	Y				4.32	2.16	ug/kg
AQ-SSA4-76-0-1	A13A243-11	Acenaphthylene	1/21/2013	2.92		Yes	Y	J			4.32	2.16	ug/kg
AQ-SSA4-76-0-1	A13A243-11	Fluorene	1/21/2013	4.32		Yes	N	U			4.32	2.16	ug/kg
AQ-SSA4-76-0-1	A13A243-11	1-Methylnaphthalene	1/21/2013	8.63		Yes	N	U			8.63	4.32	ug/kg
AQ-SSA4-76-0-1	A13A243-11	Naphthalene	1/21/2013	8.63		Yes	N	U			8.63	4.32	ug/kg
AQ-SSA4-76-0-1	A13A243-11	2-Methylnaphthalene	1/21/2013	8.63		Yes	N	U			8.63	4.32	ug/kg
AQ-SSA4-76-0-1	A13A243-11	Acenaphthene	1/21/2013	2.47		Yes	Y	J			4.32	2.16	ug/kg
AQ-SSA4-76-0-1	A13A243-11	Benzo(b,k)fluoranthene	1/21/2013	2070		Yes	Y				8.63	4.32	ug/kg
AQ-SSA4-76-0-1	A13A243-11	Anthracene	1/21/2013	8.53		Yes	Y				4.32	2.16	ug/kg
AQ-SSA4-76-0-1	A13A243-11	Dibenzo(a,h)anthracene	1/21/2013	294		Yes	Y				4.32	2.16	ug/kg
AQ-SSA4-76-0-1	A13A243-11	Chrysene	1/21/2013	936		Yes	Y				4.32	2.16	ug/kg
AQ-SSA4-76-0-1	A13A243-11	Fluoranthene	1/21/2013	274		Yes	Y				4.32	2.16	ug/kg
AQ-SSA4-76-0-1	A13A243-11	Indeno(1,2,3-c,d)pyrene	1/21/2013	1230		Yes	Y				4.32	2.16	ug/kg
AQ-SSA4-76-0-1	A13A243-11	Dibenzofuran	1/21/2013	4.32		Yes	N	U			4.32	2.16	ug/kg
AQ-SSA4-76-0-1	A13A243-11	Pyrene	1/21/2013	310		Yes	Y				4.32	2.16	ug/kg
AQ-SSA4-76-0-1	A13A243-11	Benzo(a)pyrene	1/21/2013	638		Yes	Y				4.32	2.16	ug/kg
AQ-SSA4-76-0-1	A13A243-11	Benzo(a)anthracene	1/21/2013	320		Yes	Y				4.32	2.16	ug/kg
AQ-SSA4-76-0-1	A13A243-11RE1	Benzo(g,h,i)perylene	1/22/2013	2290		Yes	Y	D			43.2	21.6	ug/kg
AQ-SSA4-76-1-2	A13A243-12	Benzo(a)anthracene	1/21/2013	2.57		Yes	Y	J			4.67	2.34	ug/kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res	Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-76-1-2	A13A243-12	Acenaphthene	1/21/2013	4.67		Yes	N	U			4.67	2.34	ug/kg
AQ-SSA4-76-1-2	A13A243-12	Phenanthrene	1/21/2013	4.67		Yes	N	U			4.67	2.34	ug/kg
AQ-SSA4-76-1-2	A13A243-12	1-Methylnaphthalene	1/21/2013	9.34		Yes	N	U			9.34	4.67	ug/kg
AQ-SSA4-76-1-2	A13A243-12	Dibenzo(a,h)anthracene	1/21/2013	4.67		Yes	N	U			4.67	2.34	ug/kg
AQ-SSA4-76-1-2	A13A243-12	Benzo(b,k)fluoranthene	1/21/2013	8.91		Yes	Y	J			9.34	4.67	ug/kg
AQ-SSA4-76-1-2	A13A243-12	Fluorene	1/21/2013	4.67		Yes	N	U			4.67	2.34	ug/kg
AQ-SSA4-76-1-2	A13A243-12	2-Methylnaphthalene	1/21/2013	9.34		Yes	N	U			9.34	4.67	ug/kg
AQ-SSA4-76-1-2	A13A243-12	Anthracene	1/21/2013	4.67		Yes	N	U			4.67	2.34	ug/kg
AQ-SSA4-76-1-2	A13A243-12	Chrysene	1/21/2013	3.26		Yes	Y	J			4.67	2.34	ug/kg
AQ-SSA4-76-1-2	A13A243-12	Acenaphthylene	1/21/2013	4.67		Yes	N	U			4.67	2.34	ug/kg
AQ-SSA4-76-1-2	A13A243-12	Fluoranthene	1/21/2013	4.67		Yes	N	U			4.67	2.34	ug/kg
AQ-SSA4-76-1-2	A13A243-12	Indeno(1,2,3-c,d)pyrene	1/21/2013	7.84		Yes	Y				4.67	2.34	ug/kg
AQ-SSA4-76-1-2	A13A243-12	Benzo(g,h,i)perylene	1/21/2013	15.5		Yes	Y				4.67	2.34	ug/kg
AQ-SSA4-76-1-2	A13A243-12	Dibenzofuran	1/21/2013	4.67		Yes	N	U			4.67	2.34	ug/kg
AQ-SSA4-76-1-2	A13A243-12	Pyrene	1/21/2013	4.67		Yes	N	U			4.67	2.34	ug/kg
AQ-SSA4-76-1-2	A13A243-12	Naphthalene	1/21/2013	9.34		Yes	N	U			9.34	4.67	ug/kg
AQ-SSA4-76-1-2	A13A243-12	Benzo(a)pyrene	1/21/2013	2.89		Yes	Y	J			4.67	2.34	ug/kg
AQ-SSA4-RB-011113	A13A243-18	Benzo(a)anthracene	1/18/2013	0.0426		Yes	N	U			0.0426	0.0213	ug/L
AQ-SSA4-RB-011113	A13A243-18	Acenaphthene	1/18/2013	0.0426		Yes	N	U			0.0426	0.0213	ug/L
AQ-SSA4-RB-011113	A13A243-18	Phenanthrene	1/18/2013	0.0426		Yes	N	U			0.0426	0.0213	ug/L
AQ-SSA4-RB-011113	A13A243-18	Fluorene	1/18/2013	0.0426		Yes	N	U			0.0426	0.0213	ug/L
AQ-SSA4-RB-011113	A13A243-18	1-Methylnaphthalene	1/18/2013	0.0851		Yes	N	U			0.0851	0.0426	ug/L
AQ-SSA4-RB-011113	A13A243-18	Dibenzo(a,h)anthracene	1/18/2013	0.0426		Yes	N	U			0.0426	0.0213	ug/L
AQ-SSA4-RB-011113	A13A243-18	2-Methylnaphthalene	1/18/2013	0.0851		Yes	N	U			0.0851	0.0426	ug/L
AQ-SSA4-RB-011113	A13A243-18	Indeno(1,2,3-c,d)pyrene	1/18/2013	0.0426		Yes	N	U			0.0426	0.0213	ug/L

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SSA4-RB-011113	A13A243-18	Naphthalene	1/18/2013	0.0851	Yes	N	U			0.0851	0.0426	ug/L
AQ-SSA4-RB-011113	A13A243-18	Benzo(a)pyrene	1/18/2013	0.0426	Yes	N	U			0.0426	0.0213	ug/L
AQ-SSA4-RB-011113	A13A243-18	Chrysene	1/18/2013	0.0426	Yes	N	U			0.0426	0.0213	ug/L
AQ-SSA4-RB-011113	A13A243-18	Acenaphthylene	1/18/2013	0.0426	Yes	N	U			0.0426	0.0213	ug/L
AQ-SSA4-RB-011113	A13A243-18	Benzo(k)fluoranthene	1/18/2013	0.0426	Yes	N	U			0.0426	0.0213	ug/L
AQ-SSA4-RB-011113	A13A243-18	Benzo(b)fluoranthene	1/18/2013	0.0426	Yes	N	U			0.0426	0.0213	ug/L
AQ-SSA4-RB-011113	A13A243-18	Benzo(g,h,i)perylene	1/18/2013	0.0426	Yes	N	U			0.0426	0.0213	ug/L
AQ-SSA4-RB-011113	A13A243-18	Dibenzofuran	1/18/2013	0.0426	Yes	N	U			0.0426	0.0213	ug/L
AQ-SSA4-RB-011113	A13A243-18	Pyrene	1/18/2013	0.0426	Yes	N	U			0.0426	0.0213	ug/L
AQ-SSA4-RB-011113	A13A243-18	Anthracene	1/18/2013	0.0426	Yes	N	U			0.0426	0.0213	ug/L
AQ-SSA4-RB-011113	A13A243-18	Fluoranthene	1/18/2013	0.0426	Yes	N	U			0.0426	0.0213	ug/L

Laboratory Data Consultants, Inc.

7750 El Camino Real, Ste. 2L Carlsbad, CA 92009

Phone 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

Anchor Environmental, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101
ATTN: Ms. Cindy Fields

February 27, 2013

SUBJECT: Millennium Bulk Terminals, Data Validation

Dear Ms. Fields,

Enclosed is the final validation report for the fractions listed below. This SDG was received on February 26, 2013. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 29284:

SDG #	Fraction
A13B318	Polynuclear Aromatic Hydrocarbons, Polychlorinated Biphenyls, Total Solids

The data validation was performed under Stage 2B guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Ming-Hwa Hwang
Project Manager/Senior Chemist

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552 Pages-SF

Attachment 1

Stage 2B EDD

LDC #29284 (Anchor Environmental-Seattle WA /Millennium Bulk Terminals)

LDC	SDG#	DATE REC'D	(3) DATE DUE	PAH (8270D-SIM)		PCB (8082A)		TS (2540G /SOP)																															
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	A13B318	02/26/13	ASAP	0	1	0	3	0	3																														
Total	A/MH			0	1	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7

Shaded cells indicate Stage 4 validation (all other cells are Stage 2B validation). These sample counts do not include MS, MSD, or DUP's.

29284ST.wpd

LDC Report# 29284A2b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 10, 2012
LDC Report Date:	February 26, 2013
Matrix:	Sediment
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A13B318

Sample Identification

AQ-SS-09-AB
AQ-SS-09-ABMS
AQ-SS-09-ABDUP

Introduction

This data review covers 3 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per a modification of EPA SW 846 Method 8270D using Selected Ion Monitoring (SIM) for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) sample was reviewed for each matrix as applicable. Percent recoveries (%R) were not within the QC limits. Since the sample was diluted out, no data were qualified.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Compound	RPD (Limits)	Flag	A or P
AQ-SS-09-ABDUP (AQ-SS-09-AB)	Phenanthrene	43 (≤35)	J (all detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to duplicate RPD problems, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG A13B318

SDG	Sample	Compound	Flag	A or P	Reason
A13B318	AQ-SS-09-AB	Phenanthrene	J (all detects)	A	Duplicate sample analysis (RPD)

Millennium Bulk Terminals
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG A13B318

No Sample Data Qualified in this SDG

LDC #: 29284A2b **VALIDATION COMPLETENESS WORKSHEET** Date: 2/26/13
SDG #: A13B318 Stage 2B Page: 1 of 1
Laboratory: APEX Laboratories, LLC Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times A	SW	Sampling dates: 12/10/12
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	A	ICV ≤ 30 CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates /DUP	SW/A	MS only
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: sediment

+		−					
1	AQ-SS-09-AB	11	1302414	21		31	
2	AQ-SS-09-ABMS	12		22		32	
3	AQ-SS-09-ABDUP	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA Method 8270)

A. Phenol	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol	III. Benzo(a)pyrene
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene	T. 4-Chloroaniline	II. 4-Nitrophenol	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene	JJ. Dibenzofuran	YY. Fluoranthene	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine	Y. 2,4,6-Trichlorophenol	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. 1-Methylnaphthalene
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)	FFF. Di-n-octylphthalate	UUU.
N. 2-Nitrophenol	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	VVV.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WWW.

LDC #: 29284A2b

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA SW 846 Method 8270)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

Y N N/A Was a MS/MSD analyzed every 20 samples of each matrix?

Y N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		2	general	(%R)	were outside limit	)	1	no qual
				( )	( )	( )		10xDL
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
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				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

LDC#: 29284A2b

VALIDATION FINDINGS WORKSHEET
Laboratory Duplicates

Reviewer: FT

2nd Reviewer: ✓

METHOD: GCMS PAH (EPA SW 846 Method 8270D-SIM)

Y N NA Were lab duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the lab duplicate pairs?

Compound	Concentration (ug/Kg)		RPD (≤35%)	Difference (ug/Kg)	Limits (ug/Kg)	Qualifications (Parent Only)
	1	3				
UU	1450	941	43			J/A det

V:\FIELD DUPLICATES\29284A2b.wpd

LDC Report# 29284A3b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 10 through December 13, 2012
LDC Report Date:	February 27, 2013
Matrix:	Sediment
Parameters:	Polychlorinated Biphenyls
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A13B318

Sample Identification

AQ-SS-09-AB
SS-16-10
SS-17-10
AQ-SS-09-ABDUP
SS-17-10MS

Introduction

This data review covers 5 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082A for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Affected Compound	Flag	A or P
1/28/13	ICV-1254	Rear	Aroclor-1254	22.4	AQ-SS-09-AB SS-16-10 AQ-SS-09-ABDUP 1302381-MB	Aroclor-1254	J (all detects) UJ (all non-detects)	A
1/28/13	ICV-1262	Rear	Aroclor-1262	20.8	AQ-SS-09-AB SS-16-10 AQ-SS-09-ABDUP 1302381-MB	Aroclor-1262	J (all detects) UJ (all non-detects)	A
1/28/13	ICV-1248	Rear	Aroclor-1248	23.1	AQ-SS-09-AB SS-16-10 AQ-SS-09-ABDUP 1302381-MB	Aroclor-1248	J (all detects) UJ (all non-detects)	A

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	Affected Compound	Flag	A or P
SS-17-10MS (SS-17-10)	Aroclor-1260	44 (50-150)	Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268	J (all detects) UJ (all non-detects)	A

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

XI. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XII. Target Compound Identification

Raw data were not reviewed for this SDG.

XIII. Compound Quantitation

Raw data were not reviewed for this SDG.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to calibration %D and MS %R problems, data were qualified as estimated in three samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B data validation all other results are considered valid and usable for all purposes.

Data flags are summarized at the end of this report if data has been qualified.

XV. Field Duplicates

No field duplicates were identified in this SDG.

XVI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Polychlorinated Biphenyls - Data Qualification Summary - SDG A13B318

SDG	Sample	Compound	Flag	A or P	Reason
A13B318	AQ-SS-09-AB SS-16-10	Aroclor-1248 Aroclor-1254 Aroclor-1262	J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D)
A13B318	SS-17-10	Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268	J (all detects) UJ (all non-detects)	A	Matrix spike (%R)

Millennium Bulk Terminals
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG A13B318

No Sample Data Qualified in this SDG

LDC #: 29284A3b

SDG #: A13B318

Laboratory: Apex Laboratories, LLC

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 2/26/13

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/10 – 12/13/12
II.	GC/ECD Instrument Performance Check	NA	
III.	Initial calibration	A	% RSD ≤ 20
IV.	Continuing calibration/ICV	SW	ICV/CCV ≤ 20
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates /DUP	SW/A	MS only
VIII.	Laboratory control samples	A	LCS
IX.	Regional quality assurance and quality control	N	
X.	Florisil cartridge check	N	
XI.	GPC Calibration	N	
XII.	Target compound identification	N	
XIII.	Compound quantitation/RL/LOQ/LODs	N	
XIV.	Overall assessment of data	A	
XV.	Field duplicates	N	
XVI.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: sediments

1	AQ-SS-09-AB	11	02	21		31	
2	SS-16-10	12	1302381	22		32	
3	SS-17-10	13		23		33	
4	AQ-SS-09-ABDUP	14		24		34	
5	SS-17-10MS	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS WORKSHEET

METHOD: Pesticide/PCBs (EPASW 846 Method 8081/8082)

A. alpha-BHC	I. Dieldrin	Q. Endrin ketone	Y. Aroclor-1242	GG.
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Aroclor-1248	HH.
C. delta-BHC	K. Endrin	S. alpha-Chlordane	AA. Aroclor-1254	II.
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ.
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. DB 608	KK.
F. Aldrin	N. Endosulfan sulfate	V. Aroclor-1016	DD. DB 1701	LL.
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE.	MM.
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF.	NN.

Notes:_____

LDC #: 29284A3b

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: FT
2nd Reviewer: ✓

METHOD: ✓ GC __ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
What type of continuing calibration calculation was performed? ___%D or ___RPD
Y N N/A Were continuing calibration standards analyzed at the required frequencies?
Y N N/A Did the continuing calibration standards meet the %D / RPD validation criteria of ≤15.0%?
Level IV Only
Y N N/A Were the retention times for all calibrated compounds within their respective acceptance windows?

#	Date	Standard ID	Detector/ Column	Compound	%D / RPD (Limit ≤ 15.0)	RT (limit)	Associated Samples	Qualifications
-	1/28/13	ICV - AA	Rear	AA	22.0	( )	~~All~~ 1302381-MB,	J/UJ/A qual AA
						( )	1, 2, 4	
						( )		
						( )		
	1/28/13	ICV - 1262	Rear	Aroclor-1262	28.8	( )	↓	J/UJ/A
						( )		qual 1262
						( )		
						( )		
						( )		
	1/28/13	ICV - Z	Rear	Z	23.1	( )	↓	J/UJ/A qual Z
						( )		
						( )		
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LDC #: 29284 A3b

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: FT
2nd Reviewer:

METHOD: ✓ **GC** __ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?
Y N N/A Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?
Y N N/A Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	5	BB	44 (50-150)	( )	( )	3	J/UJ/A
			( )	( )	( )		qual Y, Z,
			( )	( )	( )		AA, BB +
			( )	( )	( )		Aroclor 1268
			( )	( )	( )		Aroclor 1262
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC Report# 29284A6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Millennium Bulk Terminals
Collection Date:	December 10 through December 13, 2012
LDC Report Date:	February 26, 2013
Matrix:	Sediment
Parameters:	Total Solids
Validation Level:	Stage 2B
Laboratory:	APEX Laboratories, LLC
Sample Delivery Group (SDG):	A13B318

Sample Identification

AQ-SS-09-AB
SS-16-10
SS-17-10

Introduction

This data review covers 3 sediment samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Standard Method 2540G and APEX SOP for Total Solids.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of the presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Not applicable to this method.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) analysis was not required by the method.

VI. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VII. Laboratory Control Samples

Laboratory control samples were not required for this method.

VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

IX. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the Stage 2B data validation all results are considered valid and usable for all purposes.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Field Blanks

No field blanks were identified in this SDG.

Millennium Bulk Terminals
Total Solids - Data Qualification Summary - SDG A13B318

No Sample Data Qualified in this SDG

Millennium Bulk Terminals
Total Solids - Laboratory Blank Data Qualification Summary - SDG A13B318

No Sample Data Qualified in this SDG

LDC #: 29284A6

SDG #: A13B318

Laboratory: APEX Laboratories, LLC/

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date: 2/26/12

Page: 1 of 1

Reviewer: CL

2nd Reviewer: [illegible]

METHOD: Total Solids (SM2540G)/ APex SOP

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/10-13/12
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	N	Not required
V	Matrix Spike/Matrix Spike Duplicates	N	↓
VI.	Duplicates	N	CS
VII.	Laboratory control samples	N	Not required
VIII.	Sample result verification	N	
IX.	Overall assessment of data	A	
X.	Field duplicates	N	
XI	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: sediment

1	AQ-SS-09-AB	11		21		31	
2	SS-16-10	12		22		32	
3	SS-17-10	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

Millennium Bulk Terminals - LDC# 29284

SDG: A13B318

Analytical Method APEXsolids

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-09-AB	A13B318-01	Total solids	2/19/2013	49.1	Yes	Y				1.00	1.00	pct
SS-16-10	A13B318-02	Total solids	2/19/2013	76.5	Yes	Y				1.00	1.00	pct
SS-17-10	A13B318-03	Total solids	2/19/2013	60.3	Yes	Y				1.00	1.00	pct

Analytical Method SM2540G

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-09-AB	A13B318-01	Total solids	2/19/2013	49.1	Yes	Y				1.00	1.00	pct
SS-16-10	A13B318-02	Total solids	2/19/2013	76.5	Yes	Y				1.00	1.00	pct
SS-17-10	A13B318-03	Total solids	2/19/2013	60.3	Yes	Y				1.00	1.00	pct

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-09-AB	A13B318-01	Aroclor 1268	2/19/2013	19.1	Yes	N	U			19.1	19.1	ug/kg
AQ-SS-09-AB	A13B318-01	Aroclor 1254	2/19/2013	19.1	Yes	N	U	UJ	5	19.1	19.1	ug/kg
AQ-SS-09-AB	A13B318-01	Aroclor 1221	2/19/2013	19.1	Yes	N	U			19.1	19.1	ug/kg
AQ-SS-09-AB	A13B318-01	Aroclor 1232	2/19/2013	19.1	Yes	N	U			19.1	19.1	ug/kg
AQ-SS-09-AB	A13B318-01	Aroclor 1248	2/19/2013	19.1	Yes	N	U	UJ	5	19.1	19.1	ug/kg
AQ-SS-09-AB	A13B318-01	Aroclor 1016	2/19/2013	19.1	Yes	N	U			19.1	19.1	ug/kg
AQ-SS-09-AB	A13B318-01	Aroclor 1262	2/19/2013	19.1	Yes	N	U	UJ	5	19.1	19.1	ug/kg
AQ-SS-09-AB	A13B318-01	Aroclor 1242	2/19/2013	19.1	Yes	N	U			19.1	19.1	ug/kg
AQ-SS-09-AB	A13B318-01	Aroclor 1260	2/19/2013	19.1	Yes	N	U			19.1	19.1	ug/kg
SS-16-10	A13B318-02	Aroclor 1016	2/19/2013	10.6	Yes	N	U			10.6	10.6	ug/kg
SS-16-10	A13B318-02	Aroclor 1262	2/19/2013	10.6	Yes	N	U	UJ	5	10.6	10.6	ug/kg
SS-16-10	A13B318-02	Aroclor 1248	2/19/2013	10.6	Yes	N	U	UJ	5	10.6	10.6	ug/kg
SS-16-10	A13B318-02	Aroclor 1232	2/19/2013	10.6	Yes	N	U			10.6	10.6	ug/kg
SS-16-10	A13B318-02	Aroclor 1221	2/19/2013	10.6	Yes	N	U			10.6	10.6	ug/kg

Analytical Method SW8082A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
SS-16-10	A13B318-02	Aroclor 1268	2/19/2013	10.6	Yes	N	U			10.6	10.6	ug/kg
SS-16-10	A13B318-02	Aroclor 1254	2/19/2013	10.6	Yes	N	U	UJ	5	10.6	10.6	ug/kg
SS-16-10	A13B318-02	Aroclor 1260	2/19/2013	10.6	Yes	N	U			10.6	10.6	ug/kg
SS-16-10	A13B318-02	Aroclor 1242	2/19/2013	10.6	Yes	N	U			10.6	10.6	ug/kg
SS-17-10	A13B318-03	Aroclor 1016	2/19/2013	14.9	Yes	N	U			14.9	14.9	ug/kg
SS-17-10	A13B318-03	Aroclor 1262	2/19/2013	14.9	Yes	N	U	UJ	8	14.9	14.9	ug/kg
SS-17-10	A13B318-03	Aroclor 1260	2/19/2013	67.5	Yes	Y		J	8	14.9	14.9	ug/kg
SS-17-10	A13B318-03	Aroclor 1254	2/19/2013	14.9	Yes	N	U	UJ	8	14.9	14.9	ug/kg
SS-17-10	A13B318-03	Aroclor 1268	2/19/2013	14.9	Yes	N	U	UJ	8	14.9	14.9	ug/kg
SS-17-10	A13B318-03	Aroclor 1221	2/19/2013	14.9	Yes	N	U			14.9	14.9	ug/kg
SS-17-10	A13B318-03	Aroclor 1248	2/19/2013	88.5	Yes	Y		J	8	14.9	14.9	ug/kg
SS-17-10	A13B318-03	Aroclor 1242	2/19/2013	14.9	Yes	N	U	UJ	8	14.9	14.9	ug/kg
SS-17-10	A13B318-03	Aroclor 1232	2/19/2013	14.9	Yes	N	U			14.9	14.9	ug/kg

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-09-AB	A13B318-01	1-Methylnaphthalene	2/19/2013	163	Yes	N	D U			163	163	ug/kg
AQ-SS-09-AB	A13B318-01	Naphthalene	2/19/2013	163	Yes	N	D U			163	163	ug/kg
AQ-SS-09-AB	A13B318-01	Benzo(g,h,i)perylene	2/19/2013	81.4	Yes	N	D U			81.4	81.4	ug/kg
AQ-SS-09-AB	A13B318-01	Dibenzofuran	2/19/2013	207	Yes	Y	D			81.4	81.4	ug/kg
AQ-SS-09-AB	A13B318-01	Pyrene	2/19/2013	85.8	Yes	Y	D			81.4	81.4	ug/kg
AQ-SS-09-AB	A13B318-01	Anthracene	2/19/2013	226	Yes	Y	D			81.4	81.4	ug/kg
AQ-SS-09-AB	A13B318-01	Benzo(b)fluoranthene	2/19/2013	81.4	Yes	N	D U			81.4	81.4	ug/kg
AQ-SS-09-AB	A13B318-01	Fluoranthene	2/19/2013	136	Yes	Y	D			81.4	81.4	ug/kg
AQ-SS-09-AB	A13B318-01	Benzo(k)fluoranthene	2/19/2013	81.4	Yes	N	D U			81.4	81.4	ug/kg
AQ-SS-09-AB	A13B318-01	Chrysene	2/19/2013	81.4	Yes	N	D U			81.4	81.4	ug/kg

SDG: A13B318

Analytical Method SW8270DSIM

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Result	Mod Res Report	Detect	Lab Qual	Val Qual	Reason	RL	MDL	Units
AQ-SS-09-AB	A13B318-01	Fluorene	2/19/2013	795	Yes	Y	D			81.4	81.4	ug/kg
AQ-SS-09-AB	A13B318-01	Benzo(a)pyrene	2/19/2013	81.4	Yes	N	D U			81.4	81.4	ug/kg
AQ-SS-09-AB	A13B318-01	2-Methylnaphthalene	2/19/2013	163	Yes	N	D U			163	163	ug/kg
AQ-SS-09-AB	A13B318-01	Dibenzo(a,h)anthracene	2/19/2013	81.4	Yes	N	D U			81.4	81.4	ug/kg
AQ-SS-09-AB	A13B318-01	Benzo(a)anthracene	2/19/2013	81.4	Yes	N	D U			81.4	81.4	ug/kg
AQ-SS-09-AB	A13B318-01	Acenaphthene	2/19/2013	3340	Yes	Y	D			81.4	81.4	ug/kg
AQ-SS-09-AB	A13B318-01	Phenanthrene	2/19/2013	1450	Yes	Y	D	J	9	81.4	81.4	ug/kg
AQ-SS-09-AB	A13B318-01	Indeno(1,2,3-c,d)pyrene	2/19/2013	81.4	Yes	N	D U			81.4	81.4	ug/kg
AQ-SS-09-AB	A13B318-01	Acenaphthylene	2/19/2013	81.4	Yes	N	D U			81.4	81.4	ug/kg

ANCHOR QEA

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Portland, Oregon 97204
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MEMORANDUM

To:	Halah Voges, Anchor QEA, LLC	**Date:**	May 16, 2013
From:	Jessica Goin, Anchor QEA, LLC	**Project:**	130730-01.01
Re:	Review of Petroleum Hydrocarbon Fraction Chromatography Analysis, Millennium Bulk Terminals – Longview		

This memorandum presents Anchor QEA, LLC's review of chromatogram traces for a petroleum hydrocarbon fraction in samples collected during the 2012 data gaps investigation at Millennium Bulk Terminals – Longview (MBTL).

BACKGROUND

Samples were collected from test pits in Landfill #2 (ILF samples), Landfill #1 (FSL samples), Fill Deposit B-2 (ECA samples), and from Fill Deposit B-1 (BMP samples), in accordance with the data gaps work plan (Anchor QEA 2012). Sample intervals for analysis of hydrocarbons were selected in the field based on sheen or elevated photoionization detector readings. Apex Laboratories, LLC (Apex) analyzed total petroleum hydrocarbons (TPH) by method NWTPH-Dx (Ecology 1997).

Petroleum hydrocarbon concentrations were determined in 17 samples (Table 1). The initial result for 12 of these samples exceeded the soil screening level for TPH. However, the results were flagged (flag F-14[1]) by Apex, indicating an undifferentiated complex mixture (UCM) signature across the diesel and motor oil range, without the expected signal dip between the diesel and motor oil range. This flag was applied to all NWTPH-Dx results for these samples.

Anchor QEA requested the gas chromatography – flame ionization detector (GC-FID) chromatogram traces from Apex in order to review the flagged data. The chromatogram trace patterns are distinctive and consistent between the samples. The chromatogram trace

[1] F-14: The chromatographic pattern is an unresolved complex mixture of hydrocarbons extending across the diesel and oil range. The diesel result represents carbon range C10-C22, and the oil result represents C22-C40.

pattern consists of a series of distinct peaks, with variable spacing, extending from the heavy end of the diesel range to the lower end of the motor oil range. Several of the peaks are very closely spaced, giving the appearance of "doubled peaks," while others are broadly spaced, inconsistent with the evenly spaced paraffin series typical of diesel or lack of strong peaks typical of motor oil. Further, the strongest peak signal generally occurs just after the internal standard (o-terphenyl) in an elution range where both diesel and motor oil typically have low signal strength (Figure 1).

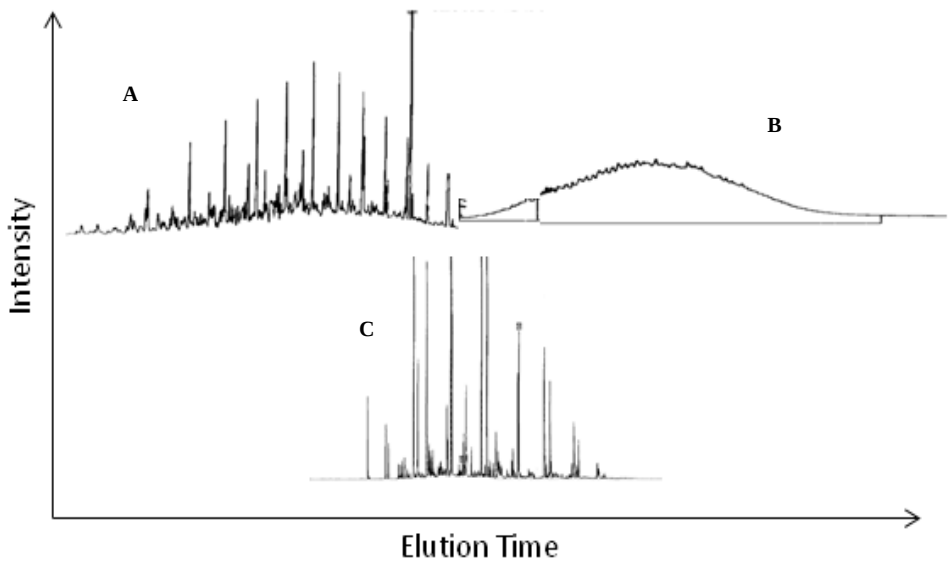

Figure 1
GC-FID chromatogram traces of the diesel standard (A), motor oil standard (B), and a MBTL sample (C) illustrating patterns and relative elution times.

The observed pattern in the GC-FID chromatogram traces is inconsistent with diesel, motor oil, or mixtures thereof. Additionally, a review of chromatogram traces for common petroleum fractions (Zemo et al. 1993) indicate this pattern is inconsistent with other petroleum fractions.

DETAILED CHROMATOGRAM ANALYSIS

The NWTPH-Dx chromatogram traces are inconsistent with detection of petroleum fractions in these samples; however, the consistent pattern and strong signal indicate detection of compounds consistently present in these samples. Three potential sources of interference in

TPH determination by GC-FID were evaluated below: 1) non-petroleum polar hydrocarbons (NPPHs); 2) polychlorinated biphenyls (PCBs); and 3) polycyclic aromatic hydrocarbons (PAHs).

NPPHs

NPPHs are detected by GC-FID in the diesel and motor oil range, and can provide significant interference in the determination of petroleum fractions, especially at sites with abundant wood or plant material. However, silica gel cleanup, which removes interference from these compounds, was included prior to GC-FID analysis for five of the samples and did not significantly alter the chromatogram traces. There was a minor reduction in the background signal with silica gel cleanup for samples analyzed at the same dilution factor (Figure 2), indicating a minor contribution of plant or wood waste degradation compounds.

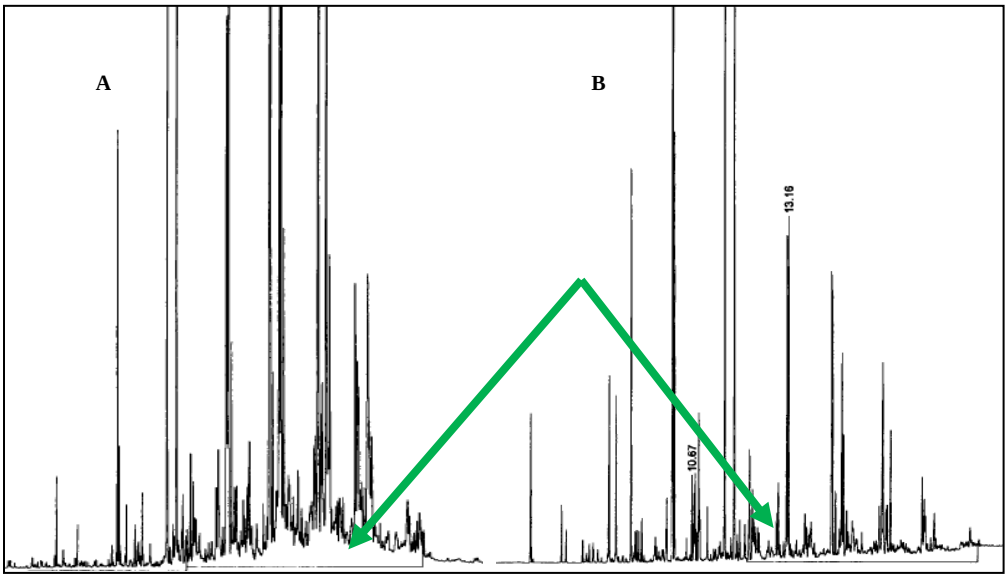

Figure 2
GC-FID chromatogram traces for samples AQ-FSL-01-4-6ft (A) and AQ-FSL-03-1-8.5ft (B). GC-FID was performed at a 20x dilution for both samples. Silica gel cleanup was performed on sample B prior to analysis. The green arrow notes the increased UCM signal for sample A, which is typically removed via silica gel cleanup.

PCBs

The GC-FID trace for PCBs also extends from the heavy end of the diesel range into the motor oil range (Stout et al. 2003; Chang and Sanders 2000). The chromatogram traces from NWTPH-Dx were compared to chromatogram traces for Aroclors 1254 and 1260, the two

Aroclors most consistently detected in these samples by method EPA 8270. The chromatogram traces for these PCBs do not reflect the distinct pattern seen in the sample chromatograms (Figure 3). Additionally, PCB concentrations in these samples (Table 2) average 2 mg/kg, several orders of magnitude lower than the NWTPH-Dx result values, and would be unlikely to generate a clear signal in the chromatogram trace (as the individual components of each Aroclor would be at much lower concentrations). Finally, for samples with detectable PCBs, the Aroclor at the greatest concentration varies, while the pattern in the NWTPH-Dx chromatogram traces is consistent between samples. Therefore, PCBs were determined not to be the source of interference.

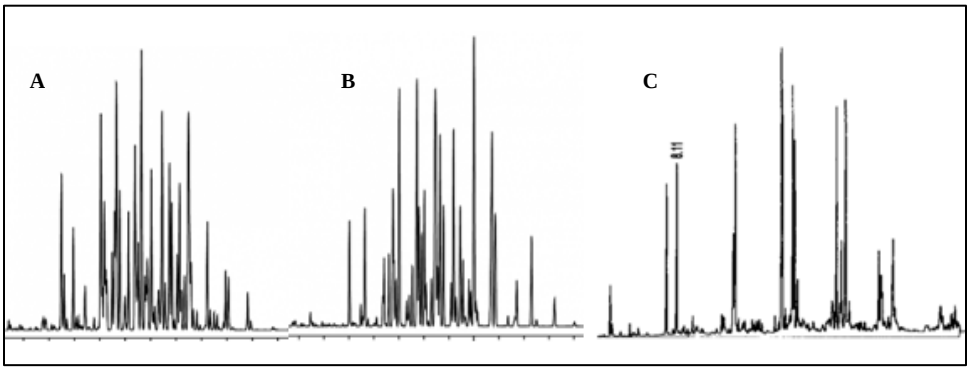

Figure 3
Chromatogram traces for Aroclor 1254 (A), Aroclor 1260 (B), and a NWTPH sample trace (C) (Restek Searchable Chromatography Library, Restek.com).

PAHs

PAHs were measured in the samples by method EPA 8270 (USEPA 1998), and the median PAH concentration for each area (Landfill #2, Fill Deposit B-1, Fill Deposit B-2, and Landfill #1) is within an order of magnitude of the median TPH value (Table 3). While PAHs do occur in petroleum fractions and, thus, should be detected by NWTPH-Dx, they represent a relatively minor component of diesel or motor oil (less than 5% for diesel, and approximately 10% for motor oil [TPH Working Group 1998]). The pattern observed consistently in the NWTPH-Dx GC-FID chromatogram traces, including “doubled” peaks, widely spaced peaks, and strong signal across the diesel and motor oil range, is consistent with the GC-FID chromatogram trace for a standard PAH mixture (Figure 4). The dominant peaks are accounted for by the PAHs, with no indication of the other compounds that would be expected (and expected to dominate the PAH signal) in either diesel or motor oil fractions.

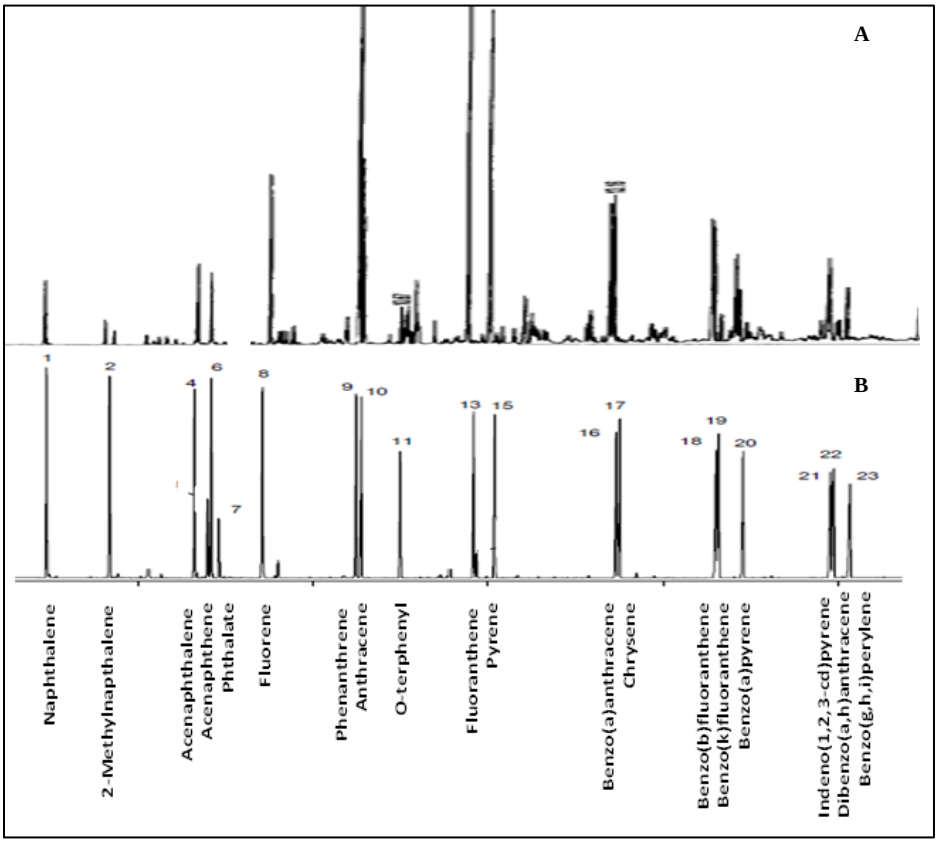

Figure 4

Typical NWTPH-Dx chromatogram trace (A) compared to a GC-FID chromatogram trace of a standard PAH mixture (B). Note the o-terphenyl standard, also analyzed as an internal standard with the MBTL soil samples (Countryman et al. 2007). The MBTL samples were run on a different column, reflected in the elution time and lack of separation individual peaks.

Three samples were analyzed at the same depth interval for PAHs and TPH (FSL-01-0-12ft, FSL-03-1-8.5ft, and ECA-02-1-5ft). The chromatogram trace and the PAH concentration profiles are well matched for the two Landfill #1 samples (Figure 5). The chromatogram trace available for review for ECA-02-1-5ft reflects insufficient dilution to compare individual peak heights (Figure 6).

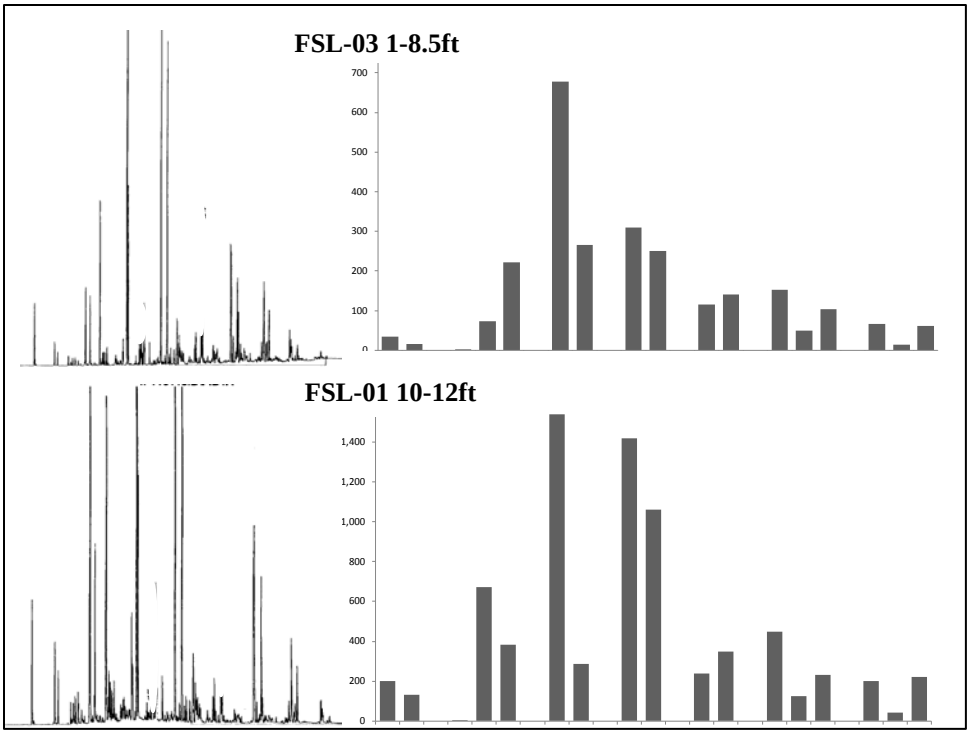

Figure 5

GC-FID chromatogram trace comparison to the concentration of individual PAHs for FSL-03-1-8.5ft and FSL-01-10-12ft (from left to right naphthalene, 2-methylnaphthalene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and benzo(g,h,i)perylene).

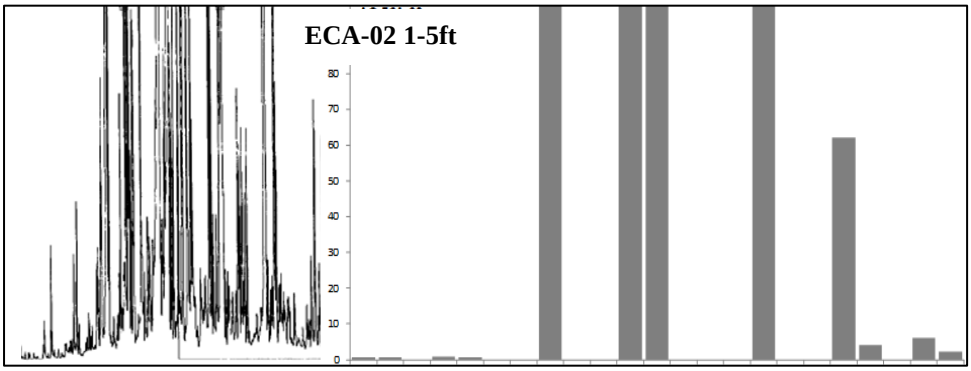

Figure 6

GC-FID chromatogram trace comparison to the concentration of individual PAHs for ECA-02-1-5ft. The PAH concentration chart is intentionally scaled to reflect the maximum signal exceedance of the chromatogram trace.

The NWTPH-Dx chromatogram trace for each sample was reviewed in conjunction with the PAH concentrations of the matching or overlapping sample interval. The trace pattern consistently reflected the dominant PAHs in each sample.

CHROMATOGRAM REVIEW BY APEX

Anchor QEA staff reviewed the analytical data and GC-FID chromatogram traces with Apex staff, and Apex followed this with an in-depth review. Apex staff indicated that the original F-14 result flag likely reflected the chromatogram trace pattern where dilution is insufficient to observe the individual peaks (Figure 7). Treatment of these peaks as a UCM signal, thus measuring the entire area rather than the individual compounds, likely accounts for the greater values assigned to TPH than the total PAH concentration in the sample.

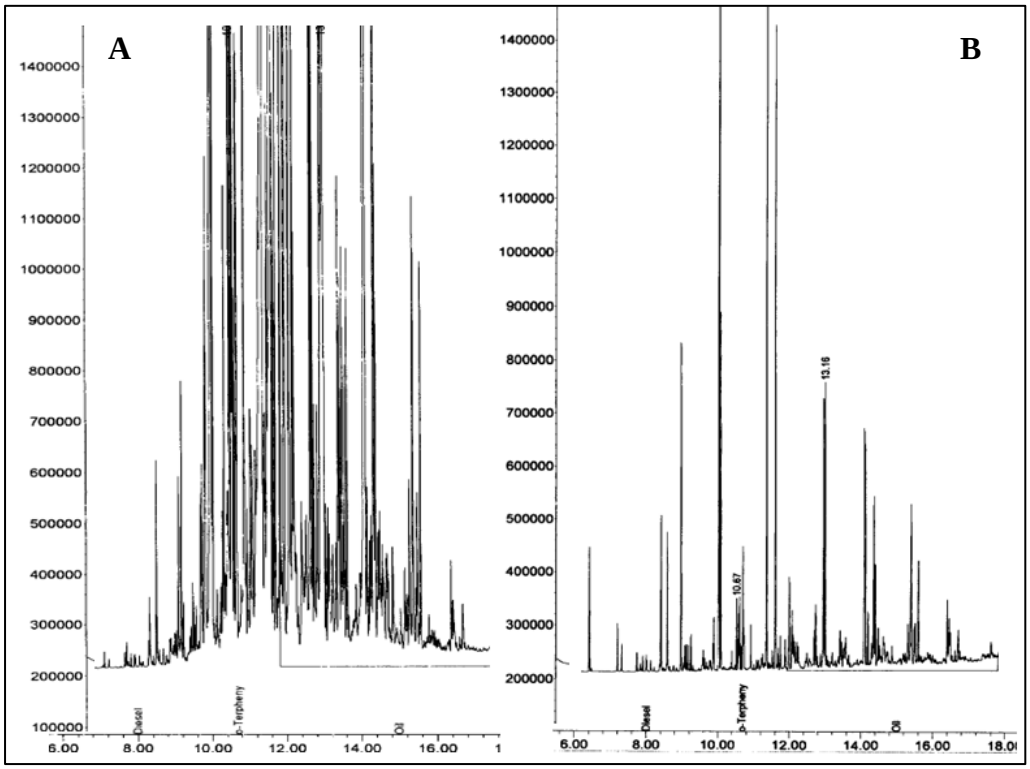

Figure 7

GC-FID chromatogram traces for ECA-02-1-5ft (A) and FSL-02-1-8.5ft (B). PAH concentrations from EPA 8082 and dilution factors used for NWTPH-Dx indicate that the concentration would have been approximately six times greater for A than for B.

Apex and Anchor QEA staff further reviewed the GC-FID chromatograms from NWTPH-Dx in comparison with the GC-MS chromatogram traces from method EPA 8270 and confirmed that the peaks detected by NWTPH-Dx reflect the PAHs measured by method EPA 8082.

Following this review, Apex indicated it would re-flag the NWTPH-Dx analytical results to reflect the PAH interference, and the absence of diesel or motor oil signatures in the chromatogram traces. The NWTPH-Dx results are now flagged as F-03 or F-12 (depending on individual chromatogram patterns), as follows:

F-03: The result for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are **not representative of the fuel pattern reported**.

F-12: The result for this hydrocarbon range is primarily due to the presence of individual analyte peaks in the quantitation range. **No fuel pattern detected**.

EXTRACTABLE PETROLEUM HYDROCARBONS

Extractable petroleum hydrocarbons (EPH) analysis was performed on a subset of the samples. EPH was determined by GC-FID as described in the NWTPH guidance. Samples were analyzed for EPH subsequent to the previously described analysis, and provide further confirmation that the 'petroleum' hydrocarbons measured in these samples represent repeat measurement of the PAHs. EPH are reported as aliphatic or aromatic compounds grouped by effective carbon number. In order to assess whether the EPH data were re-reporting the PAH results, the sum total PAH result values as determined by EPA 8270 were determined for each EPH group, as follows:

- C8-C10 Aromatics: This fraction includes monoaromatics toluene, xylene, and the ethylbenzenes. The EPH results for this fraction were all below the detection limit. The comparison concentrations were summed from the volatile organic compound (VOC) data, and were non-detect for all samples except those from Landfill #2.
- C10-C12 Aromatics: This fraction includes naphthalene. The EPH concentrations were compared to the naphthalene concentrations determined in the semivolatile organic compound (SVOC) analysis. This fraction was detected in half of the samples

as determined by either EPH or SVOC analysis, with excellent agreement between the two methods.

- C12-C16 Aromatics: This fraction includes 2-methylnaphthalene, acenaphthene, acenaphthalene, and 1- methylnaphthalene. This fraction was detected in all samples, at varying concentrations, by both EPH and SVOC analysis.
- C16-C21 Aromatics: This fraction includes phthalate, fluorene, phenanthrene, anthracene, fluoranthene, and pyrene. This fraction was detected in all samples.
- C21-C34 Aromatics: This fraction includes benz (a) anthracene, chrysene, benz (b) fluoranthene, benz (k) fluoranthene, benz (a) pyrene, indeno (1,2,3-c,d) pyrene, dibenz (a,h) anthracene, and benz (g,h,i) perylene. This fraction was detected in all samples.

There was excellent agreement for all samples between the EPH fractions determined analytically, and the EPH fractions determined by summing the component PAHs of each fraction (Figure 8).

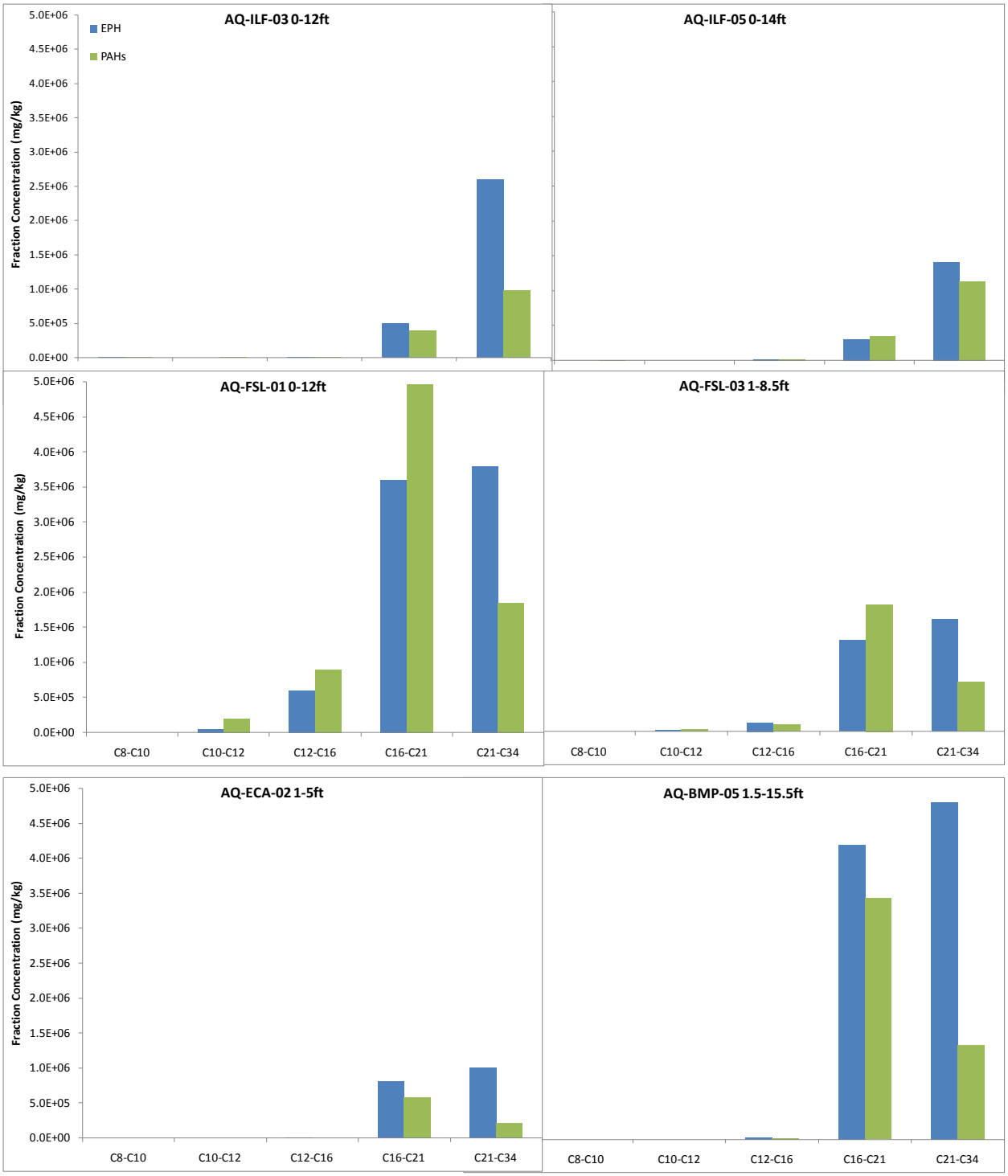

Figure 8

Comparison of the reported EPH fraction concentrations and the PAH concentrations determined by method 8270 summed by the appropriate EPH fraction. The comparison for sample BMP-02-1-15 ft, not shown, is similar to ECA-02-1-5ft and ILF-05-0-14 ft.

RECOMMENDATION

Review of the NWTPH-Dx GC-FID chromatogram traces finds no indication of petroleum fractions in these samples beyond the PAHs already reported, more accurately, by the appropriate method. The result values generated by method NWTPH-Dx should not be considered to reflect a detection or exceedance of petroleum hydrocarbons in these samples.

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Table 1
Preliminary NWTPH-Dx Results

Location	Sample ID	Depth (feet)	APEX Sample ID	TPH_d (mg/kg)	TPH_{mo} (mg/kg)
Landfill #2	AQ-ILF-02-6-8	6 - 8	A12J509-16	614	6,530
	AQ-ILF-03-8-10	8 - 10	A12J509-23	2,220	9,300
	AQ-ILF-03-0-12	0 - 12	A12L107-03	994	4,020
	AQ-ILF-04-12-14	12 - 14	A12J509-30	1,550	5,290
	AQ-ILF-05-0-14	0 - 14	A12L107-04	920	4,780
	AQ-ILF-05-10-12	10 - 12	A12J515-09	3,300	11,800
Landfill #1	AQ-FSL-01-0-12	0 - 12	A12J515-27	14,400	6,130
	AQ-FSL-01-4-6	4 - 6	A12J515-25	2,010	13,000
	AQ-FSL-01-8-10	8 - 10	A12J515-26	246	1,180
	AQ-FSL-02-14-16	14 - 16	A12J515-17	708	933
	AQ-FSL-03-1-8.5	1 - 8.5	A12J515-33	2,870	4,420
	AQ-FSL-03-5-7	5 - 7	A12J515-32	116	176
Fill Deposit B-2	AQ-ECA-02-3-5	3 - 5	A12J537-16	1,510	1,190
	AQ-ECA-02-1-5	1 - 5	A12J537-15	867	889
	AQ-ECA-03-5-7	5 - 7	A12J537-05	916	256
Fill Deposit B-1	AQ-BMP-02-1-15	1 - 15	A12J671-09	1,990	1,960
	AQ-BMP-05-1.5-15.5	1.5 - 15.5	A12J621-18	3,420	2,640

Notes:

C10-C22 reported as diesel and C22-C40 as motor oil, such that total petroleum hydrocarbons equals TPH_d + TPH_{mo}. All TPH-Dx and TPH-mo results were flagged by the analytical laboratory as F-14: The chromatographic pattern is an unresolved complex mixture of hydrocarbons extending across the diesel and oil range. The diesel result represents carbon range C10-C22, and the motor oil result represents C22-C40.

Table 2
Preliminary PCB Aroclor Results

Sample Location	Sample ID	Depth (feet)	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1268	Sum (mg/kg) detects only
Landfill #2	AQ-ILF-01	0 - 11	ND	ND	0.21	0.16	0.33	0.70
	AQ-ILF-02	0 - 12	ND	ND	0.46	0.39	0.92	1.77
	AQ-ILF-03	0 - 12	ND	ND	3.35	0.44	ND	3.79
	AQ-ILF-04	0 - 14	0.09	ND	0.82	0.29	ND	1.19
	AQ-ILF-05	0 - 14	0.09	ND	2.07	0.69	0.15	2.99
Landfill #1	AQ-FSL-01	0 - 12	0.25	ND	0.53	0.39	1.13	2.30
	AQ-FSL-02	0 - 16	0.46	ND	0.57	0.71	4.73	6.47
	AQ-FSL-03	1 - 8.5	ND	1.41	0.47	0.23	0.46	2.56
Fill Deposit B-2	AQ-ECA-03	1 - 7	ND	ND	ND	ND	ND	0.00
Fill Deposit B-1	AQ-BMP-04	1.5 - 13.5	0.18	ND	0.70	0.30	0.06	1.24

Notes:

ND = non-detect

Aroclors 1016, 1221, 1232, and 1262 were not detected in any of these samples.

Preliminary and unvalidated result values provided for comparison to NWTPH-Dx result values only.

Table 3
Preliminary PAH Results

PAHs (mg/kg dry weight)	Landfill #2					Landfill #1			Fill Deposit B-2				Fill Deposit B-1				
Sample ID	AQ-ILF-01	AQ-ILF-02	AQ-ILF-03	AQ-ILF-04	AQ-ILF-05	AQ-FSL-01	AQ-FSL-02	AQ-FSL-03	AQ-ECA-01	AQ-ECA-02	AQ-ECA-03	AQ-ECA-04	AQ-BMP-01	AQ-BMP-02	AQ-BMP-03	AQ-BMP-04	AQ-BMP-05
Depth (feet)	0 - 11	0 - 12	0 - 12	0 - 14	0 - 14	0 - 12	0 - 16	1 - 8.5	2 - 5	1 - 5	1 - 7	2 - 8	2 - 16	1 - 15	2 - 16	1.5 - 13.5	1.5 - 15.5
Acenaphthene	42.1	28.2	2	22.6	8.95	672	29.2	72.5	3.44	0.82	17.4	ND	6.3	4.69	10.3	4.01	16.2
Acenaphthylene	0.64	ND	ND	ND	ND	5.36	ND	ND	0.45	ND	0.53	ND	ND	ND	ND	ND	ND
Anthracene	30	31.9	6.52	17.8	14.5	288	29.2	266	155	27.6	112	7.53	39	22.8	100	14.3	90.4
Benzo(a)anthracene	149	167	113	64.4	81.8	239	60	116	68.5	40.1	53.7	31	126	82.6	181	47.3	227
Benzo(a)pyrene	212	227	114	113	155	231	76.7	104	10.5	10	12.4	16.7	86.2	54.6	98	25.5	116
Benzo(b)fluoranthene1	438	520	252	282	284	449	172	153	65.3	62.2	45.4	66.8	327	236	384	99.9	457
Benzo(k)fluoranthene1	105	112	73.1	73.7	81.5	125	46.3	50.3	ND	ND	9.4	ND	ND	ND	ND	24.2	ND
Benzo(g,h,i)perylene	141	147	72.6	160	193	221	80.6	61.7	1.98	4.02	2.75	6.83	48.8	33.4	34.9	21.4	35.1
Chrysene	225	288	249	143	145	348	118	140	146	88.1	116	72.9	282	199	402	103	460
Dibenzo(a,h)anthracene	47.9	54	29.3	25	30.7	40.6	14.7	13.7	1.12	1.79	1.01	3.25	13.5	9.09	14.5	4.77	13.6
Dibenzofuran	10.8	15.1	1.19	5.84	3.71	272	10.5	91.5	15.6	2.39	9.27	0.66	2.09	1.34	4.23	0.76	4.05
Fluoranthene	229	243	177	153	135	1,420	199	310	803	247	553	145	772	490	1,240	270	1,480
Fluorene	12.7	17.1	1.72	5.94	5.17	384	14.8	222	0.97	ND	6.33	ND	4.1	2.04	6.32	2.67	9.45
Indeno(1,2,3-c,d)pyrene	178	186	82.1	127	159	199	64.8	65.9	2.15	4.26	2.55	8.12	48.1	32.7	41.1	20.1	40.9
1-Methylnaphthalene	2.85	3.42	ND	ND	ND	92.9	1.89	9.13	0.51	ND	0.68	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	4.21	4.76	ND	ND	ND	133	2.68	15.7	0.67	ND	0.79	ND	ND	ND	ND	ND	ND
Naphthalene	9.24	6.6	1.28	2.09	ND	201	5.12	35	0.52	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	109	106	15.6	59.9	59.2	1,540	106	677	810	107	859	32	218	144	553	80.4	517
Pyrene	218	233	187	141	132	1,060	166	250	612	192	489	140	693	393	1,110	258	1,340
Total PAHs (U = 1/2)	2,164	2,390	1,379	1,400	1,495	7,921	1,198	2,654	2,698	790	2,292	536	2,667	1,707	4,191	981	4,816

Notes:
ND = non-detect
Preliminary and unvalidated result values provided for comparison to NWTPH-Dx result values only.

Attachment A

CHROMATOGRAM TRACES

APEX NWTPH Chromatograms

&

Analytical Resources Inc WA-EPH

NWTPH DIESEL AND MOTOR OIL STANDARDS CHROMATOGRAM TRACE

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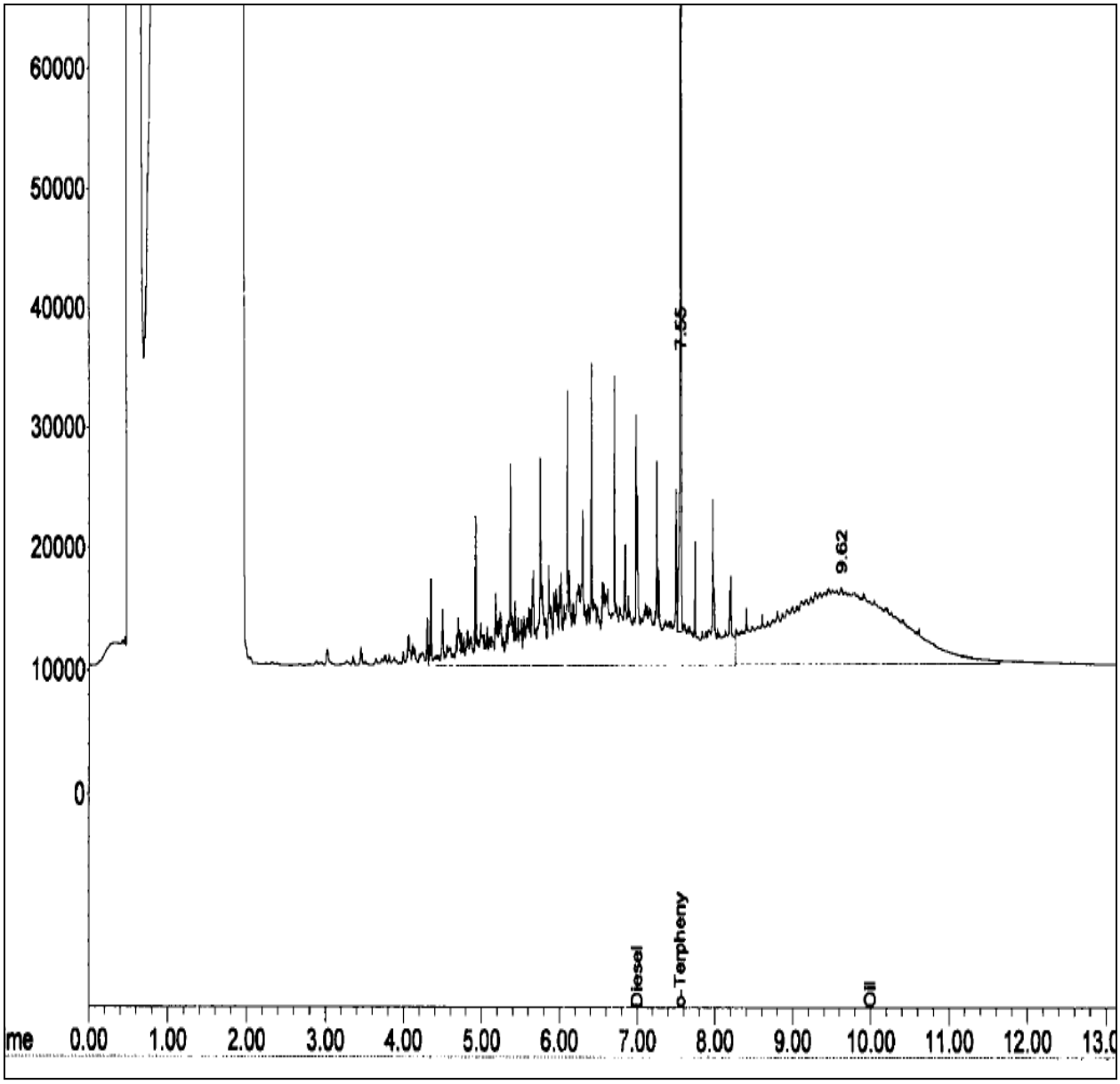

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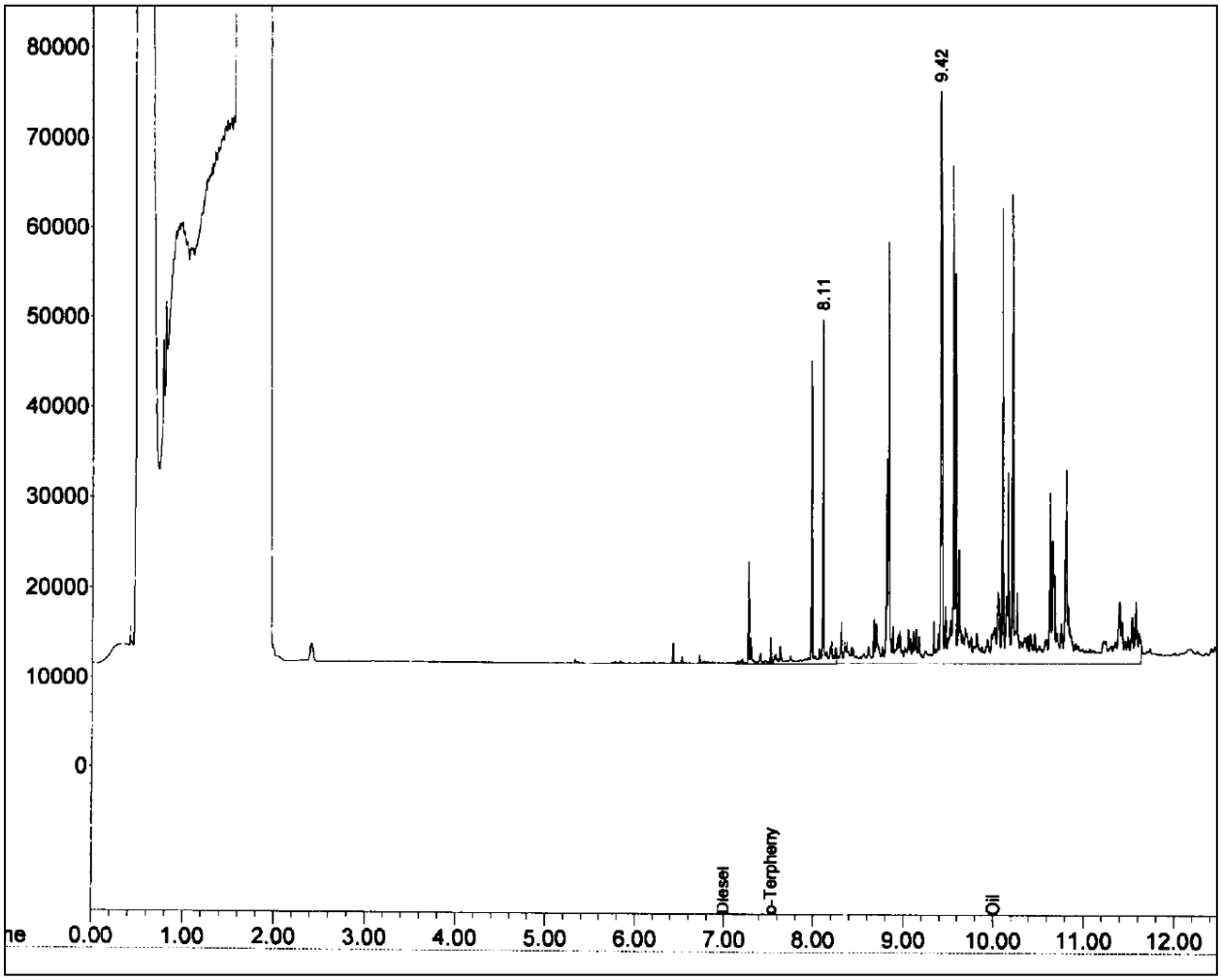

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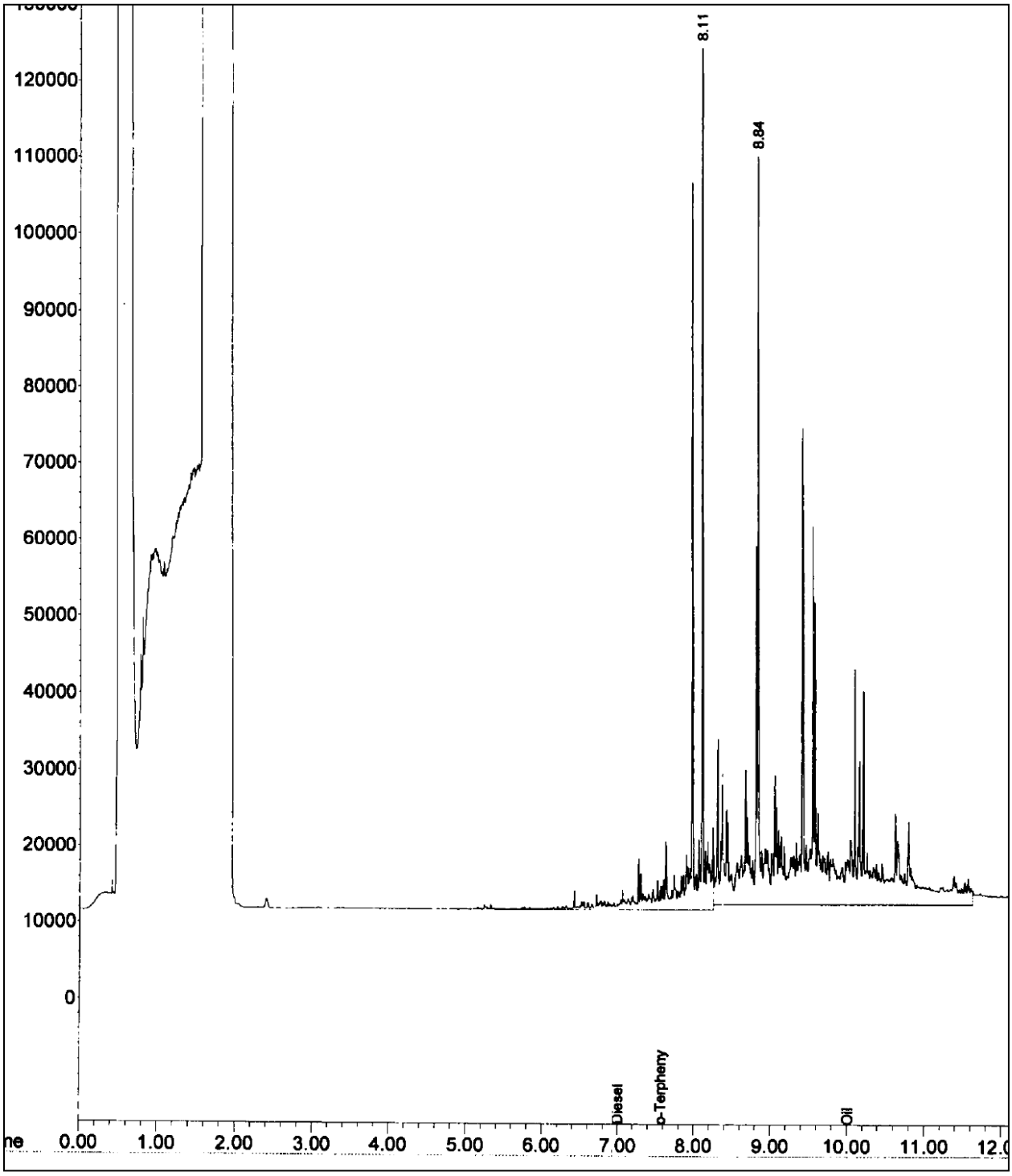

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12 - 14 ft

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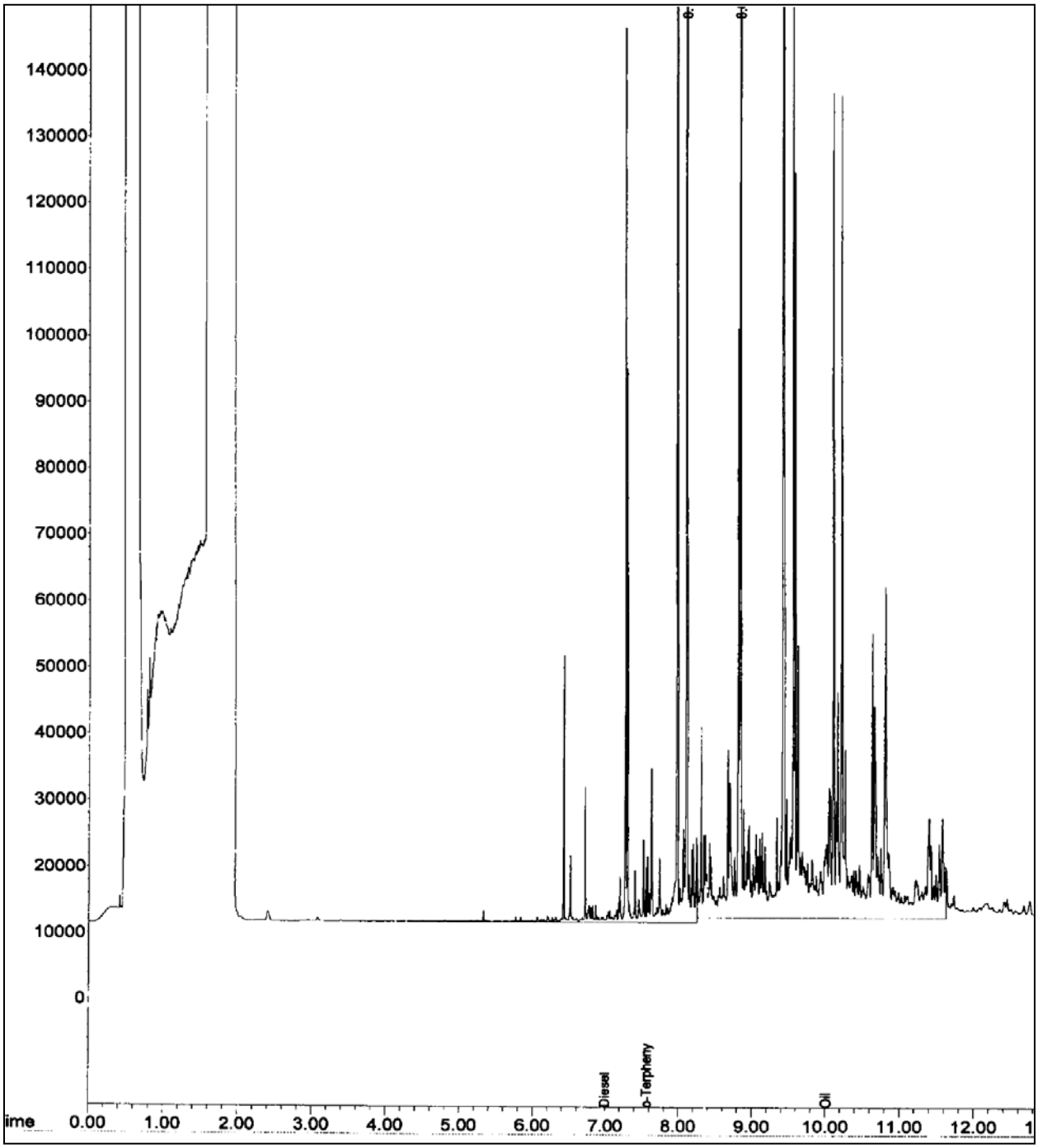

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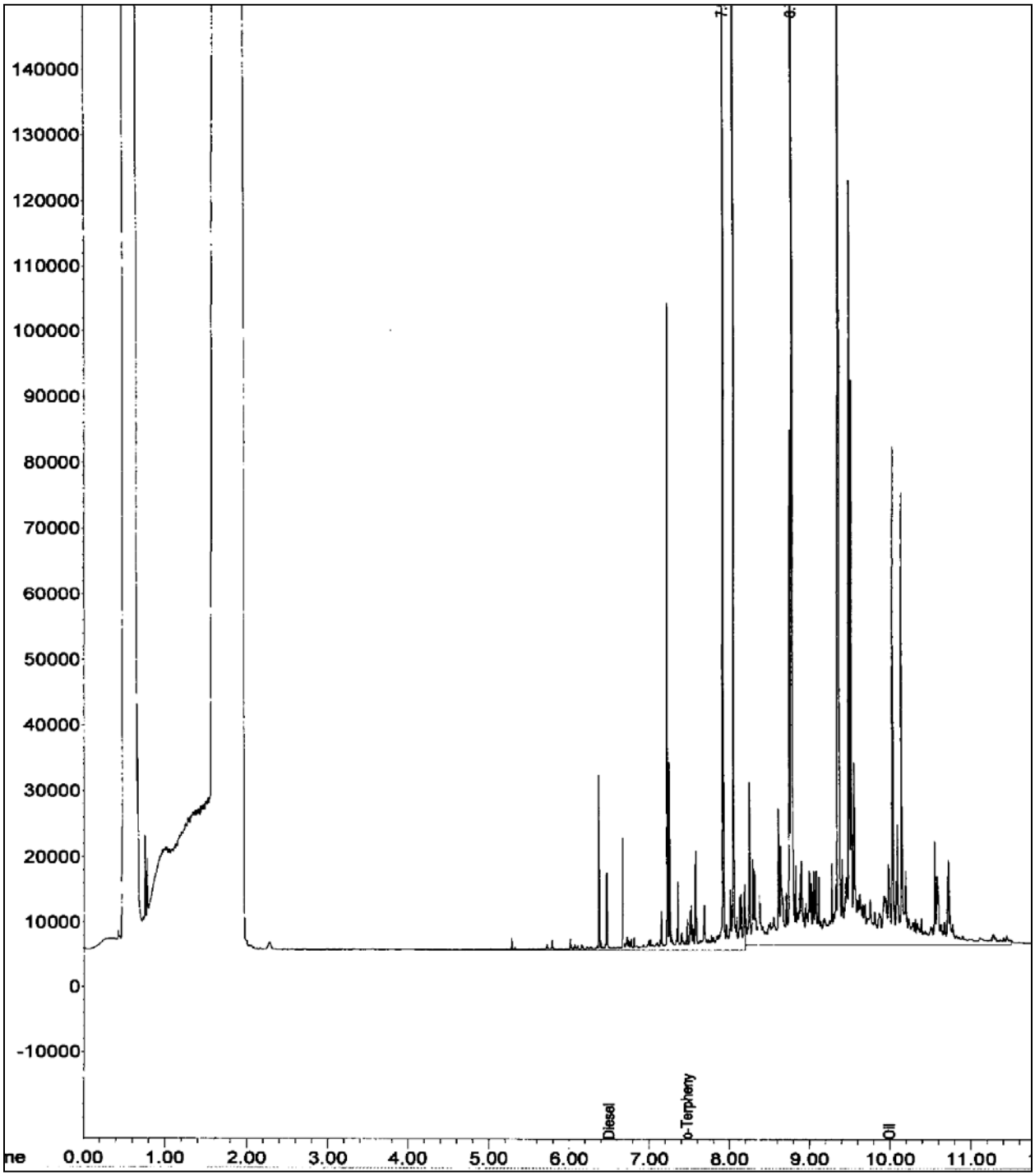

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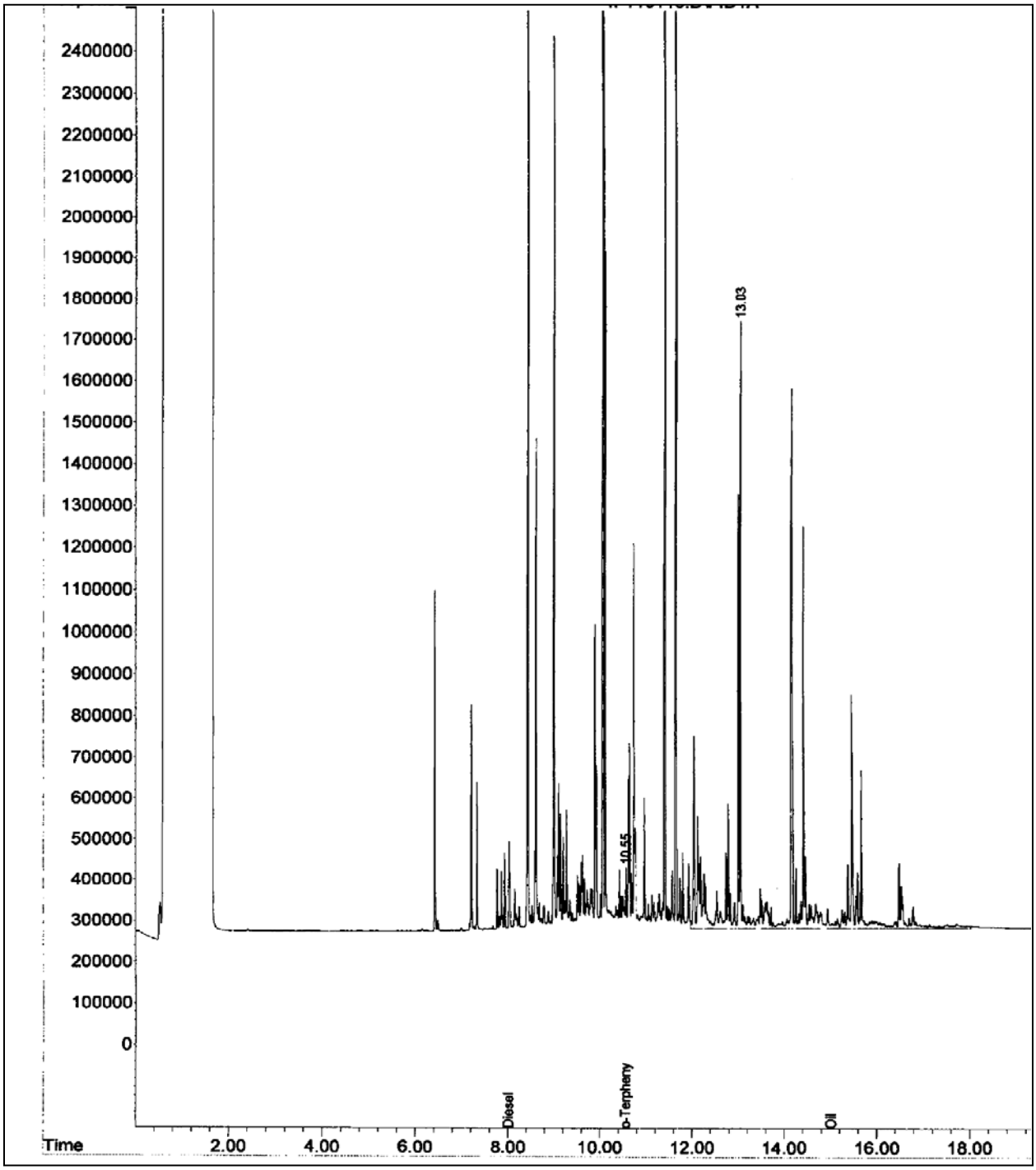

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4 - 6 ft

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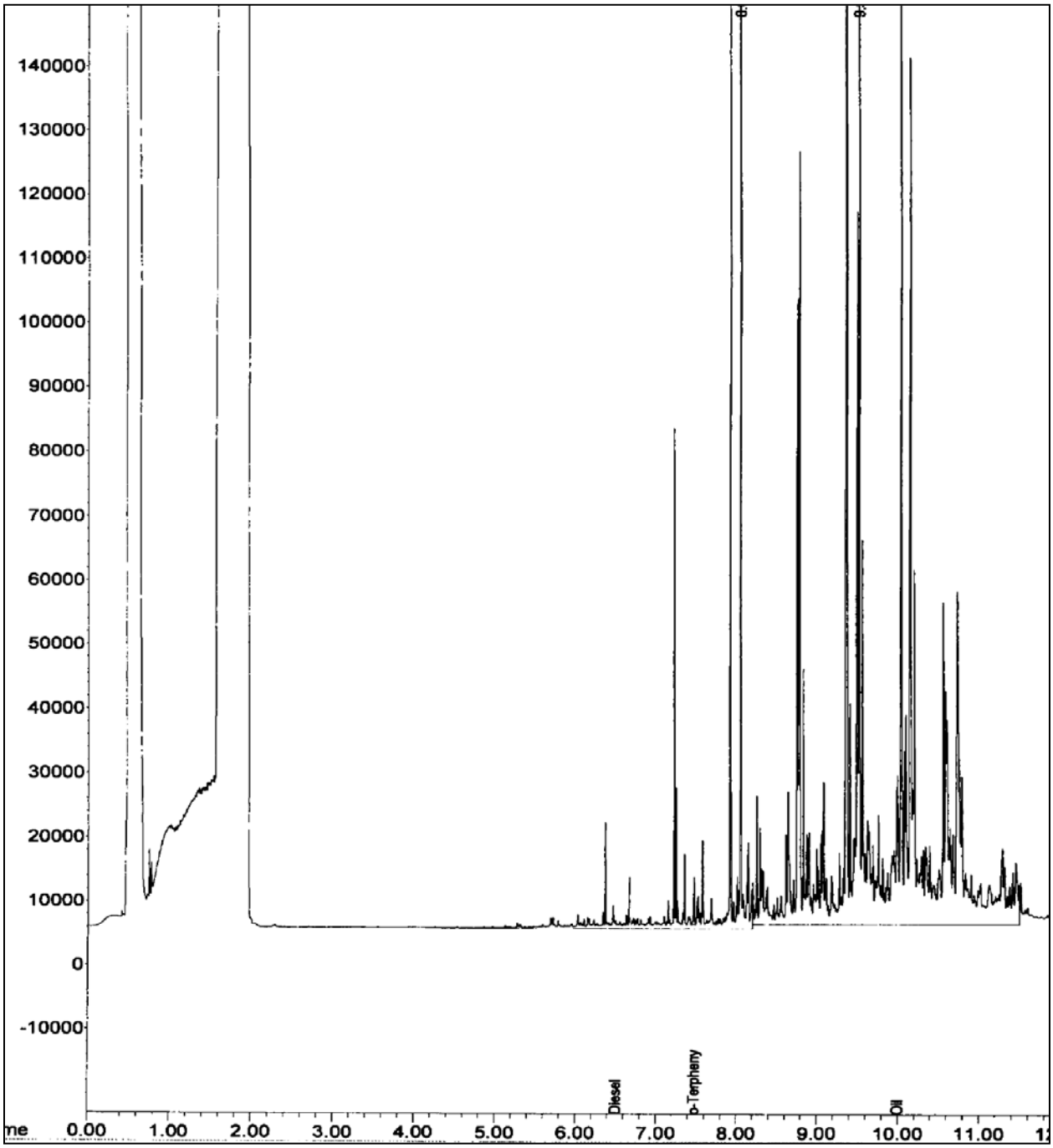

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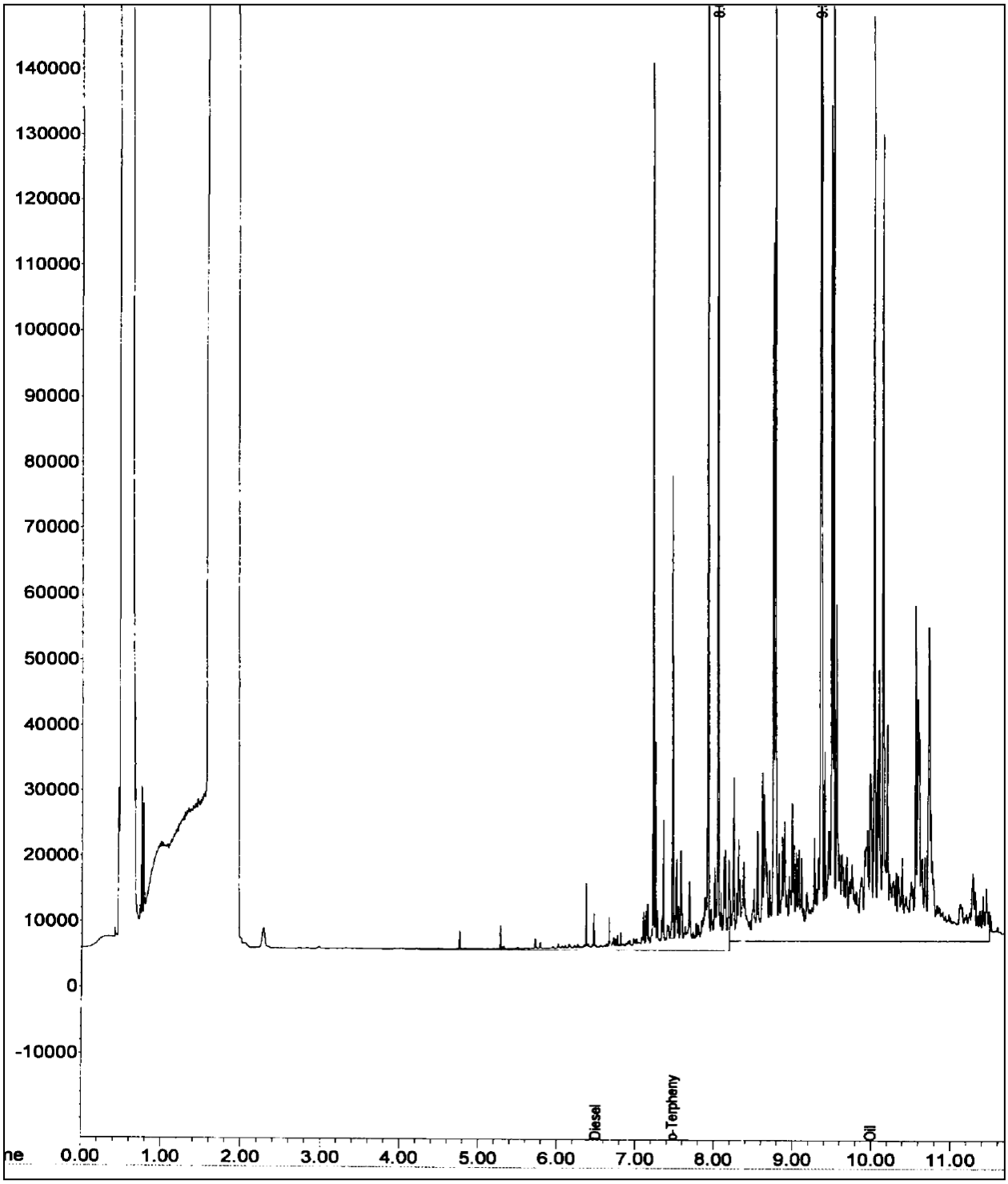

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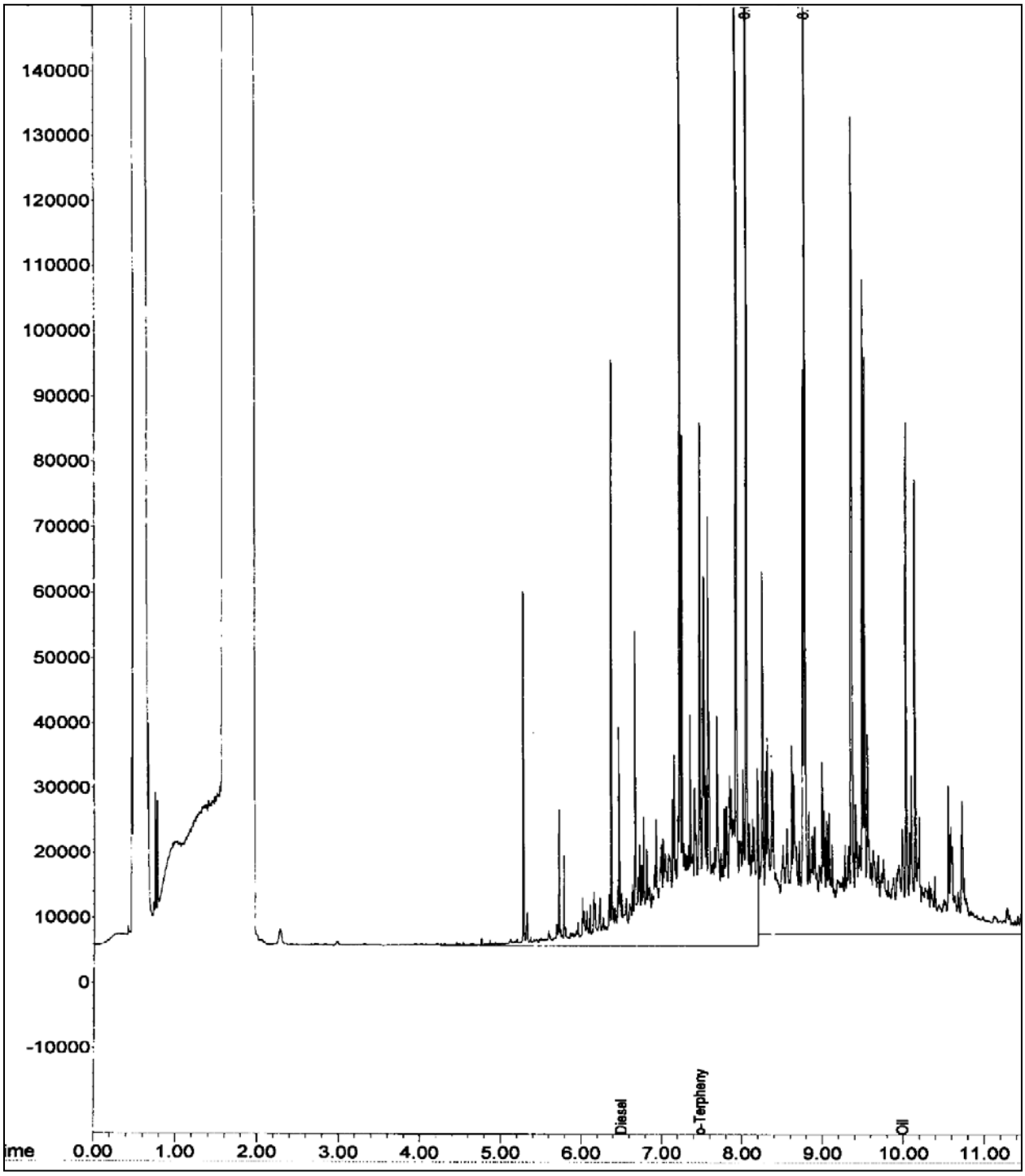

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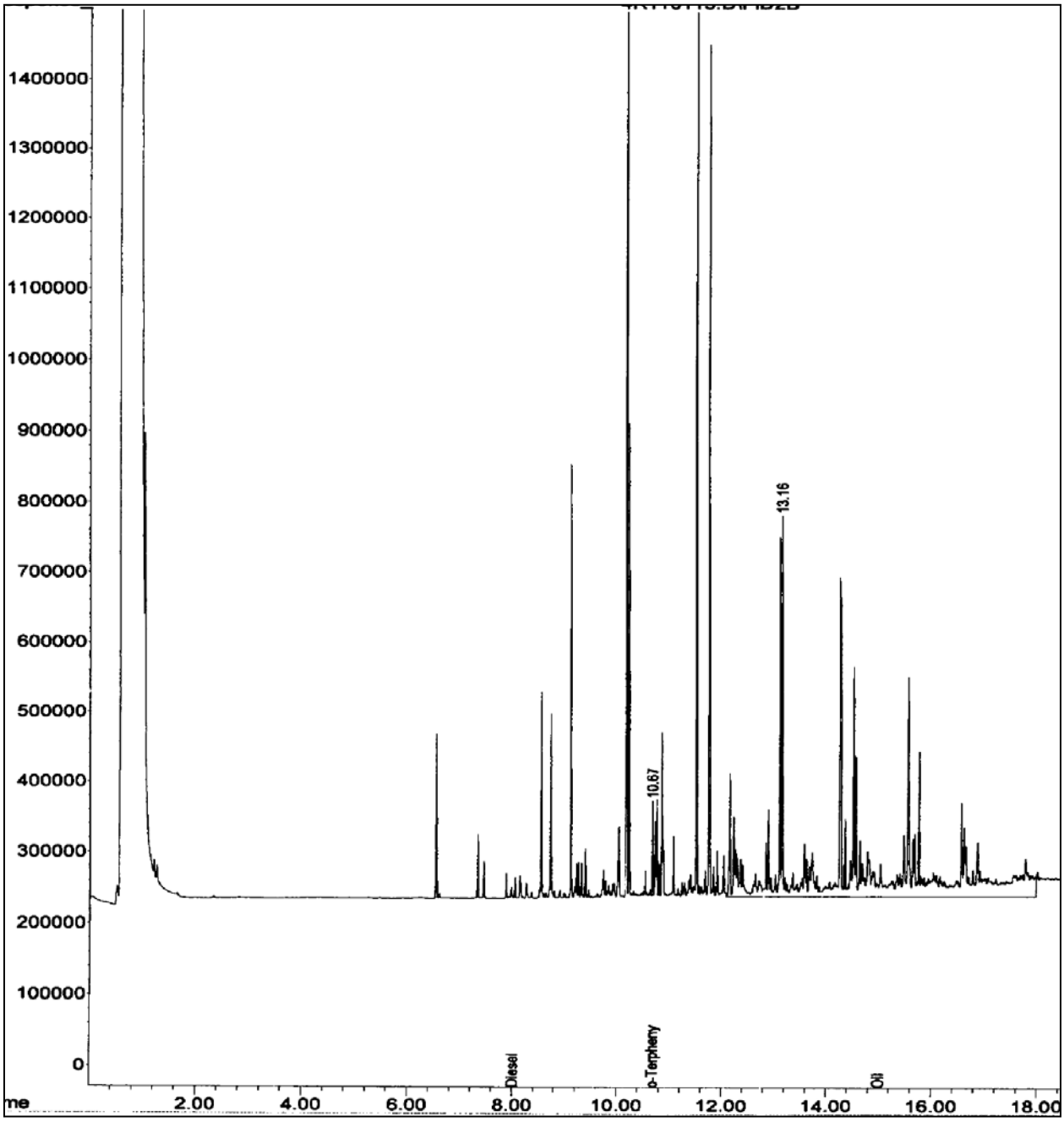

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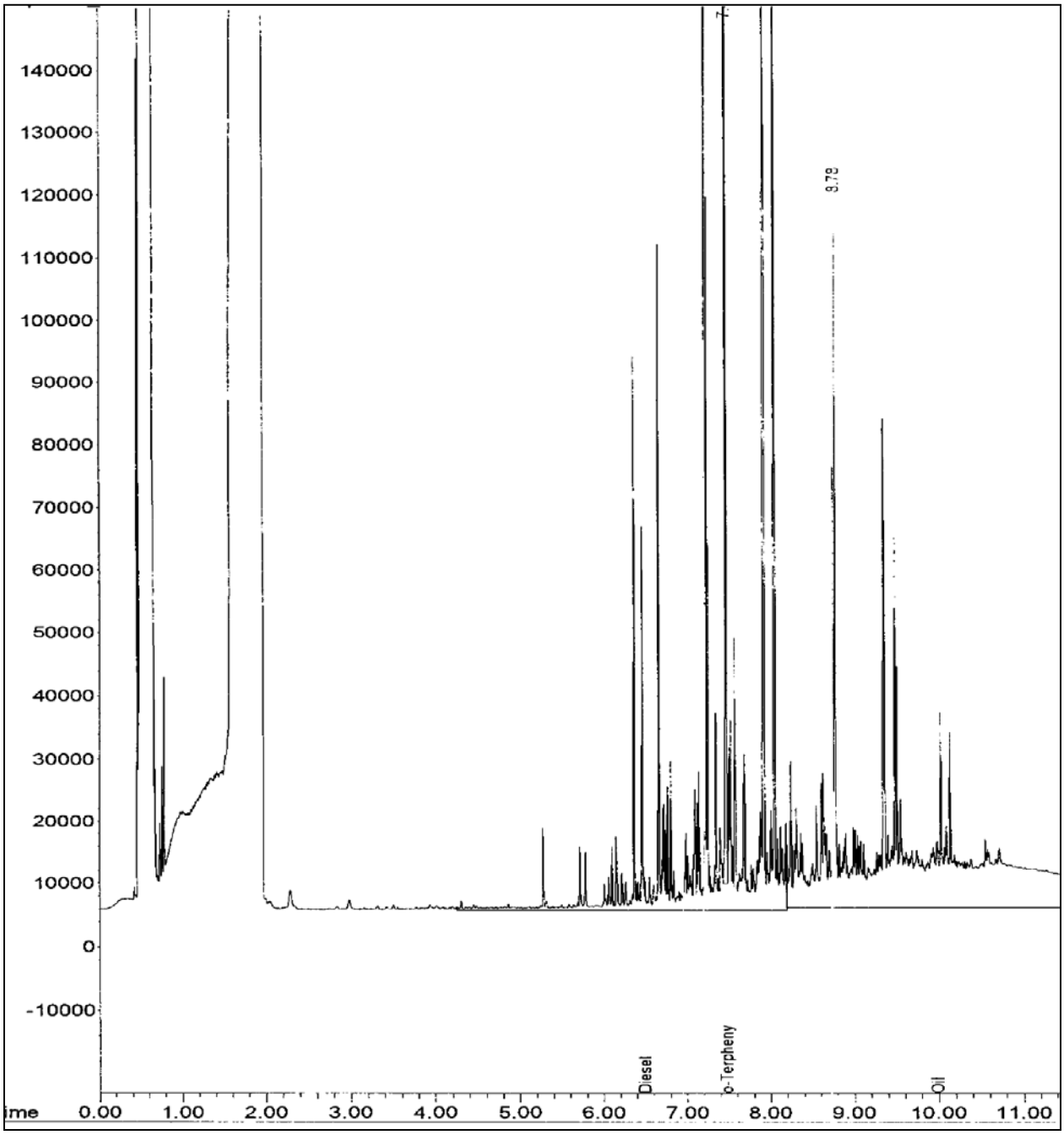

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3 - 5 ft

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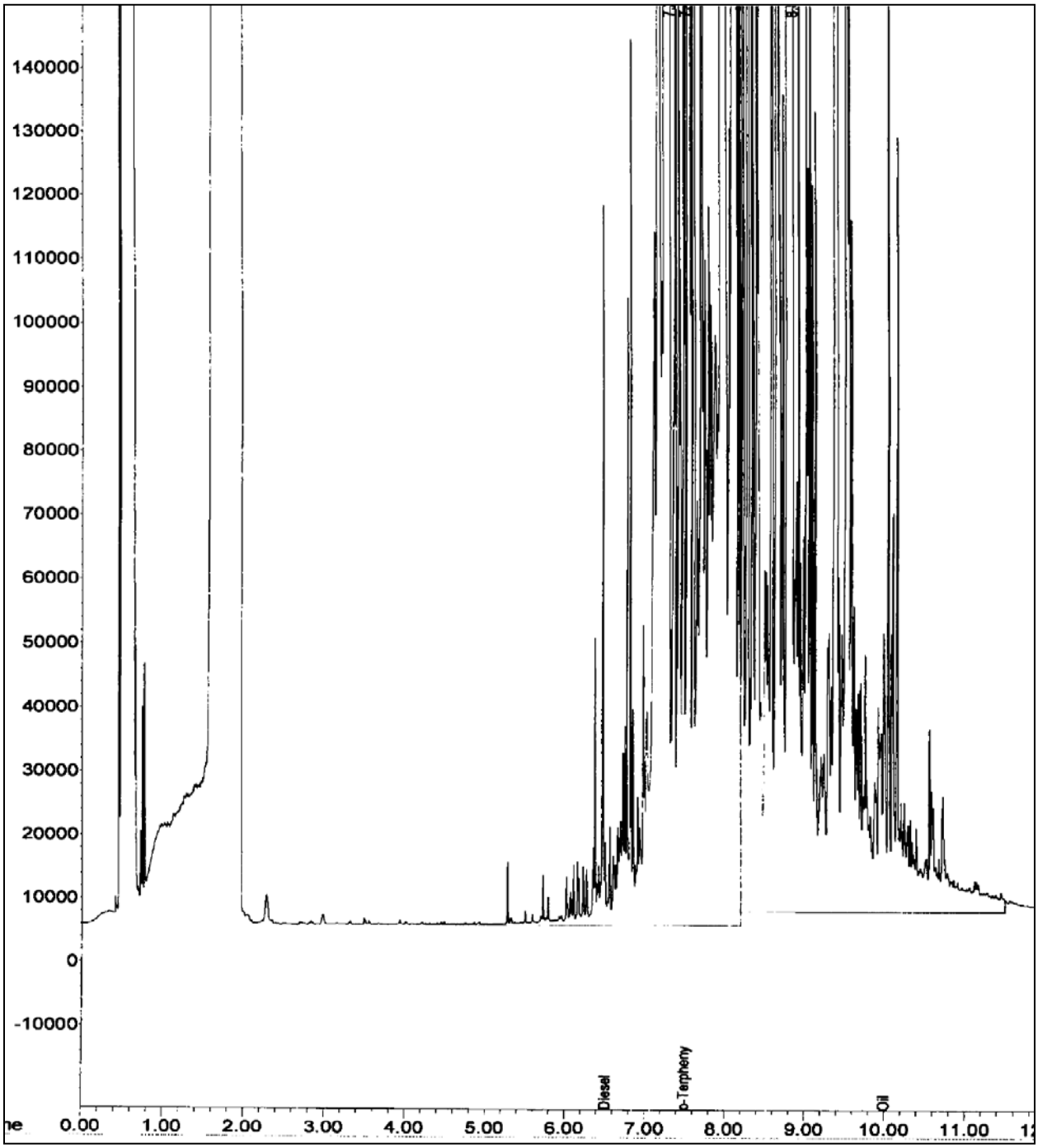

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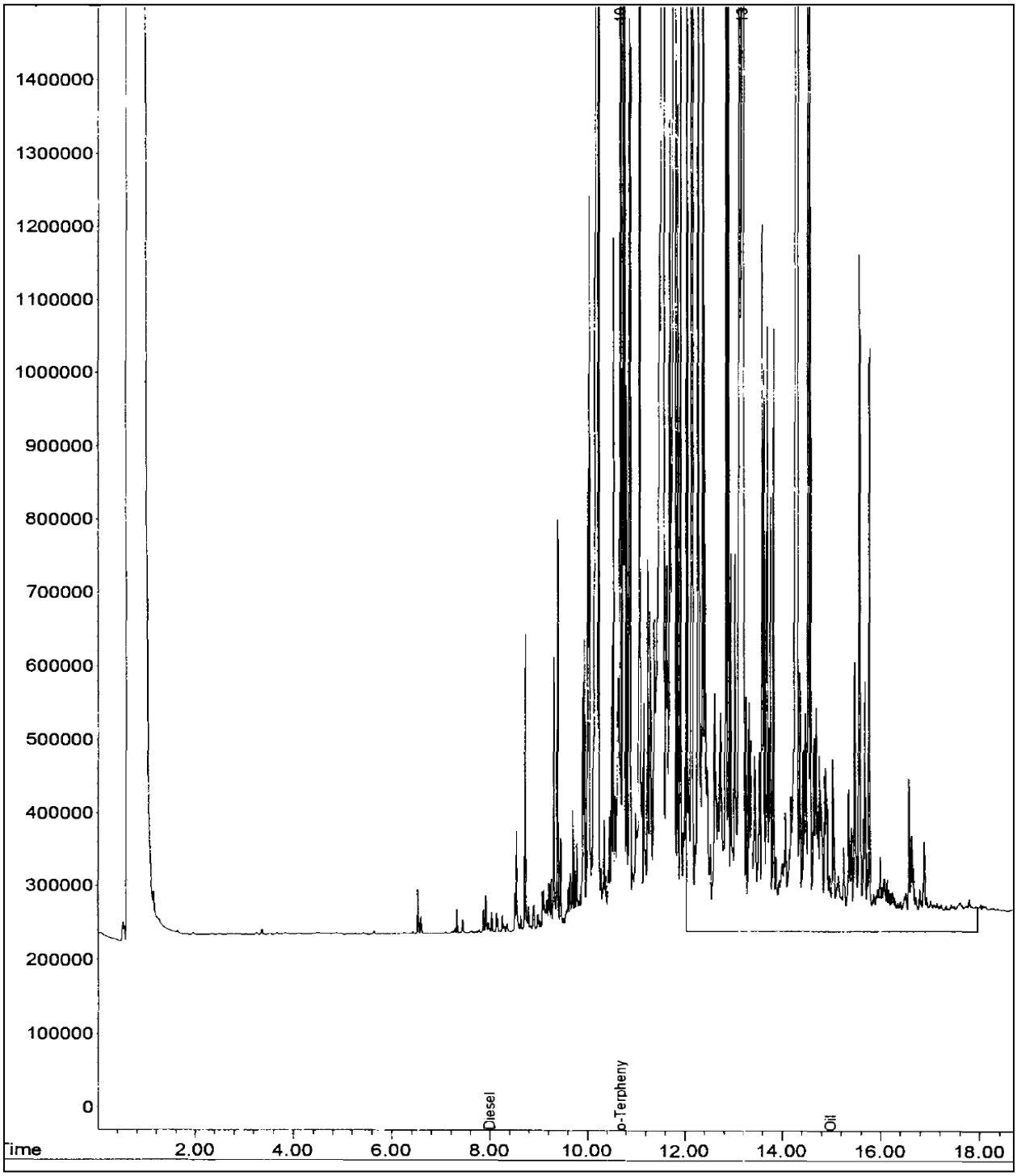

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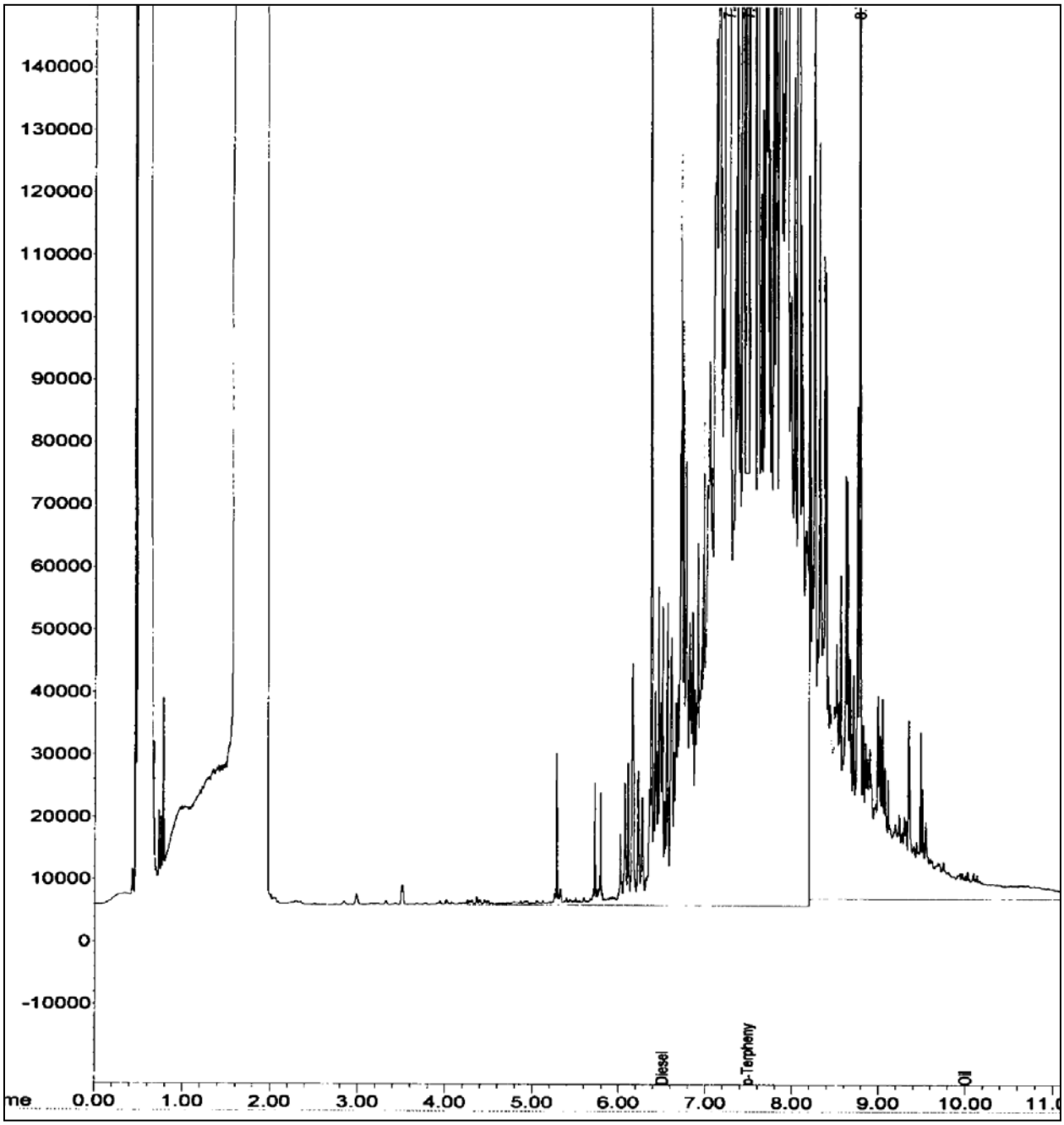

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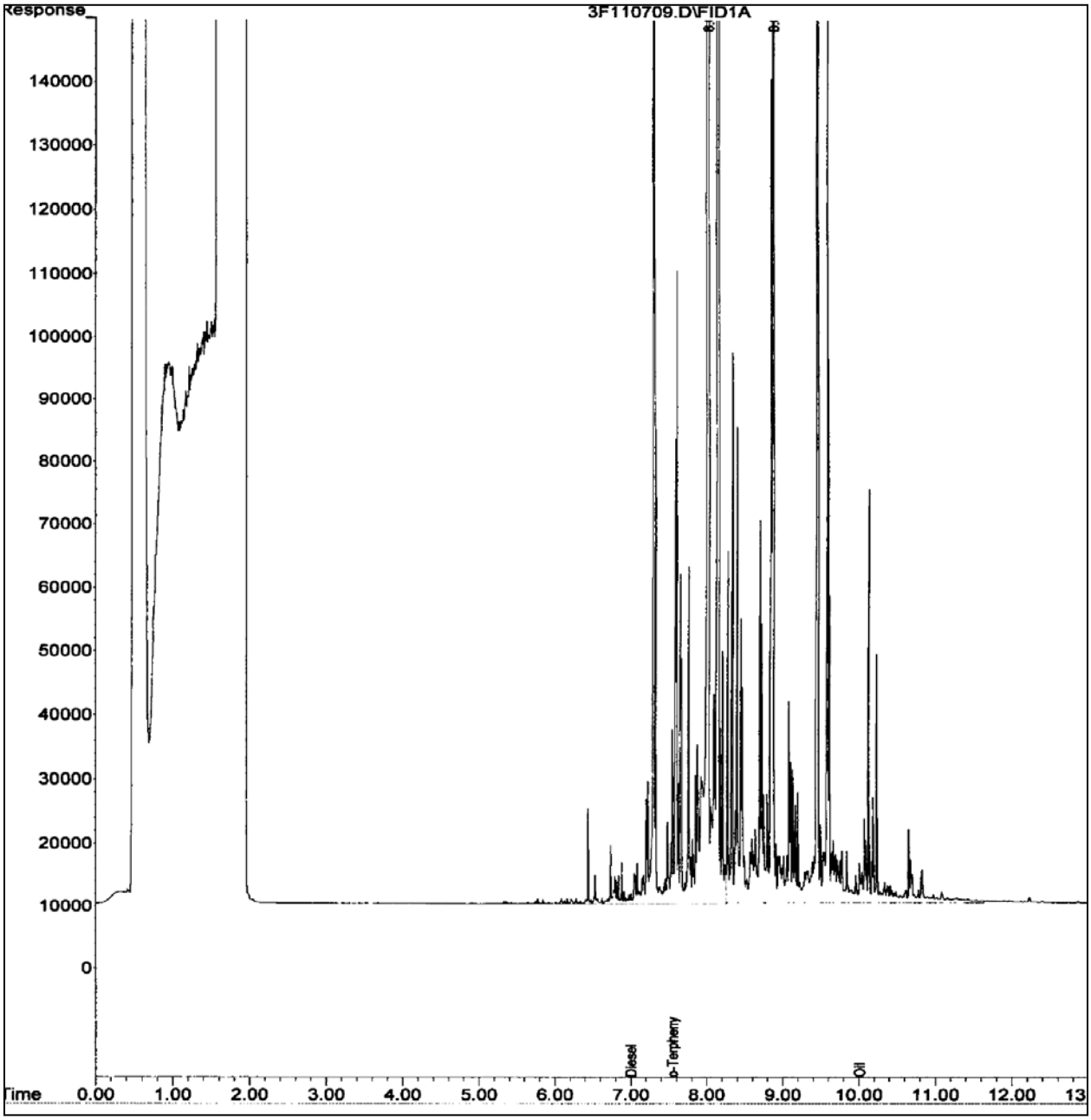

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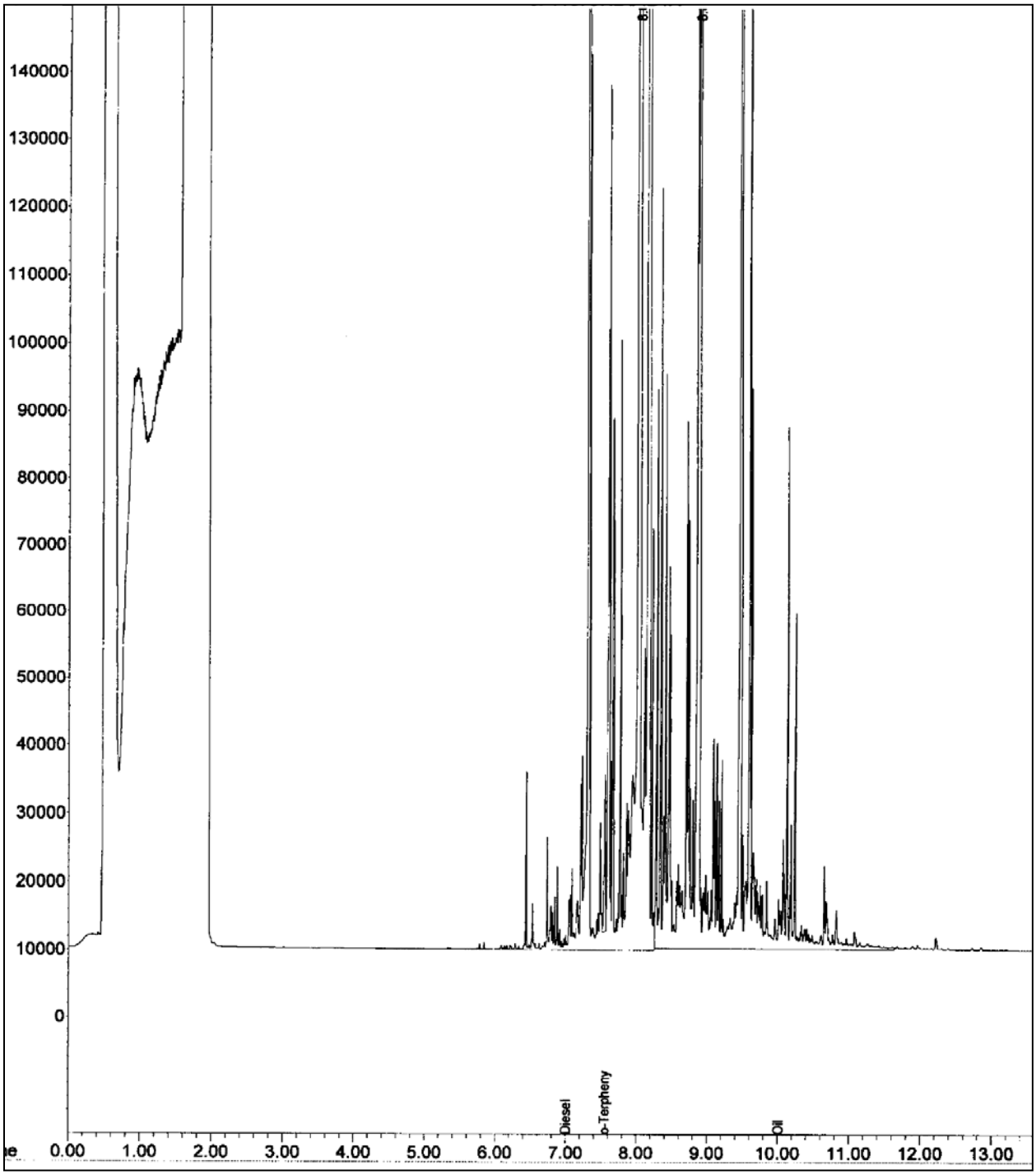

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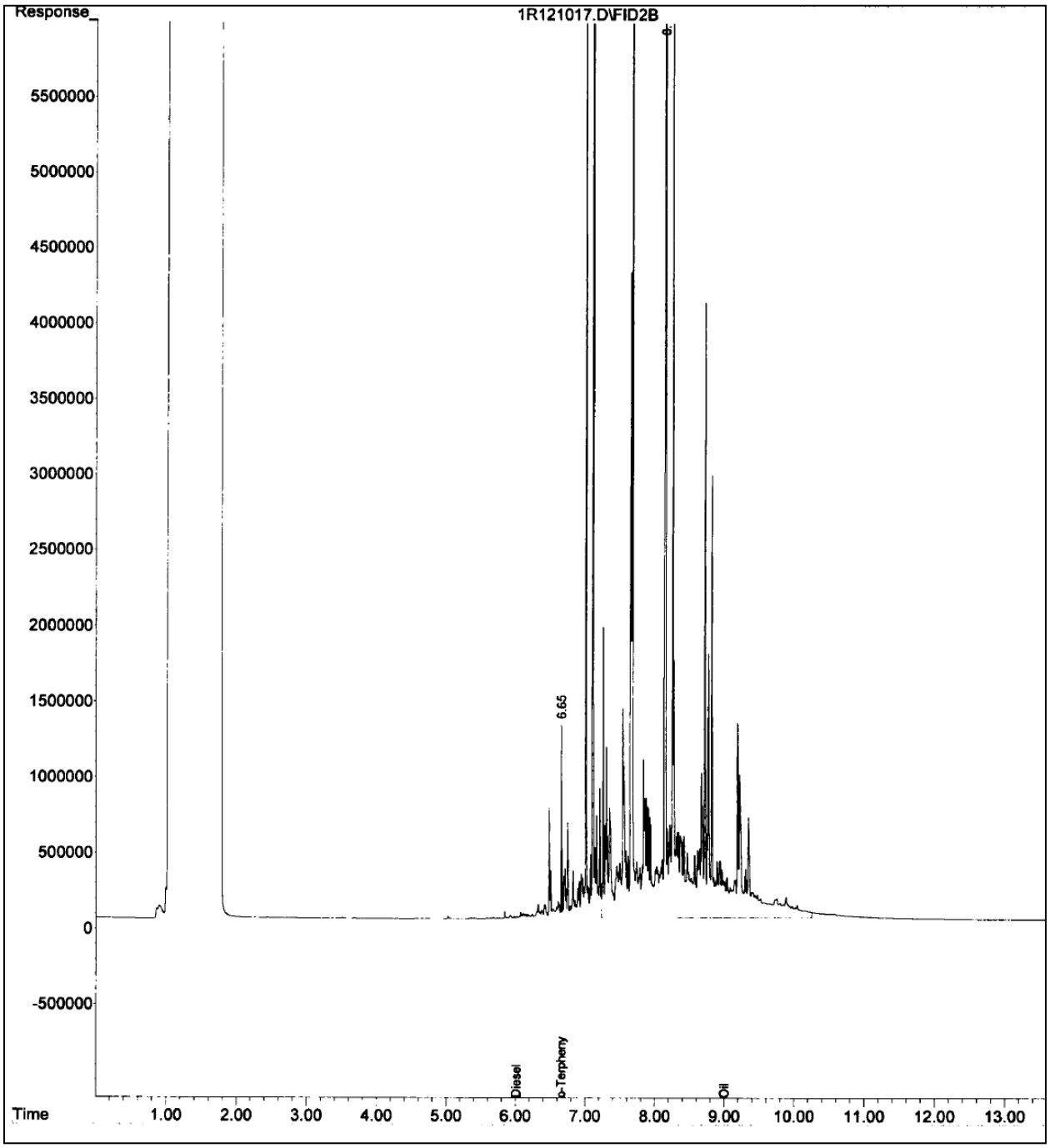

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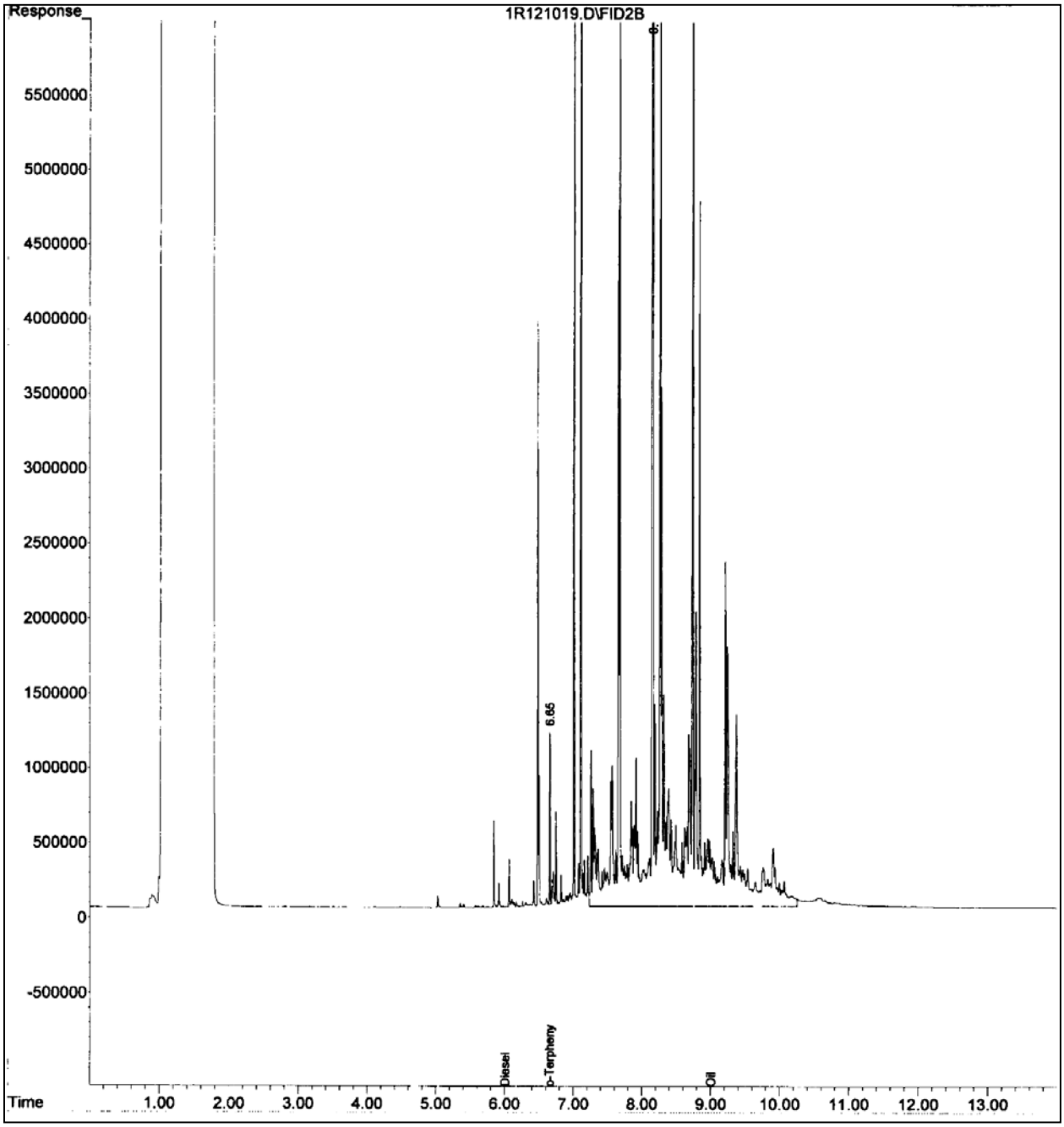

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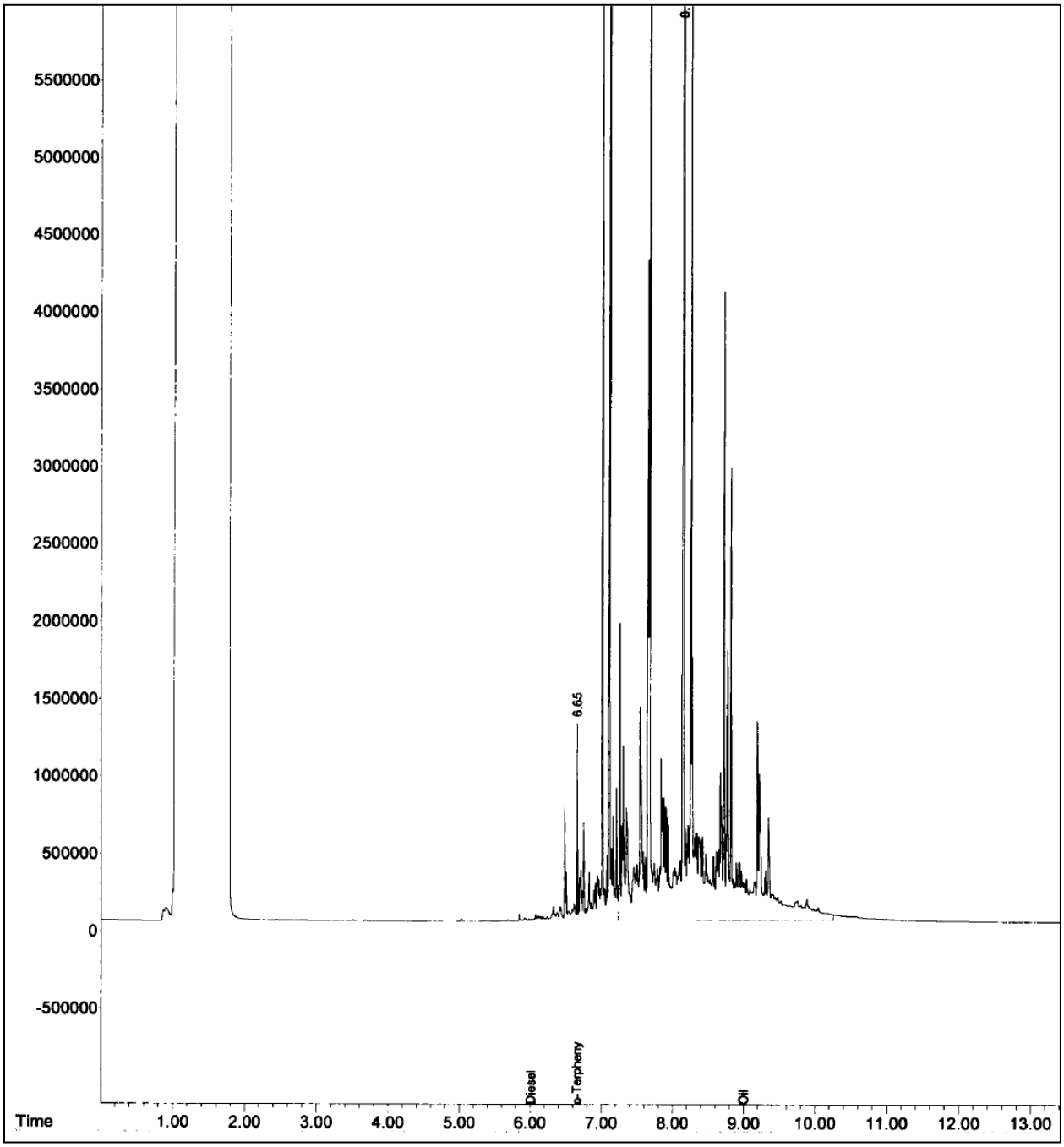

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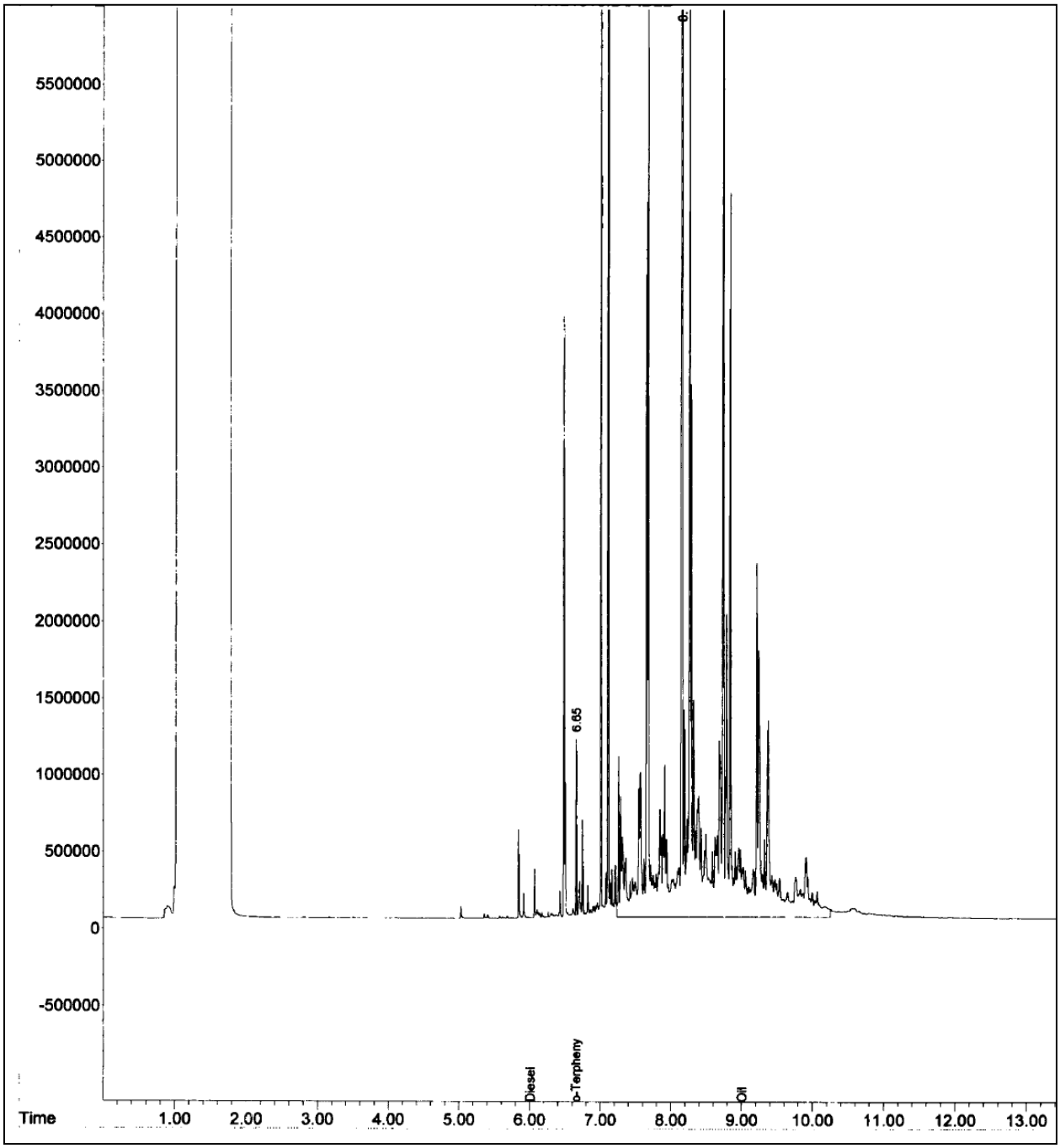

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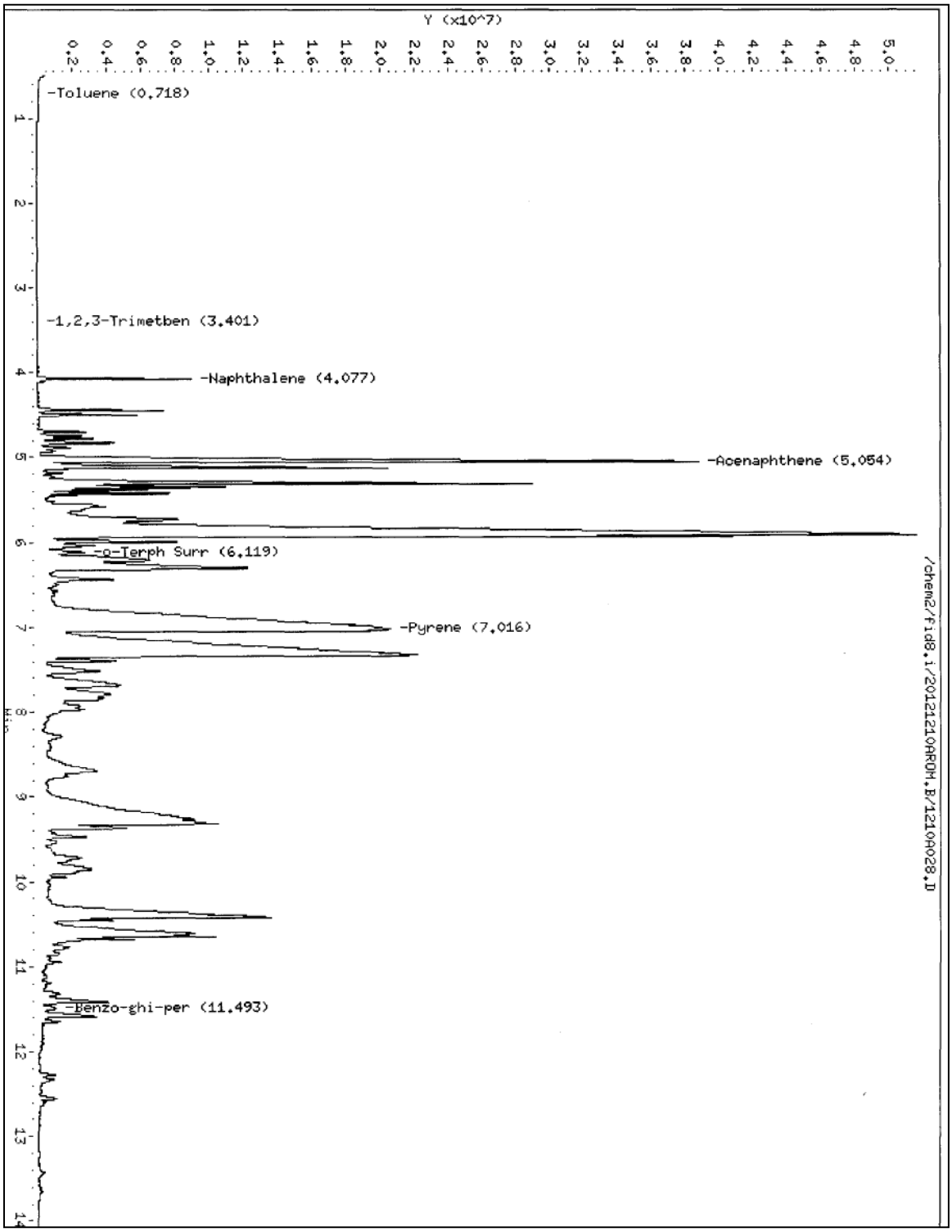
EPH Report VV14A



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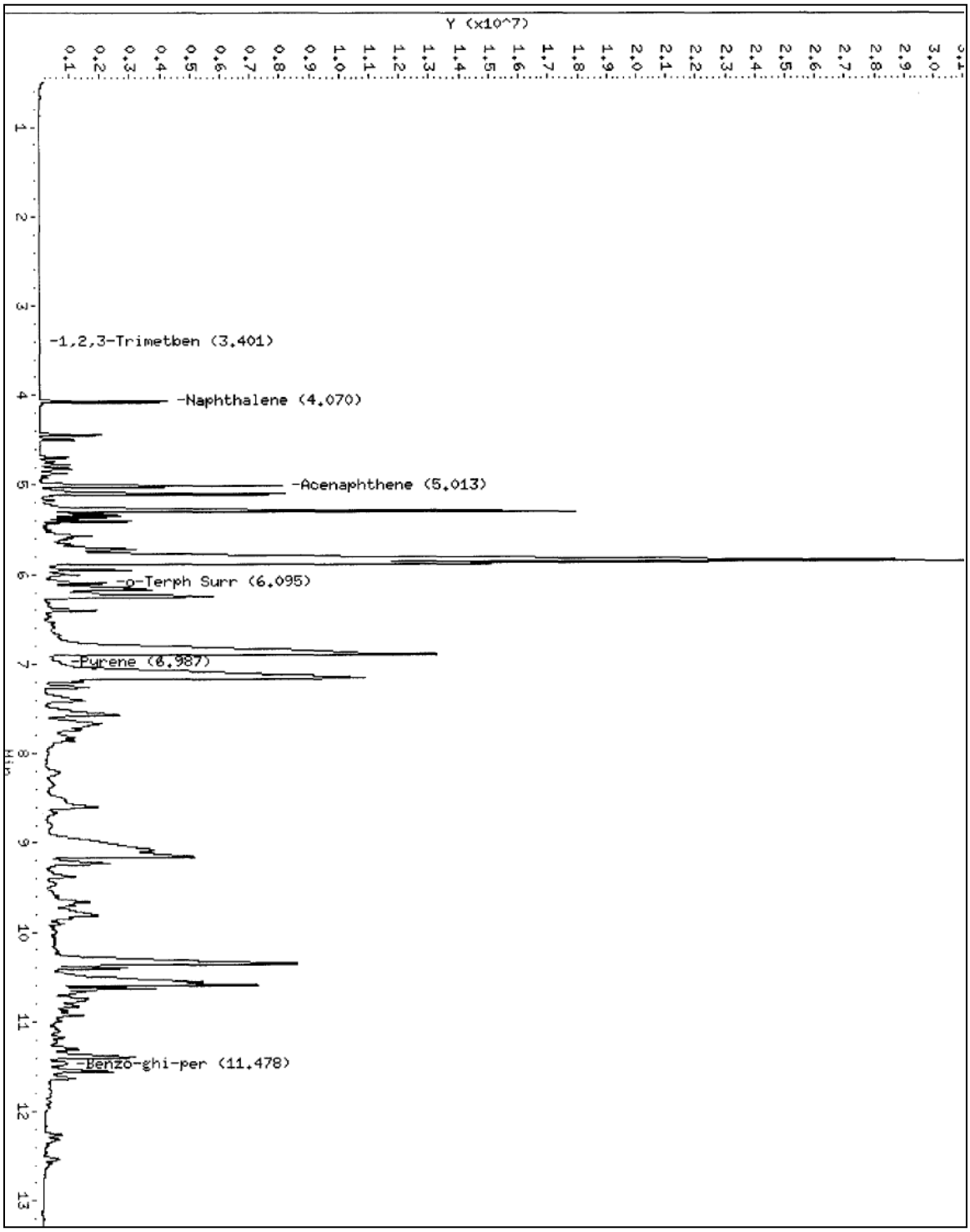
EPH Report VV14A



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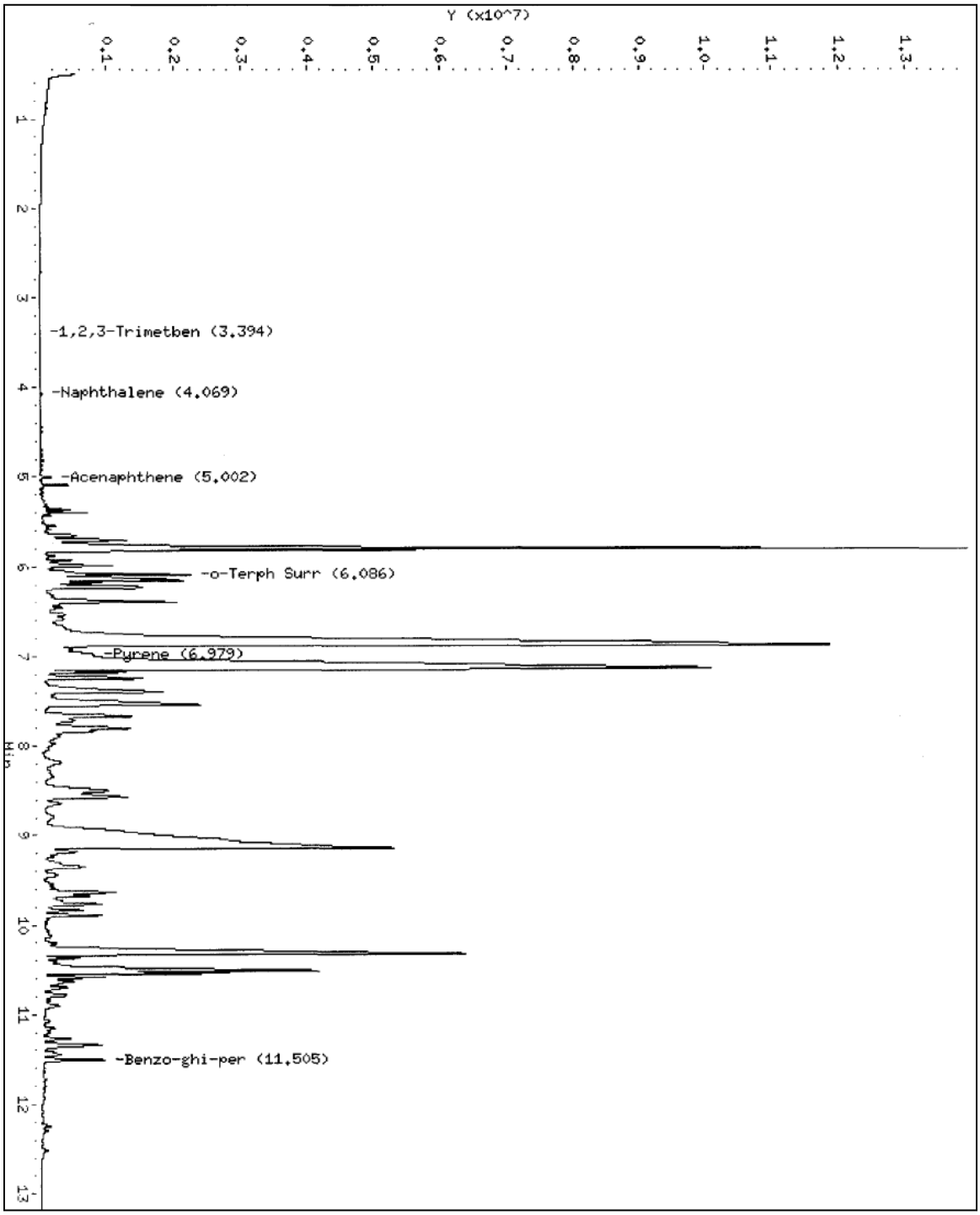
EPH Report VV14A



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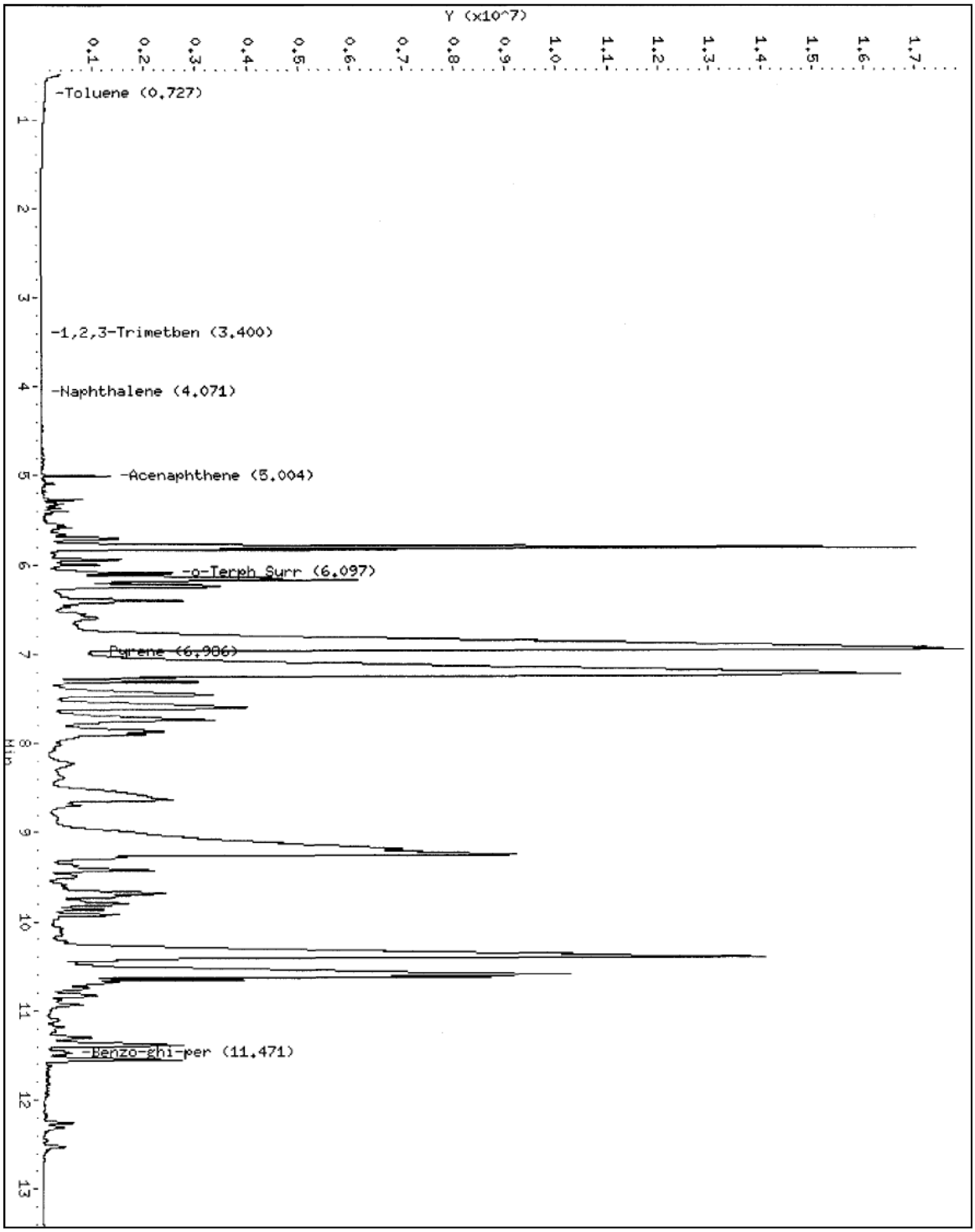
EPH Report VV14A



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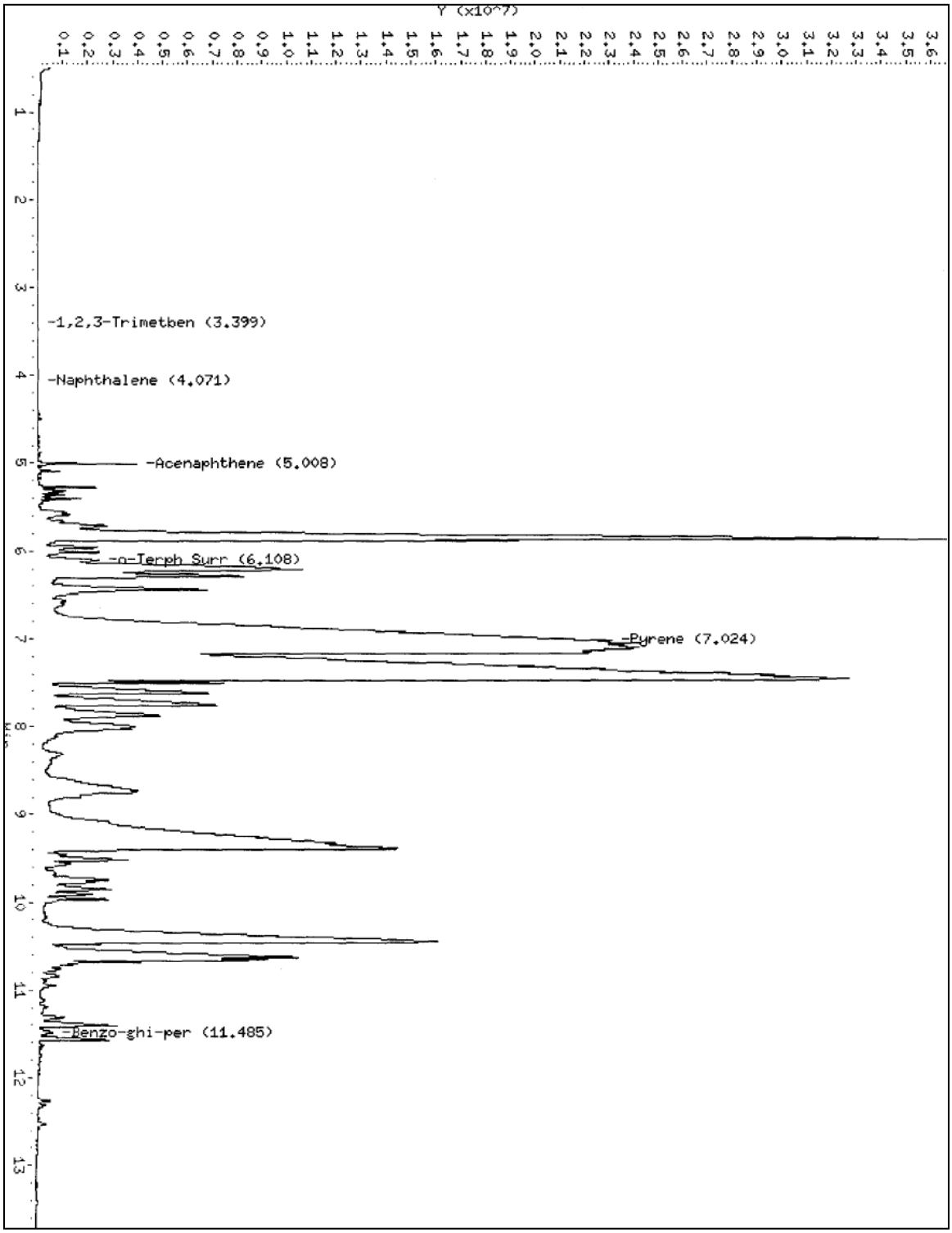

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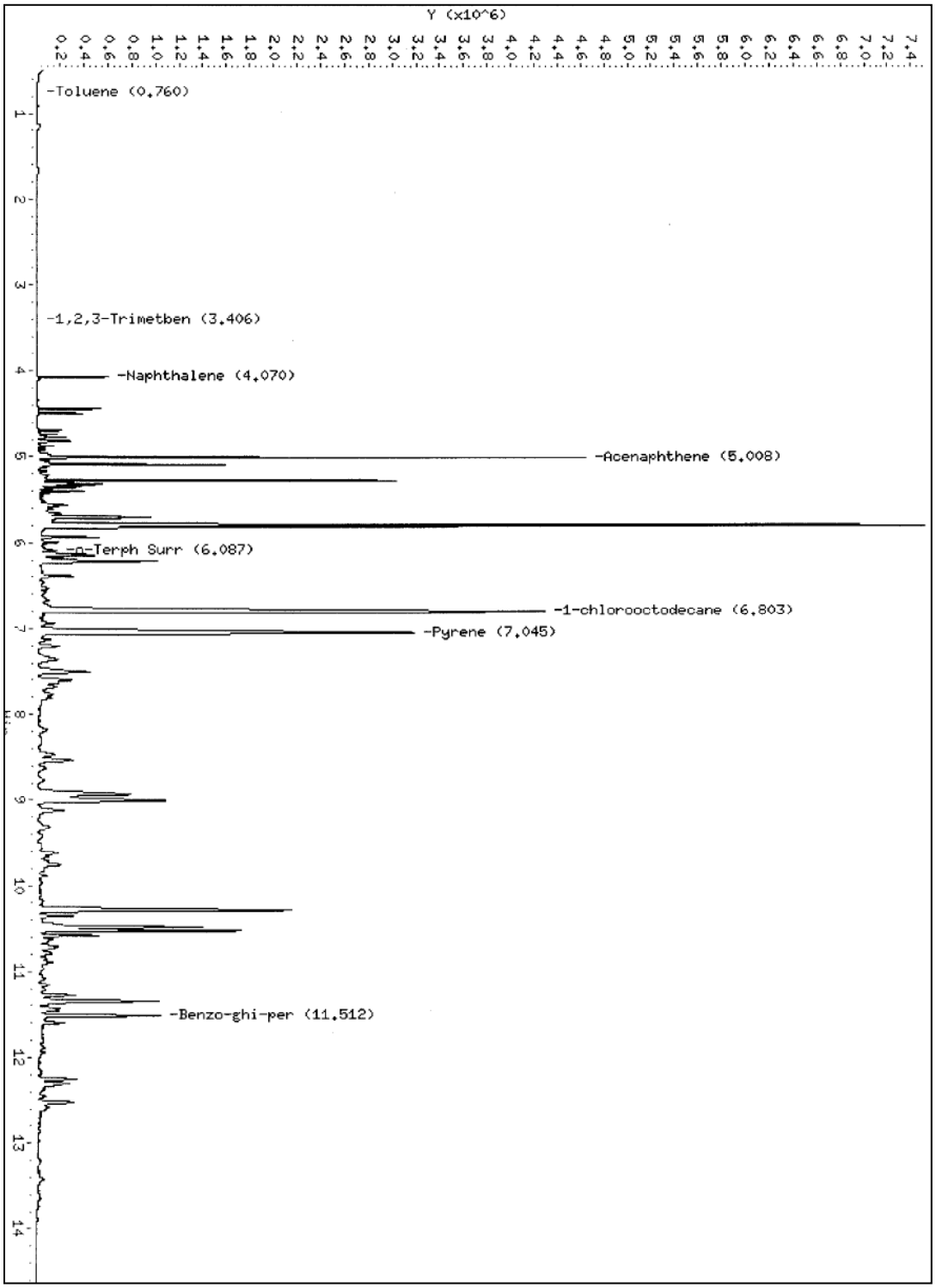
0 - 12 ft

EPH Report VV14A



ANCHOR QEA

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MEMORANDUM

To:	James DeMay, P.E., Washington State Department of Ecology	**Date:**	February 5, 2014
From:	Jessica Goin, Ph.D., and Niklas Bacher, L.G., Anchor QEA, LLC	**Project:**	130730-01.01
Re:	Evaluation of Isobaric Interferences on Reported Chromium, Copper, and Nickel Groundwater Concentration Data for Wells RL-2S and R-3		

This memorandum summarizes the Anchor QEA, LLC (Anchor QEA), evaluation of analytical method interferences affecting measurements of certain trace metals (i.e., chromium, copper, and nickel) in groundwater at two locations within the former Reynolds Metals Reduction Plant (Reynolds Facility) in Longview, Washington. Options for reducing or eliminating these interferences are presented for consideration as part of future groundwater monitoring and data analysis efforts.

INTRODUCTION AND BACKGROUND

Groundwater monitoring data collected as part of ongoing monitoring programs at the Closed BMP Facility and near the Former Spent Potliner (SPL) Area at the Reynolds Facility were previously compiled and provided to the Washington State Department of Ecology for review (Anchor QEA 2013). Anchor QEA geochemists noted in two wells that trace metals (including chromium, copper, and nickel) were correlated to specific major ions, which is indicative of potential analytical method interference. This memorandum describes methods used to verify interference and to quantify the effect on reported concentrations for those parameters.

INITIAL IDENTIFICATION OF METHOD INTERFERENCE

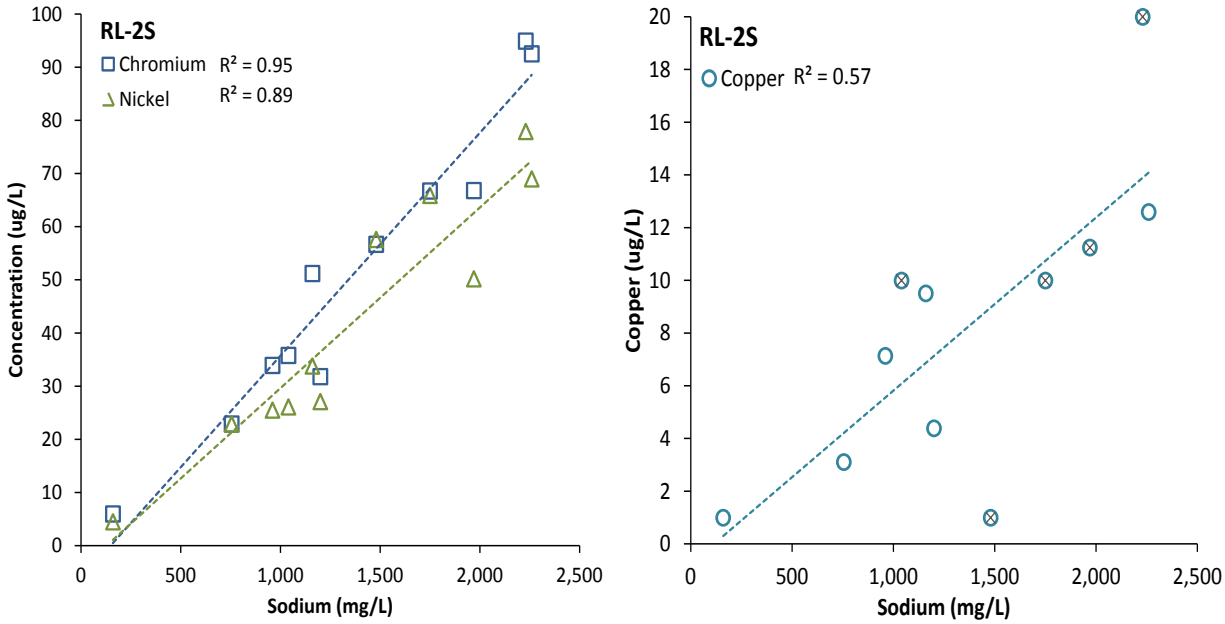
RL-2S is located at the northwestern corner of the Closed BMP Facility. During evaluation of the data for potential temporal trends, which were not observed, a strong correlation was observed between the concentrations of certain metals (chromium, copper, and nickel) and major cations, such as sodium, that are known to pose interference when present at elevated concentrations (e.g., this interference is commonly observed during testing of marine or

brackish waters). Concentrations of metals were not correlated with other parameters potentially indicative of changing geochemical conditions, including pH, oxidation-reduction potential (ORP), or fluoride concentration.

Chromium, copper, and nickel analysis by inductively coupled plasma mass spectroscopy (ICP/MS), such as that performed for U.S. Environmental Protection Agency (USEPA) Method 6020 (USEPA 2007), is sensitive to isobaric interference from multi-ion complexes that form in the plasma from interaction of dissolved ions in the sample either with other ions in the sample or with the argon carrier gas (e.g., Plantz et al. 1989; Warnken et al. 1998). Interference occurs when these complexes have the same mass as an isotope of the target analyte; for example, a complex of calcium-44 and oxygen-16 would increase the peak strength at the mass of nickel-60, increasing the reported nickel concentration. These complexes form in high-ionic strength samples, such as seawater. Relevant multi-ion complex interference includes the following: 1) chromium by chlorine-oxygen-hydrogen, argon-carbon, and chlorine-oxygen; 2) copper by argon-sodium and calcium-oxygen-hydrogen; and 3) nickel by calcium-oxygen or calcium-oxygen-hydrogen.

To further evaluate the potential presence of isobaric interference, cross-plots were generated for chromium, copper, and nickel in RL-2S as a function of sodium concentration, as sodium was the most abundant major ion. Correlation coefficients (R) with sodium were 0.97 and 0.89 for chromium and nickel, respectively, and lower for copper (R = 0.77), for which 5 of 11 measurements were below the detection limit (see Plate 1). Copper concentrations below the detection limit are indicated in Plate 1 with an “x” inside the data point. Time-series and cross-plots of other parameters were also generated, and no correlation was observed between the concentration of these metals and potentially explanatory variables such as ORP or pH. For example, RL-2S groundwater chromium concentration had a correlation coefficient of only 0.35 with pH and 0.25 with fluoride concentration.

Plate 1
Cross-plots of chromium, nickel (left), and copper (right) as a function of sodium concentration, with linear regression trendline and R square (R^2)



The correlation between trace metals and major ions and the lack of such correlation with other geochemical parameters, suggested that ion interference was affecting the reported concentrations of trace metals in samples from RL-2S. This well had sodium concentrations approximately ten-fold higher than other Closed BMP Facility monitoring wells without elevated reported trace metal concentrations. Similarly, the Former SPL Area well R-3 had elevated reported trace metal concentrations for the December 2005 monitoring event (Anchor QEA 2013 [see Table A-4 of that memorandum]). Like well RL-2S, well R-3 has specific conductance higher than the other nearby wells (RL-2S average 5,400 microsiemens per centimeter [µS/cm], other BMP wells average 1,030 µS/cm, R-3 average 21,600 µS/cm, and other SPL wells average 1,170 µS/cm), indicative of greater concentrations of dissolved ions. The co-occurrence of elevated dissolved ions and elevated apparent concentrations of chromium, copper, and nickel in RL-2S and R-3 indicated that matrix interference from dissolved ions in these samples was likely leading to artificially elevated concentration estimates.

RESULTS OF SUPPLEMENTAL TESTING

An empirical evaluation of method interference was subsequently performed. Groundwater samples were collected at monitoring wells RL-2S and R-3 on January 3, 2014. Samples were submitted to Apex Laboratories, LLC (Apex), for analysis by USEPA Method 6020A, the ICP/MS method used in previous monitoring, and an aliquot of each sample was also sent to Brooks Rand Laboratories (Brooks Rand) for parallel analysis by USEPA Method 1640 (USEPA 1997) with reductive precipitation (1640RP), which includes a pre-concentration step for the target metals prior to ICP/MS to remove matrix interference. The resulting values reported for the sample aliquots analyzed by Methods 6020A and 1640RP are summarized for the RL-2S and R-3 samples in Table 1, and laboratory reports are provided in Attachments A and B. These results confirm matrix interference in the chromium, copper, and nickel concentrations reported for these wells.

Table 1
Evaluation of Isobaric Interference in Parallel Testing – January 2014

Well	Metal	Previous Data 2011 – 2013	Estimated Magnitude of Isobaric Interference		
		Method 6020A Result (µg/L)*	Method 6020A Result (µg/L)	Method 1640RP (µg/L)	Contribution of Interference to Method 6020A Result Values
RL-2S	Chromium	50.8	75	15.2	80%[M]
	Copper	8.18	14.3[Q-42]	2.51	83%[B]
	Nickel	41.9	51.7	9.30	82%[M]
R-3	Chromium	232	251	41.1	84%
	Copper	20	23.5[J, Q-42,R-04]	5.77	75%
	Nickel	102	100	20.6	79%

Laboratory Data Quality Flags:
B = Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
M = Duplicate precision (RPD) was not within acceptance criteria. Result is estimated.
Q-42 = Matrix spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits.
R-04 = Reporting levels elevated due to dilution necessary for analysis.

Notes:
*= Average result values from 2011 to 2013 monitoring events for RL-2S and December 2005 results for R-3.
µg/L = microgram per liter
MDL = method detection limit
MRL = method reporting limit
RPD = relative percent difference
USEPA = U.S. Environmental Protection Agency

Review of quality assurance samples and analytical laboratory observations for these samples is summarized as follows:

- **Method 6020 Observations (Wells RL-2S and R-3).** During the parallel method testing, the laboratory (Apex) personnel communicated the presence of salinity interferences for the measurement of copper, and the laboratory performed high dilutions in an attempt to minimize the extent of this interference. For example, the original and field duplicate samples were diluted ten-fold by Apex to reduce matrix interference. Data quality concerns are reflected in the flags applied to the analytical results for copper; however, the data were not rejected using standard data validation protocols. Other than data quality issues noted for matrix spike and matrix spike duplicate recovery for copper, the metals data reported by Apex appeared to meet data quality standards, as have previous metals analyses performed by this method. However, the parallel testing confirmed that on average, salinity interferences may result in a substantial high bias to the concentration data for copper, chromium, and nickel in these two wells.
- **Method 1640RP Observations (Wells RL-2S and R3).** Analysis by Method 1640RP demonstrated that between 75 and 83 percent of the measured concentrations of copper, chromium, and nickel by Method 6020 may be the result of salinity interferences. During testing, chemists at the second laboratory (Brooks Rand) also communicated the presence of potential method interferences resulting in the need for sample dilutions. Interferences also resulted in lower reproducibility in duplicate analyses. Observations indicate that the matrix interference may not be fully corrected by Method 1640RP.
- **Evaluation of Chromium Speciation (Wells RL-2S and R-3).** As part of the current testing, the speciation of chromium in groundwater at wells RL-2S and R-3 was evaluated. Based on geochemical parameters for these wells, the measurable chromium was assumed to be present largely or exclusively as chromium-III rather than as the more reactive chromium-VI species (hexavalent chromium does not tend to persist in groundwater under reducing conditions). Speciation was tested by evaluating concentrations of hexavalent chromium, alongside testing for total chromium. The hexavalent chromium concentration was determined by USEPA Method 218.6 (Weck Laboratories, included in Attachment A). The hexavalent chromium concentration was less than 1 microgram per liter (µg/L) in both of the

groundwater samples. Based on the comparison of hexavalent and total chromium concentrations, hexavalent chromium represents less than 1/15th of the total chromium present at well RL-2S and less than 1/150th of the total chromium present at well R-3. These findings confirm expectations based on site geochemistry that any chromium present in groundwater at these wells would be present primarily as chromium-III, not as the more reactive hexavalent chromium species.

- **Interference Testing (Well RL-5).** Parallel testing was also performed at well RL-5. This well did not include elevated ion concentrations, and results from parallel testing by Methods 6020A and 1640RP were comparable to one another, indicating a lack of significant isobaric interferences for this well, as well as providing a quality assurance check on these analytical methods.

SUMMARY

Isobaric interferences associated with sodium and other cations in groundwater appear to have resulted in significant over estimates of concentrations of chromium, copper, and nickel in groundwater at two wells (R-3 and RL-2S). These interferences account for between 75 and 83 percent of the concentrations of chromium, copper, and nickel for these wells using Method 6020A.

The interference can be largely but not entirely removed by using Method 1640RP. The presence of this interference and options for its control should be considered during future groundwater monitoring and data analysis activities. Use of Method 6020A data for these metals without considering the impact of the isobaric interference will inappropriately overestimate the concentrations of these metals. Such considerations may be warranted in other locations with elevated ion concentrations.

REFERENCES

Anchor QEA (Anchor QEA, LLC), 2013. *Former Reynolds Metals Reduction Plant RI/FS, Historical Quarterly Groundwater Monitoring Results*. Memorandum. October 15 2013.

Plantz et al. (Plantz, Michael R., James S. Fritz, Fred G. Smith, and R. S. Houk), 1989. Separation of trace metal complexes for analysis of samples of high salt content by inductively coupled plasma mass spectrometry. *Analytical Chemistry* 61(2): 149-153.

USEPA (U.S. Environmental Protection Agency), 1997. Method 1640. Determination of Trace Elements in Water by Preconcentration and Inductively Coupled Plasma-Mass Spectrometry. April 1997.

USEPA, 2007. Method 6020 and Method 6020A. Inductively Coupled Plasma-Mass Spectrometry. SW-846. February 2007.

Warnken et al. (Warnken, Kent W., Gary A. Gill, Liang-Saw Wen, Lawrence L. Griffin, and Peter H. Santschi), 1999. Trace metal analysis of natural waters by ICP-MS with on-line preconcentration and ultrasonic nebulization. *Journal of Analytical Atomic Spectrometry* 14(2): 247-252.

ATTACHMENT A
APEX ANALYTICAL LABORATORY REPORT

Apex Labs

12232 S.W. Garden Place
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503-718-2323 Phone
503-718-0333 Fax

Friday, January 24, 2014

Cindy Fields
Anchor QEA, LLC Tigard
6650 SW Redwood Lane Ste. 333
Portland, OR 97224

RE: MBTL Groundwater / 130730-01.01

Enclosed are the results of analyses for work order A4A0036, which was received by the laboratory on 1/3/2014 at 2:35:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: dthomas@apex-labs.com, or by phone at 503-718-2323.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Anchor QEA, LLC Tigard	Project: **MBTL Groundwater**	
6650 SW Redwood Lane Ste. 333	Project Number: 130730-01.01	**Reported:**
Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MBT-RI-010314-01	A4A0036-01	Water	01/03/14 10:05	01/03/14 14:35
MBT-RI-010314-02	A4A0036-02	Water	01/03/14 11:25	01/03/14 14:35
MBT-RI-010314-03	A4A0036-03	Water	01/03/14 11:40	01/03/14 14:35
MBT-RI-010314-04	A4A0036-04	Water	01/03/14 12:50	01/03/14 14:35
MBT-RI-010314-05	A4A0036-05	Water	01/03/14 14:10	01/03/14 14:35

Apex Labs

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Anchor QEA, LLC Tigard	Project: **MBTL Groundwater**	
6650 SW Redwood Lane Ste. 333	Project Number: 130730-01.01	**Reported:**
Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

ANALYTICAL SAMPLE RESULTS

Dissolved Anions by EPA 300.0 (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MBT-RI-010314-01 (A4A0036-01)			**Matrix: Water**					
Batch: 4010073								
Chloride	**8.68**	1.00	1.00	mg/L	1	01/06/14 14:39	300.0 (Diss)	
Fluoride	**3.24**	1.00	1.00	"	"	"	"	
MBT-RI-010314-02 (A4A0036-02)			**Matrix: Water**					
Batch: 4010073								
Chloride	**61.3**	5.00	5.00	mg/L	5	01/06/14 15:22	300.0 (Diss)	
MBT-RI-010314-02 (A4A0036-02RE2)			**Matrix: Water**					
Batch: 4010073								
Fluoride	**1940**	100	100	mg/L	100	01/07/14 23:39	300.0 (Diss)	
MBT-RI-010314-03 (A4A0036-03)			**Matrix: Water**					
Batch: 4010073								
Chloride	**60.9**	5.00	5.00	mg/L	5	01/06/14 17:10	300.0 (Diss)	
MBT-RI-010314-03 (A4A0036-03RE2)			**Matrix: Water**					
Batch: 4010073								
Fluoride	**1980**	100	100	mg/L	100	01/08/14 00:22	300.0 (Diss)	
MBT-RI-010314-04 (A4A0036-04)			**Matrix: Water**					
Batch: 4010073								
Chloride	ND	1.00	1.00	mg/L	1	01/06/14 13:35	300.0 (Diss)	
Fluoride	ND	1.00	1.00	"	"	"	"	
MBT-RI-010314-05 (A4A0036-05)			**Matrix: Water**					
Batch: 4010073								
Chloride	**41.1**	5.00	5.00	mg/L	5	01/06/14 18:14	300.0 (Diss)	
Fluoride	**68.2**	5.00	5.00	"	"	"	"	

DRAFT REPORT

The results provided in this report are PRELIMINARY and are subject to change based on subsequent analysis, QC validation or final data review. Please use these results with the understanding that they may have not been finalized by the laboratory

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Anchor QEA, LLC Tigard	Project: **MBTL Groundwater**	
6650 SW Redwood Lane Ste. 333	Project Number: 130730-01.01	**Reported:**
Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

ANALYTICAL SAMPLE RESULTS

Dissolved Metals by EPA 6020 (ICPMS) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MBT-RI-010314-01 (A4A0036-01)			**Matrix: Water**					
Batch: 4010281								
Arsenic	**1.19**	0.350	0.500	ug/L	10	01/15/14 18:14	EPA 6020A (Diss)	
MBT-RI-010314-02 (A4A0036-02)			**Matrix: Water**					
Batch: 4010281								
Arsenic	**146**	15.8	22.5	ug/L	100	01/15/14 18:31	EPA 6020A (Diss)	
MBT-RI-010314-03 (A4A0036-03)			**Matrix: Water**					
Batch: 4010281								
Arsenic	**183**	15.8	22.5	ug/L	100	01/15/14 18:48	EPA 6020A (Diss)	
MBT-RI-010314-04 (A4A0036-04)			**Matrix: Water**					
Batch: 4010281								
Arsenic	ND	0.0350	0.0500	ug/L	1	01/15/14 17:40	EPA 6020A (Diss)	
MBT-RI-010314-05 (A4A0036-05)			**Matrix: Water**					
Batch: 4010281								
Arsenic	**32.6**	3.50	5.00	ug/L	100	01/15/14 19:06	EPA 6020A (Diss)	

Apex Labs

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Anchor QEA, LLC Tigard	Project: **MBTL Groundwater**	
6650 SW Redwood Lane Ste. 333	Project Number: 130730-01.01	**Reported:**
Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

ANALYTICAL SAMPLE RESULTS

Dissolved Hardness (Calculated) by EPA 6020

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MBT-RI-010314-01 (A4A0036-01)			**Matrix: Water**		**Batch: [CALC]**			
Hardness (Calc by 6020)	**49.5**	---	4.56	mg CaCO3/L	10	01/15/14 18:14	6020 Calc	
MBT-RI-010314-02 (A4A0036-02)			**Matrix: Water**		**Batch: [CALC]**			
Hardness (Calc by 6020)	ND	---	20.5	mg CaCO3/L	10	01/15/14 19:52	6020 Calc	
MBT-RI-010314-03 (A4A0036-03)			**Matrix: Water**		**Batch: [CALC]**			
Hardness (Calc by 6020)	ND	---	20.5	mg CaCO3/L	10	01/15/14 20:09	6020 Calc	
MBT-RI-010314-04 (A4A0036-04)			**Matrix: Water**		**Batch: [CALC]**			
Hardness (Calc by 6020)	ND	---	0.456	mg CaCO3/L	1	01/15/14 17:40	6020 Calc	
MBT-RI-010314-05 (A4A0036-05)			**Matrix: Water**		**Batch: [CALC]**			
Hardness (Calc by 6020)	**41.7**	---	4.56	mg CaCO3/L	10	01/15/14 20:38	6020 Calc	

DRAFT REPORT

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Anchor QEA, LLC Tigard	Project: **MBTL Groundwater**	
6650 SW Redwood Lane Ste. 333	Project Number: 130730-01.01	**Reported:**
Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

ANALYTICAL SAMPLE RESULTS

Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MBT-RI-010314-01 (A4A0036-01)			**Matrix: Water**					
Batch: 4010281								
Aluminum	**284**	25.0	50.0	ug/L	1	01/15/14 19:35	EPA 6020A (Diss)	
Calcium	**11200**	500	1000	"	10	01/15/14 18:14	"	
Chromium	**0.947**	0.450	0.500	"	1	01/15/14 19:35	"	
Copper	**20.6**	2.50	5.00	"	5	01/16/14 14:14	"	
Iron	**267**	25.0	50.0	"	1	01/15/14 19:35	"	
Magnesium	**5220**	250	500	"	10	01/15/14 18:14	"	
Manganese	**84.7**	5.00	10.0	"	"	"	"	
Nickel	**6.80**	0.500	1.00	"	1	01/15/14 19:35	"	
Potassium	**638**	250	500	"	5	01/16/14 14:14	"	
Sodium	**167000**	500	2000	"	10	01/15/14 18:14	"	
MBT-RI-010314-02 (A4A0036-02)			**Matrix: Water**					
Batch: 4010281								
Aluminum	ND	1120	2250	ug/L	10	01/15/14 19:52	EPA 6020A (Diss)	R-04
Calcium	ND	2250	4500	"	"	"	"	R-04
Chromium	**251**	20.2	22.5	"	"	"	"	
Copper	**23.5**	22.5	45.0	"	"	01/16/14 14:31	"	J, Q-42, R-04
Iron	**110000**	11200	22500	"	100	01/15/14 18:31	"	
Magnesium	ND	1120	2250	"	10	01/15/14 19:52	"	R-04
Manganese	ND	22.5	45.0	"	"	"	"	R-04
Nickel	**102**	22.5	45.0	"	"	"	"	
Potassium	**12600**	2250	4500	"	"	01/16/14 14:31	"	
Sodium	**6600000**	22500	90000	"	100	01/15/14 18:31	"	
MBT-RI-010314-03 (A4A0036-03)			**Matrix: Water**					
Batch: 4010281								
Aluminum	ND	1120	2250	ug/L	10	01/15/14 20:09	EPA 6020A (Diss)	R-04
Calcium	ND	2250	4500	"	"	"	"	R-04
Chromium	**260**	20.2	22.5	"	"	"	"	
Copper	**26.5**	22.5	45.0	"	"	01/16/14 14:55	"	J, Q-42, R-04
Iron	**115000**	11200	22500	"	100	01/15/14 18:48	"	
Magnesium	ND	1120	2250	"	10	01/15/14 20:09	"	R-04
Manganese	ND	22.5	45.0	"	"	"	"	R-04
Nickel	**100**	22.5	45.0	"	"	"	"	Q-42
Potassium	**13700**	2250	4500	"	"	01/16/14 14:55	"	

DRAFT REPORT

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Anchor QEA, LLC Tigard	Project: **MBTL Groundwater**	
6650 SW Redwood Lane Ste. 333	Project Number: 130730-01.01	**Reported:**
Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

ANALYTICAL SAMPLE RESULTS

Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MBT-RI-010314-03 (A4A0036-03)			**Matrix: Water**					
Sodium	**6940000**	22500	90000	ug/L	100	01/15/14 18:48	EPA 6020A (Diss)	
MBT-RI-010314-04 (A4A0036-04)			**Matrix: Water**					
Batch: 4010281								
Aluminum	ND	25.0	50.0	ug/L	1	01/15/14 17:40	EPA 6020A (Diss)	
Calcium	ND	50.0	100	"	"	"	"	
Chromium	ND	0.450	0.500	"	"	"	"	
Copper	ND	0.500	1.00	"	"	01/16/14 13:39	"	
Iron	ND	25.0	50.0	"	"	01/15/14 17:40	"	
Magnesium	ND	25.0	50.0	"	"	"	"	
Manganese	ND	0.500	1.00	"	"	"	"	
Nickel	ND	0.500	1.00	"	"	"	"	
Potassium	ND	50.0	100	"	"	"	"	
Sodium	ND	50.0	200	"	"	"	"	
MBT-RI-010314-05 (A4A0036-05)			**Matrix: Water**					
Batch: 4010281								
Aluminum	**265**	250	500	ug/L	10	01/15/14 20:38	EPA 6020A (Diss)	J, R-04
Calcium	**10100**	500	1000	"	"	"	"	
Chromium	**75.0**	45.0	50.0	"	100	01/15/14 19:06	"	
Copper	**14.3**	5.00	10.0	"	10	01/16/14 15:06	"	Q-42
Iron	**7040**	2500	5000	"	100	01/15/14 19:06	"	
Magnesium	**4000**	250	500	"	10	01/15/14 20:38	"	
Manganese	**46.4**	5.00	10.0	"	"	"	"	
Nickel	**51.7**	5.00	10.0	"	"	"	"	
Potassium	**3170**	500	1000	"	"	01/16/14 15:06	"	
Sodium	**1830000**	5000	20000	"	100	01/15/14 19:06	"	

DRAFT REPORT

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Anchor QEA, LLC Tigard	Project: **MBTL Groundwater**	
6650 SW Redwood Lane Ste. 333	Project Number: 130730-01.01	**Reported:**
Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

ANALYTICAL SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MBT-RI-010314-01 (A4A0036-01)			**Matrix: Water**					
Batch: 4010071								
Total Alkalinity	**293**	20.0	20.0	mg CaCO3/L	1	01/06/14 13:05	SM 2320 B	
Bicarbonate Alkalinity	**293**	20.0	20.0	"	"	"	"	
Carbonate Alkalinity	ND	20.0	20.0	"	"	"	"	
Hydroxide Alkalinity	ND	20.0	20.0	"	"	"	"	
MBT-RI-010314-02 (A4A0036-02)			**Matrix: Water**					
Batch: 4010071								
Total Alkalinity	**10600**	20.0	20.0	mg CaCO3/L	1	01/06/14 13:05	SM 2320 B	
Bicarbonate Alkalinity	**2750**	20.0	20.0	"	"	"	"	
Carbonate Alkalinity	**7800**	20.0	20.0	"	"	"	"	
Hydroxide Alkalinity	ND	20.0	20.0	"	"	"	"	
MBT-RI-010314-03 (A4A0036-03)			**Matrix: Water**					
Batch: 4010071								
Total Alkalinity	**10600**	20.0	20.0	mg CaCO3/L	1	01/06/14 13:05	SM 2320 B	
Bicarbonate Alkalinity	**2850**	20.0	20.0	"	"	"	"	
Carbonate Alkalinity	**7700**	20.0	20.0	"	"	"	"	
Hydroxide Alkalinity	ND	20.0	20.0	"	"	"	"	
MBT-RI-010314-04 (A4A0036-04)			**Matrix: Water**					
Batch: 4010071								
Total Alkalinity	ND	20.0	20.0	mg CaCO3/L	1	01/06/14 13:05	SM 2320 B	
Bicarbonate Alkalinity	ND	20.0	20.0	"	"	"	"	
Carbonate Alkalinity	ND	20.0	20.0	"	"	"	"	
Hydroxide Alkalinity	ND	20.0	20.0	"	"	"	"	
MBT-RI-010314-05 (A4A0036-05)			**Matrix: Water**					
Batch: 4010071								
Total Alkalinity	**3610**	19.8	19.8	mg CaCO3/L	1	01/06/14 13:05	SM 2320 B	
Bicarbonate Alkalinity	**2140**	19.8	19.8	"	"	"	"	
Carbonate Alkalinity	**1470**	19.8	19.8	"	"	"	"	
Hydroxide Alkalinity	ND	19.8	19.8	"	"	"	"	

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6650 SW Redwood Lane Ste. 333	Project Number: 130730-01.01	**Reported:**
Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

Weck Laboratories, Inc

ANALYTICAL SAMPLE RESULTS (Subcontracted)

Hexavalent Chromium by IC

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MBT-RI-010314-01 (A4A0036-01)			**Matrix: Water**		**Batch: W4A0417**			
Batch: W4A0417								
Chromium 6+	**0.15**	---	0.020	ug/l	1	01/10/14 19:02	EPA 218.6	
MBT-RI-010314-02 (A4A0036-02)			**Matrix: Water**		**Batch: W4A0417**			
Batch: W4A0417								
Chromium 6+	**0.27**	---	0.20	ug/l	10	01/10/14 19:02	EPA 218.6	
MBT-RI-010314-03 (A4A0036-03)			**Matrix: Water**		**Batch: W4A0417**			
Batch: W4A0417								
Chromium 6+	**0.21**	---	0.20	ug/l	10	01/10/14 19:02	EPA 218.6	
MBT-RI-010314-04 (A4A0036-04)			**Matrix: Water**		**Batch: W4A0417**			
Batch: W4A0417								
Chromium 6+	**0.11**	---	0.020	ug/l	1	01/10/14 19:02	EPA 218.6	
MBT-RI-010314-05 (A4A0036-05)			**Matrix: Water**		**Batch: W4A0417**			
Batch: W4A0417								
Chromium 6+	**0.88**	---	0.20	ug/l	10	01/10/14 19:02	EPA 218.6	

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6650 SW Redwood Lane Ste. 333	Project Number: 130730-01.01	**Reported:**
Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

QUALITY CONTROL (QC) SAMPLE RESULTS

DRAFT: Dissolved Anions by EPA 300.0 (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010073 - Method Prep: Aq							**Water**					
Blank (4010073-BLK1)					Prepared: 01/06/14 10:46		Analyzed: 01/06/14 12:52					
300.0 (Diss)												
Chloride	ND	1.00	1.00	mg/L	1	---	---	---	---	---	---	
Fluoride	ND	1.00	1.00	"	"	---	---	---	---	---	---	
LCS (4010073-BS1)					Prepared: 01/06/14 10:46		Analyzed: 01/06/14 13:13					
300.0 (Diss)												
Chloride	8.11	1.00	1.00	mg/L	1	8.00	---	101	90-110%	---	---	
Fluoride	8.22	1.00	1.00	"	"	"	---	103	"	---	---	
Duplicate (4010073-DUP1)					Prepared: 01/06/14 10:46		Analyzed: 01/06/14 13:56					
QC Source Sample: MBT-RI-010314-04 (A4A0036-04)												
300.0 (Diss)												
Chloride	ND	1.00	1.00	mg/L	1	---	ND	---	---	---	15%	
Fluoride	ND	1.00	1.00	"	"	---	ND	---	---	---	15%	
Matrix Spike (4010073-MS1)					Prepared: 01/06/14 10:46		Analyzed: 01/06/14 14:18					
QC Source Sample: MBT-RI-010314-04 (A4A0036-04)												
300.0 (Diss)												
Chloride	10.0	1.25	1.25	mg/L	1	10.0	ND	100	80-120%	---	---	
Fluoride	10.2	1.25	1.25	"	"	"	ND	102	"	---	---	
Matrix Spike (4010073-MS2)					Prepared: 01/06/14 10:46		Analyzed: 01/06/14 18:57					
QC Source Sample: MBT-RI-010314-01 (A4A0036-01)												
300.0 (Diss)												
Chloride	18.7	1.25	1.25	mg/L	1	10.0	8.68	100	80-120%	---	---	
Fluoride	13.5	1.25	1.25	"	"	"	3.24	102	"	---	---	
Matrix Spike (4010073-MS3)					Prepared: 01/06/14 10:46		Analyzed: 01/08/14 00:01					
QC Source Sample: MBT-RI-010314-02 (A4A0036-02RE2)												
300.0 (Diss)												
Chloride	ND	125	125	mg/L	100	10.0	ND		80-120%	---	---	
Fluoride	2070	125	125	"	"	"	1940	1250	"	---	---	Q-01
Matrix Spike (4010073-MS4)					Prepared: 01/06/14 10:46		Analyzed: 01/06/14 21:06					

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Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

QUALITY CONTROL (QC) SAMPLE RESULTS

DRAFT: Dissolved Anions by EPA 300.0 (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010073 - Method Prep: Aq							**Water**					
Matrix Spike (4010073-MS4)					Prepared: 01/06/14 10:46		Analyzed: 01/06/14 21:06					
QC Source Sample: MBT-RI-010314-03 (A4A0036-03RE1)												
300.0 (Diss)												
Chloride	ND	125	125	mg/L	100	10.0	ND		80-120%	---	---	
Fluoride	2030	125	125	"	"	"	2030	72	"	---	---	Q-01
Matrix Spike (4010073-MS5)					Prepared: 01/06/14 10:46		Analyzed: 01/06/14 22:11					
QC Source Sample: MBT-RI-010314-05 (A4A0036-05)												
300.0 (Diss)												
Chloride	51.4	6.25	6.25	mg/L	5	10.0	41.1	103	80-120%	---	---	
Fluoride	79.0	6.25	6.25	"	"	"	68.2	108	"	---	---	
Matrix Spike Dup (4010073-MSD1)					Prepared: 01/06/14 10:46		Analyzed: 01/06/14 21:49					
QC Source Sample: MBT-RI-010314-04 (A4A0036-04)												
300.0 (Diss)												
Chloride	10.0	1.25	1.25	mg/L	1	10.0	ND	100	80-120%	0.02	15%	
Fluoride	10.2	1.25	1.25	"	"	"	ND	102	"	0.2	15%	
Matrix Spike Dup (4010073-MSD2)					Prepared: 01/06/14 10:46		Analyzed: 01/06/14 19:19					
QC Source Sample: MBT-RI-010314-01 (A4A0036-01)												
300.0 (Diss)												
Chloride	18.7	1.25	1.25	mg/L	1	10.0	8.68	101	80-120%	0.3	15%	
Fluoride	13.6	1.25	1.25	"	"	"	3.24	103	"	0.4	15%	
Matrix Spike Dup (4010073-MSD3)					Prepared: 01/06/14 10:46		Analyzed: 01/06/14 20:01					
QC Source Sample: MBT-RI-010314-02 (A4A0036-02RE2)												
300.0 (Diss)												
Chloride	ND	125	125	mg/L	100	10.0	ND		80-120%		15%	
Fluoride	1980	125	125	"	"	"	1940	380	"	4	15%	Q-01
Matrix Spike Dup (4010073-MSD4)					Prepared: 01/06/14 10:46		Analyzed: 01/06/14 21:28					
QC Source Sample: MBT-RI-010314-03 (A4A0036-03RE1)												
300.0 (Diss)												
Chloride	ND	125	125	mg/L	100	10.0	ND		80-120%		15%	

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Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

QUALITY CONTROL (QC) SAMPLE RESULTS

DRAFT: Dissolved Anions by EPA 300.0 (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010073 - Method Prep: Aq							**Water**					
Matrix Spike Dup (4010073-MSD4)					Prepared: 01/06/14 10:46		Analyzed: 01/06/14 21:28					
QC Source Sample: MBT-RI-010314-03 (A4A0036-03RE1)												
Fluoride	2010	125	125	mg/L	"	"	2030	-176	"	1	15%	Q-01
Matrix Spike Dup (4010073-MSD5)					Prepared: 01/06/14 10:46		Analyzed: 01/06/14 22:32					
QC Source Sample: MBT-RI-010314-05 (A4A0036-05)												
300.0 (Diss)												
Chloride	51.4	6.25	6.25	mg/L	5	10.0	41.1	103	80-120%	0.03	15%	
Fluoride	79.3	6.25	6.25	"	"	"	68.2	111	"	0.4	15%	

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Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

QUALITY CONTROL (QC) SAMPLE RESULTS

DRAFT: Dissolved Metals by EPA 6020 (ICPMS) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010281 - EPA 3015A - Dissolved							**Water**					
Blank (4010281-BLK1)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 17:23					
EPA 6020A (Diss)												
Arsenic	ND	0.0350	0.0500	ug/L	1	---	---	---	---	---	---	
LCS (4010281-BS1)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 17:28					
EPA 6020A (Diss)												
Arsenic	53.8	0.0350	0.0500	ug/L	1	55.6	---	97	80-120%	---	---	
LCS Dup (4010281-BSD1)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 17:34					
EPA 6020A (Diss)												
Arsenic	54.1	0.0350	0.0500	ug/L	1	55.6	---	97	80-120%	0.4	20%	
Duplicate (4010281-DUP1)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 17:45					
QC Source Sample: MBT-RI-010314-04 (A4A0036-04)												
EPA 6020A (Diss)												
Arsenic	ND	0.0350	0.0500	ug/L	1	---	ND	---	---	---	20%	
Matrix Spike (4010281-MS1)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 18:20					
QC Source Sample: MBT-RI-010314-01 (A4A0036-01)												
EPA 6020A (Diss)												
Arsenic	56.0	0.350	0.500	ug/L	10	55.6	1.19	99	75-125%	---	---	
Matrix Spike (4010281-MS2)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 18:37					
QC Source Sample: MBT-RI-010314-02 (A4A0036-02)												
EPA 6020A (Diss)												
Arsenic	399	15.8	22.5	ug/L	100	250	146	101	75-125%	---	---	
Matrix Spike (4010281-MS3)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 18:54					
QC Source Sample: MBT-RI-010314-03 (A4A0036-03)												
EPA 6020A (Diss)												
Arsenic	374	15.8	22.5	ug/L	100	250	183	76	75-125%	---	---	
Matrix Spike (4010281-MS4)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 19:23					
QC Source Sample: MBT-RI-010314-05 (A4A0036-05)												
EPA 6020A (Diss)												

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6650 SW Redwood Lane Ste. 333	Project Number: 130730-01.01	**Reported:**
Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

QUALITY CONTROL (QC) SAMPLE RESULTS

DRAFT: Dissolved Metals by EPA 6020 (ICPMS) - Low Level

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010281 - EPA 3015A - Dissolved							**Water**					
Matrix Spike (4010281-MS4)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 19:23					
QC Source Sample: MBT-RI-010314-05 (A4A0036-05)												
Arsenic	86.6	3.50	5.00	ug/L	100	55.6	32.6	97	75-125%	---	---	
Matrix Spike (4010281-MS5)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 17:51					
QC Source Sample: MBT-RI-010314-04 (A4A0036-04)												
EPA 6020A (Diss)												
Arsenic	53.1	0.0350	0.0500	ug/L	1	55.6	ND	96	75-125%	---	---	
Matrix Spike Dup (4010281-MSD1)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 18:25					
QC Source Sample: MBT-RI-010314-01 (A4A0036-01)												
EPA 6020A (Diss)												
Arsenic	55.0	0.350	0.500	ug/L	10	55.6	1.19	97	75-125%	2	20%	
Matrix Spike Dup (4010281-MSD2)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 18:43					
QC Source Sample: MBT-RI-010314-02 (A4A0036-02)												
EPA 6020A (Diss)												
Arsenic	377	15.8	22.5	ug/L	100	250	146	92	75-125%	6	20%	
Matrix Spike Dup (4010281-MSD3)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 19:00					
QC Source Sample: MBT-RI-010314-03 (A4A0036-03)												
EPA 6020A (Diss)												
Arsenic	401	15.8	22.5	ug/L	100	250	183	87	75-125%	7	20%	
Matrix Spike Dup (4010281-MSD4)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 19:29					
QC Source Sample: MBT-RI-010314-05 (A4A0036-05)												
EPA 6020A (Diss)												
Arsenic	91.5	3.50	5.00	ug/L	100	55.6	32.6	106	75-125%	5	20%	
Matrix Spike Dup (4010281-MSD5)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 17:57					
QC Source Sample: MBT-RI-010314-04 (A4A0036-04)												
EPA 6020A (Diss)												
Arsenic	53.4	0.0350	0.0500	ug/L	1	55.6	ND	96	75-125%	0.7	20%	

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6650 SW Redwood Lane Ste. 333	Project Number: 130730-01.01	**Reported:**
Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

QUALITY CONTROL (QC) SAMPLE RESULTS

DRAFT: Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010281 - EPA 3015A - Dissolved							**Water**					
Blank (4010281-BLK1)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 17:23					
EPA 6020A (Diss)												
Aluminum	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Calcium	ND	50.0	100	"	"	---	---	---	---	---	---	
Chromium	ND	0.450	0.500	"	"	---	---	---	---	---	---	
Iron	ND	25.0	50.0	"	"	---	---	---	---	---	---	
Magnesium	ND	25.0	50.0	"	"	---	---	---	---	---	---	
Manganese	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Potassium	ND	50.0	100	"	"	---	---	---	---	---	---	
Sodium	ND	50.0	200	"	"	---	---	---	---	---	---	
Blank (4010281-BLK2)					Prepared: 01/14/14 14:40		Analyzed: 01/16/14 13:22					
EPA 6020A (Diss)												
Copper	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	Q-16
LCS (4010281-BS1)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 17:28					
EPA 6020A (Diss)												
Aluminum	5400	25.0	50.0	ug/L	1	5560	---	97	80-120%	---	---	
Calcium	5680	50.0	100	"	"	"	---	102	"	---	---	
Chromium	55.7	0.450	0.500	"	"	55.6	---	100	"	---	---	
Iron	5500	25.0	50.0	"	"	5560	---	99	"	---	---	
Magnesium	5460	25.0	50.0	"	"	"	---	98	"	---	---	
Manganese	58.0	0.500	1.00	"	"	55.6	---	104	"	---	---	
Nickel	54.7	0.500	1.00	"	"	"	---	98	"	---	---	
Potassium	5550	50.0	100	"	"	5560	---	100	"	---	---	
Sodium	5430	50.0	200	"	"	"	---	98	"	---	---	
LCS (4010281-BS2)					Prepared: 01/14/14 14:40		Analyzed: 01/16/14 13:28					
EPA 6020A (Diss)												
Copper	53.8	0.500	1.00	ug/L	1	55.6	---	97	80-120%	---	---	Q-16
LCS Dup (4010281-BSD1)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 17:34					
EPA 6020A (Diss)												

DRAFT REPORT

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Anchor QEA, LLC Tigard	Project: **MBTL Groundwater**	
6650 SW Redwood Lane Ste. 333	Project Number: 130730-01.01	**Reported:**
Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

QUALITY CONTROL (QC) SAMPLE RESULTS

DRAFT: Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010281 - EPA 3015A - Dissolved							**Water**					
LCS Dup (4010281-BSD1)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 17:34					
Aluminum	5300	25.0	50.0	ug/L	1	5560	---	95	80-120%	2	20%	
Calcium	5510	50.0	100	"	"	"	---	99	"	3	20%	
Chromium	56.1	0.450	0.500	"	"	55.6	---	101	"	0.7	20%	
Iron	5400	25.0	50.0	"	"	5560	---	97	"	2	20%	
Magnesium	5320	25.0	50.0	"	"	"	---	96	"	3	20%	
Manganese	56.5	0.500	1.00	"	"	55.6	---	102	"	3	20%	
Nickel	54.0	0.500	1.00	"	"	"	---	97	"	1	20%	
Potassium	5490	50.0	100	"	"	5560	---	99	"	1	20%	
Sodium	5240	50.0	200	"	"	"	---	94	"	4	20%	
LCS Dup (4010281-BSD2)					Prepared: 01/14/14 14:40		Analyzed: 01/16/14 13:34					
EPA 6020A (Diss)												
Copper	55.1	0.500	1.00	ug/L	1	55.6	---	99	80-120%	2	20%	Q-16
Duplicate (4010281-DUP1)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 17:45					
QC Source Sample: MBT-RI-010314-04 (A4A0036-04)												
EPA 6020A (Diss)												
Aluminum	ND	25.0	50.0	ug/L	1	---	ND	---	---	---	20%	
Calcium	ND	50.0	100	"	"	---	ND	---	---	---	20%	
Chromium	**0.474**	0.450	0.500	"	"	---	ND	---	---		20%	J
Iron	ND	25.0	50.0	"	"	---	ND	---	---	---	20%	
Magnesium	ND	25.0	50.0	"	"	---	ND	---	---	---	20%	
Manganese	ND	0.500	1.00	"	"	---	ND	---	---	---	20%	
Nickel	ND	0.500	1.00	"	"	---	ND	---	---	---	20%	
Potassium	ND	50.0	100	"	"	---	ND	---	---	---	20%	
Sodium	ND	50.0	200	"	"	---	ND	---	---	---	20%	
Duplicate (4010281-DUP2)					Prepared: 01/14/14 14:40		Analyzed: 01/16/14 13:45					
QC Source Sample: MBT-RI-010314-04 (A4A0036-04)												
EPA 6020A (Diss)												
Copper	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	20%	Q-16
Matrix Spike (4010281-MS1)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 18:20					

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6650 SW Redwood Lane Ste. 333	Project Number: 130730-01.01	**Reported:**
Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

QUALITY CONTROL (QC) SAMPLE RESULTS

DRAFT: Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010281 - EPA 3015A - Dissolved							**Water**					
Matrix Spike (4010281-MS1)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 18:20					
QC Source Sample: MBT-RI-010314-01 (A4A0036-01)												
EPA 6020A (Diss)												
Calcium	17700	500	1000	ug/L	10	5560	11200	116	75-125%	---	---	
Iron	5670	250	500	"	"	"	267	97	"	---	---	
Magnesium	11000	250	500	"	"	"	5220	105	"	---	---	
Manganese	140	5.00	10.0	"	"	55.6	84.7	99	"	---	---	
Sodium	181000	500	2000	"	"	5560	167000	246	"	---	---	PS-03, Q-03
Matrix Spike (4010281-MS2)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 18:37					
QC Source Sample: MBT-RI-010314-02 (A4A0036-02)												
EPA 6020A (Diss)												
Iron	130000	11200	22500	ug/L	100	25000	110000	80	75-125%	---	---	
Sodium	7260000	22500	90000	"	"	"	6600000	2620	"	---	---	PS-03, Q-03
Matrix Spike (4010281-MS3)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 18:54					
QC Source Sample: MBT-RI-010314-03 (A4A0036-03)												
EPA 6020A (Diss)												
Iron	112000	11200	22500	ug/L	100	25000	115000	-12	75-125%	---	---	PS-03, Q-03
Sodium	6860000	22500	90000	"	"	"	6940000	-300	"	---	---	PS-03, Q-03
Matrix Spike (4010281-MS4)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 19:23					
QC Source Sample: MBT-RI-010314-05 (A4A0036-05)												
EPA 6020A (diss)												
Chromium	127	45.0	50.0	ug/L	100	55.6	75.0	93	75-125%	---	---	
Iron	11400	2500	5000	"	"	5560	7040	78	"	---	---	
Sodium	1860000	5000	20000	"	"	"	1830000	440	"	---	---	PS-03, Q-03
Matrix Spike (4010281-MS5)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 17:51					
QC Source Sample: MBT-RI-010314-04 (A4A0036-04)												
EPA 6020A (Diss)												
Aluminum	5540	25.0	50.0	ug/L	1	5560	ND	100	75-125%	---	---	
Calcium	5810	50.0	100	"	"	"	ND	105	"	---	---	
Chromium	56.1	0.450	0.500	"	"	55.6	ND	101	"	---	---	

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6650 SW Redwood Lane Ste. 333	Project Number: 130730-01.01	**Reported:**
Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

QUALITY CONTROL (QC) SAMPLE RESULTS

DRAFT: Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010281 - EPA 3015A - Dissolved							**Water**					
Matrix Spike (4010281-MS5)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 17:51					
QC Source Sample: MBT-RI-010314-04 (A4A0036-04)												
Iron	5450	25.0	50.0	ug/L	"	5560	ND	98	"	---	---	
Magnesium	5580	25.0	50.0	"	"	"	ND	100	"	---	---	
Manganese	56.9	0.500	1.00	"	"	55.6	ND	102	"	---	---	
Nickel	54.3	0.500	1.00	"	"	"	ND	98	"	---	---	
Potassium	5540	50.0	100	"	"	5560	ND	100	"	---	---	
Sodium	5550	50.0	200	"	"	"	ND	100	"	---	---	
Matrix Spike (4010281-MS6)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 19:40					
QC Source Sample: MBT-RI-010314-01 (A4A0036-01)												
EPA 6020A (Diss)												
Aluminum	6460	25.0	50.0	ug/L	1	5560	284	111	75-125%	---	---	Q-16
Chromium	57.6	0.450	0.500	"	"	55.6	0.947	102	"	---	---	Q-16
Nickel	60.4	0.500	1.00	"	"	"	6.80	96	"	---	---	Q-16
Matrix Spike (4010281-MS7)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 19:58					
QC Source Sample: MBT-RI-010314-02 (A4A0036-02)												
EPA 6020A (Diss)												
Aluminum	26300	1120	2250	ug/L	10	25000	ND	105	75-125%	---	---	Q-16
Calcium	26100	2250	4500	"	"	"	ND	104	"	---	---	Q-16
Chromium	506	20.2	22.5	"	"	250	251	102	"	---	---	Q-16
Magnesium	26500	1120	2250	"	"	25000	ND	106	"	---	---	Q-16
Manganese	240	22.5	45.0	"	"	250	ND	96	"	---	---	Q-16
Nickel	316	22.5	45.0	"	"	"	102	86	"	---	---	Q-16
Matrix Spike (4010281-MS8)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 20:15					
QC Source Sample: MBT-RI-010314-03 (A4A0036-03)												
EPA 6020A (Diss)												
Aluminum	25900	1120	2250	ug/L	10	25000	ND	104	75-125%	---	---	Q-16
Calcium	25100	2250	4500	"	"	"	ND	100	"	---	---	Q-16
Chromium	502	20.2	22.5	"	"	250	260	97	"	---	---	Q-16
Magnesium	26100	1120	2250	"	"	25000	ND	104	"	---	---	Q-16

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6650 SW Redwood Lane Ste. 333	Project Number: 130730-01.01	**Reported:**
Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

QUALITY CONTROL (QC) SAMPLE RESULTS

DRAFT: Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010281 - EPA 3015A - Dissolved							**Water**					
Matrix Spike (4010281-MS8)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 20:15					
QC Source Sample: MBT-RI-010314-03 (A4A0036-03)												
Manganese	227	22.5	45.0	ug/L	"	250	ND	91	"	---	---	Q-16
Nickel	294	22.5	45.0	"	"	"	100	77	"	---	---	Q-16
Matrix Spike (4010281-MS9)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 20:44					
QC Source Sample: MBT-RI-010314-05 (A4A0036-05)												
EPA 6020A (Diss)												
Aluminum	5980	250	500	ug/L	10	5560	265	103	75-125%	---	---	Q-16
Calcium	15700	500	1000	"	"	"	10100	101	"	---	---	Q-16
Magnesium	9550	250	500	"	"	"	4000	100	"	---	---	Q-16
Manganese	95.4	5.00	10.0	"	"	55.6	46.4	88	"	---	---	Q-16
Nickel	95.9	5.00	10.0	"	"	"	51.7	80	"	---	---	Q-16
Matrix Spike (4010281-MSA)					Prepared: 01/14/14 14:40		Analyzed: 01/16/14 14:20					
QC Source Sample: MBT-RI-010314-01 (A4A0036-01)												
EPA 6020A (Diss)												
Copper	75.8	2.50	5.00	ug/L	5	55.6	20.6	99	75-125%	---	---	Q-16
Potassium	6130	250	500	"	"	5560	638	99	"	---	---	Q-16
Matrix Spike (4010281-MSB)					Prepared: 01/14/14 14:40		Analyzed: 01/16/14 14:37					
QC Source Sample: MBT-RI-010314-02 (A4A0036-02)												
EPA 6020A (Diss)												
Copper	134	22.5	45.0	ug/L	10	250	23.5	44	75-125%	---	---	Q-01, Q-16
Potassium	37500	2250	4500	"	"	25000	12600	100	"	---	---	Q-16
Matrix Spike (4010281-MSC)					Prepared: 01/14/14 14:40		Analyzed: 01/16/14 14:49					
QC Source Sample: MBT-RI-010314-03 (A4A0036-03)												
EPA 6020A (Diss)												
Copper	166	22.5	45.0	ug/L	10	250	26.5	56	75-125%	---	---	Q-01, Q-16
Potassium	39200	2250	4500	"	"	25000	13700	102	"	---	---	Q-16
Matrix Spike (4010281-MSD)					Prepared: 01/14/14 14:40		Analyzed: 01/16/14 15:36					
QC Source Sample: MBT-RI-010314-05 (A4A0036-05)												

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6650 SW Redwood Lane Ste. 333	Project Number: 130730-01.01	**Reported:**
Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

QUALITY CONTROL (QC) SAMPLE RESULTS

DRAFT: Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010281 - EPA 3015A - Dissolved Water												
Matrix Spike (4010281-MSD)					Prepared: 01/14/14 14:40		Analyzed: 01/16/14 15:36					
QC Source Sample: MBT-RI-010314-05 (A4A0036-05)												
EPA 6020A (Diss)												
Copper	47.4	5.00	10.0	ug/L	10	55.6	14.3	60	75-125%	---	---	Q-01, Q-16
Potassium	8940	500	1000	"	"	5560	3170	104	"	---	---	Q-16
Matrix Spike Dup (4010281-MSD1)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 18:25					
QC Source Sample: MBT-RI-010314-01 (A4A0036-01)												
EPA 6020A (Diss)												
Calcium	16700	500	1000	ug/L	10	5560	11200	98	75-125%	6	20%	
Iron	5540	250	500	"	"	"	267	95	"	2	20%	
Magnesium	10500	250	500	"	"	"	5220	95	"	5	20%	
Manganese	139	5.00	10.0	"	"	55.6	84.7	98	"	0.5	20%	
Sodium	172000	500	2000	"	"	5560	167000	78	"	5	20%	
Matrix Spike Dup (4010281-MSD2)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 18:43					
QC Source Sample: MBT-RI-010314-02 (A4A0036-02)												
EPA 6020A (Diss)												
Iron	116000	11200	22500	ug/L	100	25000	110000	26	75-125%	11	20%	PS-03, Q-03
Sodium	6190000	22500	90000	"	"	"	6600000	-1640	"	16	20%	PS-03, Q-03
Matrix Spike Dup (4010281-MSD3)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 19:00					
QC Source Sample: MBT-RI-010314-03 (A4A0036-03)												
EPA 6020A (Diss)												
Iron	118000	11200	22500	ug/L	100	25000	115000	12	75-125%	5	20%	PS-03, Q-03
Sodium	7350000	22500	90000	"	"	"	6940000	1640	"	7	20%	PS-03, Q-03
Matrix Spike Dup (4010281-MSD4)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 19:29					
QC Source Sample: MBT-RI-010314-05 (A4A0036-05)												
EPA 6020A (diss)												
Chromium	131	45.0	50.0	ug/L	100	55.6	75.0	101	75-125%	4	20%	
Iron	10800	2500	5000	"	"	5560	7040	68	"	5	20%	PS-03, Q-03
Sodium	1880000	5000	20000	"	"	"	1830000	760	"	1	20%	PS-03, Q-03

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6650 SW Redwood Lane Ste. 333	Project Number: 130730-01.01	**Reported:**
Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

QUALITY CONTROL (QC) SAMPLE RESULTS

DRAFT: Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010281 - EPA 3015A - Dissolved							**Water**					
Matrix Spike Dup (4010281-MSD5)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 17:57					
QC Source Sample: MBT-RI-010314-04 (A4A0036-04)												
EPA 6020A (Diss)												
Aluminum	5410	25.0	50.0	ug/L	1	5560	ND	97	75-125%	2	20%	
Calcium	5660	50.0	100	"	"	"	ND	102	"	3	20%	
Chromium	57.3	0.450	0.500	"	"	55.6	ND	103	"	2	20%	
Iron	5520	25.0	50.0	"	"	5560	ND	99	"	1	20%	
Magnesium	5460	25.0	50.0	"	"	"	ND	98	"	2	20%	
Manganese	57.5	0.500	1.00	"	"	55.6	ND	104	"	1	20%	
Nickel	53.7	0.500	1.00	"	"	"	ND	97	"	1	20%	
Potassium	5560	50.0	100	"	"	5560	ND	100	"	0.3	20%	
Sodium	5410	50.0	200	"	"	"	ND	97	"	2	20%	
Matrix Spike Dup (4010281-MSD6)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 19:46					
QC Source Sample: MBT-RI-010314-01 (A4A0036-01)												
EPA 6020A (Diss)												
Aluminum	5770	25.0	50.0	ug/L	1	5560	284	99	75-125%	11	20%	Q-16
Chromium	58.8	0.450	0.500	"	"	55.6	0.947	104	"	2	20%	Q-16
Nickel	59.6	0.500	1.00	"	"	"	6.80	95	"	1	20%	Q-16
Matrix Spike Dup (4010281-MSD7)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 20:03					
QC Source Sample: MBT-RI-010314-02 (A4A0036-02)												
EPA 6020A (Diss)												
Aluminum	26000	1120	2250	ug/L	10	25000	ND	104	75-125%	1	20%	Q-16
Calcium	25000	2250	4500	"	"	"	ND	100	"	4	20%	Q-16
Chromium	494	20.2	22.5	"	"	250	251	97	"	3	20%	Q-16
Magnesium	26100	1120	2250	"	"	25000	ND	104	"	1	20%	Q-16
Manganese	250	22.5	45.0	"	"	250	ND	100	"	4	20%	Q-16
Nickel	312	22.5	45.0	"	"	"	102	84	"	1	20%	Q-16
Matrix Spike Dup (4010281-MSD8)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 20:32					
QC Source Sample: MBT-RI-010314-03 (A4A0036-03)												
EPA 6020A (Diss)												

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Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

QUALITY CONTROL (QC) SAMPLE RESULTS

DRAFT: Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010281 - EPA 3015A - Dissolved							**Water**					
Matrix Spike Dup (4010281-MSD8)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 20:32					
QC Source Sample: MBT-RI-010314-03 (A4A0036-03)												
Aluminum	26400	1120	2250	ug/L	10	25000	ND	106	75-125%	2	20%	Q-16
Calcium	25600	2250	4500	"	"	"	ND	102	"	2	20%	Q-16
Chromium	498	20.2	22.5	"	"	250	260	95	"	0.6	20%	Q-16, Q-41
Magnesium	26400	1120	2250	"	"	25000	ND	106	"	1	20%	Q-16
Manganese	218	22.5	45.0	"	"	250	ND	87	"	4	20%	Q-16
Nickel	283	22.5	45.0	"	"	"	100	73	"	4	20%	Q-01, Q-16
Matrix Spike Dup (4010281-MSD9)					Prepared: 01/14/14 14:40		Analyzed: 01/15/14 20:50					
QC Source Sample: MBT-RI-010314-05 (A4A0036-05)												
EPA 6020A (Diss)												
Aluminum	6040	250	500	ug/L	10	5560	265	104	75-125%	0.9	20%	Q-16
Calcium	15800	500	1000	"	"	"	10100	103	"	0.8	20%	Q-16
Magnesium	9710	250	500	"	"	"	4000	103	"	2	20%	Q-16
Manganese	97.2	5.00	10.0	"	"	55.6	46.4	91	"	2	20%	Q-16
Nickel	93.8	5.00	10.0	"	"	"	51.7	76	"	2	20%	Q-16
Matrix Spike Dup (4010281-MSDA)					Prepared: 01/14/14 14:40		Analyzed: 01/16/14 14:25					
QC Source Sample: MBT-RI-010314-01 (A4A0036-01)												
EPA 6020A (Diss)												
Copper	74.1	2.50	5.00	ug/L	5	55.6	20.6	96	75-125%	2	20%	Q-16
Potassium	6110	250	500	"	"	5560	638	98	"	0.4	20%	Q-16
Matrix Spike Dup (4010281-MSDB)					Prepared: 01/14/14 14:40		Analyzed: 01/16/14 14:43					
QC Source Sample: MBT-RI-010314-02 (A4A0036-02)												
EPA 6020A (Diss)												
Copper	172	22.5	45.0	ug/L	10	250	23.5	60	75-125%	25	20%	Q-01, Q-16
Potassium	38600	2250	4500	"	"	25000	12600	104	"	3	20%	Q-16
Matrix Spike Dup (4010281-MSDC)					Prepared: 01/14/14 14:40		Analyzed: 01/16/14 15:00					
QC Source Sample: MBT-RI-010314-03 (A4A0036-03)												
EPA 6020A (Diss)												
Copper	107	22.5	45.0	ug/L	10	250	26.5	32	75-125%	43	20%	Q-01, Q-16

DRAFT REPORT

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Anchor QEA, LLC Tigard	Project: **MBTL Groundwater**	
6650 SW Redwood Lane Ste. 333	Project Number: 130730-01.01	**Reported:**
Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

QUALITY CONTROL (QC) SAMPLE RESULTS

DRAFT: Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010281 - EPA 3015A - Dissolved							**Water**					
Matrix Spike Dup (4010281-MSDC)					Prepared: 01/14/14 14:40		Analyzed: 01/16/14 15:00					
QC Source Sample: MBT-RI-010314-03 (A4A0036-03)												
Potassium	39700	2250	4500	"	"	25000	13700	104	"	1	20%	Q-16
Matrix Spike Dup (4010281-MSDD)					Prepared: 01/14/14 14:40		Analyzed: 01/16/14 15:41					
QC Source Sample: MBT-RI-010314-05 (A4A0036-05)												
EPA 6020A (Diss)												
Copper	39.1	5.00	10.0	ug/L	10	55.6	14.3	45	75-125%	19	20%	Q-01, Q-16
Potassium	9160	500	1000	"	"	5560	3170	108	"	2	20%	Q-16
Matrix Spike Dup (4010281-MSDE)					Prepared: 01/14/14 14:40		Analyzed: 01/16/14 13:57					
QC Source Sample: MBT-RI-010314-04 (A4A0036-04)												
EPA 6020A (Diss)												
Copper	53.8	0.500	1.00	ug/L	1	55.6	ND	97	75-125%	3	20%	Q-16
Matrix Spike (4010281-MSE)					Prepared: 01/14/14 14:40		Analyzed: 01/16/14 13:51					
QC Source Sample: MBT-RI-010314-04 (A4A0036-04)												
EPA 6020A (Diss)												
Copper	55.3	0.500	1.00	ug/L	1	55.6	ND	100	75-125%	---	---	Q-16
Post Spike (4010281-PS1)					Prepared: 01/16/14 14:43		Analyzed: 01/16/14 16:16					
QC Source Sample: MBT-RI-010314-03 (A4A0036-03)												
EPA 6020A (Diss)												
Nickel	133			ug/L	10	98.0	19.7	115	80-120%		---	
QC Source Sample: MBT-RI-010314-03 (A4A0036-03)												
EPA 6020A (Diss)												
Copper	119			"	"	"	5.20	116	"		---	
Post Spike (4010281-PS2)					Prepared: 01/16/14 16:13		Analyzed: 01/16/14 16:16					
QC Source Sample: MBT-RI-010314-02 (A4A0036-02)												
EPA 6020A (Diss)												
Copper	118			ug/L	10	99.0	4.65	115	80-120%		---	
Post Spike (4010281-PS3)					Prepared: 01/16/14 16:13		Analyzed: 01/16/14 16:22					

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6650 SW Redwood Lane Ste. 333	Project Number: 130730-01.01	**Reported:**
Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

QUALITY CONTROL (QC) SAMPLE RESULTS

DRAFT: Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010281 - EPA 3015A - Dissolved							**Water**					
Post Spike (4010281-PS3)					Prepared: 01/16/14 16:13		Analyzed: 01/16/14 16:22					
QC Source Sample: MBT-RI-010314-05 (A4A0036-05)												
EPA 6020A (Diss)												
Copper	128			ug/L	10	99.0	12.8	116	80-120%		---	

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6650 SW Redwood Lane Ste. 333	Project Number: 130730-01.01	**Reported:**
Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

QUALITY CONTROL (QC) SAMPLE RESULTS

DRAFT: Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010071 - Method Prep: Aq							**Water**					
Blank (4010071-BLK1)					Prepared: 01/06/14 10:28		Analyzed: 01/06/14 13:05					
SM 2320 B												
Total Alkalinity	ND	20.0	20.0	mg CaCO3/L	1	---	---	---	---	---	---	
Bicarbonate Alkalinity	ND	20.0	20.0	"	"	---	---	---	---	---	---	
Carbonate Alkalinity	ND	20.0	20.0	"	"	---	---	---	---	---	---	
Hydroxide Alkalinity	ND	20.0	20.0	"	"	---	---	---	---	---	---	
LCS (4010071-BS1)					Prepared: 01/06/14 10:28		Analyzed: 01/06/14 13:05					
SM 2320 B												
Total Alkalinity	189	20.0	20.0	mg CaCO3/L	1	191	---	99	85-115%	---	---	
Duplicate (4010071-DUP1)					Prepared: 01/06/14 10:28		Analyzed: 01/06/14 13:05					
QC Source Sample: MBT-RI-010314-01 (A4A0036-01)												
SM 2320 B												
Total Alkalinity	**291**	20.0	20.0	mg CaCO3/L	1	---	293	---	---	0.7	20%	
Bicarbonate Alkalinity	**291**	20.0	20.0	"	"	---	293	---	---	0.7	20%	
Carbonate Alkalinity	ND	20.0	20.0	"	"	---	ND	---	---	---	20%	
Hydroxide Alkalinity	ND	20.0	20.0	"	"	---	ND	---	---	---	20%	

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6650 SW Redwood Lane Ste. 333	Project Number: 130730-01.01	**Reported:**
Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

Weck Laboratories, Inc

QUALITY CONTROL (QC) SAMPLE RESULTS

DRAFT: Hexavalent Chromium by IC

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch W4A0417 - EPA 218.6							**Water**					
Blank (W4A0417-BLK1)					Prepared: 01/10/14 15:29		Analyzed: 01/10/14 19:02					
EPA 218.6												
Chromium 6+	ND	---	0.020	ug/l	1	---	---	---	---	---	---	
LCS (W4A0417-BS1)					Prepared: 01/10/14 15:29		Analyzed: 01/10/14 19:02					
EPA 218.6												
Chromium 6+	5.12	---	0.020	ug/l	1	5.00	---	102	90-110%	---	---	
Matrix Spike (W4A0417-MS1)					Prepared: 01/10/14 15:29		Analyzed: 01/10/14 19:02					
QC Source Sample: A4A0036-01 (A4A0036-01)												
EPA 218.6												
Chromium 6+	5.23	---	0.020	ug/l	1	5.00	0.147	102	90-110%	---	---	
Matrix Spike (W4A0417-MS2)					Prepared: 01/10/14 15:29		Analyzed: 01/10/14 19:02					
QC Source Sample: A4A0036-02 (A4A0036-02)												
EPA 218.6												
Chromium 6+	48.8	---	0.20	ug/l	10	50.0	0.268	97	90-110%	---	---	
Matrix Spike (W4A0417-MS3)					Prepared: 01/10/14 15:29		Analyzed: 01/10/14 19:02					
QC Source Sample: A4A0036-03 (A4A0036-03)												
EPA 218.6												
Chromium 6+	47.3	---	0.20	ug/l	10	50.0	0.213	94	90-110%	---	---	
Matrix Spike (W4A0417-MS4)					Prepared: 01/10/14 15:29		Analyzed: 01/10/14 19:02					
QC Source Sample: A4A0036-04 (A4A0036-04)												
EPA 218.6												
Chromium 6+	5.24	---	0.020	ug/l	1	5.00	0.107	103	90-110%	---	---	
Matrix Spike (W4A0417-MS5)					Prepared: 01/10/14 15:29		Analyzed: 01/10/14 19:02					
QC Source Sample: A4A0036-05 (A4A0036-05)												
EPA 218.6												
Chromium 6+	51.4	---	0.20	ug/l	10	50.0	0.881	101	90-110%	---	---	

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6650 SW Redwood Lane Ste. 333	Project Number: 130730-01.01	**Reported:**
Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

Weck Laboratories, Inc

QUALITY CONTROL (QC) SAMPLE RESULTS

DRAFT: Hexavalent Chromium by IC

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch W4A0417 - EPA 218.6							**Water**					
Matrix Spike Dup (W4A0417-MSD1)					Prepared: 01/10/14 15:29 Analyzed: 01/10/14 19:02							
QC Source Sample: A4A0036-01 (A4A0036-01)												
EPA 218.6												
Chromium 6+	5.31	---	0.020	ug/l	1	5.00	0.147	103	90-110%	1	10%	

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Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

SAMPLE PREPARATION INFORMATION

Dissolved Anions by EPA 300.0 (Ion Chromatography)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4010073							
A4A0036-01	Water	300.0 (Diss)	01/03/14 10:05	01/06/14 10:46	10mL/10mL	10mL/10mL	1.00
A4A0036-02	Water	300.0 (Diss)	01/03/14 11:25	01/06/14 10:46	10mL/10mL	10mL/10mL	1.00
A4A0036-02RE2	Water	300.0 (Diss)	01/03/14 11:25	01/06/14 10:46	10mL/10mL	10mL/10mL	1.00
A4A0036-03	Water	300.0 (Diss)	01/03/14 11:40	01/06/14 10:46	10mL/10mL	10mL/10mL	1.00
A4A0036-03RE2	Water	300.0 (Diss)	01/03/14 11:40	01/06/14 10:46	10mL/10mL	10mL/10mL	1.00
A4A0036-04	Water	300.0 (Diss)	01/03/14 12:50	01/06/14 10:46	10mL/10mL	10mL/10mL	1.00
A4A0036-05	Water	300.0 (Diss)	01/03/14 14:10	01/06/14 10:46	10mL/10mL	10mL/10mL	1.00

Dissolved Metals by EPA 6020 (ICPMS) - Low Level

Prep: EPA 3015A - Dissolved

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4010281							
A4A0036-01	Water	EPA 6020A (Diss)	01/03/14 10:05	01/14/14 12:11	45mL/50mL	45mL/50mL	1.00
A4A0036-02	Water	EPA 6020A (Diss)	01/03/14 11:25	01/14/14 12:11	10mL/50mL	45mL/50mL	4.50
A4A0036-03	Water	EPA 6020A (Diss)	01/03/14 11:40	01/14/14 12:11	10mL/50mL	45mL/50mL	4.50
A4A0036-04	Water	EPA 6020A (Diss)	01/03/14 12:50	01/14/14 12:11	45mL/50mL	45mL/50mL	1.00
A4A0036-05	Water	EPA 6020A (Diss)	01/03/14 14:10	01/14/14 12:11	45mL/50mL	45mL/50mL	1.00

Dissolved Metals by EPA 6020 (ICPMS)

Prep: EPA 3015A - Dissolved

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4010281							
A4A0036-01	Water	EPA 6020A (diss)	01/03/14 10:05	01/14/14 12:11	45mL/50mL	45mL/50mL	1.00
A4A0036-02	Water	EPA 6020A (Diss)	01/03/14 11:25	01/14/14 12:11	10mL/50mL	45mL/50mL	4.50
A4A0036-03	Water	EPA 6020A (Diss)	01/03/14 11:40	01/14/14 12:11	10mL/50mL	45mL/50mL	4.50
A4A0036-04	Water	EPA 6020A (Diss)	01/03/14 12:50	01/14/14 12:11	45mL/50mL	45mL/50mL	1.00
A4A0036-05	Water	EPA 6020A (Diss)	01/03/14 14:10	01/14/14 12:11	45mL/50mL	45mL/50mL	1.00

Conventional Chemistry Parameters

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4010071							

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6650 SW Redwood Lane Ste. 333	Project Number: 130730-01.01	**Reported:**
Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

SAMPLE PREPARATION INFORMATION

Conventional Chemistry Parameters

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A4A0036-01	Water	SM 2320 B	01/03/14 10:05	01/06/14 10:28	50mL/50mL	50mL/50mL	NA
A4A0036-02	Water	SM 2320 B	01/03/14 11:25	01/06/14 10:28	50mL/50mL	50mL/50mL	NA
A4A0036-03	Water	SM 2320 B	01/03/14 11:40	01/06/14 10:28	50mL/50mL	50mL/50mL	NA
A4A0036-04	Water	SM 2320 B	01/03/14 12:50	01/06/14 10:28	50mL/50mL	50mL/50mL	NA
A4A0036-05	Water	SM 2320 B	01/03/14 14:10	01/06/14 10:28	50.4mL/50mL	50mL/50mL	NA

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Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

Weck Laboratories, Inc

SAMPLE PREPARATION INFORMATION

Hexavalent Chromium by IC

Prep: EPA 218.6

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: W4A0417							
A4A0036-01	Water	EPA 218.6	01/03/14 10:05	01/10/14 15:29	5ml/5ml	5ml/5ml	1.00
A4A0036-02	Water	EPA 218.6	01/03/14 11:25	01/10/14 15:29	5ml/5ml	5ml/5ml	1.00
A4A0036-03	Water	EPA 218.6	01/03/14 11:40	01/10/14 15:29	5ml/5ml	5ml/5ml	1.00
A4A0036-04	Water	EPA 218.6	01/03/14 12:50	01/10/14 15:29	5ml/5ml	5ml/5ml	1.00
A4A0036-05	Water	EPA 218.6	01/03/14 14:10	01/10/14 15:29	5ml/5ml	5ml/5ml	1.00

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Portland, OR 97224	Project Manager: Cindy Fields	01/24/14 09:34

Notes and Definitions

Qualifiers:

J	Estimated Result . Result detected below the lowest point of the calibration curve, but above the specified MDL.
PS-03	Percent recovery is outside control limits due to the high concentration of analyte present in the sample. Post spike is not performed.
Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-03	Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
Q-16	Reanalysis of an original Batch QC sample.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
R-04	Reporting levels elevated due to dilution necessary for analysis.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

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*** Used to indicate a possible discrepency with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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Anchor QEA, LLC Tigard 6650 SW Redwood Lane Ste. 333 Portland, OR 97224	Project: **MBTL Groundwater** Project Number: 130730-01.01 Project Manager: Cindy Fields	**Reported:** 01/24/14 09:34

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: Apex
Date: January 3, 2014
Project Name: MBTL RI/FS Groundwater
Project Number: 130730-01.01
Project Manager: Nik Bacher
Phone Number: 206-903-3378
Shipment Method: Courier pick up

ANCHOR QEA

Test Parameters

Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	Diss. Metals (Na, Mg, Ca, K, Al, Fe, Mn)	Diss. RP Metals - (Cr, Cu, Ni)	Diss. CrVI (colorimetric)	Diss. Anions (Cl and Fl only)	Total alkalinity	Hardness (calc)	Comments/Preservation
1	MBT-RI-010314-01	1-3-14 1025	GW	3	X	X	X	X	X	X	
2	MBT-RI-010314-02	1125		3	X	X	X	X	X	X	
3	MBT-RI-010314-03	1140		3	X	X	X	X	X	X	
4	MBT-RI-010314-04	1250		3	X	X	X	X	X	X	
5	MBT-RI-010314-05	1410		3	X	X	X	X	X	X	
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											

Notes: Samples are field filtered except for Total alkalinity. Cr, Cu, Ni require low level analysis/reporting limits. Matrix may contain dissolved salts.
Please email copy of lab report to labdata@anchorqea.com. Contact Cindy Fields (206-903-3394) with questions.
Please analyze one MS/MSD or MS/Duplicate for each parameter.

Relinquished By: Company: Anchor QEA, LLC
Signature/Printed Name: Date/Time: 1-3-14 1435

Received By: Company:
Signature/Printed Name: Jennifer Beaudoin Date/Time: 1-3-14 1435

Relinquished By: Company:
Signature/Printed Name: Date/Time:

Received By: Company:
Signature/Printed Name: Date/Time:

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

Page ___ of ___

DRAFT REPORT

The results provided in this report are PRELIMINARY and are subject to change based on subsequent analysis, QC validation or final data review. Please use these results with the understanding that they may have not been finalized by the laboratory

ATTACHMENT B
BROOKS RAND ANALYTICAL LABORATORY REPORT

January 29, 2014

Apex Labs - Portland
ATTN: Darwin Thomas
12232 SW Garden Place
Tigard, OR 97223
dthomas@apex-labs.com
kpatton@apex-labs.com
jgoin@anchorqea.com

RE: Project APE-PO1401 Client Project: A4A0036

Dear Mr. Thomas,

On January 11, 2014, Brooks Rand Labs (BRL) received five (5) water samples. The samples were logged-in for the analyses of total chromium (Cr), copper (Cu), and nickel (Ni) according to the chain-of-custody (COC) forms. The client confirmed via email that samples *MBT-RI-010314-03* and *MBT-RI-010314-04* did not need to be analyzed and that arsenic (As) should be included in the analysis. All samples were received, prepared, analyzed, and stored according to BRL SOPs and EPA methodology.

The results were method blank corrected as described in the calculations section of the relevant BRL SOP(s) and may have been evaluated using reporting limits that have been adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

The As, Cr, Cu, and Ni native results for sample *MBT-RI-010314-05* (1403003-05) and the associated duplicate (DUP) results yielded elevated RPDs (116%, 76%, 86%, and 91%, respectively) not meeting BRL's acceptance criteria for duplicate precision. As such, the sample results were qualified **M** for duplicate imprecision for As, Cr, and Ni. Cu was not qualified because it met BRL secondary acceptance criteria, as the results were less than 5x the MRL and the difference between the two values was less than the MRL.

All data was reported without further qualification and all other associated quality control sample results met the acceptance criteria.

BRL, an accredited laboratory, certifies that the reported results of all analyses for which BRL is NELAP accredited meet all NELAP requirements. For more information please see the *Report Information* page in your report. Please feel free to contact us if you have any questions regarding this report.

Sincerely,

Lydia Greaves
Project Manager
lydia@brooksrand.com

Mi Sun Um
Data Management Specialist
misun@brooksrand.com

Report Information

Laboratory Accreditation

BRL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BRL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksrand.com/default.asp?contentID=586>. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

BLK	method blank	**MS**	matrix spike
BRL	Brooks Rand Labs	**MSD**	matrix spike duplicate
BS	laboratory fortified blank	**ND**	non-detect
CAL	calibration standard	**NR**	non-reportable
CCV	continuing calibration verification	**PS**	post preparation spike
COC	chain of custody record	**REC**	percent recovery
CRM	certified reference material	**RPD**	relative percent difference
D	dissolved fraction	**RSD**	relative standard deviation
DUP	duplicate	**SCV**	secondary calibration verification
ICV	initial calibration verification	**SOP**	standard operating procedure
MDL	method detection limit	**SRM**	standard reference material
MRL	method reporting limit	**T**	total recoverable fraction
IBL	instrument blank		

Definition of Data Qualifiers

(Effective 9/23/09)

B Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
E An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H Holding time and/or preservation requirements not met. Result is estimated.
J Estimated value. A full explanation is presented in the narrative.
J-M Duplicate precision (RPD) for associated QC sample was not within acceptance criteria. Result is estimated.
J-N Spike recovery for associated QC sample was not within acceptance criteria. Result is estimated.
M Duplicate precision (RPD) was not within acceptance criteria. Result is estimated.
N Spike recovery was not within acceptance criteria. Result is estimated.
R Rejected, unusable value. A full explanation is presented in the narrative.
U Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.

These qualifiers are based on those previously utilized by Brooks Rand Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BRL.

Project ID: APE-PO1401
PM: Lydia Greaves

Client PM: Darwin Thomas
Client PO: BRL-011514

Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
MBT-RI-010314-01	1403003-01	Water	Sample	01/03/2014	01/11/2014
MBT-RI-010314-02	1403003-02	Water	Sample	01/03/2014	01/11/2014
MBT-RI-010314-03	1403003-03	Water	Sample	01/03/2014	01/11/2014
MBT-RI-010314-04	1403003-04	Water	Sample	01/03/2014	01/11/2014
MBT-RI-010314-05	1403003-05	Water	QC Sample	01/03/2014	01/11/2014

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
As	Water	EPA 1640 RP	01/21/2014	01/28/2014	B140053	1400062
Cr	Water	EPA 1640 RP	01/21/2014	01/28/2014	B140053	1400062
Cu	Water	EPA 1640 RP	01/21/2014	01/28/2014	B140053	1400062
Ni	Water	EPA 1640 RP	01/21/2014	01/28/2014	B140053	1400062

Project ID: APE-PO1401
PM: Lydia Greaves

Client PM: Darwin Thomas
Client PO: BRL-011514

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MBT-RI-010314-01										
1403003-01	As	Water	D	0.51	B	0.20	0.60	µg/L	B140053	1400062
1403003-01	Cr	Water	D	0.616		0.160	0.400	µg/L	B140053	1400062
1403003-01	Cu	Water	D	19.2		0.16	0.48	µg/L	B140053	1400062
1403003-01	Ni	Water	D	6.39		0.16	0.56	µg/L	B140053	1400062
MBT-RI-010314-02										
1403003-02	As	Water	D	51.6		2.00	6.00	µg/L	B140053	1400062
1403003-02	Cr	Water	D	41.1		1.60	4.00	µg/L	B140053	1400062
1403003-02	Cu	Water	D	5.77		1.60	4.80	µg/L	B140053	1400062
1403003-02	Ni	Water	D	20.6		1.60	5.60	µg/L	B140053	1400062
MBT-RI-010314-05										
1403003-05	As	Water	D	5.01	M, B	2.00	6.00	µg/L	B140053	1400062
1403003-05	Cr	Water	D	15.2	M	1.60	4.00	µg/L	B140053	1400062
1403003-05	Cu	Water	D	2.51	B	1.60	4.80	µg/L	B140053	1400062
1403003-05	Ni	Water	D	9.30	M	1.60	5.60	µg/L	B140053	1400062

Project ID: APE-PO1401
PM: Lydia Greaves

Client PM: Darwin Thomas
Client PO: BRL-011514

Accuracy & Precision Summary

Batch: B140053
Lab Matrix: Water
Method: EPA 1640 RP

Sample	Analyte	Native	Spike	Result	Units	REC & Limits		RPD & Limits	
B140053-BS1	**Laboratory Fortified Blank (1404008)**								
	As		1.500	1.53	µg/L	102%	70-130		
	Cr		1.001	0.921	µg/L	92%	70-130		
	Cu		1.250	1.18	µg/L	95%	70-130		
	Ni		1.500	1.65	µg/L	110%	70-130		
B140053-SRM1	**Certified Reference Material (1345040, SLEW-3)**								
	As		1.360	1.64	µg/L	121%	75-125		
	Cr		0.1830	0.169	µg/L	92%	75-125		
	Cu		1.550	1.60	µg/L	104%	75-125		
	Ni		1.230	1.22	µg/L	99%	75-125		
B140053-SRM2	**Certified Reference Material (1345042, CASS-5)**								
	As		1.240	1.17	µg/L	95%	75-125		
	Cr		0.1060	0.082	µg/L	78%	75-125		
	Cu		0.3800	0.36	µg/L	95%	75-125		
	Ni		0.3300	0.28	µg/L	86%	75-125		
B140053-MS5	**Matrix Spike (1331056-12)**								
	As	1.23	1.500	3.20	µg/L	119%	70-130		
	Cr	0.102	1.001	1.072	µg/L	97%	70-130		
	Ni	0.73	1.500	2.47	µg/L	99%	70-130		
B140053-DUP1	**Duplicate (1403003-05)**								
	As	5.01		18.79	µg/L			*116%*	30
	Cr	15.25		33.99	µg/L			*76%*	30
	Cu	2.51		6.26	µg/L			*86%*	30
	Ni	9.30		24.69	µg/L			*91%*	30
B140053-MS1	**Matrix Spike (1403003-05)**								
	As	5.01	60.00	64.95	µg/L	100%	70-130		
	Cr	15.25	40.04	57.76	µg/L	106%	70-130		
	Cu	2.51	50.00	41.62	µg/L	78%	70-130		
	Ni	9.30	60.00	60.77	µg/L	86%	70-130		

Project ID: APE-PO1401
PM: Lydia Greaves

Client PM: Darwin Thomas
Client PO: BRL-011514

Accuracy & Precision Summary

Batch: B140053
Lab Matrix: Water
Method: EPA 1640 RP

Sample	Analyte	Native	Spike	Result	Units	REC & Limits		RPD & Limits	
B140053-MSD1	**Matrix Spike Duplicate (1403003-05)**								
	As	5.01	60.00	66.17	µg/L	102%	70-130	2%	30
	Cr	15.25	40.04	66.00	µg/L	127%	70-130	13%	30
	Cu	2.51	50.00	44.26	µg/L	84%	70-130	6%	30
	Ni	9.30	60.00	60.20	µg/L	85%	70-130	0.9%	30

Project ID: APE-PO1401
PM: Lydia Greaves

Client PM: Darwin Thomas
Client PO: BRL-011514

Method Blanks & Reporting Limits

Batch: B140053
Matrix: Water
Method: EPA 1640 RP
Analyte: As 75

Sample	Result	Units
B140053-BLK1	0.01	µg/L
B140053-BLK2	0.02	µg/L
B140053-BLK3	0.003	µg/L
B140053-BLK4	0.001	µg/L

Average: 0.01 **Standard Deviation:** 0.01 **MDL:** 0.05
Limit: 0.15 **Limit:** 0.05 **MRL:** 0.15

Analyte: Cr 52

Sample	Result	Units
B140053-BLK1	0.007	µg/L
B140053-BLK2	0.012	µg/L
B140053-BLK3	0.007	µg/L
B140053-BLK4	0.010	µg/L

Average: 0.009 **Standard Deviation:** 0.002 **MDL:** 0.040
Limit: 0.100 **Limit:** 0.040 **MRL:** 0.100

Analyte: Cu 63

Sample	Result	Units
B140053-BLK1	0.007	µg/L
B140053-BLK2	0.009	µg/L
B140053-BLK3	0.008	µg/L
B140053-BLK4	0.008	µg/L

Average: 0.01 **Standard Deviation:** 0.00 **MDL:** 0.04
Limit: 0.12 **Limit:** 0.04 **MRL:** 0.12

Project ID: APE-PO1401
PM: Lydia Greaves

Client PM: Darwin Thomas
Client PO: BRL-011514

Method Blanks & Reporting Limits

Analyte: Ni 60

Sample	Result	Units
B140053-BLK1	0.09	µg/L
B140053-BLK2	0.10	µg/L
B140053-BLK3	0.12	µg/L
B140053-BLK4	0.09	µg/L

Average: 0.10 **Standard Deviation:** 0.01 **MDL:** 0.04
Limit: 0.14 **Limit:** 0.04 **MRL:** 0.14

Project ID: APE-PO1401
PM: Lydia Greaves

Client PM: Darwin Thomas
Client PO: BRL-011514

Sample Containers

Lab ID: 1403003-01 **Report Matrix:** Water **Collected:** 01/03/2014
Sample: MBT-RI-010314-01 **Sample Type:** Sample **Received:** 01/11/2014

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	250 mL	n/a	0.4% HNO3 (Client)	n/a	<2	Cooler

Lab ID: 1403003-02 **Report Matrix:** Water **Collected:** 01/03/2014
Sample: MBT-RI-010314-02 **Sample Type:** Sample **Received:** 01/11/2014

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	250 mL	n/a	0.4% HNO3 (Client)	n/a		Cooler

Lab ID: 1403003-03 **Report Matrix:** Water **Collected:** 01/03/2014
Sample: MBT-RI-010314-03 **Sample Type:** Sample **Received:** 01/11/2014

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	250 mL	n/a	0.4% HNO3 (Client)	n/a		Cooler

Lab ID: 1403003-04 **Report Matrix:** Water **Collected:** 01/03/2014
Sample: MBT-RI-010314-04 **Sample Type:** Sample **Received:** 01/11/2014

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	250 mL	n/a	0.4% HNO3 (Client)	n/a	<2	Cooler

Lab ID: 1403003-05 **Report Matrix:** Water **Collected:** 01/03/2014
Sample: MBT-RI-010314-05 **Sample Type:** QC Sample **Received:** 01/11/2014

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	250 mL	n/a	0.4% HNO3 (Client)	n/a		Cooler

Shipping Containers

Cooler

Received: January 11, 2014 8:45
Tracking No: 1ZX4720R4492079993 via UPS
Coolant Type: Ice
Temperature: 0.3 °C

Description: Default Cooler
Damaged in transit? No
Returned to client? No

Custody seals present? No
Custody seals intact? No
COC present? Yes

Clear 1/10/14

SUBCONTRACT ORDER

Apex Laboratories

A4A0036

SENDING LABORATORY:

Apex Laboratories
12232 S.W. Garden Place
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 718-0333
Project Manager: Darwin Thomas

RECEIVING LABORATORY:

Brooks Rand
3958 6th Ave NW
Seattle, WA 98107
Phone :(206) 632-6206
Fax: (206) 632-6014

Sample Name: MBT-RI-010314-01 **Water** **Sampled: 01/03/14 10:05** (A4A0036-01)

Analysis	Due	Expires	Comments
Data Package (SUB)	01/24/14 17:00	04/12/14 10:05	Level IV DP for 1640 Cu, Ni, Cr
Subcontract Outside 2	01/24/14 17:00	07/02/14 10:05	EPA 1640 Cu, Ni, Cr; MS/MSD
Containers Supplied: (B)250 mL Poly (FF) - Nitric (HNO3)			

Sample Name: MBT-RI-010314-02 **Water** **Sampled: 01/03/14 11:25** (A4A0036-02)

Analysis	Due	Expires	Comments
Subcontract Outside 2	01/24/14 17:00	07/02/14 11:25	EPA 1640 Cu, Ni, Cr; MS only
Containers Supplied: (B)250 mL Poly (FF) - Nitric (HNO3)			

Sample Name: MBT-RI-010314-03 **Water** **Sampled: 01/03/14 11:40** (A4A0036-03)

Analysis	Due	Expires	Comments
Subcontract Outside 2	01/24/14 17:00	07/02/14 11:40	EPA 1640 Cu, Ni, Cr; MS only
Containers Supplied: (B)250 mL Poly (FF) - Nitric (HNO3)			

Sample Name: MBT-RI-010314-04 **Water** **Sampled: 01/03/14 12:50** (A4A0036-04)

Analysis	Due	Expires	Comments
Subcontract Outside 2	01/24/14 17:00	07/02/14 12:50	EPA 1640 Cu, Ni, Cr; MS only
Containers Supplied: (B)250 mL Poly (FF) - Nitric (HNO3)			

Firm TAT Due 1/24

Released By	Date	Received By	Date
	1/10/14		1/11/14 0845
Released By	Date	Received By	Date

SUBCONTRACT ORDER

Apex Laboratories

A4A0036

Sample Name: MBT-RI-010314-05 **Water** **Sampled: 01/03/14 14:10** (A4A0036-05)

Analysis	Due	Expires	Comments
Subcontract Outside 2 *Containers Supplied:* (B)250 mL Poly (FF) - Nitric (HNO3)	01/24/14 17:00	07/02/14 14:10	EPA 1640 Cu, Ni, Cr; MS only

Released By	Date	Received By	Date
	1/10/14		1/11/14 0845

Released By	Date	Received By	Date

ANCHOR QEA

421 SW Sixth Avenue, Suite 750
Portland, Oregon 97204
Phone 503.688.5057
www.anchorqea.com

MEMORANDUM

To:	James DeMay, P.E., Washington State Department of Ecology	**Date:**	February 12, 2014
From:	Dan Hennessy, Anchor QEA, LLC	**Project:**	130730-01.01
Re:	2012 Sediment Bioassay Validation		

INTRODUCTION

This memorandum provides a quality assurance/quality control (QA/QC) review of the bioassay analysis results for tests conducted by Anchor QEA, LLC (Anchor QEA), in December 2012 at the Millennium Bulk Terminals – Longview, LLC (MBTL), facility in Longview, Washington. The sampling was conducted on behalf of MBTL as part of the renewal application for National Pollutant Discharge Elimination System (NPDES) permit WA 000008-6. The project area is located within the Columbia River and within the boundaries of the Washington Department of Natural Resources Aquatic Lands Lease No. 20-B09222 held by the adjacent land property owner, Northwest Alloys, Inc.

The purpose of the 2012 sampling and analysis was to characterize sediment quality within and adjacent to the proposed mixing zones of Outfalls 001S and 002A. The goals of the study[1] were as follows:

- Meet the sediment monitoring requirements established by the Washington State Department of Ecology (Ecology) that support the NPDES permit renewal application of the facility
- Assess the overall quality of the surface sediments, as defined by the Ecology Sediment Management Standards (SMS; Chapter 173-204 Washington Administrative Code [WAC])

The contents and structure of this report follow guidance provided in the *Sediment Sampling and Analysis Plan Appendix* (Ecology 2008) and are consistent with the *NPDES Sediment*

[1] The complete scope of sampling and analyses is described in the *NPDES Sediment Sampling and Analysis Plan* (SSAP; Anchor QEA 2012), which was approved by Ecology on December 6, 2012.

Sampling and Analysis Plan (SSAP; Anchor QEA, 2012) approved by Ecology prior to sampling.

Details on sediment sampling, handling, and analysis are provided in Appendix E of the draft Remedial Investigation/Feasibility (RI/FS) report. Briefly, bioassay samples were stored in a cooler with ice to keep samples at 4 degrees Celsius (°C) plus or minus (±) 2 °C prior to delivery to the laboratories. Archive samples were submitted to Northwestern Aquatic Sciences (NAS) in Newport, Oregon, for potential bioassay testing, which was triggered on the basis of analytical chemistry results. Standard chain-of-custody procedures were followed for sample transfers.

Bioassay testing was performed by NAS in Newport, Oregon, on surface sediment samples collected from the 0- to 10-centimeter (cm) interval at three locations (SS-09, SS-10, and SS-12). Samples at each of these stations exceeded the SMS freshwater cleanup screening levels (CSLs) for total polycyclic aromatic hydrocarbons (PAHs), triggering bioassay testing based on a collaborative evaluation with Ecology. To evaluate the impacts to the benthic invertebrate community, the following two types of bioassay tests were performed:

- 10-day amphipod (*Hyalella azteca*) mortality test
- 20-day midge (C*hironomus dilutes*) mortality and growth test

Biological testing was performed in compliance with U.S. Environmental Protection Agency (EPA; 2000) and ASTM International (ASTM; 2010) methods and Ecology's SMS, Chapter 173-204 WAC, Final Rule (2013a). General biological testing procedures and specific procedures for each sediment bioassay are summarized in the SSAP.

BIOLOGICAL TESTING RESULTS

Test samples were received on December 14, 2012, and the test was initiated on February 15, 2013, which exceeded the 56-day holding time; however, the holding time was extended and approved by Peter Adolphson from Ecology on February 19, 2013. Sample material was collected and stored in accordance with the SSAP. Surface sediments from the 0- to 10-cm interval were tested at Stations SS-09, SS-10, and SS-12, where an SMS

freshwater CSL was exceeded for total PAHs, triggering confirmation bioassay testing based on evaluation of the data with Ecology.

Two bioassays, an acute 10-day amphipod mortality test and chronic 20-day midge mortality and growth test, were conducted. The results of the bioassay testing were received in report form on March 14, 2013 (see Appendix E of the draft RI/FS report). Biological testing was performed in compliance with USEPA (2000) and ASTM (2010) methods and Ecology's *Draft Sediment Cleanup Users Manual II: Appendices* (Ecology 2012), as described in the SSAP.

The test interpretive criteria are shown in Table 1. The results of the two tests are summarized in Table 2 and in the following subsections.

Amphipod Mortality Bioassay

The purpose of this test was to characterize sediment toxicity to amphipods using a 10-day exposure. At the conclusion of the test, Station SS-09, located immediately downstream of Outfall 002A, exceeded the CSL, while Stations SS-10 and SS-12 were determined to have no significant biological effect. Results are summarized in Table 2.

Water quality conditions were maintained to ensure optimal health of the organisms before and during testing. Temperature, dissolved oxygen, conductivity, pH, hardness, alkalinity, and total ammonia were measured in the overlying water of one replicate test container per treatment on days 0 and 10. Temperature and dissolved oxygen were also measured daily. Total ammonia and pH were measured in the porewater from the bulk sediment prior to test initiation. Water quality parameters were within protocol-specified ranges. Interstitial bulk sediment values for ammonia-N ranged from less than 0.5 to 2.6 milligrams per liter (mg/L).

The test met the survival acceptability criteria specified in the test protocol with 0 percent mean control mortality. The reference toxicant test was conducted using potassium chloride resulting in a 96-hour median lethal concentration (LC50) or 0.31 grams per liter (g/L). This reference toxicant test was not within the control chart warning limit of 0.32 to 0.46 g/L potassium chloride but was within the action limits of 0.28 to 0.50 g/L potassium chloride. Control limits of ± 2 standard deviations will be exceeded 5 percent of the time by chance

alone. No problems were found with the test organisms or the testing procedure, and it was concluded that the test developed fully acceptable data for use in management decisions.

Midge Mortality and Growth Bioassay

The purpose of this test was to characterize chronic sediment toxicity to midges using a 20-day exposure. At the conclusion of the 20-day test, Station SS-09 had 100 percent mortality and, therefore, exceeded the CSL for both 20-day mortality and growth. Stations SS-10 and SS-12 were determined to have no significant biological effects, indicating that sediment toxicity is localized to only the area around SS-09 immediately downstream of Outfall 002A. Results are summarized in Table 2.

Water quality conditions were maintained to ensure optimal health of the test organisms before and during testing. Temperature, dissolved oxygen, conductivity, pH, hardness, alkalinity, and total ammonia were measured in the overlying water of one replicate test container per treatment on days 0 and 20. Temperature was measured daily, pH and dissolved oxygen were measured three times per week, and conductivity was measured weekly. Water quality parameters were within acceptable limits. Interstitial bulk sediment values for ammonia-N ranged from less than 0.5 to 2.6 mg/L.

The test met the survival and weight acceptability criteria specified in the test protocol with 16.3 percent mean control mortality and a control individual mean ash-free dry weight (AFDW) of 1.4 milligrams (mg) per individual, exceeding the 0.60 mg per individual requirement. For the purpose of entering AFDW data for the test into Ecology's Environmental Information Management system, the start-of-test mass was assumed to be zero [2]. Applying a value of zero to the first instar initial test weights was approved by Ecology (2013b).

[2] The 20-day midge survival and growth test is started with less than 24-hour (first instar) larvae, which have an average head capsule width the order of 0.1 millimeter (mm). They are so small that transfer to test chambers is typically performed under a dissection microscope. Because these first instar larvae have so little mass, ash-free dry weight (AFDW) in this test is typically measured at the end of the test, and the first instar larvae are considered to have a starting mass of zero (EPA Method 100.5; EPA/600/R-99/064).

The reference toxicant test was conducted using potassium chloride. The reference toxicant (positive control) LC50 result, 2.94 g/L, was within the laboratory's control chart limits, and the test data were determined to be suitable for making management decisions.

SUMMARY

Thirteen offshore surface sediment samples were collected in December 2012 from within and adjacent to the proposed mixing zones of Outfall 001S and 002A. Based on the analytical test results, the CSL was exceeded for total PAHs at Stations SS-09, SS-10, and SS-12. This chemical criteria exceedance triggered bioassay testing at these three sample locations to confirm sediment quality. Biological testing was performed in compliance with USEPA (2000) and ASTM (2010) methods and Ecology's SMS, Chapter 173-204 WAC, Final Rule (2013a) and met all QA/QC requirements. The data generated by both tests were determined to be suitable for making management decisions. Biological criteria were exceeded at Station SS-09 in both the amphipod and midge tests, and Stations SS-10 and SS-12 met SMS biological criteria in both the amphipod and midge tests.

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TABLES

Table 1
Summary of Sediment Management Performance Standards and Biological Effects Criteria

Biological Test Endpoint	Performance Standard		Sediment Cleanup Objective[3]	Cleanup Screening Level[3]
	Control[1]	Reference[2]		
Hyalella azteca				
10-day mortality	$M_C < 20\%$	$M_R < 25\%$	$M_T - M_C > 15\%$	$M_T - M_C > 25\%$
Chironomus dilutus				
20-day mortality	$M_C < 32\%$	$M_R < 35\%$	$M_T - M_C > 15\%$	$M_T - M_C > 25\%$
20-day growth	$MIG_C > 0.60$ mg/individual	RF/CF > 0.8	$MIG_T/MIG_C < 0.75$	$MIG_T/MIG_C < 0.6$

Notes:
1 = These tests and parameters were developed based on ASTM (2010) protocols.
2 = Reference performance standards are provided for sites where the department has approved a freshwater reference sediment site, and reference results will be substituted for control in comparing test sediments to criteria.
3 = An exceedance of the sediment cleanup objective and cleanup screening level requires statistical significance at p = 0.05.
Source: Ecology 2012
C = control
F = final
M = mortality
mg = milligram
MIG = mean individual growth at time final
R = reference
T = test

Table 2
Results of Sediment Confirmational Bioassays

	Hyalella azteca		*Chironomus dilutus*			
	10-Day Mortality (%)		**20-Day Mortality (%)**		**20-Day Growth (mg/individual)**	
Control	0	Pass QA	16.3	Pass QA	1.4	Pass QA
SS-09	36.3	CSL Hit	100	CSL Hit	N/A	CSL Hit
SS-10	1.3	Pass	28.8	Pass	1.55	Pass
SS-12	3.8	Pass	21.3	Pass	1.36	Pass

Notes:
1 = Bioassay results were screened using SCO and/or CSL criteria, as defined in the *Sediment Management Standards, Chapter 173-204 WAC, Final Rule* (Ecology 2013a).
2 = A summary of bioassay results, including all supporting laboratory reports and a QA summary, are included in Appendix E of the draft Remedial Investigation/Feasibility report.

CSL = cleanup screening level
mg = milligram
N/A = not applicable
QA = quality assurance
SCO = sediment cleanup objective