

November 21, 2014

Project No. 073-93368-06.09A

Harry Grant
Riddell Williams P.S.
1001 Fourth Avenue, Suite 4500
Seattle, WA 98154

**RE: SEA-TAC DEVELOPMENT SITE (MASTERPARK LOT C) PERFORMANCE GROUNDWATER
MONITORING REPORT – THIRD QUARTER 2014**

Dear Harry:

Golder Associates Inc. (Golder) completed performance groundwater monitoring at the Sea-Tac Development Site (MasterPark Lot C) September 10 through 12, 2014. Groundwater sampling was conducted in accordance with the Compliance Monitoring Plan, Sea-Tac Development Site (Golder 2011)¹. Groundwater samples were collected from monitoring wells MW-06, MW-07, MW-09, MW-12, MW-13, MW-17A, MW-18, MW-19, MW-20, MW-21, MW-22, and PORT-MW-B (Figure 1). Monitoring wells MW-07, MW-09, MW-12, MW-13, MW-17A, MW-18, and MW-22 are completed to monitor the approximate groundwater plume boundary. Monitoring wells MW-06, MW-19, MW-20, MW-21, and PORT-MW-B are completed to monitor background concentrations. Static water elevations were collected at all site wells, which also include MW-01, MW-05, MW-08A, MW-10, MW-11, MW-14, MW-15, and MW-16.

1.0 SAMPLING PROTOCOL

Groundwater sampling was conducted in accordance with the Compliance Monitoring Plan, Sea-Tac Development Site (Golder 2011)¹, and included the following activities:

- Measurement of static water elevations at monitoring wells.
- Well purging to ensure sample representativeness with the newly installed dedicated submersible bladder pumping systems.
- Measurement of field parameters including: pH, specific conductance, temperature, dissolved oxygen, and turbidity.
- Collection of all purge water in appropriate containers for on-site storage prior to disposal.
- Collection of representative and quality assurance / quality control (QA/QC) samples in appropriate containers.
- Analyses of groundwater for volatile organic compounds (VOCs, EPA Method 8260C): ethylene dibromide (EDB), naphthalene, and n-hexane; diesel and motor oil range Northwest Total Petroleum Hydrocarbons (Method NWTPH-D); gasoline range Northwest Total Petroleum Hydrocarbons, benzene, toluene, ethylbenzene, and xylene (NWTPH-Gx/BTEX); and EDB with a lower reporting limit on select wells by EPA Method 8260C-SIM.

¹Golder Associates Inc. (Golder). 2011. Attachment E: Compliance Monitoring Plan Sea-Tac Development Site, SeaTac Washington. November 2.



The attached Appendix A presents the laboratory analytical reports for all analyses. Sampling activities were documented on Sample Integrity Data Sheets (SIDS), which are provided in Appendix B. Appendix C presents the Data Validation Memorandum. Appendix D provides summary data tables for all sampling events. Table 1 presents water depth measurements and elevations that were collected from wells prior to sampling activities.

2.0 THIRD QUARTER 2014 GROUNDWATER SAMPLING RESULTS

Following sample collection, all bottles were sealed, labeled, and placed in an iced cooler until delivery to the laboratory. All groundwater samples from monitoring wells were transported under chain-of-custody procedures to Analytical Resources Incorporated (ARI), of Tukwila, Washington, for analysis. Upon receipt of laboratory data reports, data underwent a Data Validation Review. Results were compared to State of Washington Model Toxics Control Act (MTCA) Method A or B clean-up levels (CULs) and Secondary Maximum Containment Levels (MCLs), whichever value is more protective.

The analytical results indicate that groundwater conditions have improved significantly from those observed during the historical groundwater monitoring during the Remedial Investigation (RI) and since the startup of the In-situ Air Sparging (IAS)-Soil Vapor Extraction (SVE) system. Table 2 presents the field parameter measurements and laboratory analytical results for each groundwater sample.

Results for NWTPH-Gasoline exceeded the MTCA Method A limit for groundwater when benzene is present (0.8 milligrams per liter [mg/L]) in wells MW-07, MW-09, MW-22, and the field duplicate at MW-22 (MW-22-DUP). NWTPH-Gx was detected but the value was less than the MTCA standard in wells MW-12. NWTPH-Gx was non-detect in wells MW-06, MW-13, MW-17A, MW-18, MW-19, MW-20, MW-21, and PORT-MW-B.

The MTCA standard for benzene (5 micrograms per liter [$\mu\text{g/L}$]) was exceeded in wells MW-07 and MW-09. Benzene was detected in MW-12, MW-18, MW-22, and MW-22-DUP, but was less than the MTCA standard. Benzene was non-detect in wells MW-06, MW-13, MW-17A, MW-19, MW-20, MW-21, and PORT-MW-B.

There were detections of toluene and/or ethylbenzene in wells MW-07, MW-09, MW-12, MW-18, MW-22, MW-22-DUP, and PORT-MW-B (ethylbenzene only), but the values did not exceed the MTCA standard (640 $\mu\text{g/L}$ for toluene and 700 $\mu\text{g/L}$ for ethylbenzene) except for ethylbenzene in MW-22-DUP. Toluene and ethylbenzene were non-detect in wells MW-06, MW-17A, MW-20, MW-21, and PORT-MW-B (toluene only).

Results for total xylenes exceeded the MTCA Method A standard (1,000 $\mu\text{g/L}$) in wells MW-07, MW-22, and MW-22-DUP. Xylenes were detected, but below the standard in MW-09, MW-12, MW-18, and PORT-MW-B, and were non-detect in wells MW-06, MW-13, MW-17A, MW-19, MW-20, and MW-21.

Ethylene dibromide (EDB) results were non-detect for all samples. The reporting limits were raised for samples from MW-07 and MW-22 due to high levels of BTEX. More information is provided in the Data Validation Memorandum in Appendix C. The method detection limits (MDLs) for EDB for all samples were greater than the MTCA CULs, except for MW-09, MW-12, MW-13, and MW-18, which were analyzed by EPA method 8260C-SIM to achieve lower detection limits. Groundwater from these wells had detections above the MTCA CUL for EDB during the RI, but the results for these wells are now all non-detect below the MTCA CUL.

N-hexane was detected, and below the MTCA Method B level (480 $\mu\text{g/L}$) in wells MW-07, MW-12, MW-22, and MW-22-DUP. N-hexane was non-detect in wells MW-06, MW-09, MW-13, MW-17A, MW-19, MW-20, MW-21, and PORT-MW-B.

Naphthalene was detected above the MTCA limit (160 $\mu\text{g/L}$) in wells MW-07, MW-22, and MW-22-DUP. Naphthalene was also detected, but below the MTCA limit, in wells MW-09, MW-12, and MW-17A.

Naphthalene was non-detect in wells MW-06, MW-13, MW-18, MW-19, MW-20, MW-21, and PORT-MW-B.

Results for NWTPH-Diesel were detected above the MTCA Method A limit (0.5 mg/L) in wells MW-07, MW-09, MW-22, and MW-22-DUP. NWTPH-Diesel was detected, but below the MTCA limit in wells MW-12, MW-13, and MW-18. NWTPH-Diesel was non-detect in MW-06, MW-17A, MW-19, MW-20, MW-21, and PORT-MW-B. The highest concentrations of diesel were detected in groundwater from monitoring well MW-07 at 11 mg/L, while all other diesel concentrations were less than 2.8 mg/L or non-detect. Results for NWTPH-Motor Oil were non-detect at less than 0.20 mg/L for all samples except for sample MW-07, which was detected below the MTCA limit.

3.0 DATA QUALITY ASSURANCE / VALIDATION

Data underwent a data validation review and is presented in detail in Appendix C. In general, the data were acceptable, except for the following:

- The naphthalene result for the initial analysis of MW-09 and MW-22-DUP was qualified as estimated (J) due to a surrogate being out of control high. The result was not reported since it was reanalyzed at a dilution.
- Naphthalene in sample MW-17A was qualified as estimated (J) due to an out of control laboratory control sample duplicate (LCSD) and matrix spike duplicate (MSD).
- Naphthalene in samples MW-07, MW-12, MW-22, and MW-22-DUP (initial and diluted result), were qualified as estimated (J) due to an out of control LCS and LCSD.
- Naphthalene in sample MW-12 was qualified as estimated with a result biased high (J+) due to the method blank contamination.
- Samples MW-07, MW-09, MW-22, and MW-22-DUP had to be reanalyzed at a dilution due to high levels of analytes. The diluted results are reported and are detailed in Appendix C.
- Gasoline/BTEX results for the initial analysis of MW-07 were qualified as estimated (J) due to a surrogate being out of control high. The result was not reported since it was reanalyzed at a dilution.
- Gasoline results for MW-22-DUP (initial and diluted result) were qualified as estimated (J) because the lab indicated the results do not match an identifiable gasoline pattern.
- Diesel results for samples MW-07, MW-22, and MW-22-DUP were qualified as estimated (J) due to unidentifiable hydrocarbons.
- Results for QA/QC samples (field blanks, trip blanks, and field duplicate) were acceptable. No other issues were noted.

4.0 SUMMARY

The analytical results for the third quarter 2014 groundwater sampling indicate that there continues to be significant improvements to the groundwater conditions following the startup of the IAS-SVE system and since the first quarter (February 2014) groundwater sampling event. For the February 2014 sampling, there were 24 results that were greater than the MTCA CULs; in May 2014 there were only 13 results above the MTCA CULs. For the third quarter (September 2014), there were 17 results above MTCA CULs. Although there were more results above MTCA CULs for this round, overall, results are trending downward as shown in the historical data tables and graphs in Appendix D.

The only on-site wells containing compounds with results above MTCA CULs in September 2014 were MW-07 and MW-09. Wells MW-07 and MW-09 are located just outside of the zone mostly influenced by the IAS-SVE system and may take longer to respond to the treatment. The only off-site well containing compounds with results above the MTCA CULs in September 2014 was MW-22, although, two off-site

monitoring wells (MW-15 and MW-16) that had detected contaminants over MTCA CULs during the RI are not sampled for performance monitoring.

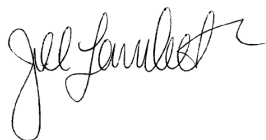
Wells MW-12 and MW-13 showed the greatest drop in concentrations since the startup of the IAS-SVE system with NWTPH-Gx levels going from 8.6 mg/L and 14 mg/L to 0.11 mg/L and <0.10 mg/L, respectively. Benzene in MW-12 and MW-13 went from 79 µg/L and <0.25 µg/L to 2.5 µg/L and <0.25 µg/L, respectively. Toluene, ethylbenzene, total xylenes, and naphthalene in MW-12 and MW-13 also showed significant decreases in concentrations. MW-18 is also showing significant improvements with all results being non-detects or detected much lower than the MTCA CULs.

The wells inside of the IAS and SVE system area have significant reductions and are almost meeting performance goals. Refer to Appendix D for summary data tables and trend graphs for comparisons of the March 2010 final RI monitoring event with the February, May and September 2014 performance monitoring results.

If you have any questions or require any additional information, please contact Douglas Morell at (425) 883-0777.

Sincerely,

GOLDER ASSOCIATES INC.



Jill Lamberts
Project Environmental Scientist



Douglas J. Morell, PhD, LHG
Principal

cc: Roger McCracken
Tamarah Knapp-Hancock
Kevin Collette
Doug Rigoni

List of Tables

Table 1	Third Quarter 2014 Groundwater Elevation Data, Sea-Tac Development Site, SeaTac, Washington
Table 2	Third Quarter 2014 Groundwater Field Parameters and Analytical Data, Sea-Tac Development Site, SeaTac, Washington

List of Figures

Figure 1	Groundwater Monitoring Locations
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List of Appendices

Appendix A	Laboratory Analytical Results
Appendix B	Sample Integrity Data Sheets (SIDS)
Appendix C	Data Validation Memorandum
Appendix D	Summary Data Tables and Trend Graphs

JL/DJM/cb

TABLES

Table 1: Third Quarter 2014 Groundwater Elevation Data, Sea-Tac Development Site, SeaTac, Washington

Sample Location ID	Date/Time Sampled	Well Data			Water Levels		
		Total Well Depth (feet bgs)	Screened Interval (feet bgs)	Casing Diameter (inches)	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
MW-01 ^b	9/10/2014 9:03	51.0	41-51	2	361.38	49.72	311.66
MW-05	9/10/2014 8:45	58.0	48-58	2	364.26	54.27	309.99
MW-06 ^c	9/10/2014 8:43	60.0	50-60	2	369.68	-	-
MW-07 ^b	9/10/2014 9:19	53.5	43.5-53.5	2	358.69	48.25	310.44
MW-08A	9/10/2014 9:10	54.0	44-54	2	359.16	49.01	310.15
MW-09 ^{b,c}	9/10/2014 8:50	57.0	47.5-57	2	362.13	-	-
MW-10 ^b	9/10/2014 9:05	90.0	80-90	2	360.18	50.27	309.91
MW-11 ^b	9/10/2014 9:16	57.0	42-57	2	357.53	47.08	310.45
MW-12 ^b	9/10/2014 9:27	67.0	52-67	2	364.83	55.21	309.62
MW-13 ^b	9/10/2014 8:59	65.0	50-65	2	365.42	54.57	310.85
MW-14 ^b	9/10/2014 8:55	65.0	50-65	2	363.76	53.55	310.21
MW-15	9/12/2014 10:52	65.0	50-65	2	364.67	54.21	310.46
MW-16 ^b	9/10/2014 9:52	73.7	64-74	2	377.63	67.68	309.95
MW-17A ^{a,b}	9/10/2014 9:48	95.0	80-95	2	394.00	84.51	309.49
MW-18 ^b	9/10/2014 9:23	62.0	47-62	2	360.45	50.33	310.12
MW-19	9/10/2014 9:13	58.0	43-58	2	356.61	46.28	310.33
MW-20	9/10/2014 9:42	113.1	103-113	2	416.61	106.99	309.62
MW-21 ^b	9/10/2014 9:36	109.8	95-110	2	412.85	103.10	309.75
MW-22	9/12/2014 9:55	95.0	80-95	2	393.31	82.99	310.32
MW-23	9/12/2014 11:00	57.5	42.5-57.5	2	354.94	44.37	310.57
PORT-MW-B ^a	9/12/2014 11:23	99.0	79-99	2	400.00	89.69	310.31

Notes:

- Not measured or not available
- feet bgs Feet below ground surface
- feet bmp Feet below measuring point
- feet msl Feet above mean sea level
- TOC Top of casing inside PVC well
- ^a Well not surveyed, elevation estimated
- ^b IAS/SVE in operation. Suction may be affecting WLs
- ^c Top of pump is above water level - not measured

Table 2: Third Quarter 2014 Groundwater Field Parameters and Analytical Data, Sea-Tac Development Site, SeaTac, Washington

		Field Parameters								Analytical Data									
Sample Location ID	Date/Time Sampled ^c	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L) ^f	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
MW-06 ^j	9/10/2014 13:50	369.7	-	-	6.27	15.9	312	1.52	11.8	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
MW-07 ^b	9/11/2014 12:30	358.7	48.3	310.4	6.73	16.5	373	0.35	2.28	36	17	81	260	2110	< 0.028	280	300 B J	11	0.41 J
MW-09 ^{b,j}	9/10/2014 15:40	362.1	-	-	6.49	15.7	310	0.20	3.85	5.6	17	4.6	100	47	< 0.010*	< 0.20	74	2.8	< 0.20
MW-12 ^b	9/11/2014 14:15	364.8	55.2	309.6	8.04	18.1	255	11.80	38.8	0.11	2.5	2.6	1.5	5.3	< 0.010*	0.78	0.53 B J+	0.35	< 0.20
MW-13 ^b	9/10/2014 16:35	365.4	54.6	310.9	7.06	14.9	137	11.06	2.41	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.010*	< 0.20	< 0.50	0.29	< 0.20
MW-17A ^{a,b}	9/10/2014 10:45	394.0	84.5	309.5	6.28	12.4	162	1.42	18.8	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	0.64 J	< 0.10	< 0.20
MW-18 ^b	9/11/2014 11:40	360.5	50.3	310.1	8.23	15.2	498	11.23	13.1	< 0.10	0.72	0.27	0.40	0.72	< 0.010*	< 0.20	< 0.50	0.14	< 0.20
MW-19	9/10/2014 14:45	356.6	46.3	310.3	6.93	14.5	379	0.16	0.30	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
MW-20	9/10/2014 12:40	416.6	107.0	309.6	6.83	13.2	355	7.55	0.69	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
MW-21 ^b	9/10/2014 11:50	412.9	103.1	309.8	6.15	13.5	283	6.25	1.95	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
MW-22	9/12/2014 10:40	393.3	83.0	310.3	6.81	13.7	423	0.29	1.03	16	4.8	9.3	690	1103	< 1.5	9.8	460 B J	1.1 J	< 0.20
MW-22 Duplicate	9/12/2014 10:45	-	-	-	-	-	-	-	-	17 J	4.5	9.0	710	1203	< 0.07	9.0	470 B J	1.0 J	< 0.20
PORT-MW-B ^a	9/12/2014 12:10	400.0	89.7	310.3	6.56	14.0	266.1	3.56	6.18	< 0.10	< 0.25	< 0.25	1.1	1.9	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
Clean-up Level		MTCA Method A for Groundwater (unrestricted landuse)								0.8 ^d /1.0 ^e	5 ^g	1000 ^g	700 ^g	1000 ^h	0.01 ^h	NSA	160	0.5	0.5
		MTCA Method B for Groundwater (unrestricted landuse)								NSA	5 ⁱ	640	800	1600	0.022	480	160	NSA	NSA

- Notes:
- feet bgs

Feet below ground surface

-

Not measured or not available
- feet bmp

Feet below measuring point

Result exceeds Clean-up Level (CUL)
- feet msl

Feet above mean sea level

mg/L

Milligrams per liter
- a

Well not surveyed, elevation estimated.

µg/L

Micrograms per liter
- b

IAS/SVE in operation. Suction may be affecting WLs.

NTU

Nephelometric Turbidity Unit
- c

Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.

µmhos/cm

Micromhos per centimeter
- d

When benzene is present.

<

Analyte not detected above the reporting limit shown
- e

When benzene is not present.

MTCA

Model Toxics Control Act
- f

Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.

MCL

Maximum Containment Level
- g

Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs

NSA

No Standard Available
- h

Value is more protective than Federal MCLs.

TOC

Top of casing inside PVC well
- i

MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.

°C

Degrees Celsius
- j

Top of pump is above water level - not measured.

J

The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
- *

Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.

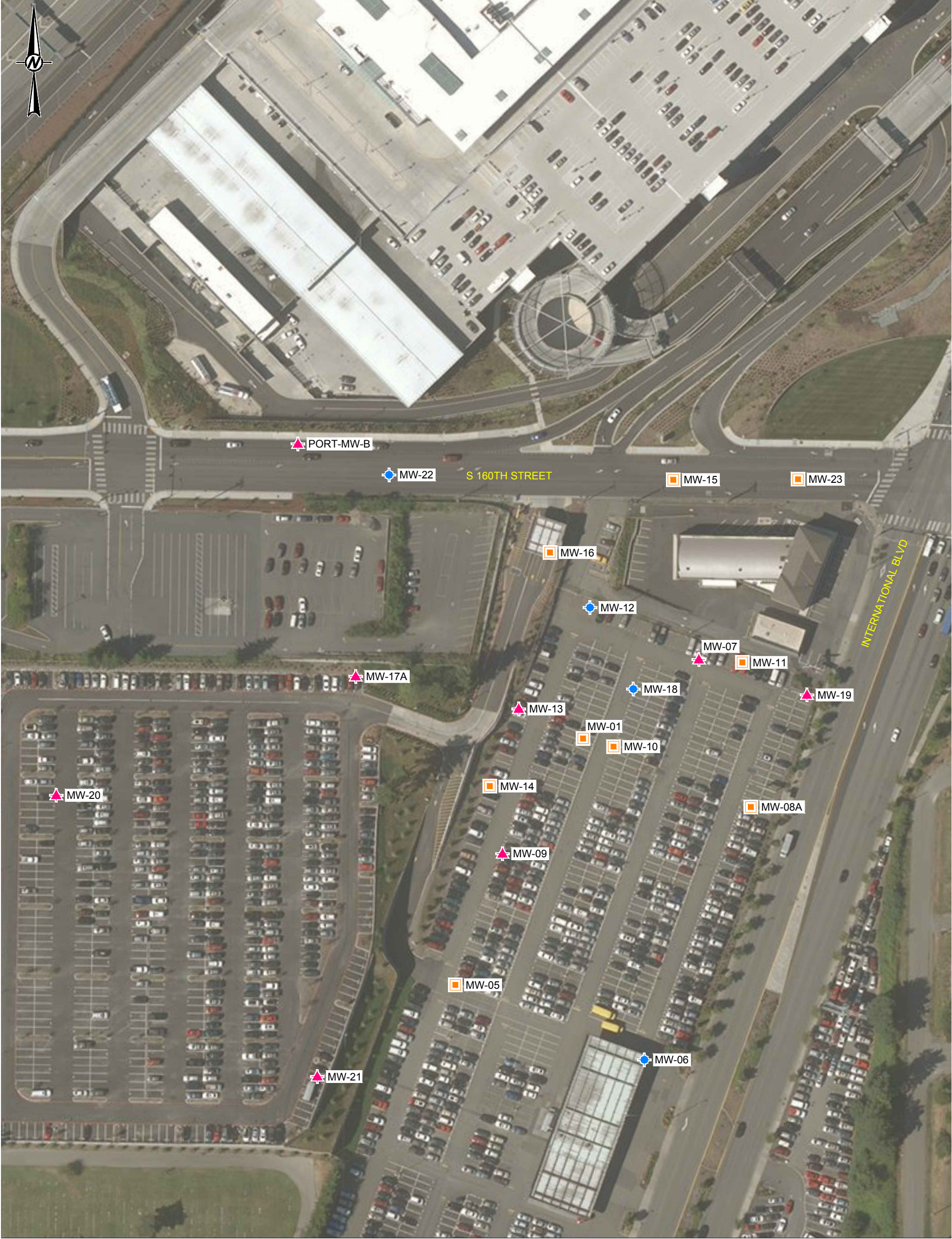
UJ

The constituent was analyzed for, but was not detected above the reported sample quantitation limit; however, the value reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
- J+




The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.
- B

Analyte detected in an associated Method Blank at a concentration greater than one-half of laboratory's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

FIGURE



LEGEND

	MW-14	MONITORING WELL - GROUNDWATER ELEVATIONS MEASURED
	MW-09	MONITORING WELL - COMPLIANCE
	MW-01	MONITORING WELL - NATURAL ATTENUATION

NOTES

1. MONITORING WELL LOCATIONS ARE APPROXIMATE.

REFERENCE

IMAGE COURTESY OF USGS EARTHSTAR GEOGRAPHICS

CLIENT
RIDDELL-WILLIAMS

CONSULTANT



YYYY-MM-DD	2014-04-01
PREPARED	REDMOND
DESIGN	JL
REVIEW	DM
APPROVED	

PROJECT
SEATAC DEVELOPMENT SITE
MASTER PARK LOT C

TITLE
GROUNDWATER MONITORING LOCATIONS

PROJECT No. 073-93368x06.09A

U+0000

Rev.
B

FIGURE
1



APPENDIX A
LABORATORY ANALYTICAL RESULTS



Analytical Resources, Incorporated
Analytical Chemists and Consultants

September 27, 2014

Mr. Doug Morell
Golder Associates Inc.
18300 NE Union Hill Road
Suite 200
Redmond, WA 98052

Re: Project: MasterPark Lot C
ARI Job No.: YZ53

Dear Doug:

Please find enclosed Chain-of-Custody record (COC), sample receipt documentation, and the final results for the project referenced above. Analytical Resources, Inc. (ARI) accepted seven water samples and trip blanks on September 10, 2014. For further details regarding sample receipt, please refer to the Cooler Receipt Form.

The samples were analyzed NWTPH-Dx, NWTPH-Gx/BETX, SIM VOCs and VOCs, as requested on the COC. Quality control analyses have been included for your review.

The SIM VOCs surrogate DCE is out of control high in sample MPLOT-MW-9-091014. The associated sample is non-detect therefore no further action was taken.

The VOCs surrogate DCE is out of control high in sample MPLOT-MW-9-091014.

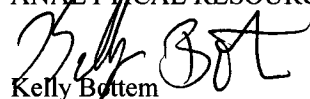
The VOCs 9/22/14 LCSD is out of control high for naphthalene.

The VOCs MSD is out of control high for naphthalene.

There were no other anomalies associated with the analyses.

An electronic copy of this report and all associated raw data will remain electronically on file at ARI. Please feel free to contact me if you have any questions or require any additional information.

Respectfully,
ANALYTICAL RESOURCES, INC.



Kelly Bottem
Client Services Manager
(206) 695-6211

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 1253	Turn-around Requested: Standard
ARI Client Company: Golder Associates	Phone: 425 883 0777
Client Contact: D. Morell, J. Lamberts	
Client Project Name: Masterpark Lot C	
Client Project #: 073-93368-06-09A	Samplers: Lamberts

Page: 1	of 1
Date: 9/10/14	Ice Present?
No. of Coolers:	Cooler Temps: 4.6 3.7



Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No Containers	Analysis Requested							Notes/Comments	
					NWTPH-GX BTEx	EDB by 8260 *report to MDL *	N-hexane	Naphthalene	NWTPH-DX	LL EDB by 504.1 or equiv.			
Trip Blank	9/10/14	-	DI	3	X	X	X	X		X			
MPLOT-C-MW-17A-091014		1045	W	21	X	X	X	X	X				MS/MSD
MPLOT-C-MW-21-091014		1150	W	7	X	X	X	X	X				
MPLOT-C-MW-6-091014		1350	W	7	X	X	X	X	X				
MPLOT-C-MW-20-091014		1240	W	7	X	X	X	X	X				
MPLOT-C-MW-19-091014		1445	W	7	X	X	X	X	X				
MPLOT-C-MW-9-091014		1540	W	9	X	X	X	X	X	X			
MPLOT-C-MW-13-091014		1635	W	9	X	X	X	X	X	X			

Comments/Special Instructions *Ecology EIM EDD Pls cc jlamberts@golder.com dmorell@golder.com	Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: J. Lamberts	Printed Name: Taylor Stricker	Printed Name:	Printed Name:
	Company: Golder	Company: ARI	Company:	Company:
	Date & Time: 9/10/2014 17:17	Date & Time: 9-10-14 1717	Date & Time:	Date & Time:

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Sample ID Cross Reference Report



ARI Job No: YZ53
Client: Golder Associates
Project Event: 073-93368-06-09A
Project Name: Master Park Lot C

Sample ID	ARI		Matrix	Sample Date/Time	VTSR
	Lab ID	LIMS ID			
1. Trip Blanks	YZ53A	14-18391	Water	09/10/14	09/10/14 17:17
2. MPLOT-C-MW-17A-091014	YZ53B	14-18392	Water	09/10/14 10:45	09/10/14 17:17
3. MPLOT-C-MW-21-091014	YZ53C	14-18393	Water	09/10/14 11:50	09/10/14 17:17
4. MPLOT-C-MW-6-091014	YZ53D	14-18394	Water	09/10/14 13:50	09/10/14 17:17
5. MPLOT-C-MW-20-091014	YZ53E	14-18395	Water	09/10/14 12:40	09/10/14 17:17
6. MPLOT-C-MW-19-091014	YZ53F	14-18396	Water	09/10/14 14:45	09/10/14 17:17
7. MPLOT-C-MW-9-091014	YZ53G	14-18397	Water	09/10/14 15:40	09/10/14 17:17
8. MPLOT-C-MW-13-091014	YZ53H	14-18398	Water	09/10/14 16:35	09/10/14 17:17



Cooler Receipt Form

ARI Client: Goldcr

Project Name: Master Park Lot C

COC No(s): _____ NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: Y253

Tracking No _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO

Were custody papers included with the cooler? YES NO

Were custody papers properly filled out (ink, signed, etc) YES NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 4.6 3.7

Time: _____

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID# 90877952

Cooler Accepted by: TS Date: 9-10-11 Time: 7:17

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO

What kind of packing material was used? Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____

Was sufficient ice used (if appropriate)? NA YES NO

Were all bottles sealed in individual plastic bags? YES NO

Did all bottles arrive in good condition (unbroken)? YES NO

Were all bottle labels complete and legible? YES NO

Did the number of containers listed on COC match with the number of containers received? YES NO

Did all bottle labels and tags agree with custody papers? YES NO

Were all bottles used correct for the requested analyses? YES NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... NA YES NO

Were all VOC vials free of air bubbles? NA YES NO

Was sufficient amount of sample sent in each bottle? YES NO

Date VOC Trip Blank was made at ARI NA 9-8-11

Was Sample Split by ARI: NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: TS Date: 9-11-11 Time: 0530

**** Notify Project Manager of discrepancies or concerns ****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: _____ Date: _____

Small Air Bubbles ~2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm

Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 1

Sample ID: Trip Blanks
SAMPLE

Lab Sample ID: YZ53A

LIMS ID: 14-18391

Matrix: Water

Data Release Authorized: *W*

Reported: 09/24/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/10/14

Date Received: 09/10/14

Instrument/Analyst: NT2/LH

Date Analyzed: 09/22/14 14:33

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	107%
d8-Toluene	98.4%
Bromofluorobenzene	99.4%
d4-1,2-Dichlorobenzene	101%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 1Sample ID: MPL0TC-MW-17A-091014
SAMPLE

Lab Sample ID: YZ53B

LIMS ID: 14-18392

Matrix: Water

Data Release Authorized: *mm*

Reported: 09/24/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/10/14

Date Received: 09/10/14

Instrument/Analyst: NT2/LH

Date Analyzed: 09/22/14 15:00

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	0.64
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	106%
d8-Toluene	100%
Bromofluorobenzene	98.2%
d4-1,2-Dichlorobenzene	99.8%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 1 of 1

Sample ID: MPLOT-C-MW-17A-091014

MATRIX SPIKE

Lab Sample ID: YZ53B

LIMS ID: 14-18392

Matrix: Water

Data Release Authorized: *Ymw*

Reported: 09/24/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/10/14

Date Received: 09/10/14

Instrument/Analyst: NT2/LH

Date Analyzed: 09/22/14 18:06

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	---
91-20-3	Naphthalene	0.12	0.50	---
110-54-3	Hexane	0.10	0.20	---

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	102%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	99.4%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 1

Sample ID: MPlotC-MW-17A-091014
MATRIX SPIKE DUPLICATE

Lab Sample ID: YZ53B

LIMS ID: 14-18392

Matrix: Water

Data Release Authorized: *WWW*

Reported: 09/24/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/10/14

Date Received: 09/10/14

Instrument/Analyst: NT2/LH

Date Analyzed: 09/22/14 18:33

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	---
91-20-3	Naphthalene	0.12	0.50	---
110-54-3	Hexane	0.10	0.20	---

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	101%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	99.7%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MPL0TC-MW-21-091014

Page 1 of 1

SAMPLE

Lab Sample ID: YZ53C

QC Report No: YZ53-Golder Associates

LIMS ID: 14-18393

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: *YWW*

Date Sampled: 09/10/14

Reported: 09/24/14

Date Received: 09/10/14

Instrument/Analyst: NT2/LH

Sample Amount: 10.0 mL

Date Analyzed: 09/22/14 15:26

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	101%
Bromofluorobenzene	96.8%
d4-1,2-Dichlorobenzene	103%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MPL0TC-MW-6-091014

Page 1 of 1

SAMPLE

Lab Sample ID: YZ53D

QC Report No: YZ53-Golder Associates

LIMS ID: 14-18394

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: *WW*

Date Sampled: 09/10/14

Reported: 09/24/14

Date Received: 09/10/14

Instrument/Analyst: NT2/LH

Sample Amount: 10.0 mL

Date Analyzed: 09/22/14 15:53

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	103%
Bromofluorobenzene	96.8%
d4-1,2-Dichlorobenzene	104%



ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MPL0TC-MW-20-091014

Page 1 of 1

SAMPLE

Lab Sample ID: YZ53E

QC Report No: YZ53-Golder Associates

LIMS ID: 14-18395

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: *MMW*

Date Sampled: 09/10/14

Reported: 09/24/14

Date Received: 09/10/14

Instrument/Analyst: NT2/LH

Sample Amount: 10.0 mL

Date Analyzed: 09/22/14 16:20

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	99.8%
Bromofluorobenzene	98.1%
d4-1,2-Dichlorobenzene	99.6%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MPL0TC-MW-19-091014

Page 1 of 1

SAMPLE

Lab Sample ID: YZ53F


QC Report No: YZ53-Golder Associates

LIMS ID: 14-18396

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: 

Date Sampled: 09/10/14

Reported: 09/24/14

Date Received: 09/10/14

Instrument/Analyst: NT2/LH

Sample Amount: 10.0 mL

Date Analyzed: 09/22/14 16:47

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	106%
d8-Toluene	98.8%
Bromofluorobenzene	97.1%
d4-1,2-Dichlorobenzene	100%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 1

Sample ID: MPL0TC-MW-9-091014
SAMPLE

Lab Sample ID: YZ53G

LIMS ID: 14-18397

Matrix: Water

Data Release Authorized: *WVW*

Reported: 09/24/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/10/14

Date Received: 09/10/14

Instrument/Analyst: NT2/LH

Date Analyzed: 09/22/14 17:13

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	84 E
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	122%
d8-Toluene	110%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	102%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MPL0TC-MW-9-091014

Page 1 of 1

DILUTION

Lab Sample ID: YZ53G

QC Report No: YZ53-Golder Associates

LIMS ID: 14-18397

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: *WVW*

Date Sampled: 09/10/14

Reported: 09/24/14

Date Received: 09/10/14

Instrument/Analyst: NT2/LH

Sample Amount: 5.00 mL

Date Analyzed: 09/24/14 11:58

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.15	0.40	< 0.40 U
91-20-3	Naphthalene	0.24	1.0	74
110-54-3	Hexane	0.19	0.40	< 0.40 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	106%
Bromofluorobenzene	104%
d4-1,2-Dichlorobenzene	99.6%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MPL0TC-MW-13-091014

Page 1 of 1

SAMPLE

Lab Sample ID: YZ53H

QC Report No: YZ53-Golder Associates

LIMS ID: 14-18398

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: *MMW*

Date Sampled: 09/10/14

Reported: 09/24/14

Date Received: 09/10/14

Instrument/Analyst: NT2/LH

Sample Amount: 10.0 mL

Date Analyzed: 09/24/14 11:30

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	103%
d8-Toluene	102%
Bromofluorobenzene	97.6%
d4-1,2-Dichlorobenzene	98.9%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 1Sample ID: MB-092214A
METHOD BLANK

Lab Sample ID: MB-092214A

LIMS ID: 14-18392

Matrix: Water

Data Release Authorized: *mm*

Reported: 09/24/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: NA

Date Received: NA

Instrument/Analyst: NT2/LH

Date Analyzed: 09/22/14 11:27

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	100%
Bromofluorobenzene	96.1%
d4-1,2-Dichlorobenzene	100%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MB-092414A

Page 1 of 1

METHOD BLANK

Lab Sample ID: MB-092414A

LIMS ID: 14-18398

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 09/24/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: NA

Date Received: NA

Instrument/Analyst: NT2/LH

Date Analyzed: 09/24/14 11:03

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	101%
Bromofluorobenzene	98.8%
d4-1,2-Dichlorobenzene	98.9%

VOA SURROGATE RECOVERY SUMMARY



Matrix: Water

QC Report No: YZ53-Golder Associates
Project: Master Park Lot C
073-93368-06-09A

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
YZ53A	Trip Blanks	10	107%	98.4%	99.4%	101%	0
MB-092214A	Method Blank	10	102%	100%	96.1%	100%	0
LCS-092214A	Lab Control	10	102%	100%	101%	99.2%	0
LCSD-092214A	Lab Control Dup	10	103%	100%	103%	100%	0
YZ53B	MPLOT-MW-17A-091014	10	106%	100%	98.2%	99.8%	0
YZ53BMS	MPLOT-MW-17A-091014	10	104%	102%	102%	99.4%	0
YZ53BMSD	MPLOT-MW-17A-091014	10	104%	101%	103%	99.7%	0
YZ53C	MPLOT-MW-21-091014	10	105%	101%	96.8%	103%	0
YZ53D	MPLOT-MW-6-091014	10	104%	103%	96.8%	104%	0
YZ53E	MPLOT-MW-20-091014	10	108%	99.8%	98.1%	99.6%	0
YZ53F	MPLOT-MW-19-091014	10	106%	98.8%	97.1%	100%	0
YZ53G	MPLOT-MW-9-091014	10	122%*	110%	102%	102%	1
YZ53GDL	MPLOT-MW-9-091014	10	108%	106%	104%	99.6%	0
MB-092414A	Method Blank	10	105%	101%	98.8%	98.9%	0
LCS-092414A	Lab Control	10	104%	102%	101%	97.8%	0
LCSD-092414A	Lab Control Dup	10	100%	102%	101%	98.7%	0
YZ53H	MPLOT-MW-13-091014	10	103%	102%	97.6%	98.9%	0

LCS/MB LIMITS

QC LIMITS

SW8260C

(DCE) = d4-1,2-Dichloroethane
(TOL) = d8-Toluene
(BFB) = Bromofluorobenzene
(DCB) = d4-1,2-Dichlorobenzene(80-120)
(80-120)
(80-120)
(80-120)(80-120)
(80-120)
(80-120)
(80-120)Prep Method: SW5030B
Log Number Range: 14-18391 to 14-18398

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-092214A

Page 1 of 1

LAB CONTROL SAMPLE

Lab Sample ID: LCS-092214A

LIMS ID: 14-18392

Matrix: Water

Data Release Authorized: *mm*

Reported: 09/24/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: NA

Date Received: NA

Instrument/Analyst LCS: NT2/LH

LCSD: NT2/LH

Date Analyzed LCS: 09/22/14 10:33

LCSD: 09/22/14 11:00

Sample Amount LCS: 10.0 mL

LCSD: 10.0 mL

Purge Volume LCS: 10.0 mL

LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
1,2-Dibromoethane	10.7	10.0	107%	11.3	10.0	113%	5.5%
Naphthalene	11.2	10.0	112%	12.9	10.0	129%	14.1%
Hexane	11.2	10.0	112%	11.7	10.0	117%	4.4%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	102%	103%
d8-Toluene	100%	100%
Bromofluorobenzene	101%	103%
d4-1,2-Dichlorobenzene	99.2%	100%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-092414A

Page 1 of 1

LAB CONTROL SAMPLE

Lab Sample ID: LCS-092414A

LIMS ID: 14-18398

Matrix: Water

Data Release Authorized: *W*

Reported: 09/24/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: NA

Date Received: NA

Instrument/Analyst LCS: NT2/LH

LCSD: NT2/LH

Date Analyzed LCS: 09/24/14 10:10

LCSD: 09/24/14 10:37

Sample Amount LCS: 10.0 mL

LCSD: 10.0 mL

Purge Volume LCS: 10.0 mL

LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
1,2-Dibromoethane	10.9	10.0	109%	10.7	10.0	107%	1.9%
Naphthalene	11.2	10.0	112%	11.0	10.0	110%	1.8%
Hexane	10.5	10.0	105%	11.0	10.0	110%	4.7%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	104%	100%
d8-Toluene	102%	102%
Bromofluorobenzene	101%	101%
d4-1,2-Dichlorobenzene	97.8%	98.7%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MPL0TC-MW-17A-091014

Page 1 of 1

MATRIX SPIKE

Lab Sample ID: YZ53B

QC Report No: YZ53-Golder Associates

LIMS ID: 14-18392

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: *MMW*

Date Sampled: 09/10/14

Reported: 09/24/14

Date Received: 09/10/14

Instrument/Analyst MS: NT2/LH

Sample Amount MS: 10.0 mL

MSD: NT2/LH

MSD: 10.0 mL

Date Analyzed MS: 09/22/14 18:06

Purge Volume MS: 10.0 mL

MSD: 09/22/14 18:33

MSD: 10.0 mL

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
1,2-Dibromoethane	< 0.20 U	10.6	10.0	106%	10.5	10.0	105%	0.9%
Naphthalene	0.64	12.1	10.0	115%	13.1	10.0	125%	7.9%
Hexane	< 0.20 U	11.1	10.0	111%	11.1	10.0	111%	0.0%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM **Sample ID: Trip Blanks**
Page 1 of 1 **SAMPLE**

Lab Sample ID: YZ53A

QC Report No: YZ53-Golder Associates

LIMS ID: 14-18391

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: 

Date Sampled: 09/10/14

Reported: 09/23/14

Date Received: 09/10/14

Instrument/Analyst: NT7/PKC

Sample Amount: 10.0 mL

Date Analyzed: 09/17/14 12:07

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	Ethylene Dibromide	0.0028	0.010	< 0.010 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	109%
d8-Toluene	101%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: MPLOTG-MW-9-091014
Page 1 of 1 **SAMPLE**

Lab Sample ID: YZ53G

LIMS ID: 14-18397

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 09/23/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/10/14

Date Received: 09/10/14

Instrument/Analyst: NT7/PKC

Date Analyzed: 09/17/14 12:30

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	Ethylene Dibromide	0.0028	0.010	< 0.010 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	280%
d8-Toluene	89.0%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: MPLOT-MW-13-091014
Page 1 of 1 SAMPLE

Lab Sample ID: YZ53H

LIMS ID: 14-18398

Matrix: Water

Data Release Authorized:

Reported: 09/23/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/10/14

Date Received: 09/10/14

Instrument/Analyst: NT7/PKC

Date Analyzed: 09/17/14 12:53

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	Ethylene Dibromide	0.0028	0.010	< 0.010 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	99.5%
d8-Toluene	104%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: MB-091714

Page 1 of 1

METHOD BLANK

Lab Sample ID: MB-091714

LIMS ID: 14-18391

Matrix: Water

Data Release Authorized: *AB*

Reported: 09/23/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: NA

Date Received: NA

Instrument/Analyst: NT7/PKC

Date Analyzed: 09/17/14 11:25

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	Ethylene Dibromide	0.0028	0.010	< 0.010 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	116%
d8-Toluene	98.5%

SW8260-SIM SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: YZ53-Golder Associates
Project: Master Park Lot C
073-93368-06-09A

<u>Client ID</u>	<u>DCE</u>	<u>TOL</u>	<u>TOT OUT</u>
MB-091714	116%	98.5%	0
LCS-091714	108%	104%	0
LCSD-091714	108%	102%	0
Trip Blanks	109%	101%	0
MPLOT-MW-9-091014	280%*	89.0%	1
MPLOT-MW-13-091014	99.5%	104%	0

	<u>LCS/MB LIMITS</u>	<u>QC LIMITS</u>
(DCE) = d4-1,2-Dichloroethane	(80-129)	(80-129)
(TOL) = d8-Toluene	(80-120)	(80-120)

Prep Method: SW5030
Log Number Range: 14-18391 to 14-18398

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: LCS-091714

Page 1 of 1

LAB CONTROL SAMPLE

Lab Sample ID: LCS-091714


QC Report No: YZ53-Golder Associates

LIMS ID: 14-18391

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: 

Date Sampled: NA

Reported: 09/23/14

Date Received: NA

Instrument/Analyst LCS: NT7/PKC

Sample Amount LCS: 10.0 mL

LCSD: NT7/PKC

LCSD: 10.0 mL

Date Analyzed LCS: 09/17/14 10:39

Purge Volume LCS: 10.0 mL

LCSD: 09/17/14 11:02

LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Ethylene Dibromide	0.808	1.00	80.8%	0.819	1.00	81.9%	1.4%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	108%	108%
d8-Toluene	104%	102%

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG
Page 1 of 1

Sample ID: Trip Blanks
SAMPLE

Lab Sample ID: YZ53A
LIMS ID: 14-18391
Matrix: Water
Data Release Authorized: *MMW*
Reported: 09/22/14

QC Report No: YZ53-Golder Associates
Project: Master Park Lot C
Event: 073-93368-06-09A
Date Sampled: 09/10/14
Date Received: 09/10/14

Date Analyzed: 09/16/14 17:51
Instrument/Analyst: PID1/PKC

Purge Volume: 5.0 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	< 0.25 U
108-88-3	Toluene	0.014	0.25	< 0.25 U
100-41-4	Ethylbenzene	0.028	0.25	< 0.25 U
179601-23-1	m,p-Xylene	0.022	0.50	< 0.50 U
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	97.6%
Bromobenzene	98.4%

Gasoline Surrogate Recovery

Trifluorotoluene	103%
Bromobenzene	101%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MPLOTC-MW-17A-091014

SAMPLE

Lab Sample ID: YZ53B

LIMS ID: 14-18392

Matrix: Water

Data Release Authorized: *MMW*

Reported: 09/22/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/10/14

Date Received: 09/10/14

Date Analyzed: 09/16/14 18:21

Instrument/Analyst: PID1/PKC

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	< 0.25 U
108-88-3	Toluene	0.014	0.25	< 0.25 U
100-41-4	Ethylbenzene	0.028	0.25	< 0.25 U
179601-23-1	m,p-Xylene	0.022	0.50	< 0.50 U
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	96.2%
Bromobenzene	95.9%

Gasoline Surrogate Recovery

Trifluorotoluene	101%
Bromobenzene	97.8%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MPLOTC-MW-21-091014

SAMPLE

Lab Sample ID: YZ53C

LIMS ID: 14-18393

Matrix: Water

Data Release Authorized: *mm*

Reported: 09/22/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/10/14

Date Received: 09/10/14

Date Analyzed: 09/16/14 19:48

Instrument/Analyst: PID1/PKC

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	< 0.25 U
108-88-3	Toluene	0.014	0.25	< 0.25 U
100-41-4	Ethylbenzene	0.028	0.25	< 0.25 U
179601-23-1	m,p-Xylene	0.022	0.50	< 0.50 U
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	94.8%
Bromobenzene	95.5%

Gasoline Surrogate Recovery

Trifluorotoluene	99.9%
Bromobenzene	97.8%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG
Page 1 of 1

Sample ID: MPL0TC-MW-6-091014
SAMPLE

Lab Sample ID: YZ53D
LIMS ID: 14-18394
Matrix: Water
Data Release Authorized: *mm*
Reported: 09/22/14

QC Report No: YZ53-Golder Associates
Project: Master Park Lot C
Event: 073-93368-06-09A
Date Sampled: 09/10/14
Date Received: 09/10/14

Date Analyzed: 09/16/14 20:18
Instrument/Analyst: PID1/PKC

Purge Volume: 5.0 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	< 0.25 U
108-88-3	Toluene	0.014	0.25	< 0.25 U
100-41-4	Ethylbenzene	0.028	0.25	< 0.25 U
179601-23-1	m,p-Xylene	0.022	0.50	< 0.50 U
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	94.8%
Bromobenzene	96.0%

Gasoline Surrogate Recovery

Trifluorotoluene	99.5%
Bromobenzene	98.2%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG
Page 1 of 1

Sample ID: MPlotC-MW-20-091014
SAMPLE

Lab Sample ID: YZ53E
LIMS ID: 14-18395
Matrix: Water
Data Release Authorized: *mm*
Reported: 09/22/14

QC Report No: YZ53-Golder Associates
Project: Master Park Lot C
Event: 073-93368-06-09A
Date Sampled: 09/10/14
Date Received: 09/10/14

Date Analyzed: 09/16/14 20:47
Instrument/Analyst: PID1/PKC

Purge Volume: 5.0 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	< 0.25 U
108-88-3	Toluene	0.014	0.25	< 0.25 U
100-41-4	Ethylbenzene	0.028	0.25	< 0.25 U
179601-23-1	m,p-Xylene	0.022	0.50	< 0.50 U
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	96.4%
Bromobenzene	96.0%

Gasoline Surrogate Recovery

Trifluorotoluene	101%
Bromobenzene	99.0%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED
Sample ID: MPLOTG-MW-19-091014
SAMPLE

Lab Sample ID: YZ53F
LIMS ID: 14-18396
Matrix: Water
Data Release Authorized: *mmw*
Reported: 09/22/14

QC Report No: YZ53-Golder Associates
Project: Master Park Lot C
Event: 073-93368-06-09A
Date Sampled: 09/10/14
Date Received: 09/10/14

Date Analyzed: 09/16/14 21:16
Instrument/Analyst: PID1/PKC

Purge Volume: 5.0 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	< 0.25 U
108-88-3	Toluene	0.014	0.25	< 0.25 U
100-41-4	Ethylbenzene	0.028	0.25	< 0.25 U
179601-23-1	m,p-Xylene	0.022	0.50	< 0.50 U
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	92.8%
Bromobenzene	94.5%

Gasoline Surrogate Recovery

Trifluorotoluene	98.6%
Bromobenzene	97.5%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MPL0TC-MW-9-091014

SAMPLE

Lab Sample ID: YZ53G

LIMS ID: 14-18397

Matrix: Water

Data Release Authorized: *mm*

Reported: 09/22/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/10/14

Date Received: 09/10/14

Date Analyzed: 09/16/14 21:45

Instrument/Analyst: PID1/PKC

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	17
108-88-3	Toluene	0.014	0.25	4.6
100-41-4	Ethylbenzene	0.028	0.25	100
179601-23-1	m,p-Xylene	0.022	0.50	46
95-47-6	o-Xylene	0.027	0.25	1.2

Gasoline Range Hydrocarbons

0.057

0.10

5.6

GAS ID

GAS

BETX Surrogate Recovery

Trifluorotoluene	102%
Bromobenzene	103%

Gasoline Surrogate Recovery

Trifluorotoluene	104%
Bromobenzene	108%

BETX values reported in µg/L (ppb)

Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Lab Sample ID: YZ53H
LIMS ID: 14-18398
Matrix: Water
Data Release Authorized: *mm*
Reported: 09/22/14

QC Report No: YZ53-Golder Associates
Project: Master Park Lot C
Event: 073-93368-06-09A
Date Sampled: 09/10/14
Date Received: 09/10/14

Date Analyzed: 09/16/14 22:14
Instrument/Analyst: PID1/PKC

Purge Volume: 5.0 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	< 0.25 U
108-88-3	Toluene	0.014	0.25	< 0.25 U
100-41-4	Ethylbenzene	0.028	0.25	< 0.25 U
179601-23-1	m,p-Xylene	0.022	0.50	< 0.50 U
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	93.4%
Bromobenzene	93.9%

Gasoline Surrogate Recovery

Trifluorotoluene	97.6%
Bromobenzene	96.1%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1



Sample ID: MB-091614

METHOD BLANK

Lab Sample ID: MB-091614

LIMS ID: 14-18392

Matrix: Water

Data Release Authorized: *MMW*

Reported: 09/22/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: NA

Date Received: NA

Date Analyzed: 09/16/14 11:46

Instrument/Analyst: PID1/PKC

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	< 0.25 U
108-88-3	Toluene	0.014	0.25	< 0.25 U
100-41-4	Ethylbenzene	0.028	0.25	< 0.25 U
179601-23-1	m,p-Xylene	0.022	0.50	< 0.50 U
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons 0.057 0.10 < 0.10 U

GAS ID
---**BETX Surrogate Recovery**

Trifluorotoluene	92.5%
Bromobenzene	93.8%

Gasoline Surrogate Recovery

Trifluorotoluene	97.3%
Bromobenzene	96.6%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

BETX WATER SURROGATE RECOVERY SUMMARY

ARI Job: YZ53
Matrix: Water

QC Report No: YZ53-Golder Associates
Project: Master Park Lot C
Event: 073-93368-06-09A

Client ID	TFT	BBZ	TOT OUT
Trip Blanks	97.6%	98.4%	0
MB-091614	92.5%	93.8%	0
LCS-091614	94.3%	94.5%	0
LCSD-091614	95.0%	96.6%	0
MPLOT-MW-17A-0910	96.2%	95.9%	0
MPLOT-MW-17A-0910 MS	98.5%	101%	0
MPLOT-MW-17A-0910 MSD	96.3%	99.3%	0
MPLOT-MW-21-09101	94.8%	95.5%	0
MPLOT-MW-6-091014	94.8%	96.0%	0
MPLOT-MW-20-09101	96.4%	96.0%	0
MPLOT-MW-19-09101	92.8%	94.5%	0
MPLOT-MW-9-091014	102%	103%	0
MPLOT-MW-13-09101	93.4%	93.9%	0

		LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(5 mL PV)	(80-120)	(80-120)
(TFT) = Trifluorotoluene	(15 mL PV)	(79-120)	(80-120)
(BBZ) = Bromobenzene	(5 mL PV)	(80-120)	(77-120)
(BBZ) = Bromobenzene	(15 mL PV)	(79-120)	(80-120)

Log Number Range: 14-18391 to 14-18398

TPHG WATER SURROGATE RECOVERY SUMMARY

ARI Job: YZ53
Matrix: Water

QC Report No: YZ53-Golder Associates
Project: Master Park Lot C
Event: 073-93368-06-09A

Client ID	TFT	BBZ	TOT OUT
Trip Blanks	103%	101%	0
MB-091614	97.3%	96.6%	0
LCS-091614	98.9%	96.8%	0
LCSD-091614	99.8%	98.3%	0
MPLOT-MW-17A-0910	101%	97.8%	0
MPLOT-MW-17A-0910 MS	104%	102%	0
MPLOT-MW-17A-0910 MSD	102%	101%	0
MPLOT-MW-21-09101	99.9%	97.8%	0
MPLOT-MW-6-091014	99.5%	98.2%	0
MPLOT-MW-20-09101	101%	99.0%	0
MPLOT-MW-19-09101	98.6%	97.5%	0
MPLOT-MW-9-091014	104%	108%	0
MPLOT-MW-13-09101	97.6%	96.1%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(80-120)
(BBZ) = Bromobenzene	(80-120)	(80-120)

Log Number Range: 14-18391 to 14-18398

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

Page 1 of 1

Sample ID: LCS-091614

LAB CONTROL SAMPLE

Lab Sample ID: LCS-091614

LIMS ID: 14-18392

Matrix: Water

Data Release Authorized: *mm*

Reported: 09/22/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 09/16/14 10:47

Purge Volume: 5.0 mL

LCSD: 09/16/14 11:16

Instrument/Analyst LCS: PID1/PKC

Dilution Factor LCS: 1.0

LCSD: PID1/PKC

LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzene	6.56	7.00	93.7%	6.36	7.00	90.9%	3.1%
Toluene	50.1	49.4	101%	48.4	49.4	98.0%	3.5%
Ethylbenzene	12.3	12.3	100%	11.8	12.3	95.9%	4.1%
m,p-Xylene	39.8	40.0	99.5%	38.0	40.0	95.0%	4.6%
o-Xylene	15.4	15.3	101%	14.9	15.3	97.4%	3.3%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

BETX Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	94.3%	95.0%
Bromobenzene	94.5%	96.6%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: LCS-091614

LAB CONTROL SAMPLE

Lab Sample ID: LCS-091614

LIMS ID: 14-18392

Matrix: Water

Data Release Authorized: *mm*

Reported: 09/22/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 09/16/14 10:47

Purge Volume: 5.0 mL

LCSD: 09/16/14 11:16

Instrument/Analyst LCS: PID1/PKC

Dilution Factor LCS: 1.0

LCSD: PID1/PKC

LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	1.03	1.00	103%	0.97	1.00	97.0%	6.0%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	98.9%	99.8%
Bromobenzene	96.8%	98.3%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MPLOTG-MW-17A-091014

MATRIX SPIKE

Lab Sample ID: YZ53B

LIMS ID: 14-18392

Matrix: Water

Data Release Authorized: *MW*

Reported: 09/22/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/10/14

Date Received: 09/10/14

Date Analyzed MS: 09/16/14 18:50

MSD: 09/16/14 19:19

Instrument/Analyst MS: PID1/PKC

MSD: PID1/PKC

Purge Volume: 5.0 mL

Dilution Factor MS: 1.0

MSD: 1.0

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Gasoline Range Hydrocarbons < 0.10 U		1.11	1.00	111%	1.08	1.00	108%	2.7%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	MS	MSD
Trifluorotoluene	104%	102%
Bromobenzene	102%	101%

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

Page 1 of 1

Sample ID: MPL0TC-MW-17A-091014

MATRIX SPIKE

Lab Sample ID: YZ53B

LIMS ID: 14-18392

Matrix: Water

Data Release Authorized: *mm*

Reported: 09/22/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/10/14

Date Received: 09/10/14

Date Analyzed MS: 09/16/14 18:50

MSD: 09/16/14 19:19

Instrument/Analyst MS: PID1/PKC

MSD: PID1/PKC

Purge Volume: 5.0 mL

Dilution Factor MS: 1.0

MSD: 1.0

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Benzene	< 0.25 U	7.57	7.00	108%	7.42	7.00	106%	2.0%
Toluene	< 0.25 U	55.4	49.4	112%	54.6	49.4	111%	1.5%
Ethylbenzene	< 0.25 U	13.6	12.3	111%	13.4	12.3	109%	1.5%
m,p-Xylene	< 0.50 U	43.7	40.0	109%	43.6	40.0	109%	0.2%
o-Xylene	< 0.25 U	17.5	15.3	114%	17.0	15.3	111%	2.9%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

BETX Surrogate Recovery

	MS	MSD
Trifluorotoluene	98.5%	96.3%
Bromobenzene	101%	99.3%

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C
Page 1 of 1

QC Report No: YZ53-Golder Associates
Project: Master Park Lot C
073-93368-06-09A

Matrix: Water

Date Received: 09/10/14

Data Release Authorized: *mw*
Reported: 09/18/14

ARI ID	Sample ID	Analysis Date	DF	Range	Result	LOQ	DL
YZ53B 14-18392	MPLOT-MW-17A-091014	09/17/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	< 0.10 U < 0.20 U --- 82.6%	0.10 0.20	0.02 0.04
YZ53C 14-18393	MPLOT-MW-21-091014	09/17/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	< 0.10 U < 0.20 U --- 92.7%	0.10 0.20	0.02 0.04
YZ53D 14-18394	MPLOT-MW-6-091014	09/17/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	< 0.10 U < 0.20 U --- 87.9%	0.10 0.20	0.02 0.04
YZ53E 14-18395	MPLOT-MW-20-091014	09/17/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	< 0.10 U < 0.20 U --- 83.6%	0.10 0.20	0.02 0.04
YZ53F 14-18396	MPLOT-MW-19-091014	09/17/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	< 0.10 U < 0.20 U --- 89.7%	0.10 0.20	0.02 0.04
YZ53G 14-18397	MPLOT-MW-9-091014	09/17/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	2.8 < 0.20 U DIESEL 80.2%	0.10 0.20	0.02 0.04
YZ53H 14-18398	MPLOT-MW-13-091014	09/17/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	0.29 < 0.20 U DIESEL 81.4%	0.10 0.20	0.02 0.04

Reported in mg/L (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.

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: YZ53-Golder Associates
Project: Master Park Lot C
073-93368-06-09A

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
LCS-091314	71.6%	0
LCSD-091314	84.0%	0
MPLOT-MW-17A-091014	82.6%	0
MPLOT-MW-17A-091014 MS	90.6%	0
MPLOT-MW-17A-091014 MSD	72.6%	0
MPLOT-MW-21-091014	92.7%	0
MPLOT-MW-6-091014	87.9%	0
MPLOT-MW-20-091014	83.6%	0
MPLOT-MW-19-091014	89.7%	0
MPLOT-MW-9-091014	80.2%	0
MPLOT-MW-13-091014	81.4%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 14-18392 to 14-18398

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID

Page 1 of 1

Sample ID: MPL0TC-MW-17A-091014
MS/MSD

Lab Sample ID: YZ53B

LIMS ID: 14-18392

Matrix: Water

Data Release Authorized: *mw*

Reported: 09/18/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/10/14

Date Received: 09/10/14

Date Extracted MS/MSD: 09/13/14

Sample Amount MS: 500 mL

MSD: 500 mL

Date Analyzed MS: 09/17/14 12:39

Final Extract Volume MS: 1.0 mL

MSD: 09/17/14 13:00

MSD: 1.0 mL

Instrument/Analyst MS: FID9/VTS

Dilution Factor MS: 1.00

MSD: FID9/VTS

MSD: 1.00

Range	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Diesel	< 0.10 U	2.84	3.00	94.7%	2.69	3.00	89.7%	5.4%

TPHD Surrogate Recovery

	MS	MSD
o-Terphenyl	90.6%	72.6%

Results reported in mg/L

RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID

Page 1 of 1

Sample ID: LCS-091314

LCS/LCSD

Lab Sample ID: LCS-091314

LIMS ID: 14-18392

Matrix: Water

Data Release Authorized: *MW*

Reported: 09/18/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: NA

Date Received: NA

Date Extracted LCS/LCSD: 09/13/14

Sample Amount LCS: 500 mL

LCSD: 500 mL

Date Analyzed LCS: 09/17/14 11:36

Final Extract Volume LCS: 1.0 mL

LCSD: 09/17/14 11:57

LCSD: 1.0 mL

Instrument/Analyst LCS: FID9/VTS

Dilution Factor LCS: 1.00

LCSD: FID9/VTS

LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.87	3.00	95.7%	2.80	3.00	93.3%	2.5%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	71.6%	84.0%

Results reported in mg/L

RPD calculated using sample concentrations per SW846.

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 09/10/14

ARI Job: YZ53
Project: Master Park Lot C
073-93368-06-09A

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
14-18392-091314MB1	Method Blank	500 mL	1.00 mL	09/13/14
14-18392-091314LCS1	Lab Control	500 mL	1.00 mL	09/13/14
14-18392-091314LCSD1	Lab Control Dup	500 mL	1.00 mL	09/13/14
14-18392-YZ53B	MPLOT-MW-17A-091014	500 mL	1.00 mL	09/13/14
14-18392-YZ53BMS	MPLOT-MW-17A-091014	500 mL	1.00 mL	09/13/14
14-18392-YZ53BMSD	MPLOT-MW-17A-091014	500 mL	1.00 mL	09/13/14
14-18393-YZ53C	MPLOT-MW-21-091014	500 mL	1.00 mL	09/13/14
14-18394-YZ53D	MPLOT-MW-6-091014	500 mL	1.00 mL	09/13/14
14-18395-YZ53E	MPLOT-MW-20-091014	500 mL	1.00 mL	09/13/14
14-18396-YZ53F	MPLOT-MW-19-091014	500 mL	1.00 mL	09/13/14
14-18397-YZ53G	MPLOT-MW-9-091014	500 mL	1.00 mL	09/13/14
14-18398-YZ53H	MPLOT-MW-13-091014	500 mL	1.00 mL	09/13/14



Analytical Resources, Incorporated
Analytical Chemists and Consultants

September 26, 2014

Mr. Doug Morell
Golder Associates Inc.
18300 NE Union Hill Road
Suite 200
Redmond, WA 98052

Re: Project: MasterPark Lot C
ARI Job No.: YZ96

Dear Doug:

Please find enclosed Chain-of-Custody record (COC), sample receipt documentation, and the final results for the project referenced above. Analytical Resources, Inc. (ARI) accepted seven water samples and trip blanks on September 12, 2014. For further details regarding sample receipt, please refer to the Cooler Receipt Form.

The samples were analyzed NWTPH-Dx, NWTPH-Gx/BETX, SIM VOCs and VOCs, as requested on the COC. Quality control analyses have been included for your review.

The VOCs method blanks contained naphthalene. All associated samples that contain analyte have been flagged with a "B" qualifier.

The NWTPH-Gx and/or BTEX surrogates TFT and BBZ are out of control high in sample MPLOT-MW-7-091114. The sample was re-analyzed with surrogate recoveries in control. Both sets of data have been included for your review.

The SIM surrogate DCE is out of control high in sample MPLOT-MW-7-091114. The associated sample is non-detect therefore no further action was taken.

The VOCs surrogate DCE is out of control high in sample MPLOT-MW-22-DUP-091214. The sample was re-analyzed with surrogate recoveries in control and both sets of data have been included for your review.

The VOCs 9/19/14 LCS and LCSD are out of control high for naphthalene.

There were no other anomalies associated with the analyses.

An electronic copy of this report and all associated raw data will remain electronically on file at ARI. Please feel free to contact me if you have any questions or require any additional information.

Respectfully,
ANALYTICAL RESOURCES, INC.
Kelly Bottem
Kelly Bottem
Client Services Manager
(206) 695-6211

Chain of Custody Record & Laboratory Analysis Request

Please analyze under existing MSA bwn ARI + Golder



Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

ARI Assigned Number: Y796	Turn-around Requested: Standard
ARI Client Company: Golder	Phone: 425-883-0777
Client Contact: D. Morell / J. Lamberts	
Client Project Name: Masterpark Lot c	
Client Project #: 073-93368-06-09A	Samplers: Lamberts

Page: 1	of 1
Date: 9/11/2014	Ice Present? Y
No. of Coolers: 1	Cooler Temps: 4.0

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested							Notes/Comments
					NWTPH-Gx BTEX	EDS by 8260 *report to MDLX	N-hexane	Naphthalene	NWTPH-Dx	LL EDB * by 504.1 or equiv.		
Trip Blank	9/11/14	-	DI	3	X	X	X	X				
MPLOT-C-MW-18-091114		1140	W	9	X	X	X	X	X			
MPLOT-C-FB-091114		1155	W	7	X	X	X	X	X			
MPLOT-C-MW-7-091114		1230	W	9	X	X	X	X	X			
MPLOT-C-MW-12-091114		1415	W	9	X	X	X	X	X			
MPLOT-C-MW-22-091214	9/12/14	1040	W	7	X	X	X	X	X			
MPLOT-C-MW-22-DUP-091214		1045	W	7	X	X	X	X	X			
PORT-MW-B-091214		1210	W	7	X	X	X	X	X			
← END OF SAMPLING EVENT →												
Comments/Special Instructions * Ecology Elm EDP Pls cc jlamberts@golder.com 51 jlam dmorell@golder.com					Relinquished by: (Signature) <i>Jill Lamberts</i> Printed Name: Jill Lamberts Company: Golder Date & Time: 9/12/2014 12:57		Received by: (Signature) <i>Jennifer M. [unclear]</i> Printed Name: Jennifer M. [unclear] Company: ARI Date & Time: 9/12/14 1257		Relinquished by: (Signature) _____ Printed Name: _____ Company: _____ Date & Time: _____		Received by: (Signature) _____ Printed Name: _____ Company: _____ Date & Time: _____	

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.



Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Golder

COC No(s): _____ (NA)

Assigned ARI Job No. Y2016

Project Name: Masterpark Lot C

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES (NO)

Were custody papers included with the cooler? (YES) NO

Were custody papers properly filled out (ink, signed, etc.) (YES) NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)
Time: 4:0

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 9087752

Cooler Accepted by: dm Date: 9/12/14 Time: 1257

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES (NO)

What kind of packing material was used? ... Bubble Wrap (C) Wet Ice Gel Packs Baggies Foam Block Paper Other: _____

Was sufficient ice used (if appropriate)? NA (YES) NO

Were all bottles sealed in individual plastic bags? (YES) (NO)

Did all bottles arrive in good condition (unbroken)? (YES) NO

Were all bottle labels complete and legible? (YES) NO

Did the number of containers listed on COC match with the number of containers received? (YES) NO

Did all bottle labels and tags agree with custody papers? (YES) NO

Were all bottles used correct for the requested analyses? (YES) NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... (NA) YES NO

Were all VOC vials free of air bubbles? NA (YES) NO

Was sufficient amount of sample sent in each bottle? (YES) NO

Date VOC Trip Blank was made at ARI: _____ NA (9-8-14)

Was Sample Split by ARI: (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

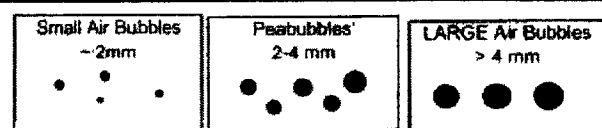
Samples Logged by: (TS) Date: 9-12-14 Time: 1505

**** Notify Project Manager of discrepancies or concerns ****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: _____ Date: _____



Small → "sm" (< 2 mm)

Peabubbles → "pb" (2 to < 4 mm)

Large → "lg" (4 to < 6 mm)

Headspace → "hs" (> 6 mm)

Sample ID Cross Reference Report



ARI Job No: YZ96
Client: Golder Associates
Project Event: 073-93368-06-09A
Project Name: Master Park Lot C

Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1. Trip Blank	YZ96A	14-18648	Water	09/11/14	09/12/14 12:57
2. MPLOT-MW-18-091114	YZ96B	14-18649	Water	09/11/14 11:40	09/12/14 12:57
3. MPLOT-FB-091114	YZ96C	14-18650	Water	09/11/14 11:55	09/12/14 12:57
4. MPLOT-MW-7-091114	YZ96D	14-18651	Water	09/11/14 12:30	09/12/14 12:57
5. MPLOT-MW-12-091114	YZ96E	14-18652	Water	09/11/14 14:15	09/12/14 12:57
6. MPLOT-MW-22-091214	YZ96F	14-18653	Water	09/12/14 10:40	09/12/14 12:57
7. MPLOT-MW-22-DUP-091214	YZ96G	14-18654	Water	09/12/14 10:45	09/12/14 12:57
8. PORT-MW-B-091214	YZ96H	14-18655	Water	09/12/14 12:10	09/12/14 12:57

YZ96: 42 BC 10/2/14

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C


Sample ID: Trip Blank
SAMPLE

Page 1 of 1

Lab Sample ID: YZ96A

LIMS ID: 14-18648

Matrix: Water

Data Release Authorized: 

Reported: 09/26/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/11/14

Date Received: 09/12/14

Instrument/Analyst: NT2/LH

Date Analyzed: 09/19/14 16:12

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	101%
Bromofluorobenzene	92.2%
d4-1,2-Dichlorobenzene	101%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 1 of 1

ANALYTICAL
RESOURCES
INCORPORATED


Sample ID: MPLOTG-MW-18-091114

SAMPLE

Lab Sample ID: YZ96B

LIMS ID: 14-18649

Matrix: Water

Data Release Authorized: 

Reported: 09/26/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/11/14

Date Received: 09/12/14

Instrument/Analyst: NT2/LH

Date Analyzed: 09/19/14 16:37

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	103%
d8-Toluene	102%
Bromofluorobenzene	91.9%
d4-1,2-Dichlorobenzene	99.7%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 1 of 1

ANALYTICAL
RESOURCES
INCORPORATED


Sample ID: MPLOTB-FB-091114

SAMPLE

Lab Sample ID: YZ96C

LIMS ID: 14-18650

Matrix: Water

Data Release Authorized: 

Reported: 09/26/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/11/14

Date Received: 09/12/14

Instrument/Analyst: NT2/LH

Date Analyzed: 09/19/14 17:02

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	101%
Bromofluorobenzene	93.3%
d4-1,2-Dichlorobenzene	101%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 1 of 1

ANALYTICAL
RESOURCES
INCORPORATED

Sample ID: MPLOTG-MW-7-091114

SAMPLE

Lab Sample ID: YZ96D

LIMS ID: 14-18651

Matrix: Water

Data Release Authorized: *AS*

Reported: 09/26/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/11/14

Date Received: 09/12/14

Instrument/Analyst: NT2/LH

Date Analyzed: 09/19/14 17:30

Sample Amount: 0.50 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	1.5	4.0	< 4.0 U
91-20-3	Naphthalene	2.4	10	300 B
110-54-3	Hexane	1.9	4.0	280

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	101%
Bromofluorobenzene	96.0%
d4-1,2-Dichlorobenzene	99.0%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 1 of 1

ANALYTICAL
RESOURCES
INCORPORATED

Sample ID: MPLOTG-MW-12-091114

SAMPLE

Lab Sample ID: YZ96E

LIMS ID: 14-18652

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 09/26/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/11/14

Date Received: 09/12/14

Instrument/Analyst: NT2/LH

Date Analyzed: 09/19/14 17:56

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	0.53 B
110-54-3	Hexane	0.10	0.20	0.78

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	99.4%
Bromofluorobenzene	101%
d4-1,2-Dichlorobenzene	100%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 1 of 1

ANALYTICAL
RESOURCES
INCORPORATED


Sample ID: MPLOT-C-MW-22-091214

SAMPLE

Lab Sample ID: YZ96F

LIMS ID: 14-18653

Matrix: Water

Data Release Authorized: 

Reported: 10/02/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/12/14

Date Received: 09/12/14

Instrument/Analyst: NT2/LH

Date Analyzed: 09/19/14 18:25

Sample Amount: 0.50 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	1.5	4.0	< 4.0 U
91-20-3	Naphthalene	2.4	10	460 B
110-54-3	Hexane	1.9	4.0	9.8

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	103%
d8-Toluene	100%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	99.5%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 1 of 1

ANALYTICAL
RESOURCES
INCORPORATED

Sample ID: MPLOT-MW-22-DUP-091214

SAMPLE

Lab Sample ID: YZ96G

LIMS ID: 14-18654

Matrix: Water

Data Release Authorized: *AB*

Reported: 10/02/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/12/14

Date Received: 09/12/14

Instrument/Analyst: NT2/LH

Date Analyzed: 09/19/14 19:20

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	340 EB
110-54-3	Hexane	0.10	0.20	8.2

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	130%
d8-Toluene	111%
Bromofluorobenzene	108%
d4-1,2-Dichlorobenzene	99.6%

YZ96-11R 30 10/2/14

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C


Page 1 of 1

ANALYTICAL
RESOURCES
INCORPORATEDSample ID: MPLOT-MW-22-DUP-091214
DILUTION

Lab Sample ID: YZ96G

LIMS ID: 14-18654

Matrix: Water

Data Release Authorized: 

Reported: 10/02/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/12/14

Date Received: 09/12/14

Instrument/Analyst: NT2/LH

Date Analyzed: 09/19/14 18:54

Sample Amount: 0.50 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	1.5	4.0	< 4.0 U
91-20-3	Naphthalene	2.4	10	470 B
110-54-3	Hexane	1.9	4.0	9.0

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	101%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	101%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 1 of 1

ANALYTICAL
RESOURCES
INCORPORATED

Sample ID: PORT-MW-B-091214

SAMPLE

Lab Sample ID: YZ96H

LIMS ID: 14-18655

Matrix: Water

Data Release Authorized: *AS*

Reported: 09/26/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/12/14

Date Received: 09/12/14

Instrument/Analyst: NT2/LH

Date Analyzed: 09/24/14 14:33

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	102%
Bromofluorobenzene	99.3%
d4-1,2-Dichlorobenzene	97.4%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MB-091914A

Page 1 of 1

METHOD BLANK

Lab Sample ID: MB-091914A

LIMS ID: 14-18649

Matrix: Water

Data Release Authorized: *RB*

Reported: 09/26/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: NA

Date Received: NA

Instrument/Analyst: NT2/LH

Date Analyzed: 09/19/14 11:52

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	0.19 J
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	106%
d8-Toluene	100%
Bromofluorobenzene	99.5%
d4-1,2-Dichlorobenzene	99.9%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 1 of 1



Sample ID: MB-092414A

METHOD BLANK

Lab Sample ID: MB-092414A

LIMS ID: 14-18655

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 09/26/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: NA

Date Received: NA

Instrument/Analyst: NT2/LH

Date Analyzed: 09/24/14 11:03

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	0.16 J
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	101%
Bromofluorobenzene	98.8%
d4-1,2-Dichlorobenzene	98.9%

VOA SURROGATE RECOVERY SUMMARY



Matrix: Water

QC Report No: YZ96-Golder Associates
Project: Master Park Lot C
073-93368-06-09A

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
YZ96A	Trip Blank	10	104%	101%	92.2%	101%	0
MB-091914A	Method Blank	10	106%	100%	99.5%	99.9%	0
LCS-091914A	Lab Control	10	103%	100%	103%	99.1%	0
LCSD-091914A	Lab Control Dup	10	104%	100%	103%	98.0%	0
YZ96B	MPLOT-MW-18-091114	10	103%	102%	91.9%	99.7%	0
YZ96C	MPLOT-MW-091114	10	104%	101%	93.3%	101%	0
YZ96D	MPLOT-MW-7-091114	10	105%	101%	96.0%	99.0%	0
YZ96E	MPLOT-MW-12-091114	10	105%	99.4%	101%	100%	0
YZ96F	MPLOT-MW-22-091214	10	103%	100%	100%	99.5%	0
YZ96G	MPLOT-MW-22-DUP-091214	10	130%*	111%	108%	99.6%	1
YZ96GDL	MPLOT-MW-22-DUP-091214	10	102%	101%	102%	101%	0
MB-092414A	Method Blank	10	105%	101%	98.8%	98.9%	0
LCS-092414A	Lab Control	10	104%	102%	101%	97.8%	0
LCSD-092414A	Lab Control Dup	10	100%	102%	101%	98.7%	0
YZ96H	PORT-MW-B-091214	10	104%	102%	99.3%	97.4%	0

LCS/MB LIMITS

QC LIMITS

SW8260C

(DCE) = d4-1,2-Dichloroethane	(80-120)	(80-120)
(TOL) = d8-Toluene	(80-120)	(80-120)
(BFB) = Bromofluorobenzene	(80-120)	(80-120)
(DCB) = d4-1,2-Dichlorobenzene	(80-120)	(80-120)

Prep Method: SW5030B
Log Number Range: 14-18648 to 14-18655

YZ96: 16R BC 10/2/14

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 1 of 1

Sample ID: LCS-091914A

LAB CONTROL SAMPLE

Lab Sample ID: LCS-091914A

LIMS ID: 14-18649

Matrix: Water

Data Release Authorized: *AB*

Reported: 09/26/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: NA

Date Received: NA

Instrument/Analyst LCS: NT2/LH

LCSD: NT2/LH

Date Analyzed LCS: 09/19/14 10:58

LCSD: 09/19/14 11:25

Sample Amount LCS: 10.0 mL

LCSD: 10.0 mL

Purge Volume LCS: 10.0 mL

LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
1,2-Dibromoethane	11.0	10.0	110%	10.9	10.0	109%	0.9%
Naphthalene	13.0 B	10.0	130%	12.1 B	10.0	121%	7.2%
Hexane	12.0	10.0	120%	11.4	10.0	114%	5.1%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	103%	104%
d8-Toluene	100%	100%
Bromofluorobenzene	103%	103%
d4-1,2-Dichlorobenzene	99.1%	98.0%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 1 of 1

Sample ID: LCS-092414A

LAB CONTROL SAMPLE

Lab Sample ID: LCS-092414A

LIMS ID: 14-18655

Matrix: Water

Data Release Authorized: *AB*

Reported: 09/26/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: NA

Date Received: NA

Instrument/Analyst LCS: NT2/LH

LCSD: NT2/LH

Date Analyzed LCS: 09/24/14 10:10

LCSD: 09/24/14 10:37

Sample Amount LCS: 10.0 mL

LCSD: 10.0 mL

Purge Volume LCS: 10.0 mL

LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
1,2-Dibromoethane	10.9	10.0	109%	10.7	10.0	107%	1.9%
Naphthalene	11.2 B	10.0	112%	11.0 B	10.0	110%	1.8%
Hexane	10.5	10.0	105%	11.0	10.0	110%	4.7%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	104%	100%
d8-Toluene	102%	102%
Bromofluorobenzene	101%	101%
d4-1,2-Dichlorobenzene	97.8%	98.7%

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: Trip Blank
SAMPLE

Lab Sample ID: YZ96A

LIMS ID: 14-18648

Matrix: Water

Data Release Authorized: 

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/11/14

Date Received: 09/12/14

Date Analyzed: 09/18/14 22:33

Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	< 0.25 U
108-88-3	Toluene	0.014	0.25	< 0.25 U
100-41-4	Ethylbenzene	0.028	0.25	< 0.25 U
179601-23-1	m,p-Xylene	0.022	0.50	< 0.50 U
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	92.7%
Bromobenzene	95.7%

Gasoline Surrogate Recovery

Trifluorotoluene	97.6%
Bromobenzene	97.5%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Sample ID: MPLOTG-MW-18-091114
SAMPLE

Lab Sample ID: YZ96B
LIMS ID: 14-18649
Matrix: Water
Data Release Authorized: *[Signature]*
Reported: 09/25/14

QC Report No: YZ96-Golder Associates
Project: Master Park Lot C
Event: 073-93368-06-09A
Date Sampled: 09/11/14
Date Received: 09/12/14

Date Analyzed: 09/18/14 23:03
Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	0.72
108-88-3	Toluene	0.014	0.25	0.27
100-41-4	Ethylbenzene	0.028	0.25	0.40
179601-23-1	m,p-Xylene	0.022	0.50	0.72
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	92.8%
Bromobenzene	95.2%

Gasoline Surrogate Recovery

Trifluorotoluene	97.0%
Bromobenzene	97.8%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MPlotC-FB-091114

SAMPLE

Lab Sample ID: YZ96C

LIMS ID: 14-18650

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/11/14

Date Received: 09/12/14

Date Analyzed: 09/18/14 23:32

Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	< 0.25 U
108-88-3	Toluene	0.014	0.25	< 0.25 U
100-41-4	Ethylbenzene	0.028	0.25	< 0.25 U
179601-23-1	m,p-Xylene	0.022	0.50	< 0.50 U
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	90.7%
Bromobenzene	93.9%

Gasoline Surrogate Recovery

Trifluorotoluene	96.0%
Bromobenzene	95.5%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Sample ID: MPLOTG-MW-7-091114
SAMPLE

Lab Sample ID: YZ96D

LIMS ID: 14-18651

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/11/14

Date Received: 09/12/14

Date Analyzed: 09/19/14 00:01

Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	16
108-88-3	Toluene	0.014	0.25	75
100-41-4	Ethylbenzene	0.028	0.25	230 E
179601-23-1	m,p-Xylene	0.022	0.50	1,600 E
95-47-6	o-Xylene	0.027	0.25	9.5

Gasoline Range Hydrocarbons	0.057	0.10	27 E	GAS ID GAS
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BETX Surrogate Recovery

Trifluorotoluene	123%
Bromobenzene	112%

Gasoline Surrogate Recovery

Trifluorotoluene	106%
Bromobenzene	653%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG
Page 1 of 1

Sample ID: MPLOTG-MW-7-091114
DILUTION

Lab Sample ID: YZ96D
LIMS ID: 14-18651
Matrix: Water
Data Release Authorized: *B*
Reported: 09/25/14

QC Report No: YZ96-Golder Associates
Project: Master Park Lot C
Event: 073-93368-06-09A
Date Sampled: 09/11/14
Date Received: 09/12/14

Date Analyzed: 09/19/14 22:20
Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL
Dilution Factor: 20.0

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.56	5.0	17
108-88-3	Toluene	0.28	5.0	81
100-41-4	Ethylbenzene	0.56	5.0	260
179601-23-1	m,p-Xylene	0.44	10	2,100
95-47-6	o-Xylene	0.54	5.0	8.6

Gasoline Range Hydrocarbons	0.057	2.0	36	GAS ID GAS
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BETX Surrogate Recovery

Trifluorotoluene	99.6%
Bromobenzene	102%

Gasoline Surrogate Recovery

Trifluorotoluene	103%
Bromobenzene	103%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Sample ID: MPLOTG-MW-12-091114
SAMPLE

Lab Sample ID: YZ96E
LIMS ID: 14-18652
Matrix: Water
Data Release Authorized:
Reported: 09/25/14

QC Report No: YZ96-Golder Associates
Project: Master Park Lot C
Event: 073-93368-06-09A
Date Sampled: 09/11/14
Date Received: 09/12/14

Date Analyzed: 09/19/14 15:05
Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	2.5
108-88-3	Toluene	0.014	0.25	2.6
100-41-4	Ethylbenzene	0.028	0.25	1.5
179601-23-1	m,p-Xylene	0.022	0.50	3.8
95-47-6	o-Xylene	0.027	0.25	1.5

Gasoline Range Hydrocarbons	0.057	0.10	0.11	GAS ID GAS
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BETX Surrogate Recovery

Trifluorotoluene	103%
Bromobenzene	103%

Gasoline Surrogate Recovery

Trifluorotoluene	107%
Bromobenzene	104%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.
Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG
Page 1 of 1



Sample ID: MPLOTG-MW-22-091214
SAMPLE

Lab Sample ID: YZ96F
LIMS ID: 14-18653
Matrix: Water
Data Release Authorized: *AB*
Reported: 10/02/14

QC Report No: YZ96-Golder Associates
Project: Master Park Lot C
Event: 073-93368-06-09A
Date Sampled: 09/12/14
Date Received: 09/12/14

Date Analyzed: 09/19/14 00:59
Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	4.5
108-88-3	Toluene	0.014	0.25	8.4
100-41-4	Ethylbenzene	0.028	0.25	640 E
179601-23-1	m,p-Xylene	0.022	0.50	1,000 E
95-47-6	o-Xylene	0.027	0.25	2.7

Gasoline Range Hydrocarbons	0.057	0.10	14 E	GAS ID GAS
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BETX Surrogate Recovery

Trifluorotoluene	92.9%
Bromobenzene	104%

Gasoline Surrogate Recovery

Trifluorotoluene	97.9%
Bromobenzene	102%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.
Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG
Page 1 of 1



Sample ID: MPLOT-MW-22-091214
DILUTION

Lab Sample ID: YZ96F
LIMS ID: 14-18653
Matrix: Water
Data Release Authorized: *[Signature]*
Reported: 10/02/14

QC Report No: YZ96-Golder Associates
Project: Master Park Lot C
Event: 073-93368-06-09A
Date Sampled: 09/12/14
Date Received: 09/12/14

Date Analyzed: 09/19/14 15:33
Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL
Dilution Factor: 10.0

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.28	2.5	4.8
108-88-3	Toluene	0.14	2.5	9.3
100-41-4	Ethylbenzene	0.28	2.5	690
179601-23-1	m,p-Xylene	0.22	5.0	1,100
95-47-6	o-Xylene	0.27	2.5	< 2.5 U

Gasoline Range Hydrocarbons	0.057	1.0	16	GAS ID GAS
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BETX Surrogate Recovery

Trifluorotoluene	93.0%
Bromobenzene	96.3%

Gasoline Surrogate Recovery

Trifluorotoluene	94.7%
Bromobenzene	94.6%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG
Page 1 of 1

ANALYTICAL
RESOURCES
INCORPORATED

Sample ID: MPLOT-MW-22-DUP-091214
SAMPLE

Lab Sample ID: YZ96G
LIMS ID: 14-18654
Matrix: Water
Data Release Authorized: *JB*
Reported: 10/02/14

QC Report No: YZ96-Golder Associates
Project: Master Park Lot C
Event: 073-93368-06-09A
Date Sampled: 09/12/14
Date Received: 09/12/14

Date Analyzed: 09/19/14 01:58
Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	4.4
108-88-3	Toluene	0.014	0.25	8.2
100-41-4	Ethylbenzene	0.028	0.25	640 E
179601-23-1	m,p-Xylene	0.022	0.50	1,000 E
95-47-6	o-Xylene	0.027	0.25	2.5

Gasoline Range Hydrocarbons	0.057	0.10	14 E	GAS ID GRO
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BETX Surrogate Recovery

Trifluorotoluene	93.2%
Bromobenzene	106%

Gasoline Surrogate Recovery

Trifluorotoluene	97.0%
Bromobenzene	103%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG
Page 1 of 1



Sample ID: MPLOT-MW-22-DUP-091214
DILUTION

Lab Sample ID: YZ96G

LIMS ID: 14-18654

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 10/02/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/12/14

Date Received: 09/12/14

Date Analyzed: 09/22/14 13:18

Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL

Dilution Factor: 10.0

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.28	2.5	4.5
108-88-3	Toluene	0.14	2.5	9.0
100-41-4	Ethylbenzene	0.28	2.5	710
179601-23-1	m,p-Xylene	0.22	5.0	1,200
95-47-6	o-Xylene	0.27	2.5	< 2.5 U

Gasoline Range Hydrocarbons	0.057	1.0	17	GAS ID GRO
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BETX Surrogate Recovery

Trifluorotoluene	96.5%
Bromobenzene	96.4%

Gasoline Surrogate Recovery

Trifluorotoluene	99.2%
Bromobenzene	97.8%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: PORT-MW-B-091214

SAMPLE

Lab Sample ID: YZ96H

LIMS ID: 14-18655

Matrix: Water

Data Release Authorized:

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/12/14

Date Received: 09/12/14

Date Analyzed: 09/22/14 13:47

Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	< 0.25 U
108-88-3	Toluene	0.014	0.25	< 0.25 U
100-41-4	Ethylbenzene	0.028	0.25	1.1
179601-23-1	m,p-Xylene	0.022	0.50	1.9
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	92.0%
Bromobenzene	92.6%

Gasoline Surrogate Recovery

Trifluorotoluene	97.3%
Bromobenzene	95.4%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MB-091814

METHOD BLANK

Lab Sample ID: MB-091814

LIMS ID: 14-18649

Matrix: Water

Data Release Authorized: 

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: NA

Date Received: NA

Date Analyzed: 09/18/14 13:44

Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	< 0.25 U
108-88-3	Toluene	0.014	0.25	< 0.25 U
100-41-4	Ethylbenzene	0.028	0.25	< 0.25 U
179601-23-1	m,p-Xylene	0.022	0.50	< 0.50 U
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	93.3%
Bromobenzene	94.9%

Gasoline Surrogate Recovery

Trifluorotoluene	98.8%
Bromobenzene	97.5%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MB-091914

METHOD BLANK

Lab Sample ID: MB-091914

LIMS ID: 14-18651

Matrix: Water

Data Release Authorized: *AA*

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: NA

Date Received: NA

Date Analyzed: 09/19/14 11:22

Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	< 0.25 U
108-88-3	Toluene	0.014	0.25	< 0.25 U
100-41-4	Ethylbenzene	0.028	0.25	< 0.25 U
179601-23-1	m,p-Xylene	0.022	0.50	< 0.50 U
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	100%
Bromobenzene	101%

Gasoline Surrogate Recovery

Trifluorotoluene	103%
Bromobenzene	102%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG
Page 1 of 1



Sample ID: MB-092214
METHOD BLANK

Lab Sample ID: MB-092214
LIMS ID: 14-18655
Matrix: Water
Data Release Authorized: *[Signature]*
Reported: 09/25/14

QC Report No: YZ96-Golder Associates
Project: Master Park Lot C
Event: 073-93368-06-09A
Date Sampled: NA
Date Received: NA

Date Analyzed: 09/22/14 11:53
Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	< 0.25 U
108-88-3	Toluene	0.014	0.25	< 0.25 U
100-41-4	Ethylbenzene	0.028	0.25	< 0.25 U
179601-23-1	m,p-Xylene	0.022	0.50	< 0.50 U
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	97.8%
Bromobenzene	99.2%

Gasoline Surrogate Recovery

Trifluorotoluene	102%
Bromobenzene	101%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

BETX WATER SURROGATE RECOVERY SUMMARY

ARI Job: YZ96
Matrix: Water

QC Report No: YZ96-Golder Associates
Project: Master Park Lot C
Event: 073-93368-06-09A

Client ID	TFT	BBZ	TOT OUT
Trip Blank	92.7%	95.7%	0
MB-091814	93.3%	94.9%	0
LCS-091814	97.0%	94.3%	0
LCSD-091814	95.1%	96.5%	0
MPLOT-MW-18-09111	92.8%	95.2%	0
MPLOT-MW-091114	90.7%	93.9%	0
MB-091914	100%	101%	0
LCS-091914	95.6%	95.0%	0
LCSD-091914	100%	102%	0
MPLOT-MW-7-091114	123%*	112%	1
MPLOT-MW-7-091114 DL	99.6%	102%	0
MPLOT-MW-12-09111	103%	103%	0
MPLOT-MW-22-09121	92.9%	104%	0
MPLOT-MW-22-09121 DL	93.0%	96.3%	0
MPLOT-MW-22-DUP-0	93.2%	106%	0
MPLOT-MW-22-DUP-0 DL	96.5%	96.4%	0
MB-092214	97.8%	99.2%	0
LCS-092214	99.9%	101%	0
LCSD-092214	99.1%	102%	0
PORT-MW-B-091214	92.0%	92.6%	0

		LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(5 mL PV)	(80-120)	(80-120)
(TFT) = Trifluorotoluene	(15 mL PV)	(79-120)	(80-120)
(BBZ) = Bromobenzene	(5 mL PV)	(80-120)	(77-120)
(BBZ) = Bromobenzene	(15 mL PV)	(79-120)	(80-120)

Log Number Range: 14-18648 to 14-18655

TPHG WATER SURROGATE RECOVERY SUMMARY

ARI Job: YZ96
Matrix: Water

QC Report No: YZ96-Golder Associates
Project: Master Park Lot C
Event: 073-93368-06-09A

Client ID	TFT	BBZ	TOT OUT
Trip Blank	97.6%	97.5%	0
MB-091814	98.8%	97.5%	0
LCS-091814	99.1%	95.4%	0
LCSD-091814	100%	99.1%	0
MPLOTTC-MW-18-09111	97.0%	97.8%	0
MPLOTTC-FB-091114	96.0%	95.5%	0
MB-091914	103%	102%	0
LCS-091914	96.8%	95.5%	0
LCSD-091914	104%	103%	0
MPLOTTC-MW-7-091114	106%	653%*	1
MPLOTTC-MW-7-091114 DL	103%	103%	0
MPLOTTC-MW-12-09111	107%	104%	0
MPLOTTC-MW-22-09121	97.9%	102%	0
MPLOTTC-MW-22-09121 DL	94.7%	94.6%	0
MPLOTTC-MW-22-DUP-0	97.0%	103%	0
MPLOTTC-MW-22-DUP-0 DL	99.2%	97.8%	0
MB-092214	102%	101%	0
LCS-092214	105%	103%	0
LCSD-092214	104%	105%	0
PORT-MW-B-091214	97.3%	95.4%	0

LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene (80-120)	(80-120)
(BBZ) = Bromobenzene (80-120)	(80-120)

Log Number Range: 14-18648 to 14-18655

YZ96: 342 B 10/2/14

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: LCS-091814

LAB CONTROL SAMPLE

Lab Sample ID: LCS-091814

LIMS ID: 14-18649

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 09/18/14 12:46

LCSD: 09/18/14 13:15

Instrument/Analyst LCS: PID1/LH

LCSD: PID1/LH

Purge Volume: 5.0 mL

Dilution Factor LCS: 1.0

LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	1.00	1.00	100%	1.03	1.00	103%	3.0%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	99.1%	100%
Bromobenzene	95.4%	99.1%

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

Page 1 of 1



Sample ID: LCS-091814

LAB CONTROL SAMPLE

Lab Sample ID: LCS-091814

LIMS ID: 14-18649

Matrix: Water

Data Release Authorized: *AB*

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 09/18/14 12:46

Purge Volume: 5.0 mL

LCSD: 09/18/14 13:15

Instrument/Analyst LCS: PID1/LH

Dilution Factor LCS: 1.0

LCSD: PID1/LH

LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzene	6.66	7.00	95.1%	6.83	7.00	97.6%	2.5%
Toluene	50.4	49.4	102%	52.8	49.4	107%	4.7%
Ethylbenzene	12.1	12.3	98.4%	12.8	12.3	104%	5.6%
m,p-Xylene	39.7	40.0	99.2%	41.4	40.0	104%	4.2%
o-Xylene	15.6	15.3	102%	16.2	15.3	106%	3.8%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

BETX Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	97.0%	95.1%
Bromobenzene	94.3%	96.5%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

ANALYTICAL
RESOURCES
INCORPORATED


Sample ID: LCS-091914

LAB CONTROL SAMPLE

Lab Sample ID: LCS-091914

LIMS ID: 14-18651

Matrix: Water

Data Release Authorized: 

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 09/19/14 12:56

LCSD: 09/19/14 10:53

Instrument/Analyst LCS: PID1/LH

LCSD: PID1/LH

Purge Volume: 5.0 mL

Dilution Factor LCS: 1.0

LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	1.02	1.00	102%	1.12	1.00	112%	9.3%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	96.8%	104%
Bromobenzene	95.5%	103%

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

Page 1 of 1

Sample ID: LCS-091914

LAB CONTROL SAMPLE

Lab Sample ID: LCS-091914

LIMS ID: 14-18651

Matrix: Water

Data Release Authorized: *AB*

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 09/19/14 12:56

LCSD: 09/19/14 10:53

Instrument/Analyst LCS: PID1/LH

LCSD: PID1/LH

Purge Volume: 5.0 mL

Dilution Factor LCS: 1.0

LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzene	7.04	7.00	101%	7.51	7.00	107%	6.5%
Toluene	51.9	49.4	105%	57.1	49.4	116%	9.5%
Ethylbenzene	12.6	12.3	102%	13.9	12.3	113%	9.8%
m,p-Xylene	40.9	40.0	102%	45.5	40.0	114%	10.6%
o-Xylene	16.0	15.3	105%	17.8	15.3	116%	10.7%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

BETX Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	95.6%	100%
Bromobenzene	95.0%	102%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

ANALYTICAL
RESOURCES
INCORPORATED


Sample ID: LCS-092214

LAB CONTROL SAMPLE

Lab Sample ID: LCS-092214

LIMS ID: 14-18655

Matrix: Water

Data Release Authorized: 

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 09/22/14 10:54

Purge Volume: 5.0 mL

LCSD: 09/22/14 11:24

Instrument/Analyst LCS: PID1/LH

Dilution Factor LCS: 1.0

LCSD: PID1/LH

LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	1.18	1.00	118%	1.17	1.00	117%	0.9%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	105%	104%
Bromobenzene	103%	105%

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

Page 1 of 1

Sample ID: LCS-092214

LAB CONTROL SAMPLE

Lab Sample ID: LCS-092214

LIMS ID: 14-18655

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 09/22/14 10:54

LCSD: 09/22/14 11:24

Instrument/Analyst LCS: PID1/LH

LCSD: PID1/LH

Purge Volume: 5.0 mL

Dilution Factor LCS: 1.0

LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzene	7.32	7.00	105%	7.10	7.00	101%	3.1%
Toluene	55.2	49.4	112%	53.7	49.4	109%	2.8%
Ethylbenzene	13.6	12.3	111%	13.1	12.3	107%	3.7%
m,p-Xylene	44.1	40.0	110%	42.6	40.0	106%	3.5%
o-Xylene	17.2	15.3	112%	16.7	15.3	109%	2.9%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

BETX Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	99.9%	99.1%
Bromobenzene	101%	102%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: MPL0TC-MW-18-091114
 Page 1 of 1 **SAMPLE**

Lab Sample ID: YZ96B

LIMS ID: 14-18649

Matrix: Water

Data Release Authorized: *mm*

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/11/14

Date Received: 09/12/14

Instrument/Analyst: NT7/LH

Date Analyzed: 09/17/14 16:23

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	Ethylene Dibromide	0.0028	0.010	< 0.010 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	102%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: MPL0TC-MW-7-091114
Page 1 of 1 **SAMPLE**

Lab Sample ID: YZ96D

LIMS ID: 14-18651

Matrix: Water

Data Release Authorized: *mmw*

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/11/14

Date Received: 09/12/14

Instrument/Analyst: NT7/LH

Date Analyzed: 09/22/14 17:45

Sample Amount: 1.00 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	Ethylene Dibromide	0.0282	0.10	< 0.10 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	153%
d8-Toluene	113%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: MPL0TC-MW-12-091114
Page 1 of 1 SAMPLE

Lab Sample ID: YZ96E

LIMS ID: 14-18652

Matrix: Water

Data Release Authorized: *mm*

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/11/14

Date Received: 09/12/14

Instrument/Analyst: NT7/LH

Date Analyzed: 09/17/14 17:09

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	Ethylene Dibromide	0.0028	0.010	< 0.010 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	98.2%
d8-Toluene	103%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: MB-091714

Page 1 of 1

METHOD BLANK

Lab Sample ID: MB-091714

LIMS ID: 14-18649

Matrix: Water

Data Release Authorized: *mm*

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: NA

Date Received: NA

Instrument/Analyst: NT7/LH

Date Analyzed: 09/17/14 11:25

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	Ethylene Dibromide	0.0028	0.010	< 0.010 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	116%
d8-Toluene	98.5%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: MB-092214

Page 1 of 1

METHOD BLANK

Lab Sample ID: MB-092214

LIMS ID: 14-18651

Matrix: Water

Data Release Authorized: *MMJ*

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: NA

Date Received: NA

Instrument/Analyst: NT7/LH

Date Analyzed: 09/22/14 16:30

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	Ethylene Dibromide	0.0028	0.010	< 0.010 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	100%

SW8260-SIM SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: YZ96-Golder Associates
Project: Master Park Lot C
073-93368-06-09A

Client ID	DCE	TOL	TOT OUT
MB-091714	116%	98.5%	0
LCS-091714	108%	104%	0
LCSD-091714	108%	102%	0
MPLOT-C-MW-18-091114	108%	102%	0
MB-092214	105%	100%	0
LCS-092214	101%	102%	0
LCSD-092214	103%	103%	0
MPLOT-C-MW-7-091114	153%*	113%	1
MPLOT-C-MW-12-091114	98.2%	103%	0

	LCS/MB LIMITS	QC LIMITS
(DCE) = d4-1,2-Dichloroethane	(80-129)	(80-129)
(TOL) = d8-Toluene	(80-120)	(80-120)

Prep Method: SW5030
Log Number Range: 14-18649 to 14-18652

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: LCS-091714

Page 1 of 1

LAB CONTROL SAMPLE

Lab Sample ID: LCS-091714

LIMS ID: 14-18649

Matrix: Water

Data Release Authorized: *mw*

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: NA

Date Received: NA

Instrument/Analyst LCS: NT7/LH

LCSD: NT7/LH

Date Analyzed LCS: 09/17/14 10:39

LCSD: 09/17/14 11:02

Sample Amount LCS: 10.0 mL

LCSD: 10.0 mL

Purge Volume LCS: 10.0 mL

LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Ethylene Dibromide	0.808	1.00	80.8%	0.819	1.00	81.9%	1.4%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	108%	108%
d8-Toluene	104%	102%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: LCS-092214

Page 1 of 1

LAB CONTROL SAMPLE

Lab Sample ID: LCS-092214

LIMS ID: 14-18651

Matrix: Water

Data Release Authorized: *mm*

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: NA

Date Received: NA

Instrument/Analyst LCS: NT7/LH

LCSD: NT7/LH

Date Analyzed LCS: 09/22/14 15:43

LCSD: 09/22/14 16:06

Sample Amount LCS: 10.0 mL

LCSD: 10.0 mL

Purge Volume LCS: 10.0 mL

LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Ethylene Dibromide	1.06	1.00	106%	1.07	1.00	107%	0.9%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	101%	103%
d8-Toluene	102%	103%

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS

NWTPHD by GC/FID
 Extraction Method: SW3510C
 Page 1 of 1

QC Report No: YZ96-Golder Associates
 Project: Master Park Lot C
 073-93368-06-09A



Matrix: Water

Date Received: 09/12/14

Data Release Authorized: *B*
 Reported: 10/02/14

ARI ID	Sample ID	Analysis Date	DF	Range	Result	LOQ	DL
MB-091514 14-18649	Method Blank	09/19/14 FID9	1.0	Diesel Range Motor Oil Range HC ID o-Terphenyl	< 0.10 U < 0.20 U --- 54.3%	0.10 0.20	0.02 0.04
YZ96B 14-18649	MPLOT-MW-18-091114	09/19/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	0.14 < 0.20 U DIESEL 77.0%	0.10 0.20	0.02 0.04
YZ96C 14-18650	MPLOT-MW-091114	09/19/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	< 0.10 U < 0.20 U --- 58.6%	0.10 0.20	0.02 0.04
YZ96D 14-18651	MPLOT-MW-7-091114	09/19/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	11 E 0.41 DIESEL/RRO 78.3%	0.10 0.20	0.02 0.04
YZ96D DL 14-18651	MPLOT-MW-7-091114	09/20/14 FID9	10	Diesel Motor Oil HC ID o-Terphenyl	11 < 2.0 U DIESEL 63.6%	1.0 2.0	0.22 0.44
YZ96E 14-18652	MPLOT-MW-12-091114	09/19/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	0.35 < 0.20 U DIESEL 87.5%	0.10 0.20	0.02 0.04
YZ96F 14-18653	MPLOT-MW-22-091214	09/19/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	1.1 < 0.20 U DRO 70.6%	0.10 0.20	0.02 0.04
YZ96G 14-18654	MPLOT-MW-22-DUP-091214	09/19/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	1.0 < 0.20 U DRO 71.2%	0.10 0.20	0.02 0.04
YZ96H 14-18655	PORT-MW-B-091214	09/19/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	< 0.10 U < 0.20 U --- 92.0%	0.10 0.20	0.02 0.04

Reported in mg/L (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.

YZ96: 492 B 10/2/14

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: YZ96-Golder Associates
Project: Master Park Lot C
073-93368-06-09A

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-091514	54.3%	0
LCS-091514	85.2%	0
LCSD-091514	91.4%	0
MPLOT-C-MW-18-091114	77.0%	0
MPLOT-C-FB-091114	58.6%	0
MPLOT-C-MW-7-091114	78.3%	0
MPLOT-C-MW-7-091114 DL	63.6%	0
MPLOT-C-MW-12-091114	87.5%	0
MPLOT-C-MW-22-091214	70.6%	0
MPLOT-C-MW-22-DUP-091214	71.2%	0
PORT-MW-B-091214	92.0%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 14-18649 to 14-18655

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID

Page 1 of 1

Sample ID: LCS-091514

LCS/LCSD

Lab Sample ID: LCS-091514

LIMS ID: 14-18649

Matrix: Water

Data Release Authorized: *mw*

Reported: 09/22/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: NA

Date Received: NA

Date Extracted LCS/LCSD: 09/15/14

Sample Amount LCS: 500 mL

LCSD: 500 mL

Date Analyzed LCS: 09/19/14 14:05

Final Extract Volume LCS: 1.0 mL

LCSD: 09/19/14 14:26

LCSD: 1.0 mL

Instrument/Analyst LCS: FID9/VTs

Dilution Factor LCS: 1.00

LCSD: FID9/VTs

LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.84	3.00	94.7%	2.88	3.00	96.0%	1.4%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	85.2%	91.4%

Results reported in mg/L

RPD calculated using sample concentrations per SW846.

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 09/12/14

ARI Job: YZ96
Project: Master Park Lot C
073-93368-06-09A

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
14-18649-091514MB1	Method Blank	500 mL	1.00 mL	09/15/14
14-18649-091514LCS1	Lab Control	500 mL	1.00 mL	09/15/14
14-18649-091514LCSD1	Lab Control Dup	500 mL	1.00 mL	09/15/14
14-18649-YZ96B	MPLOT-MW-18-091114	500 mL	1.00 mL	09/15/14
14-18650-YZ96C	MPLOT-MW-091114	500 mL	1.00 mL	09/15/14
14-18651-YZ96D	MPLOT-MW-7-091114	500 mL	1.00 mL	09/15/14
14-18652-YZ96E	MPLOT-MW-12-091114	500 mL	1.00 mL	09/15/14
14-18653-YZ96F	MPLOT-MW-22-091214	500 mL	1.00 mL	09/15/14
14-18654-YZ96G	MPLOT-MW-22-DUP-091500	500 mL	1.00 mL	09/15/14
14-18655-YZ96H	PORT-MW-B-091214	500 mL	1.00 mL	09/15/14

APPENDIX B
SAMPLE INTEGRITY DATA SHEETS (SIDS)

SAMPLE INTEGRITY DATA SHEET

Plant/Site Master Park Lot C Project No. 073-93368-06.09A

Site Location SeaTac, WA Sample ID MPL0TC-MW-6- 091014

Sampling Location At end of sample tubing

Low Flow Sampling

Technical Procedure Reference(s) App E – Compliance Monitoring Plant Plan (Golder, Nov 2011)

Type of Sampler QED Controller and Bladder Pump – Dedicated Tubing

Date 9/10/2014 Time 1350

Media Water Station MW-6

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: — Free Product Thickness: none

Date & Time of Measurement: 9/10/2014 @ 843 - WL at below top of pump

Measurements are in feet below top of well casing.

Sample Intake Point: 60 ft below top of well casing

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

See Field Parameters Sheet

<u>Aliquot Amount</u>	<u>Analysis</u>	<u>Container</u>	<u>Preservative</u>
(5) 40 mL	NWTPH-gasoline & BTEX	VOA vial	HCl
	EDB (ethylene dibromide)		
	N-hexane		
	Naphthalene		
(2) 500 mL	NTWPH-Dx	Amber Glass	none

Sampler (signature) [Signature]

Date 9/10/2014

Supervisor (signature) [Signature]

Date 9/12/2014

FIELD PARAMETERS SHEET

Well ID MW-6
 Date 9/10/2014
 Time Begin Purge 1305
 Time Collect Sample 1350

(pH)

Water Level feet bmp	Time	Volume Purged	pH	Conductivity (uS/cm)	Temp. (°C)	DO (mg/L)	Turbidity (NTU)
	1315		6.32	315	15.5	2.27	101
	1320		6.28	314	15.6	1.89	57.9
	1325		6.28	311	15.6	1.75	36.9
	1330		6.28	311	15.7	1.67	21.8
	1335		6.28	312	15.9	1.58	15.9
	1340		6.27	311	15.9	1.55	12.5
	1345		6.27	312	15.9	1.52	11.8

Comments:

* Turbid @ start of purge.

Nitrogen Tank: 110 psi
 Throttle: 50 psi
 Cycle ID: 50 (~~2051105~~) JS1103 (103/55)
 CPM: 4
 Purge Rate: ~175 mL/min
 PID: 0.0 ppm

Water level fluctuation with pump cycle: n/a

Sampler's Initials JSI

SAMPLE INTEGRITY DATA SHEET

Plant/Site Master Park Lot C

Project No. 073-96668-06.09A

Site Location SeaTac, WA

Sample ID MPLOT-C-MW-7-091114

Sampling Location At end of sample tubing

MPLOT-C-FB-091114

Low Flow Sampling

Technical Procedure Reference(s) App E – Compliance Monitoring Plant Plan (Golder, Nov 2011)

Type of Sampler QED Controller and Bladder Pump – Dedicated Tubing

Date 9/11/2014

Time 1230

FB @ 1155

Media Water

Station MW-7

Sample Type: grab

time composite

space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 48.25' Free Product Thickness: none

Date & Time of Measurement: 9/10/2014 @ 9:19

Measurements are in feet below top of well casing.

Sample Intake Point: 52 ft below top of well casing

Sample Description clear, TPH odor

Field Measurements on Sample (pH, conductivity, etc.)

See Field Parameters Sheet

<u>Aliquot Amount</u>	<u>Analysis</u>	<u>Container</u>	<u>Preservative</u>
(5) 40 mL	NWTPH-gasoline & BTEX	VOA vial	HCl
	EDB (ethylene dibromide)		
	N-hexane		
	Naphthalene		
(2) 500 mL	NTWPH-Dx	Amber Glass	none
(2) 40mL	504.1 EDB	VOA vial	HCl

Sampler (signature) [Signature]

Date 9/11/2014

Supervisor (signature) [Signature]

Date 9/12/2014

FIELD PARAMETERS SHEET

Well ID MW-7

Date 9/11/2014

Time Begin Purge 1152

Time Collect Sample 1230

(pH)

[illegible]

Comments:

Nitrogen Tank: 110 psi

Throttle: 40 psi

Cycle ID: 50 (20/10)

CPM: 2

Purge Rate: 500 mL/min

PID: 0.0 ppm

- suction in well

- TPH odor

- collected FB @ MW-7 @ 1155
by pouring lab-provided DI water into
bottle set MPlotC-FB-091114

Water level fluctuation with pump cycle: $n \text{ la}$

Sampler's Initials jsl

SAMPLE INTEGRITY DATA SHEET

Plant/Site Master Park Lot C Project No. 073-96668-06.09A

Site Location SeaTac, WA Sample ID MPL0TC-MW-9- 091014

Sampling Location At end of sample tubing

Low Flow Sampling

Technical Procedure Reference(s) App E – Compliance Monitoring Plant Plan (Golder, Nov 2011)

Type of Sampler QED Controller and Bladder Pump – Dedicated Tubing

Date 9/10/2014 Time 1540

Media Water Station MW-9

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: ^{N/A} ~~51.4~~ ^{1 psi} Free Product Thickness: none

Date & Time of Measurement: 9/10/2014 09:50 top of pump above WL

Measurements are in feet below top of well casing.

Sample Intake Point: 54 ft below top of well casing

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

See Field Parameters Sheet

<u>Aliquot Amount</u>	<u>Analysis</u>	<u>Container</u>	<u>Preservative</u>
(5) 40 mL	NWTPH-gasoline & BTEX	VOA vial	HCl
	EDB (ethylene dibromide)		
	N-hexane		
	Naphthalene		
(2) 500 mL	NTWPH-Dx	Amber Glass	none
(2) 40 mL	Low Level EDB	VOA vial	HCl

Sampler (signature) 

Date 9/10/2014

Supervisor (signature) 

Date 9/12/2014

FIELD PARAMETERS SHEET

Well ID MW-9
 Date 9/10/2014
 Time Begin Purge 1456
 Time Collect Sample 1540

Water Level feet bmp	Time	Volume Purged	pH	Conductivity (uS/cm)	Temp. (°C)	DO (mg/L)	Turbidity (NTU)
	1506		6.49	308	15.8	0.40	7.22
	1511		6.50	308	15.8	0.31	5.25
	1516		6.48	308	15.7	0.27	4.75
	1521		6.49	307	15.7	0.24	4.71
	1526		6.49	309	15.7	0.22	4.29
	1531		6.49	309	15.7	0.21	3.90
	1536		6.49	310	15.7	0.20	3.85

Comments:

* can hear suction in well

Nitrogen Tank: 110 psi
 Throttle: 60 psi
 Cycle ID: 103 (10/5)
 CPM: 4
 Purge Rate: ~225 mL/min
 PID: 0.0 ppm

Water level fluctuation with pump cycle: N/A

Sampler's Initials JSI

SAMPLE INTEGRITY DATA SHEET

Plant/Site Master Park Lot C

Project No. 073-96668-06.09A

Site Location SeaTac, WA

Sample ID MPLOTG-MW-12-091114

Sampling Location At end of sample tubing

Low Flow Sampling

Technical Procedure Reference(s) App E – Compliance Monitoring Plant Plan (Golder, Nov 2011)

Type of Sampler QED Controller and Bladder Pump – Dedicated Tubing

Date 9/11/2014

Time 1415

Media Water

Station MW-12

Sample Type: grab

time composite

space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 55.21' Free Product Thickness:

Date & Time of Measurement: 9/10/2014 @ 9:27

Measurements are in feet below top of well casing.

Sample Intake Point: 59 ft below top of well casing

Sample Description clear, TPH odor

Field Measurements on Sample (pH, conductivity, etc.)

See Field Parameters Sheet

<u>Aliquot Amount</u>	<u>Analysis</u>	<u>Container</u>	<u>Preservative</u>
(5) 40 mL	NWTPH-gasoline & BTEX	VOA vial	HCl
	EDB (ethylene dibromide)		
	N-hexane		
	Naphthalene		
(2) 500 mL	NTWPH-Dx	Amber Glass	none
(2) 40mL	low level EDB (504.1)	VOA vial	HCl

Sampler (signature) Jell Leule

Date 9/11/2014

Supervisor (signature) D. J. Miller

Date 9/12/2014

FIELD PARAMETERS SHEET

Well ID MW-12
 Date 9/11/2014
 Time Begin Purge 1242
 Time Collect Sample 1415

Water Level feet bmp	Time	Volume Purged	pH	Conductivity (uS/cm)	Temp. (°C)	DO (mg/L)	Turbidity (NTU)
	1252		8.01	284.4	19.6	9.73	13.4
	1257		8.03	280.2	21.8	9.33	9.43
	1302						
	1307		8.03	280.2	21.8	9.33	9.43
	1312		8.00	275.1	21.8	9.23	21.3
	1317	1350	8.01	256.3	18.9	9.20	10.5
	1322	1355	8.04	257.6	21.2	9.32	12.3
	1327	1400	7.95	258.5	21.8	9.28	50.5
	1405	1	7.99	256.6	17.9	12.19	59.5
	1410		8.04	255.1	18.1	11.80	38.8

Comments:

Nitrogen Tank: 110 psi
 Throttle: 40 psi
 Cycle ID: 50 (20/10)
 CPM: 2
 Purge Rate: 200 mL/min
 PID: 0.0 ppm

- slight amount of suction
 - TPT odor, lots of brown specks
 * - bubbles in line, pulled pump - pump is coated in dirt and intake is clogged. Cleaned, put pump back in at 1 ft below WL and restarted. Still bubbles. May need to pull pump + clean in lab for next time. Called D. Morell.

* Is well sedimented up? Pump is very clogged.
 Water level fluctuation with pump cycle: n/a

Sampler's Initials JSL

- Pulled a bailer - clear.
 - Put pump back in after washing - still slow - just going to bail out well for sample. but enough to get sample.
 - Slow recharge?

SAMPLE INTEGRITY DATA SHEET

Plant/Site Master Park Lot C Project No. 073-96668-06.09A

Site Location SeaTac, WA Sample ID MPL0TC-MW-13- 091014

Sampling Location At end of sample tubing

Low Flow Sampling

Technical Procedure Reference(s) App E – Compliance Monitoring Plant Plan (Golder, Nov 2011)

Type of Sampler QED Controller and Bladder Pump – Dedicated Tubing

Date 9/10/2014 Time 1635

Media Water Station MW-13

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 54.57' Free Product Thickness: none

Date & Time of Measurement: 9/10/2014 @ 8:59

Measurements are in feet below top of well casing.

Sample Intake Point: 60 ft below top of well casing

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

See Field Parameters Sheet

<u>Aliquot Amount</u>	<u>Analysis</u>	<u>Container</u>	<u>Preservative</u>
(5) 40 mL	NWTPH-gasoline & BTEX	VOA vial	HCl
	EDB (ethylene dibromide)		
	N-hexane		
	Naphthalene		
(2) 500 mL	NTWPH-Dx	Amber Glass	none
(2) 40 mL	low level EDB (504.1)	VOA vial	HCl

Sampler (signature) [Signature]

Date 9/10/2014

Supervisor (signature) [Signature]

Date 9/12/2014

Well ID MW-13
Date 9/16/2014
Time Begin Purge 1551
Time Collect Sample 1635

(pH)

[illegible]

Nitrogen Tank: 110 psi
Throttle: 50 psi
Cycle ID: 50 (20/10)
CPM: 2
Purge Rate: ~ 300 mL/min
PID: 0.0 ppm

- Readings jumping around - could be due to amount of suction.

Water level fluctuation with pump cycle: n l q

Sampler's Initials JS

SAMPLE INTEGRITY DATA SHEET

Plant/Site Master Park Lot C

Project No. 073-96668-06.09A

Site Location SeaTac, WA

Sample ID MPLOTG-MW-17A-091014

Sampling Location At end of sample tubing

+ MS/MSD

Low Flow Sampling

Technical Procedure Reference(s) App E – Compliance Monitoring Plant Plan (Golder, Nov 2011)

Type of Sampler QED Controller and Bladder Pump – Dedicated Tubing

Date 9/10/2014

Time 1045

Media Water

Station MW-17A

Sample Type: grab

time composite

space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 8451 Free Product Thickness: none ~~@ 948~~

Date & Time of Measurement: 9/10/14 @ 948

Measurements are in feet below top of well casing.

Sample Intake Point: 90 ft below top of well casing

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

See Field Parameters Sheet

<u>Aliquot Amount</u>	<u>Analysis</u>	<u>Container</u>	<u>Preservative</u>
3x (5) 40 mL	NWTPH-gasoline & BTEX	VOA vial	HCl
	EDB (ethylene dibromide)		
	N-hexane		
	Naphthalene		
3x (2) 500 mL	NTWPH-Dx	Amber Glass	none

Sampler (signature) [Signature]

Date 9/10/14

Supervisor (signature) [Signature]

Date 9/12/2014

FIELD PARAMETERS SHEET

Well ID MW-17A
Date 9/10/2014
Time Begin Purge 1003
Time Collect Sample 1045

[illegible]

Comments:

-collected msimsd Volume

Nitrogen Tank: 110 psi
Throttle: 60 psi
Cycle ID: 50 (205/1105)
CPM: 2
Purge Rate: ~150 mL/min $\times 2 = \sim 300$ mLs/min
PID: 0.0 ppm

Water level fluctuation with pump cycle: *n/a*

Sampler's Initials JS

SAMPLE INTEGRITY DATA SHEET

Plant/Site Master Park Lot C

Project No. 073-96668-06.09A

Site Location SeaTac, WA

Sample ID MPLOTTC-MW-18- 091114

Sampling Location At end of sample tubing

Low Flow Sampling

Technical Procedure Reference(s) App E – Compliance Monitoring Plant Plan (Golder, Nov 2011)

Type of Sampler QED Controller and Bladder Pump – Dedicated Tubing

Date 9/11/2014

Time 1140

Media Water

Station MW-18

Sample Type: grab

time composite

space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 50.33 Free Product Thickness: none

Date & Time of Measurement: 9/10/2014 @ 9:23

Measurements are in feet below top of well casing.

Sample Intake Point: 54 ft below top of well casing

Sample Description clear, slight TPH odor

Field Measurements on Sample (pH, conductivity, etc.)

See Field Parameters Sheet

<u>Aliquot Amount</u>	<u>Analysis</u>	<u>Container</u>	<u>Preservative</u>
(5) 40 mL	NWTPH-gasoline & BTEX	VOA vial	HCl
	EDB (ethylene dibromide)		
	N-hexane		
	Naphthalene		
(2) 500 mL	NTWPH-Dx	Amber Glass	none
(2) 40mL	Low level EDB (504.1)	VOA vial	HCl

Sampler (signature)

[Signature]

Date 9/11/2014

Supervisor (signature)

[Signature]

Date 9/12/2014

FIELD PARAMETERS SHEET

Well ID MW-18

Date 9/11/2014

Time Begin Purge 1059

Time Collect Sample 1140

(pH)

[illegible]

Comments:

- slight suction

Nitrogen Tank: 110 psi

Throttle: 40 psi

Cycle ID: 50 (20/10)

CPM: 2

Purge Rate: 250 mL/min

PID: 0.0 ppm

Water level fluctuation with pump cycle: nla

Sampler's Initials jsl

SAMPLE INTEGRITY DATA SHEET

Plant/Site Master Park Lot C

Project No. 073-96668-06.09A

Site Location SeaTac, WA

Sample ID MPLOT-C-MW-19-091014

Sampling Location At end of sample tubing

Low Flow Sampling

Technical Procedure Reference(s) App E – Compliance Monitoring Plant Plan (Golder, Nov 2011)

Type of Sampler QED Controller and Bladder Pump – Dedicated Tubing

Date 9/10/2014

Time 1445

Media Water

Station MW-19

Sample Type: grab

time composite

space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 46.28 Free Product Thickness: none

Date & Time of Measurement: 9/10/2014 @ 9.13

Measurements are in feet below top of well casing.

Sample Intake Point: 50 ft below top of well casing

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

See Field Parameters Sheet

<u>Aliquot Amount</u>	<u>Analysis</u>	<u>Container</u>	<u>Preservative</u>
(5) 40 mL	NWTPH-gasoline & BTEX	VOA vial	HCl
	EDB (ethylene dibromide)		
	N-hexane		
	Naphthalene		
(2) 500 mL	NTWPH-Dx	Amber Glass	none

Sampler (signature) [Signature]

Date 9/10/2014

Supervisor (signature) [Signature]

Date 9/12/2014

SAMPLE INTEGRITY DATA SHEET

Plant/Site Master Park Lot C

Project No. 073-96668-06.09A

Site Location SeaTac, WA

Sample ID MPLOTTC-MW-20- 091014

Sampling Location At end of sample tubing

Low Flow Sampling

Technical Procedure Reference(s) App E – Compliance Monitoring Plant Plan (Golder, Nov 2011)

Type of Sampler QED Controller and Bladder Pump – Dedicated Tubing

Date 9/10/14

Time 1240

Media Water

Station MW-20

Sample Type: grab

time composite

space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 106.99' Free Product Thickness: none

Date & Time of Measurement: 9/10/14 @ 942

Measurements are in feet below top of well casing.

Sample Intake Point: 111 ft below top of well casing

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

See Field Parameters Sheet

<u>Aliquot Amount</u>	<u>Analysis</u>	<u>Container</u>	<u>Preservative</u>
(5) 40 mL	NWTPH-gasoline & BTEX	VOA vial	HCl
	EDB (ethylene dibromide)		
	N-hexane		
	Naphthalene		
(2) 500 mL	NTWPH-Dx	Amber Glass	none

Sampler (signature) [Signature]

Date 9/10/2014

Supervisor (signature) [Signature]

Date 9/12/2014

FIELD PARAMETERS SHEET

Well ID MW-20

Date 9/16/2014

Time Begin Purge 12:00

Time Collect Sample 1240

(pH)

[illegible]

Comments:

Nitrogen Tank: 110 psi

Throttle: 70 psi

Cycle ID: 50 (20s/10s)

CPM: 2

Purge Rate: ~300 mL/min

PID: 0.0 ppm

Water level fluctuation with pump cycle: Δh

Sampler's Initials Jsl

SAMPLE INTEGRITY DATA SHEET

Plant/Site Master Park Lot C Project No. 073-96668-06.09A

Site Location SeaTac, WA Sample ID MPLOT-C-MW-21-091014

Sampling Location At end of sample tubing

Low Flow Sampling

Technical Procedure Reference(s) App E – Compliance Monitoring Plant Plan (Golder, Nov 2011)

Type of Sampler QED Controller and Bladder Pump – Dedicated Tubing

Date 9/10/2014 Time 1150

Media Water Station MW-21

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 103.10' Free Product Thickness: none

Date & Time of Measurement: 9/10/14 @ 9:42 9:36 jz

Measurements are in feet below top of well casing.

Sample Intake Point: 107 ft below top of well casing

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

See Field Parameters Sheet

<u>Aliquot Amount</u>	<u>Analysis</u>	<u>Container</u>	<u>Preservative</u>
(5) 40 mL	NWTPH-gasoline & BTEX	VOA vial	HCl
	EDB (ethylene dibromide)		
	N-hexane		
	Naphthalene		
(2) 500 mL	NTWPH-Dx	Amber Glass	none

Sampler (signature) [Signature]

Date 9/10/2014

Supervisor (signature) [Signature]

Date 9/12/2014

SAMPLE INTEGRITY DATA SHEET

Plant/Site Master Park Lot C

Project No. 073-96668-06.09A

Site Location SeaTac, WA

Sample ID MPLOTG-MW-22-091214

Sampling Location At end of sample tubing

MPLOTG-MW-22-DUP-091214

Low Flow Sampling

Technical Procedure Reference(s) App E – Compliance Monitoring Plant Plan (Golder, Nov 2011)

Type of Sampler QED Controller and Bladder Pump – Dedicated Tubing

Date 9/12/2014

Time 1040, 1045 (dup)

Media Water

Station MW-22

Sample Type: grab

time composite

space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 82.99' Free Product Thickness: none

Date & Time of Measurement: 9/12/14 @ 0955

Measurements are in feet below top of well casing.

Sample Intake Point: 89 ft below top of well casing

Sample Description clear, slight TPH odor

Field Measurements on Sample (pH, conductivity, etc.)

See Field Parameters Sheet

<u>Aliquot Amount</u>	<u>Analysis</u>	<u>Container</u>	<u>Preservative</u>
(5 x 2) 40 mL	NWTPH-gasoline & BTEX	VOA vial	HCl
	EDB (ethylene dibromide)		
	N-hexane		
	Naphthalene		
2x (2) 500 mL	NTWPH-Dx	Amber Glass	none

Sampler (signature)

[Signature]

Date 9/12/2014

Supervisor (signature)

[Signature]

Date 9/12/2014

FIELD PARAMETERS SHEET

Well ID MW-22

Date 9/12/2014

Time Begin Purge 0959

Time Collect Sample 1040, 1045 (dup)

(pH)

[illegible]

Comments:

Nitrogen Tank: 110 psi

Throttle: 55 psi

Cycle ID: 50

CPM: 2

Purge Rate: ~280 mL/min

PID: 0.0 ppm

Water level fluctuation with pump cycle: *N/A*

Sampler's Initials isl

SAMPLE INTEGRITY DATA SHEET

Plant/Site Master Park Lot C Project No. 073-96668-06.09A

Site Location SeaTac, WA Sample ID PORT-MW-B- 091214

Sampling Location At end of sample tubing

Low Flow Sampling

Technical Procedure Reference(s) App E – Compliance Monitoring Plant Plan (Golder, Nov 2011)

Type of Sampler QED Controller and Bladder Pump – Dedicated Tubing

Date 9/12/2014 Time 1216

Media Water Station PORT-MW-B

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

Static Water Level: 89.69' Free Product Thickness: none

Date & Time of Measurement: 9/12/2014 @ 11:23

Measurements are in feet below top of well casing.

Sample Intake Point: 89 ft below top of well casing

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

See Field Parameters Sheet

<u>Aliquot Amount</u>	<u>Analysis</u>	<u>Container</u>	<u>Preservative</u>
(5) 40 mL	NWTPH-gasoline & BTEX	VOA vial	HCl
	EDB (ethylene dibromide)		
	N-hexane		
	Naphthalene		
(2) 500 mL	NTWPH-Dx	Amber Glass	none

Sampler (signature) [Signature]

Date 9/12/2014

Supervisor (signature) [Signature]

Date 9/12/2014

FIELD PARAMETERS SHEET

Well ID PORT-MW-B
 Date 9/12/2014
 Time Begin Purge 1126
 Time Collect Sample 1210

(pH)

Water Level feet bmp	Time	Volume Purged	pH	Conductivity (uS/cm)	Temp. (°C)	DO (mg/L)	Turbidity (NTU)
	1136		6.56	263.6	14.2	4.49	29.6
	1141		6.55	263.4	14.6	4.35	14.4
	1146		6.55	263.5	14.6	4.09	7.26
	1151		6.56	264.3	13.9	3.86	5.93
	1156		6.56	265.3	14.6	3.76	6.89
	1201		6.56	265.2	14.6	3.68	6.15
	1206		6.56	266.1	14.6	3.56	6.18

Comments:

Nitrogen Tank: 110 psi
 Throttle: 55 psi
 Cycle ID: 50 (20/10)
 CPM: 2
 Purge Rate: ~220 mL/min
 PID: 6.6 ppm

Water level fluctuation with pump cycle: n/A

Sampler's Initials jsl

APPENDIX C
DATA VALIDATION MEMORANDUM

DATA VALIDATION CHECKLIST

Project Name:	Masterpark Lot C – Seatac Development Site
Project Number:	073-93368.06.09A
Sample Identification(s):	Trip Blank-091014, MPLOT-MW-06-091014, MPLOT-MW-21-091014, MPLOT-MW-17A-091014, MPLOT-MW-19-091014, MPLOT-MW-09-091014, MPLOT-MW-13-091014, MPLOT-MW-18-091114, MPLOT-FB-091114, MPLOT-MW-07-091114, MPLOT-MW-12-091114, Trip Blank-091114, MPLOT-MW-20-091014, MPLOT-MW-22-091214, MPLOT-MW-22-DUP-091214, PORT-MW-B-091214
Sample Date(s):	9/10/2014, 9/11/2014 and 9/12/2014
Sample Team:	Jill Lamberts, Aaron Rydecki, Golder Associates
Sample Matrix:	Aqueous
Analyzing Laboratory:	Analytical Resources Inc (ARI) – Tukwila WA
Analyses:	NWTPH-Gx/BTEX, EPA 8260C (EDB, N-hexane, Naphthalene), NWPTH-Dx, EPA 8260C-SIM (EDB).
Laboratory Report No.:	YZ53 and YZ96

FIELD DATA PACKAGE DOCUMENTATION

Field Sampling Logs:	Reported		Performance Acceptable		Not Required
	NO	YES	NO	YES	
1. Sampling dates noted		X		X	
2. Sampling team indicated		X		X	
3. Sampling identification traceable to location collected		X		X	
4. Sample location		X		X	
5. Collection technique (bailer, pump, etc.)		X		X	
6. Sample container type		X		X	
7. Preservation methods		X		X	
8. Chain-of-custody form completed		X		X	
9. Required analytical methods requested		X		X	
10. Field sample logs completed properly and signed		X		X	
11. Number and type of field QC samples collected		X		X	
12. Field equipment calibration		X		X	
13. Field equipment decontamination		X		X	

QC – quality control

COMMENTS:

Performance was acceptable.

ANALYTICAL DATA PACKAGE DOCUMENTATION

GENERAL INFORMATION

	Reported		Performance Acceptable		Not Required
	NO	YES	NO	YES	
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Method of analysis		X		X	
4. Reporting limits of analysis		X		X	
5. Sample collection date		X		X	
6. Laboratory sample received date		X		X	
7. Sample preparation/extraction date		X		X	
8. Sample analysis date		X		X	
9. Copy of chain-of-custody form signed by lab sample custodian		X		X	
10. Narrative summary of QA or sample problems provided		X		X	

QA – quality assurance

COMMENTS:

Performance was acceptable, with the following exceptions and/or notes:

- Cooler temperatures were all $4 \pm 2^{\circ}\text{C}$.
- 2 Trip Blanks, 12 samples, 1 field duplicate, and 1 field blank submitted per work plan.
- Sample IDs for MPLOT-C-MW-22-091214 and MPLOT-C-MW-22-DUP-091214 were logged in to the lab incorrectly. The lab was contacted and a revised report was provided.

ORGANIC ANALYSES

EDB, N-hexane, Naphthalene (EPA 8260C) and EDB by (EPA 8260C-SIM)	Reported		Performance Acceptable		Not Required
	NO	YES	NO	YES	
1. Holding times		X		X	
2. Reporting limits		X		X	
3. Blanks					
a. Method blanks		X	X		
b. Field blanks and Trip Blanks		X		X	
4. Laboratory control sample (LCS) %R		X	X		
5. Matrix spike (MS) %R		X		X	
6. LCS duplicate (LCSD) %R		X	X		
7. MS duplicate (MSD) %R		X	X		
8. MS / MSD RPD		X		X	
9. LCS / LCSD RPD		X		X	
10. Surrogate %R		X	X		
11. Laboratory Duplicate RPD	X				X
12. Field duplicate comparison		X		X	

%R – percent recovery

RPD – relative percent difference

COMMENTS:

Performance was acceptable, with the following exceptions and/or notes:

- SDG YZ53: Surrogate d4-1,2-Dichloroethane (DCE) for the 8260C-SIM analysis was out of control above the control limits for sample MPlotC-MW-09-091014. No qualification is necessary for results that are non-detects. Detects are qualified as **estimated (J)**. EDB is non-detect for this sample so no qualification was necessary.
- SDG YZ53: Surrogate d4-1,2-Dichloroethane (DCE) for the 8260C analysis was out of control above the control limits for sample MPlotC-MW-09-091014. No qualification is necessary for results that are non-detects. Detects are qualified as **estimated (J)**. EDB is non-detect for this sample so no qualification was necessary. Naphthalene is detected and is qualified as estimated (**J**). No qualification is necessary for hexane as the analyte is not associated with the surrogate.
- SDG YZ53: The LCSD analyzed on 9/22/2014 for 8260C analysis was out of control above the control limits for naphthalene. No qualification is necessary for results that are non-detects. Detects are qualified as **estimated (J)**. Naphthalene sample result for MPlotC-MW-17A-091014 is qualified as **estimated (J)**. All other samples are non-detect for naphthalene.
- SDG YZ53: The MSD for 8260C analysis was out of control above the control limits for naphthalene. Naphthalene sample result for MPlotC-MW-17A-091014 is qualified as **estimated (J)**.
- SDG YZ53: Naphthalene for MPlotC-MW-09-091014 had to be analyzed at a dilution because initial analysis was qualified E by the lab (*Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte*). The reanalysis was within the instrument calibration range and is the result that should be reported. The initial result for naphthalene is qualified as **DNR** (do not report). The diluted results for EDB and hexane for each of the samples are also qualified as **DNR** and the initial results are reported.
- MPlotC-FB-091114 field blank (FB), Trip Blank-091014, and Trip Blank-091114 had no detections.

- SDG YZ96: Method blanks, MB-091914A and MB-092414A contained naphthalene. Lab qualified detections as 'B' (*analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample*). MB-091914A has naphthalene at 0.19 J µg/L and MB-092414A has naphthalene at 0.16 J µg/L. Qualify associated results that are less than the LOQ but greater than the DL as **non-detects (U)** at the LOQ value (no samples). Qualify associated results that are greater than the LOQ but less than 2X the LOQ as **estimated with a high bias (J+)** (samples MPLOT-MW-12-091114). No action for results that are greater than 2X the LOQ or less than the DL (Trip Blank-091114, MPLOT-MW-18-091114, MPLOT-FB-091114, MPLOT-MW-07-091114, MPLOT-MW-22-091214, MPLOT-MW-22-DUP-091214, and PORT-MW-B-091214).
- SDG YZ96: Surrogate d4-1,2-Dichloroethane (DCE) for the 8260C-SIM analysis was out of control above the control limits for sample MPLOT-MW-07-091114. No qualification is necessary for results that are non-detects. Detects are qualified as **estimated (J)**. EDB is non-detect for this sample so no qualification was necessary.
- SDG YZ96: Surrogate d4-1,2-Dichloroethane (DCE) for the 8260C analysis was out of control above the control limits for sample MPLOT-MW-22-DUP-091214. The sample was reanalyzed and the surrogate recoveries were in control. The lab provided both sets of results. No qualification is necessary for results that are non-detects. Detects are qualified as **estimated (J)**. EDB is non-detect for this sample so no qualification was necessary. Naphthalene is detected and is qualified as **estimated (J)** for the initial analysis of the sample. No qualification is necessary for hexane as the analyte is not associated with the surrogate.
- SDG YZ96: The LCS and LCSD analyzed on 9/19/2014 for 8260C analysis were out of control above the control limits for naphthalene. No qualification is necessary for results that are non-detects. Detects are qualified as **estimated (J)**. Naphthalene sample results for MPLOT-MW-07-091114, MPLOT-MW-12-091114, MPLOT-MW-22-091214, MPLOT-MW-22-DUP-091214 (initial result and diluted result) are qualified as **estimated (J)**. All other samples are non-detect for naphthalene (Trip Blank-091114, MPLOT-MW-18-091114, and MPLOT-FB-091114).
- SDG YZ96: Naphthalene for MPLOT-MW-22-DUP-091214 had to be analyzed at a dilution because initial analysis was qualified E by the lab (*Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte*). The reanalysis was within the instrument calibration range and is the result that should be reported. The initial result is qualified as **DNR** (do not report) for Naphthalene. The diluted results for EDB for the sample are also qualified as **DNR** and the initial results are reported. The diluted result for hexane was reported instead of the initial result since it was the higher value. The initial result for hexane was qualified as **DNR**.
- SDG YZ96: A field duplicate was collected and sample IDs were MPLOT-MW-22-091214 and MPLOT-MW-22-DUP-091214. Relative percent differences were <20% for all analytes or results were < 5X LOQ.
- SDG YZ96: Reporting limits were raised for EDB, naphthalene, and hexane in samples MPLOT-MW-07-091114, MPLOT-MW-22-091214, and MPLOT-MW-22-DUP-091214 (diluted result). Lab was contacted for more information and reported that the samples were analyzed at a dilution due to the presence of other non-target compounds. High levels of volatiles made a 20X dilution necessary to prevent instrument damage. No further action was taken other than to note.

ORGANIC ANALYSES

NWTPH-Dx (Diesel and Motor Oil)	Reported		Performance Acceptable		Not Required
	NO	YES	NO	YES	
1. Holding times		X		X	
2. Reporting limits		X		X	
3. Blanks					
a. Method blanks		X		X	
b. Field blanks		X		X	
4. Laboratory control sample (LCS) %R		X		X	
5. Matrix spike (MS) %R		X		X	
6. LCS duplicate (LCSD) %R		X		X	
7. MS duplicate (MSD) %R		X		X	
8. MS / MSD RPD		X		X	
9. LCS / LCSD RPD		X		X	
10. Surrogate %R		X		X	
11. Laboratory Duplicate RPD	X				X
12. Field duplicate comparison		X		X	

%R – percent recovery

RPD – relative percent difference

COMMENTS:

Performance was acceptable, with the following exceptions and/or notes:

- The motor oil result for samples MPLOT-C-MW-07-091114 (initial result) was qualified by the lab as RRO (*indicates results of organics or additional hydrocarbons in ranges are not identifiable*). Qualify motor oil results as **estimated (J)**.
- The diesel result for samples MPLOT-C-MW-22-091214 and MPLOT-C-MW-22-DUP-091214 were qualified by the lab as DRO (*indicates results of organics or additional hydrocarbons in ranges are not identifiable*). Qualify diesel results as **estimated (J)**.
- SDG YZ96: A field duplicate was collected and sample IDs were MPLOT-C-MW-22-091214 and MPLOT-C-MW-22-DUP-091214. Relative percent differences (RPDs) were <20% or results were <5X RL for all analytes.
- SDG YZ96: Diesel for MPLOT-C-MW-07-091114 had to be analyzed at a dilution because initial analysis was qualified E by the lab (*Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte*). The reanalysis was within the instrument calibration range and is the result that should be reported. The initial result is qualified as **DNR** (do not report). The diluted result for Motor Oil is also qualified as **DNR** to select the result with the lower detection limit.
- YZ966: MPLOT-C-FB-091114 field blank (FB) had no detections.

ORGANIC ANALYSES

NWTPH-Gx/BTEX (Gasoline, Benzene, Toluene, Ethylbenzene, m,p-Xylene, and o-Xylene)	Reported		Performance Acceptable		Not Required
	NO	YES	NO	YES	
1. Holding times		X		X	
2. Reporting limits		X		X	
3. Blanks					
a. Method blanks		X		X	
b. Field blanks and Trip Blanks		X		X	
4. Laboratory control sample (LCS) %R		X		X	
5. Matrix spike (MS) %R		X		X	
6. LCS duplicate (LCSD) %R		X		X	
7. MS duplicate (MSD) %R		X		X	
8. MS / MSD RPD		X		X	
9. LCS / LCSD RPD		X		X	
10. Surrogate %R		X	X		
11. Laboratory Duplicate RPD	X				X
12. Field duplicate comparison		X		X	

%R – percent recovery

RPD – relative percent difference

COMMENTS:

Performance was acceptable, with the following exceptions and/or notes:

- MPLOT-C-FB-091114 field blank (FB), Trip Blank-091014, and Trip Blank-091114 had no detections.
- SDG YZ96: Surrogate Trifluorotoluene (TFT) and Bromobenzene (BBZ) are out of control above the control limits in sample MPLOT-C-MW-07-091114. The sample was reanalyzed with surrogate recoveries in control. Both sets of data have been included by the lab. No qualification is necessary for results that are non-detects. Detects are qualified as **estimated (J)**. BTEX and Gasoline are detected and are qualified as estimated (**J**) for the initial analysis of the sample.
- SDG YZ96: Ethylbenzene, m,p-xylene, and gasoline for MPLOT-C-MW-07-091114, MPLOT-C-MW-22-091214, and MPLOT-C-MW-22-DUP-091214 had to be analyzed at a dilution because initial analysis was qualified E by the lab (*Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte*). The reanalysis was within the instrument calibration range and is the result that should be reported. The initial result is qualified as **DNR** (do not report) for Ethylbenzene, m,p-xylene, and gasoline. The diluted results for o-xylene for the sample are qualified as **DNR** and the initial results are reported since it is the higher value. The diluted result for benzene and toluene was reported instead of the initial result since they were the higher values. The initial result for benzene and toluene were qualified as **DNR**.
- SDG YZ96: Reporting limits were raised for GAS/BTEX the diluted results for samples MPLOT-C-MW-07-091114, MPLOT-C-MW-22-091214, and MPLOT-C-MW-22-DUP-091214 due to high levels of GAS/BTEX in the sample which made a 20X or 10X dilutions necessary to prevent instrument damage. No further action was taken other than to note.
- SDG YZ96: A field duplicate was collected and sample IDs were MPLOT-C-MW-22-091214 and MPLOT-C-MW-22-DUP-091214. Relative percent differences (RPDs) were <20% or < 5X LOQ for all analytes.

- Sample result for Gasoline for samples MPLOTc-MW-09-091014, MPLOTc-MW-07-091114 (initial and dilution), MPLOTc-MW-12-091114, and MPLOTc-MW-22-091214 (initial and dilution) was qualified by lab as GAS (*indicates the presences of gasoline or weathered gasoline*). No further action was taken other than to note.
- Sample result for Gasoline for sample MPLOTc-MW-22-DUP-091214 (initial and dilution) was qualified by lab as GRO (*positive result that does not match an identifiable gasoline pattern*). The gasoline result for this sample was qualified as **estimated (J)**.
- Sample results for PORT-MW-B-091214 had low level detections of ethylbenzene at 1.1 µg/L and m,p-xylene at 1.9 µg/L. The first two sampling events were non-detect for these analytes so carryover was suspected since the sample was analyzed after a sample that had an out of range result. The lab was contacted and they confirmed the results as detections. No further action was taken. Results are well below the MTCA CULs.

DATA VALIDATION CHECKLIST

SUMMARY AND DATA QUALIFIER CODES

Project Name:	Masterpark Lot C – Seatac Development Site
Project Number:	073-93368.06.09A
Sample Identification(s):	Trip Blank-091014, MPLOT-MW-06-091014, MPLOT-MW-21-091014, MPLOT-MW-17A-091014, MPLOT-MW-19-091014, MPLOT-MW-09-091014, MPLOT-MW-13-091014, MPLOT-MW-18-091114, MPLOT-FB-091114, MPLOT-MW-07-091114, MPLOT-MW-12-091114, Trip Blank-091114, MPLOT-MW-20-091014, MPLOT-MW-22-091214, MPLOT-MW-22-DUP-091214, PORT-MW-B-091214
Sample Date(s):	9/10/2014, 9/11/2014 and 9/12/2014
Sample Team:	Jill Lamberts, Aaron Rydecki, Golder Associates
Sample Matrix:	Aqueous
Analyzing Laboratory:	Analytical Resources Inc (ARI) – Tukwila WA
Analyses:	NWTPH-Gx/BTEX, EPA 8260C (EDB, N-hexane, Naphthalene), NWPTH-Dx, EPA 8260C-SIM (EDB).
Laboratory Report No.:	YZ53 and YZ96


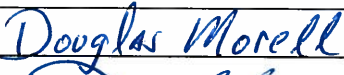

Reference

USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods

Data Review, EPA-540-R-08-01, June 2008

Sample ID	Analyte(s)	Result	Qualifier	Reason(s)
MPLOT-MW-17A-091014	Naphthalene	0.64 µg/L	J	LCSD and MSD out of control high.
MPLOT-MW-09-091014 MPLOT-MW-22-DUP-091214	Naphthalene	84 E µg/L 340 EB µg/L	J, DNR	Surrogate out of control high. Sample reanalyzed at a dilution and diluted result is reported instead.
MPLOT-MW-09-091014 DL	1,2-Dibromomethane Hexane	< 0.40 U µg/L < 0.40 U µg/L	DNR	Report initial analysis for these analytes.
MPLOT-MW-07-091114 MPLOT-MW-12-091114 MPLOT-MW-22-091214 MPLOT-MW-22-DUP-091214 MPLOT-MW-22-DUP-091214 DL	Naphthalene	300 B µg/L 0.53 B µg/L 460 B µg/L 340 EB µg/L 470 B µg/L	J	LCS/LCSD out of control high.
MPLOT-MW-12-091114	Naphthalene	0.53 B µg/L	J+	Method blank contains naphthalene
MPLOT-MW-22-DUP-091214	Hexane	8.2 µg/L	DNR	Report diluted analysis for this analyte.
MPLOT-MW-22-DUP-091214 DL	1,2-Dibromomethane	< 0.40 U µg/L	DNR	Report initial analysis for this analyte.
MPLOT-MW-07-091114	Benzene Toluene Ethylbenzene m,p-Xylene o-Xylene Gasoline	16 µg/L 75 µg/L 230 E µg/L 1,600 E µg/L 9.5 µg/L 27 E mg/L	J, DNR J, DNR J, DNR J, DNR J J, DNR	Surrogate out of control high. Sample reanalyzed at a dilution and diluted result is reported instead. Initial result for o-xylene is reported instead of the diluted result.
MPLOT-MW-07-091114 DL MPLOT-MW-22-091214 DL MPLOT-MW-22-DUP-091214 DL	o-Xylene	8.6 µg/L < 2.5 µg/L < 2.5 µg/L	DNR	Report initial analysis for this analyte.

Sample ID	Analyte(s)	Result	Qualifier	Reason(s)
MPLOTG-MW-22-091214 DL	Benzene	4.5 µg/L	DNR	Report diluted analysis for these analytes.
MPLOTG-MW-22-DUP-091214 DL	Toluene	8.4 µg/L		
	Ethylbenzene	640 E µg/L		
	m,p-Xylene	1,000 µg/L		
	Gasoline	14 E mg/L		
	Benzene	4.4 µg/L		
	Toluene	8.2 µg/L		
	Ethylbenzene	640 E µg/L		
MPLOTG-MW-22-DUP-091214 MPLOTG-MW-22-DUP-091214 DL	Gasoline	14 E mg/L	J	Positive result that does not match an identifiable gasoline pattern.
		17 mg/L		
MPLOTG-MW-22-091214	Diesel	1.1 mg/L	J	Organics or additional hydrocarbons in ranges that are not identifiable.
MPLOTG-MW-22-DUP-091214	Diesel	1.0 mg/L	J	
MPLOTG-MW-07-091114	Motor Oil	0.41 mg/L	J	
MPLOTG-MW-07-091114	Diesel	11 E mg/L	DNR	Sample reanalyzed at a dilution and diluted result is reported instead.
MPLOTG-MW-07-091114 DL	Motor Oil	< 2.0 U mg/L	DNR	Sample was reanalyzed at a dilution but initial result is reported.

VALIDATION PERFORMED BY:	Jill Lamberts, Golder Associates
VALIDATOR'S SIGNATURE:	
DATE:	September 29, 2014
REVIEWED BY:	
REVIEWER'S SIGNATURE	
DATE:	Oct 2, 2014

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 1253	Turn-around Requested: Standard
ARI Client Company: Golder Associates	Phone: 425 883 0777
Client Contact: D. Morell, J. Lamberts	
Client Project Name: Masterpark Lot C	
Client Project #: 073-93368-06-09A	Samplers: Lamberts

Page: 1	of 1
Date: 9/10/14	Ice Present?
No. of Coolers:	Cooler Temps: 4.6 3.7



Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No Containers	Analysis Requested							Notes/Comments	
					NWTPH-GX BTEx	EDB by 8260 *report to MDL *	N-hexane	Naphthalene	NWTPH-DX	LL EDB by 504.1 or equiv.			
Trip Blank	9/10/14	-	DI	3	X	X	X	X		X			
MPLOT-C-MW-17A-091014		1045	W	21	X	X	X	X	X				MS/MSD
MPLOT-C-MW-21-091014		1150	W	7	X	X	X	X	X				
MPLOT-C-MW-6-091014		1350	W	7	X	X	X	X	X				
MPLOT-C-MW-20-091014		1240	W	7	X	X	X	X	X				
MPLOT-C-MW-19-091014		1445	W	7	X	X	X	X	X				
MPLOT-C-MW-9-091014		1540	W	9	X	X	X	X	X	X			
MPLOT-C-MW-13-091014		1635	W	9	X	X	X	X	X	X			
Comments/Special Instructions *Ecology EIM EDD Pls cc jlamberts@golder.com dmorell@golder.com					Relinquished by: (Signature) <i>[Signature]</i> Printed Name: J. Lamberts Company: Golder Date & Time: 9/10/2014 17:17		Received by: (Signature) <i>[Signature]</i> Printed Name: Taylor, S. <i>[Signature]</i> Company: ARI Date & Time: 9-10-14 1717		Relinquished by: (Signature) Printed Name: Company: Date & Time:		Received by: (Signature) Printed Name: Company: Date & Time:		

Reviewed by J. Lamberts 9/29/2014

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

ORGANICS ANALYSIS DATA SHEETVolatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 1Sample ID: Trip Blanks
SAMPLE

Lab Sample ID: YZ53A

LIMS ID: 14-18391

Matrix: Water

Data Release Authorized: *YWN*

Reported: 09/24/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/10/14

Date Received: 09/10/14

Instrument/Analyst: NT2/LH

Date Analyzed: 09/22/14 14:33

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	107%
d8-Toluene	98.4%
Bromofluorobenzene	99.4%
d4-1,2-Dichlorobenzene	101%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 1Sample ID: MPL0TC-MW-17A-091014
SAMPLE

Lab Sample ID: YZ53B

LIMS ID: 14-18392

Matrix: Water

Data Release Authorized: *mw*

Reported: 09/24/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/10/14

Date Received: 09/10/14

Instrument/Analyst: NT2/LH

Date Analyzed: 09/22/14 15:00

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	0.64 J
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	106%
d8-Toluene	100%
Bromofluorobenzene	98.2%
d4-1,2-Dichlorobenzene	99.8%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MPL0TC-MW-21-091014

Page 1 of 1

SAMPLE

Lab Sample ID: YZ53C


QC Report No: YZ53-Golder Associates

LIMS ID: 14-18393

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: 

Date Sampled: 09/10/14

Reported: 09/24/14

Date Received: 09/10/14

Instrument/Analyst: NT2/LH

Sample Amount: 10.0 mL

Date Analyzed: 09/22/14 15:26

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	101%
Bromofluorobenzene	96.8%
d4-1,2-Dichlorobenzene	103%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MPL0TC-MW-6-091014

Page 1 of 1

SAMPLE

Lab Sample ID: YZ53D

QC Report No: YZ53-Golder Associates

LIMS ID: 14-18394

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: *WW*

Date Sampled: 09/10/14

Reported: 09/24/14

Date Received: 09/10/14

Instrument/Analyst: NT2/LH

Sample Amount: 10.0 mL

Date Analyzed: 09/22/14 15:53

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	103%
Bromofluorobenzene	96.8%
d4-1,2-Dichlorobenzene	104%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MPL0TC-MW-20-091014

Page 1 of 1

SAMPLE

Lab Sample ID: YZ53E

QC Report No: YZ53-Golder Associates

LIMS ID: 14-18395

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: *MMW*

Date Sampled: 09/10/14

Reported: 09/24/14

Date Received: 09/10/14

Instrument/Analyst: NT2/LH

Sample Amount: 10.0 mL

Date Analyzed: 09/22/14 16:20

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	99.8%
Bromofluorobenzene	98.1%
d4-1,2-Dichlorobenzene	99.6%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MPL0TC-MW-19-091014

Page 1 of 1

SAMPLE

Lab Sample ID: YZ53F


QC Report No: YZ53-Golder Associates

LIMS ID: 14-18396

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: 

Date Sampled: 09/10/14

Reported: 09/24/14

Date Received: 09/10/14

Instrument/Analyst: NT2/LH

Sample Amount: 10.0 mL

Date Analyzed: 09/22/14 16:47

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	106%
d8-Toluene	98.8%
Bromofluorobenzene	97.1%
d4-1,2-Dichlorobenzene	100%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MPL0TC-MW-9-091014

Page 1 of 1

SAMPLE

Lab Sample ID: YZ53G

QC Report No: YZ53-Golder Associates

LIMS ID: 14-18397

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: *WVW*

Date Sampled: 09/10/14

Reported: 09/24/14

Date Received: 09/10/14

Instrument/Analyst: NT2/LH

Sample Amount: 10.0 mL

Date Analyzed: 09/22/14 17:13

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	84 E
110-54-3	Hexane	0.10	0.20	< 0.20 U

J DNR

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	122%
d8-Toluene	110%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	102%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MPL0TC-MW-9-091014

Page 1 of 1

DILUTION

Lab Sample ID: YZ53G

QC Report No: YZ53-Golder Associates

LIMS ID: 14-18397

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: *WVW*

Date Sampled: 09/10/14

Reported: 09/24/14

Date Received: 09/10/14

Instrument/Analyst: NT2/LH

Sample Amount: 5.00 mL

Date Analyzed: 09/24/14 11:58

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result	
106-93-4	1,2-Dibromoethane	0.15	0.40	< 0.40 U	DNR
91-20-3	Naphthalene	0.24	1.0	74	
110-54-3	Hexane	0.19	0.40	< 0.40 U	DNR

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	106%
Bromofluorobenzene	104%
d4-1,2-Dichlorobenzene	99.6%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MPL0TC-MW-13-091014

Page 1 of 1

SAMPLE

Lab Sample ID: YZ53H


QC Report No: YZ53-Golder Associates

LIMS ID: 14-18398

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: 

Date Sampled: 09/10/14

Reported: 09/24/14

Date Received: 09/10/14

Instrument/Analyst: NT2/LH

Sample Amount: 10.0 mL

Date Analyzed: 09/24/14 11:30

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	103%
d8-Toluene	102%
Bromofluorobenzene	97.6%
d4-1,2-Dichlorobenzene	98.9%

ORGANICS ANALYSIS DATA SHEET**Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: Trip Blanks**
Page 1 of 1 **SAMPLE**

Lab Sample ID: YZ53A

QC Report No: YZ53-Golder Associates

LIMS ID: 14-18391

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: 

Date Sampled: 09/10/14

Reported: 09/23/14

Date Received: 09/10/14

Instrument/Analyst: NT7/PKC

Sample Amount: 10.0 mL

Date Analyzed: 09/17/14 12:07

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	Ethylene Dibromide	0.0028	0.010	< 0.010 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	109%
d8-Toluene	101%

ORGANICS ANALYSIS DATA SHEET**Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: MPLOTG-MW-9-091014**
Page 1 of 1 **SAMPLE**

Lab Sample ID: YZ53G


QC Report No: YZ53-Golder Associates

LIMS ID: 14-18397

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: 

Date Sampled: 09/10/14

Reported: 09/23/14

Date Received: 09/10/14

Instrument/Analyst: NT7/PKC

Sample Amount: 10.0 mL

Date Analyzed: 09/17/14 12:30

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	Ethylene Dibromide	0.0028	0.010	< 0.010 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	280%
d8-Toluene	89.0%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: MPLOT-MW-13-091014

Page 1 of 1

SAMPLE

Lab Sample ID: YZ53H


QC Report No: YZ53-Golder Associates

LIMS ID: 14-18398

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: 

Date Sampled: 09/10/14

Reported: 09/23/14

Date Received: 09/10/14

Instrument/Analyst: NT7/PKC

Sample Amount: 10.0 mL

Date Analyzed: 09/17/14 12:53

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	Ethylene Dibromide	0.0028	0.010	< 0.010 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	99.5%
d8-Toluene	104%

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: Trip Blanks
SAMPLE

Lab Sample ID: YZ53A

LIMS ID: 14-18391

Matrix: Water

Data Release Authorized: *MW*

Reported: 09/22/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/10/14

Date Received: 09/10/14

Date Analyzed: 09/16/14 17:51

Instrument/Analyst: PID1/PKC

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	< 0.25 U
108-88-3	Toluene	0.014	0.25	< 0.25 U
100-41-4	Ethylbenzene	0.028	0.25	< 0.25 U
179601-23-1	m,p-Xylene	0.022	0.50	< 0.50 U
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	97.6%
Bromobenzene	98.4%

Gasoline Surrogate Recovery

Trifluorotoluene	103%
Bromobenzene	101%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MPL0TC-MW-17A-091014

SAMPLE

Lab Sample ID: YZ53B

LIMS ID: 14-18392

Matrix: Water

Data Release Authorized: *MW*

Reported: 09/22/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/10/14

Date Received: 09/10/14

Date Analyzed: 09/16/14 18:21

Instrument/Analyst: PID1/PKC

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	< 0.25 U
108-88-3	Toluene	0.014	0.25	< 0.25 U
100-41-4	Ethylbenzene	0.028	0.25	< 0.25 U
179601-23-1	m,p-Xylene	0.022	0.50	< 0.50 U
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	96.2%
Bromobenzene	95.9%

Gasoline Surrogate Recovery

Trifluorotoluene	101%
Bromobenzene	97.8%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1


Sample ID: MPLOTC-MW-21-091014

SAMPLE

Lab Sample ID: YZ53C

LIMS ID: 14-18393

Matrix: Water

Data Release Authorized: 

Reported: 09/22/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/10/14

Date Received: 09/10/14

Date Analyzed: 09/16/14 19:48

Instrument/Analyst: PID1/PKC

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	< 0.25 U
108-88-3	Toluene	0.014	0.25	< 0.25 U
100-41-4	Ethylbenzene	0.028	0.25	< 0.25 U
179601-23-1	m,p-Xylene	0.022	0.50	< 0.50 U
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	94.8%
Bromobenzene	95.5%

Gasoline Surrogate Recovery

Trifluorotoluene	99.9%
Bromobenzene	97.8%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MPL0TC-MW-6-091014

SAMPLE

Lab Sample ID: YZ53D

LIMS ID: 14-18394

Matrix: Water

Data Release Authorized: *mm*

Reported: 09/22/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/10/14

Date Received: 09/10/14

Date Analyzed: 09/16/14 20:18

Instrument/Analyst: PID1/PKC

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	< 0.25 U
108-88-3	Toluene	0.014	0.25	< 0.25 U
100-41-4	Ethylbenzene	0.028	0.25	< 0.25 U
179601-23-1	m,p-Xylene	0.022	0.50	< 0.50 U
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	94.8%
Bromobenzene	96.0%

Gasoline Surrogate Recovery

Trifluorotoluene	99.5%
Bromobenzene	98.2%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MPlotC-MW-20-091014

SAMPLE

Lab Sample ID: YZ53E

LIMS ID: 14-18395

Matrix: Water

Data Release Authorized: *mw*

Reported: 09/22/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/10/14

Date Received: 09/10/14

Date Analyzed: 09/16/14 20:47

Instrument/Analyst: PID1/PKC

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	< 0.25 U
108-88-3	Toluene	0.014	0.25	< 0.25 U
100-41-4	Ethylbenzene	0.028	0.25	< 0.25 U
179601-23-1	m,p-Xylene	0.022	0.50	< 0.50 U
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	96.4%
Bromobenzene	96.0%

Gasoline Surrogate Recovery

Trifluorotoluene	101%
Bromobenzene	99.0%

BETX values reported in µg/L (ppb)
 Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MPLOTG-MW-19-091014

SAMPLE

Lab Sample ID: YZ53F

LIMS ID: 14-18396

Matrix: Water

Data Release Authorized: *YWW*

Reported: 09/22/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/10/14

Date Received: 09/10/14

Date Analyzed: 09/16/14 21:16

Instrument/Analyst: PID1/PKC

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	< 0.25 U
108-88-3	Toluene	0.014	0.25	< 0.25 U
100-41-4	Ethylbenzene	0.028	0.25	< 0.25 U
179601-23-1	m,p-Xylene	0.022	0.50	< 0.50 U
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	92.8%
Bromobenzene	94.5%

Gasoline Surrogate Recovery

Trifluorotoluene	98.6%
Bromobenzene	97.5%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MPL0TC-MW-9-091014

SAMPLE

Lab Sample ID: YZ53G

LIMS ID: 14-18397

Matrix: Water

Data Release Authorized: *mm*

Reported: 09/22/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/10/14

Date Received: 09/10/14

Date Analyzed: 09/16/14 21:45

Instrument/Analyst: PID1/PKC

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	17
108-88-3	Toluene	0.014	0.25	4.6
100-41-4	Ethylbenzene	0.028	0.25	100
179601-23-1	m,p-Xylene	0.022	0.50	46
95-47-6	o-Xylene	0.027	0.25	1.2

Gasoline Range Hydrocarbons	0.057	0.10	5.6	GAS ID
				GAS

BETX Surrogate Recovery

Trifluorotoluene	102%
Bromobenzene	103%

Gasoline Surrogate Recovery

Trifluorotoluene	104%
Bromobenzene	108%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MPLOT-MW-13-091014

SAMPLE

Lab Sample ID: YZ53H

LIMS ID: 14-18398

Matrix: Water

Data Release Authorized: *mm*

Reported: 09/22/14

QC Report No: YZ53-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/10/14

Date Received: 09/10/14

Date Analyzed: 09/16/14 22:14

Instrument/Analyst: PID1/PKC

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	< 0.25 U
108-88-3	Toluene	0.014	0.25	< 0.25 U
100-41-4	Ethylbenzene	0.028	0.25	< 0.25 U
179601-23-1	m,p-Xylene	0.022	0.50	< 0.50 U
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	93.4%
Bromobenzene	93.9%

Gasoline Surrogate Recovery

Trifluorotoluene	97.6%
Bromobenzene	96.1%

BETX values reported in µg/L (ppb)

Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C
Page 1 of 1

QC Report No: YZ53-Golder Associates
Project: Master Park Lot C
073-93368-06-09A

Matrix: Water

Date Received: 09/10/14

Data Release Authorized: *mw*
Reported: 09/18/14

ARI ID	Sample ID	Analysis Date	DF	Range	Result	LOQ	DL
YZ53B 14-18392	MPLOT-MW-17A-091014	09/17/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	< 0.10 U < 0.20 U --- 82.6%	0.10 0.20	0.02 0.04
YZ53C 14-18393	MPLOT-MW-21-091014	09/17/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	< 0.10 U < 0.20 U --- 92.7%	0.10 0.20	0.02 0.04
YZ53D 14-18394	MPLOT-MW-6-091014	09/17/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	< 0.10 U < 0.20 U --- 87.9%	0.10 0.20	0.02 0.04
YZ53E 14-18395	MPLOT-MW-20-091014	09/17/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	< 0.10 U < 0.20 U --- 83.6%	0.10 0.20	0.02 0.04
YZ53F 14-18396	MPLOT-MW-19-091014	09/17/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	< 0.10 U < 0.20 U --- 89.7%	0.10 0.20	0.02 0.04
YZ53G 14-18397	MPLOT-MW-9-091014	09/17/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	2.8 < 0.20 U DIESEL 80.2%	0.10 0.20	0.02 0.04
YZ53H 14-18398	MPLOT-MW-13-091014	09/17/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	0.29 < 0.20 U DIESEL 81.4%	0.10 0.20	0.02 0.04

Reported in mg/L (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.

Chain of Custody Record & Laboratory Analysis Request

Please analyze under existing MSA bwn ARI + Golder



Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

ARI Assigned Number: Y796	Turn-around Requested: Standard
ARI Client Company: Golder	Phone: 425-883-0777
Client Contact: D. Morell / J. Lamberts	
Client Project Name: Masterpark Lot c	
Client Project #: 073-93368-06-09A	Samplers: Lamberts

Page: 1	of 1
Date: 9/11/2014	Ice Present? Y
No. of Coolers: 1	Cooler Temps: 4.0

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested							Notes/Comments
					NWTPH-Gx BTEX	EDS by 8260 *report to MDLX	N-hexane	Naphthalene	NWTPH-Dx	LL EDB * by 504.1 or equiv.		
Trip Blank	9/11/14	-	DI	3	X	X	X	X				
MPLOT-C-MW-18-091114		1140	W	9	X	X	X	X	X	X		
MPLOT-C-FB-091114		1155	W	7	X	X	X	X	X			
MPLOT-C-MW-7-091114		1230	W	9	X	X	X	X	X	X		
MPLOT-C-MW-12-091114		1415	W	9	X	X	X	X	X	X		
MPLOT-C-MW-22-091214	9/12/14	1040	W	7	X	X	X	X	X			
MPLOT-C-MW-22-DUP-091214		1045	W	7	X	X	X	X	X			
PORT-MW-B-091214		1210	W	7	X	X	X	X	X			
← END OF SAMPLING EVENT →												
Comments/Special Instructions * Ecology Elm EDP Pls cc jlamberts@golder.com 51 jlam dmorell@golder.com					Relinquished by: (Signature) <i>Jill Lamberts</i> Printed Name: Jill Lamberts Company: Golder Date & Time: 9/12/2014 12:57		Received by: (Signature) <i>Jennifer M. [unclear]</i> Printed Name: Jennifer M. [unclear] Company: ARI Date & Time: 9/12/14 1257		Relinquished by: (Signature) _____ Printed Name: _____ Company: _____ Date & Time: _____		Received by: (Signature) _____ Printed Name: _____ Company: _____ Date & Time: _____	

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Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Reviewed by J. Lamberts 9/29/2014


ORGANICS ANALYSIS DATA SHEET**Volatiles by Purge & Trap GC/MS-Method SW8260C****Sample ID: Trip Blank
SAMPLE**

Page 1 of 1

Lab Sample ID: YZ96A

LIMS ID: 14-18648

Matrix: Water

Data Release Authorized: 

Reported: 09/26/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/11/14

Date Received: 09/12/14

Instrument/Analyst: NT2/LH

Date Analyzed: 09/19/14 16:12

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	101%
Bromofluorobenzene	92.2%
d4-1,2-Dichlorobenzene	101%

ORGANICS ANALYSIS DATA SHEET**Volatiles by Purge & Trap GC/MS-Method SW8260C****Sample ID: MPLOTG-MW-18-091114**

Page 1 of 1

SAMPLE

Lab Sample ID: YZ96B


QC Report No: YZ96-Golder Associates

LIMS ID: 14-18649

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: 

Date Sampled: 09/11/14

Reported: 09/26/14

Date Received: 09/12/14

Instrument/Analyst: NT2/LH

Sample Amount: 10.0 mL

Date Analyzed: 09/19/14 16:37

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	103%
d8-Toluene	102%
Bromofluorobenzene	91.9%
d4-1,2-Dichlorobenzene	99.7%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MPLOTG-FB-091114

Page 1 of 1

SAMPLE

Lab Sample ID: YZ96C


QC Report No: YZ96-Golder Associates

LIMS ID: 14-18650

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: 

Date Sampled: 09/11/14

Reported: 09/26/14

Date Received: 09/12/14

Instrument/Analyst: NT2/LH

Sample Amount: 10.0 mL

Date Analyzed: 09/19/14 17:02

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	101%
Bromofluorobenzene	93.3%
d4-1,2-Dichlorobenzene	101%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MPLOTG-MW-7-091114

Page 1 of 1

SAMPLE

Lab Sample ID: YZ96D


QC Report No: YZ96-Golder Associates

LIMS ID: 14-18651

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: 

Date Sampled: 09/11/14

Reported: 09/26/14

Date Received: 09/12/14

Instrument/Analyst: NT2/LH

Sample Amount: 0.50 mL

Date Analyzed: 09/19/14 17:30

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	1.5	4.0	< 4.0 U
91-20-3	Naphthalene	2.4	10	300 B J
110-54-3	Hexane	1.9	4.0	280

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	101%
Bromofluorobenzene	96.0%
d4-1,2-Dichlorobenzene	99.0%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MPLOTG-MW-12-091114

Page 1 of 1

SAMPLE

Lab Sample ID: YZ96E


QC Report No: YZ96-Golder Associates

LIMS ID: 14-18652

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: 

Date Sampled: 09/11/14

Reported: 09/26/14

Date Received: 09/12/14

Instrument/Analyst: NT2/LH

Sample Amount: 10.0 mL

Date Analyzed: 09/19/14 17:56

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	0.53 B J+
110-54-3	Hexane	0.10	0.20	0.78

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	99.4%
Bromofluorobenzene	101%
d4-1,2-Dichlorobenzene	100%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MPLOT-C-MW-22-091214

Page 1 of 1

SAMPLE

Lab Sample ID: YZ96F


QC Report No: YZ96-Golder Associates

LIMS ID: 14-18653

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: 

Date Sampled: 09/12/14

Reported: 10/02/14

Date Received: 09/12/14

Instrument/Analyst: NT2/LH

Sample Amount: 0.50 mL

Date Analyzed: 09/19/14 18:25

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	1.5	4.0	< 4.0 U
91-20-3	Naphthalene	2.4	10	460 B J
110-54-3	Hexane	1.9	4.0	9.8

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	103%
d8-Toluene	100%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	99.5%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MPLOT-MW-22-DUP-091214

Page 1 of 1

SAMPLE

Lab Sample ID: YZ96G


QC Report No: YZ96-Golder Associates

LIMS ID: 14-18654

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: 

Date Sampled: 09/12/14

Reported: 10/02/14

Date Received: 09/12/14

Instrument/Analyst: NT2/LH

Sample Amount: 10.0 mL

Date Analyzed: 09/19/14 19:20

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	340 EB J DNR
110-54-3	Hexane	0.10	0.20	8.2 DNR

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	130%
d8-Toluene	111%
Bromofluorobenzene	108%
d4-1,2-Dichlorobenzene	99.6%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MPLOTG-MW-22-DUP-091214

Page 1 of 1

DILUTION

Lab Sample ID: YZ96G


QC Report No: YZ96-Golder Associates

LIMS ID: 14-18654

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: 

Date Sampled: 09/12/14

Reported: 10/02/14

Date Received: 09/12/14

Instrument/Analyst: NT2/LH

Sample Amount: 0.50 mL

Date Analyzed: 09/19/14 18:54

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result	
106-93-4	1,2-Dibromoethane	1.5	4.0	< 4.0 U	DNR J
91-20-3	Naphthalene	2.4	10	470 B	
110-54-3	Hexane	1.9	4.0	9.0	

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	101%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	101%

ORGANICS ANALYSIS DATA SHEET**Volatiles by Purge & Trap GC/MS-Method SW8260C****Sample ID: PORT-MW-B-091214**

Page 1 of 1

SAMPLE

Lab Sample ID: YZ96H


QC Report No: YZ96-Golder Associates

LIMS ID: 14-18655

Project: Master Park Lot C

Matrix: Water

073-93368-06-09A

Data Release Authorized: 

Date Sampled: 09/12/14

Reported: 09/26/14

Date Received: 09/12/14

Instrument/Analyst: NT2/LH

Sample Amount: 10.0 mL

Date Analyzed: 09/24/14 14:33

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
110-54-3	Hexane	0.10	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	102%
Bromofluorobenzene	99.3%
d4-1,2-Dichlorobenzene	97.4%

ORGANICS ANALYSIS DATA SHEET**BETX by Method SW8021BMod****TPHG by Method NWTPHG**

Page 1 of 1

**Sample ID: Trip Blank
SAMPLE**

Lab Sample ID: YZ96A

LIMS ID: 14-18648

Matrix: Water

Data Release Authorized: 

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/11/14

Date Received: 09/12/14

Date Analyzed: 09/18/14 22:33

Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	< 0.25 U
108-88-3	Toluene	0.014	0.25	< 0.25 U
100-41-4	Ethylbenzene	0.028	0.25	< 0.25 U
179601-23-1	m,p-Xylene	0.022	0.50	< 0.50 U
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	92.7%
Bromobenzene	95.7%

Gasoline Surrogate Recovery

Trifluorotoluene	97.6%
Bromobenzene	97.5%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MPLOTG-MW-18-091114

SAMPLE

Lab Sample ID: YZ96B

LIMS ID: 14-18649

Matrix: Water

Data Release Authorized: 

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/11/14

Date Received: 09/12/14

Date Analyzed: 09/18/14 23:03

Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	0.72
108-88-3	Toluene	0.014	0.25	0.27
100-41-4	Ethylbenzene	0.028	0.25	0.40
179601-23-1	m,p-Xylene	0.022	0.50	0.72
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	92.8%
Bromobenzene	95.2%

Gasoline Surrogate Recovery

Trifluorotoluene	97.0%
Bromobenzene	97.8%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1


Sample ID: MPLOTG-FB-091114

SAMPLE

Lab Sample ID: YZ96C

LIMS ID: 14-18650

Matrix: Water

Data Release Authorized: 

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/11/14

Date Received: 09/12/14

Date Analyzed: 09/18/14 23:32

Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	< 0.25 U
108-88-3	Toluene	0.014	0.25	< 0.25 U
100-41-4	Ethylbenzene	0.028	0.25	< 0.25 U
179601-23-1	m,p-Xylene	0.022	0.50	< 0.50 U
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	90.7%
Bromobenzene	93.9%

Gasoline Surrogate Recovery

Trifluorotoluene	96.0%
Bromobenzene	95.5%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MPLOTG-MW-7-091114

SAMPLE

Lab Sample ID: YZ96D

LIMS ID: 14-18651

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/11/14

Date Received: 09/12/14

Date Analyzed: 09/19/14 00:01

Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	16
108-88-3	Toluene	0.014	0.25	75
100-41-4	Ethylbenzene	0.028	0.25	230 E
179601-23-1	m,p-Xylene	0.022	0.50	1,600 E
95-47-6	o-Xylene	0.027	0.25	9.5

J DNR
J DNR
J DNR
J DNR
J

Gasoline Range Hydrocarbons 0.057 0.10 27 E

GAS ID

GAS J DNR

BETX Surrogate Recovery

Trifluorotoluene	123%
Bromobenzene	112%

Gasoline Surrogate Recovery

Trifluorotoluene	106%
Bromobenzene	653%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MPLOTG-MW-7-091114

DILUTION

Lab Sample ID: YZ96D

LIMS ID: 14-18651

Matrix: Water

Data Release Authorized: 

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/11/14

Date Received: 09/12/14

Date Analyzed: 09/19/14 22:20

Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL

Dilution Factor: 20.0

CAS Number	Analyte	DL	LOQ	Result	
71-43-2	Benzene	0.56	5.0	17	
108-88-3	Toluene	0.28	5.0	81	
100-41-4	Ethylbenzene	0.56	5.0	260	
179601-23-1	m,p-Xylene	0.44	10	2,100	
95-47-6	o-Xylene	0.54	5.0	8.6	DNR

Gasoline Range Hydrocarbons	0.057	2.0	36	GAS ID GAS
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BETX Surrogate Recovery

Trifluorotoluene	99.6%
Bromobenzene	102%

Gasoline Surrogate Recovery

Trifluorotoluene	103%
Bromobenzene	103%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MPLOTG-MW-12-091114

SAMPLE

Lab Sample ID: YZ96E

LIMS ID: 14-18652

Matrix: Water

Data Release Authorized:

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/11/14

Date Received: 09/12/14

Date Analyzed: 09/19/14 15:05

Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	2.5
108-88-3	Toluene	0.014	0.25	2.6
100-41-4	Ethylbenzene	0.028	0.25	1.5
179601-23-1	m,p-Xylene	0.022	0.50	3.8
95-47-6	o-Xylene	0.027	0.25	1.5

Gasoline Range Hydrocarbons	0.057	0.10	0.11
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GAS ID

GAS

BETX Surrogate Recovery

Trifluorotoluene	103%
Bromobenzene	103%

Gasoline Surrogate Recovery

Trifluorotoluene	107%
Bromobenzene	104%

BETX values reported in µg/L (ppb)

Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MPLOT-MW-22-091214

SAMPLE

Lab Sample ID: YZ96F

LIMS ID: 14-18653

Matrix: Water

Data Release Authorized: *AS*

Reported: 10/02/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/12/14

Date Received: 09/12/14

Date Analyzed: 09/19/14 00:59

Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	4.5
108-88-3	Toluene	0.014	0.25	8.4
100-41-4	Ethylbenzene	0.028	0.25	640 E
179601-23-1	m,p-Xylene	0.022	0.50	1,000 E
95-47-6	o-Xylene	0.027	0.25	2.7

DNR

DNR

DNR

DNR

Gasoline Range Hydrocarbons

0.057

0.10

14 E

GAS ID

GAS

DNR

BETX Surrogate Recovery

Trifluorotoluene	92.9%
Bromobenzene	104%

Gasoline Surrogate Recovery

Trifluorotoluene	97.9%
Bromobenzene	102%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MPLOT-MW-22-091214
DILUTION

Lab Sample ID: YZ96F

LIMS ID: 14-18653

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 10/02/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/12/14

Date Received: 09/12/14

Date Analyzed: 09/19/14 15:33

Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL

Dilution Factor: 10.0

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.28	2.5	4.8
108-88-3	Toluene	0.14	2.5	9.3
100-41-4	Ethylbenzene	0.28	2.5	690
179601-23-1	m,p-Xylene	0.22	5.0	1,100
95-47-6	o-Xylene	0.27	2.5	< 2.5 U DNR

Gasoline Range Hydrocarbons	0.057	1.0	16	GAS ID
				GAS

BETX Surrogate Recovery

Trifluorotoluene	93.0%
Bromobenzene	96.3%

Gasoline Surrogate Recovery

Trifluorotoluene	94.7%
Bromobenzene	94.6%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MPLOT-MW-22-DUP-091214
SAMPLE

Lab Sample ID: YZ96G

LIMS ID: 14-18654

Matrix: Water

Data Release Authorized: *JB*

Reported: 10/02/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/12/14

Date Received: 09/12/14

Date Analyzed: 09/19/14 01:58

Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	4.4
108-88-3	Toluene	0.014	0.25	8.2
100-41-4	Ethylbenzene	0.028	0.25	640 E
179601-23-1	m,p-Xylene	0.022	0.50	1,000 E
95-47-6	o-Xylene	0.027	0.25	2.5

DNR
DNR
DNR
DNR

Gasoline Range Hydrocarbons 0.057 0.10 14 E

GAS ID
GRO J DNR

BETX Surrogate Recovery

Trifluorotoluene	93.2%
Bromobenzene	106%

Gasoline Surrogate Recovery

Trifluorotoluene	97.0%
Bromobenzene	103%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MPLOTG-MW-22-DUP-091214
DILUTION

Lab Sample ID: YZ96G

LIMS ID: 14-18654

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 10/02/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/12/14

Date Received: 09/12/14

Date Analyzed: 09/22/14 13:18

Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL

Dilution Factor: 10.0

CAS Number	Analyte	DL	LOQ	Result	
71-43-2	Benzene	0.28	2.5	4.5	
108-88-3	Toluene	0.14	2.5	9.0	
100-41-4	Ethylbenzene	0.28	2.5	710	
179601-23-1	m,p-Xylene	0.22	5.0	1,200	
95-47-6	o-Xylene	0.27	2.5	< 2.5 U	DNR

Gasoline Range Hydrocarbons	0.057	1.0	17	GAS ID
				GRO J

BETX Surrogate Recovery

Trifluorotoluene	96.5%
Bromobenzene	96.4%

Gasoline Surrogate Recovery

Trifluorotoluene	99.2%
Bromobenzene	97.8%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: PORT-MW-B-091214

SAMPLE

Lab Sample ID: YZ96H

LIMS ID: 14-18655

Matrix: Water

Data Release Authorized:

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

Event: 073-93368-06-09A

Date Sampled: 09/12/14

Date Received: 09/12/14

Date Analyzed: 09/22/14 13:47

Instrument/Analyst: PID1/LH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
71-43-2	Benzene	0.028	0.25	< 0.25 U
108-88-3	Toluene	0.014	0.25	< 0.25 U
100-41-4	Ethylbenzene	0.028	0.25	1.1
179601-23-1	m,p-Xylene	0.022	0.50	1.9
95-47-6	o-Xylene	0.027	0.25	< 0.25 U

Gasoline Range Hydrocarbons	0.057	0.10	< 0.10 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	92.0%
Bromobenzene	92.6%

Gasoline Surrogate Recovery

Trifluorotoluene	97.3%
Bromobenzene	95.4%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: MPL0TC-MW-18-091114
Page 1 of 1 SAMPLE

Lab Sample ID: YZ96B

LIMS ID: 14-18649

Matrix: Water

Data Release Authorized: *mm*

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/11/14

Date Received: 09/12/14

Instrument/Analyst: NT7/LH

Date Analyzed: 09/17/14 16:23

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	Ethylene Dibromide	0.0028	0.010	< 0.010 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	102%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: MPL0TC-MW-7-091114
Page 1 of 1 SAMPLE

Lab Sample ID: YZ96D

LIMS ID: 14-18651

Matrix: Water

Data Release Authorized: *mmw*

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/11/14

Date Received: 09/12/14

Instrument/Analyst: NT7/LH

Date Analyzed: 09/22/14 17:45

Sample Amount: 1.00 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	Ethylene Dibromide	0.0282	0.10	< 0.10 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	153%
d8-Toluene	113%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: MPL0TC-MW-12-091114
Page 1 of 1 SAMPLE

Lab Sample ID: YZ96E

LIMS ID: 14-18652

Matrix: Water

Data Release Authorized: *mm*

Reported: 09/25/14

QC Report No: YZ96-Golder Associates

Project: Master Park Lot C

073-93368-06-09A

Date Sampled: 09/11/14

Date Received: 09/12/14

Instrument/Analyst: NT7/LH

Date Analyzed: 09/17/14 17:09

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
106-93-4	Ethylene Dibromide	0.0028	0.010	< 0.010 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	98.2%
d8-Toluene	103%



ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS

NWTPHD by GC/FID
 Extraction Method: SW3510C
 Page 1 of 1

QC Report No: YZ96-Golder Associates
 Project: Master Park Lot C
 073-93368-06-09A

Matrix: Water

Date Received: 09/12/14

Data Release Authorized: *B*
 Reported: 10/02/14

ARI ID	Sample ID	Analysis Date	DF	Range	Result	LOQ	DL
MB-091514 14-18649	Method Blank	09/19/14 FID9	1.0	Diesel Range Motor Oil Range HC ID o-Terphenyl	< 0.10 U < 0.20 U --- 54.3%	0.10 0.20	0.02 0.04
YZ96B 14-18649	MPLOT-MW-18-091114	09/19/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	0.14 < 0.20 U DIESEL 77.0%	0.10 0.20	0.02 0.04
YZ96C 14-18650	MPLOT-MW-FB-091114	09/19/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	< 0.10 U < 0.20 U --- 58.6%	0.10 0.20	0.02 0.04
YZ96D 14-18651	MPLOT-MW-7-091114	09/19/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	11 E DNR 0.41 J DIESEL 78.3%	0.10 0.20	0.02 0.04
YZ96D DL 14-18651	MPLOT-MW-7-091114	09/20/14 FID9	10	Diesel Motor Oil HC ID o-Terphenyl	11 < 2.0 U DNR DIESEL 63.6%	1.0 2.0	0.22 0.44
YZ96E 14-18652	MPLOT-MW-12-091114	09/19/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	0.35 < 0.20 U DIESEL 87.5%	0.10 0.20	0.02 0.04
YZ96F 14-18653	MPLOT-MW-22-091214	09/19/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	1.1 J < 0.20 U DRO 70.6%	0.10 0.20	0.02 0.04
YZ96G 14-18654	MPLOT-MW-22-DUP-091214	09/19/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	1.0 J < 0.20 U DRO 71.2%	0.10 0.20	0.02 0.04
YZ96H 14-18655	PORT-MW-B-091214	09/19/14 FID9	1.0	Diesel Motor Oil HC ID o-Terphenyl	< 0.10 U < 0.20 U --- 92.0%	0.10 0.20	0.02 0.04

Reported in mg/L (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.

YZ96: 492 B 10/2/14

APPENDIX D
SUMMARY DATA TABLES AND TREND GRAPHS

SUMMARY DATA TABLES

Table D-1: Summary of Groundwater Sampling Results - Well MW-06
Sea-Tac Development Site, SeaTac WA

	Field Parameters								Analytical Data									
Date Sampled ^c	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L) ^f	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
19-Mar-10	369.68	60.03	309.65	5.96	13.5	409	0.87	3.75	< 0.10	< 1.0	< 1.0	< 1.0	< 1.0	< 0.0096	< 1.0	< 5.0	-	-
11-Feb-14	369.68	59.03	310.65	6.13	12.1	139	0.91	16.4	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.08	< 0.20	< 0.50	< 0.10	< 0.20
28-May-14	369.68	-	-	6.14	14.3	454	1.03	3.71	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20 UJ	< 0.50	< 0.10	< 0.20
10-Sep-14	369.68	-	-	6.27	15.9	312	1.52	11.8	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
Clean-up Level	MTCA Method A for Groundwater (unrestricted landuse)								0.8 ^d /1.0 ^e	5 ^g	1000 ^g	700 ^g	1000 ^h	0.01 ^h	NSA	160	0.5	0.5
	MTCA Method B for Groundwater (unrestricted landuse)								NSA	5 ⁱ	640	800	1600	0.022	480	160	NSA	NSA

Notes:																		
feet bgs	Feet below ground surface	-	Not measured or not available															
feet bmp	Feet below measuring point		Result exceeds Clean-up Level (CUL)															
feet msl	Feet above mean sea level	mg/L	Milligrams per liter															
^a	Well not surveyed, elevation estimated.	µg/L	Micrograms per liter															
^b	IAS/SVE in operation. Suction may be affecting WLs.	NTU	Nephelometric Turbidity Unit															
^c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.	µmhos/cm	Micromhos per centimeter															
^d	When benzene is present.	<	Analyte not detected above the reporting limit shown															
^e	When benzene is not present.	MTCA	Model Toxics Control Act															
^f , *	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.	MCL	Maximum Containment Level															
^g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs	NSA	No Standard Available															
^h	Value is more protective than Federal MCLs.	TOC	Top of casing inside PVC well															
ⁱ	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.	°C	Degrees Celsius															
^j	Turbidity out of range. Well was purged using a bailer.	J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.															
*	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.	UJ	The constituent was analyzed for, but was not detected above the reported sample quantitation limit; however, the value reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.															
		J+	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.															
		B	Analyte detected in an associated Method Blank at a concentration greater than one-half of laboratory's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.															

**Table D-2: Summary of Groundwater Sampling Results - Well MW-07
Sea-Tac Development Site, SeaTac WA**

	Field Parameters								Analytical Data									
Date Sampled ^c	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L) ^f	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
18-Mar-10	358.70	48.69	310.01	6.61	13.3	354	1.41	5.18	26	230	1,100	360	4630	0.010	160	210	-	-
13-Feb-14	358.69	47.72	310.97	6.56	14.3	131	0.35	3.87	29	25	110	180	2022	< 3.8	190	220	11 J	< 0.20
29-May-14	358.69	47.65	311.04	6.65	16.4	379	0.13	2.84	27	14	80	190	1811	< 1.5	140	210 B	11 J	< 0.20
11-Sep-14	358.69	48.25	310.44	6.73	16.5	373	0.35	2.28	36	17	81	260	2110	< 0.028	280	300 B J	11	0.41 J
Clean-up Level	MTCA Method A for Groundwater (unrestricted landuse)								0.8 ^d /1.0 ^a	5 ^g	1000 ^g	700 ^g	1000 ^h	0.01 ^h	NSA	160	0.5	0.5
	MTCA Method B for Groundwater (unrestricted landuse)								NSA	5 ⁱ	640	800	1600	0.022	480	160	NSA	NSA

Notes:																		
feet bgs	Feet below ground surface	-																
feet bmp	Feet below measuring point																	
feet msl	Feet above mean sea level	mg/L																
^a	Well not surveyed, elevation estimated.	µg/L																
^b	IAS/SVE in operation. Suction may be affecting WLs.	NTU																
^c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.	µmhos/cm																
^d	When benzene is present.	<																
^e	When benzene is not present.	MTCA																
^f	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.	MCL																
^g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs	NSA																
^h	Value is more protective than Federal MCLs.	TOC																
ⁱ	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.	°C																
^j	Turbidity out of range. Well was purged using a bailer.	J																
[*]	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.	UJ																
		J+																
		B																

**Table D-3: Summary of Groundwater Sampling Results - Well MW-09
Sea-Tac Development Site, SeaTac WA**

	Field Parameters								Analytical Data									
Date Sampled ^c	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L) ^f	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
19-Mar-10	362.14	52.30	309.84	6.19	14.2	294	0.13	7.18	16	170	65	400	1434	0.016	100	160	-	
12-Feb-14	362.13	51.45	310.68	6.49	12.6	99.5	0.28	3.10	7.5	30	8.1	150	98.0	< 0.08	16	120	1.6 J	< 0.20
29-May-14	362.13	51.41	310.72	6.44	15.0	295	0.14	1.01	7.8	32	9.4	170	111.6	< 0.37	5.60	92 B	2.3 J	< 0.20
10-Sep-14	362.13	-	-	6.49	15.7	310	0.20	3.85	5.6	17	4.6	100	47.2	< 0.010*	< 0.20	74	2.8	< 0.20
Clean-up Level	MTCA Method A for Groundwater (unrestricted landuse)								0.8 ^d /1.0 ^e	5 ^g	1000 ^g	700 ^g	1000 ^h	0.01 ^h	NSA	160	0.5	0.5
	MTCA Method B for Groundwater (unrestricted landuse)								NSA	5 ⁱ	640	800	1600	0.022	480	160	NSA	NSA

Notes:																		
feet bgs	Feet below ground surface	-	Not measured or not available															
feet bmp	Feet below measuring point		Result exceeds Clean-up Level (CUL)															
feet msl	Feet above mean sea level	mg/L	Milligrams per liter															
^a	Well not surveyed, elevation estimated.	µg/L	Micrograms per liter															
^b	IAS/SVE in operation. Suction may be affecting WLs.	NTU	Nephelometric Turbidity Unit															
^c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.	µmhos/cm	Micromhos per centimeter															
^d	When benzene is present.	<	Analyte not detected above the reporting limit shown															
^e	When benzene is not present.	MTCA	Model Toxics Control Act															
^f	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.	MCL	Maximum Containment Level															
^g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs	NSA	No Standard Available															
^h	Value is more protective than Federal MCLs.	TOC	Top of casing inside PVC well															
ⁱ	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.	°C	Degrees Celsius															
^j	Turbidity out of range. Well was purged using a bailer.	J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.															
[*]	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.	UJ	The constituent was analyzed for, but was not detected above the reported sample quantitation limit; however, the value reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.															
		J+	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.															
		B	Analyte detected in an associated Method Blank at a concentration greater than one-half of laboratory's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.															

**Table D-4: Summary of Groundwater Sampling Results - Well MW-12
Sea-Tac Development Site, SeaTac WA**

	Field Parameters								Analytical Data									
Date Sampled ^c	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L) ^f	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
15-Mar-10	364.88	54.99	309.89	6.38	14.5	472	0.03	40.8	36	230	2,400	1,300	5140	0.16	210	520	-	
13-Feb-14	364.83	55.02	309.81	7.76	14.1	125	10.50	3.43	8.6	79	410	79	970	< 3.8	< 10	25	1.1 J	< 0.20
29-May-14	364.83	51.58	313.25	7.87	16.7	252	11.77	5.99	0.12	2.0	4.3	1.6	4.15	< 0.07	< 0.20	< 0.50	0.34 J	< 0.20
11-Sep-14	364.83	55.21	309.62	8.04	18.1	255	11.80	38.8	0.11	2.5	2.6	1.5	5.3	< 0.010*	0.78	0.53 B J+	0.35	< 0.20
Clean-up Level	MTCA Method A for Groundwater (unrestricted landuse)								0.8 ^d /1.0 ^a	5 ^g	1000 ^g	700 ^g	1000 ^h	0.01 ^h	NSA	160	0.5	0.5
	MTCA Method B for Groundwater (unrestricted landuse)								NSA	5 ⁱ	640	800	1600	0.022	480	160	NSA	NSA

Notes:																		
feet bgs	Feet below ground surface	-	Not measured or not available															
feet bmp	Feet below measuring point		Result exceeds Clean-up Level (CUL)															
feet msl	Feet above mean sea level	mg/L	Milligrams per liter															
^a	Well not surveyed, elevation estimated.	µg/L	Micrograms per liter															
^b	IAS/SVE in operation. Suction may be affecting WLs.	NTU	Nephelometric Turbidity Unit															
^c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.	µmhos/cm	Micromhos per centimeter															
^d	When benzene is present.	<	Analyte not detected above the reporting limit shown															
^e	When benzene is not present.	MTCA	Model Toxics Control Act															
^f	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.	MCL	Maximum Containment Level															
^g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs	NSA	No Standard Available															
^h	Value is more protective than Federal MCLs.	TOC	Top of casing inside PVC well															
ⁱ	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.	°C	Degrees Celsius															
^j	Turbidity out of range. Well was purged using a bailer.	J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.															
[*]	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.	UJ	The constituent was analyzed for, but was not detected above the reported sample quantitation limit; however, the value reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.															
		J+	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.															
		B	Analyte detected in an associated Method Blank at a concentration greater than one-half of laboratory's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.															

**Table D-5: Summary of Groundwater Sampling Results - Well MW-13
Sea-Tac Development Site, SeaTac WA**

	Field Parameters								Analytical Data									
Date Sampled ^c	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L) ^f	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
19-Mar-10	365.42	55.66	309.76	6.28	12.8	271	0.16	72.1	33	14	230	890	4500	0.029	130	410	-	-
12-Feb-14	365.42	54.35	311.07	6.57	13.2	73.3	1.41	4.28	14	< 0.25	3.90	240	2070	< 0.08	< 0.20	33	1.4 J	< 0.20
29-May-14	365.42	55.62	309.80	6.84	14.7	182	10.59	4.24	0.14	< 0.25	< 0.25	0.85	18.54	< 0.07	0.11 J	< 0.50	0.32	< 0.20
10-Sep-14	365.42	54.57	310.85	7.06	14.9	137	11.06	2.41	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.010*	< 0.20	< 0.50	0.29	< 0.20
Clean-up Level	MTCA Method A for Groundwater (unrestricted landuse)								0.8 ^d /1.0 ^a	5 ^g	1000 ^g	700 ^g	1000 ^h	0.01 ^h	NSA	160	0.5	0.5
	MTCA Method B for Groundwater (unrestricted landuse)								NSA	5 ⁱ	640	800	1600	0.022	480	160	NSA	NSA

Notes:																		
feet bgs	Feet below ground surface	-	Not measured or not available															
feet bmp	Feet below measuring point		Result exceeds Clean-up Level (CUL)															
feet msl	Feet above mean sea level	mg/L	Milligrams per liter															
^a	Well not surveyed, elevation estimated.	µg/L	Micrograms per liter															
^b	IAS/SVE in operation. Suction may be affecting WLs.	NTU	Nephelometric Turbidity Unit															
^c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.	µmhos/cm	Micromhos per centimeter															
^d	When benzene is present.	<	Analyte not detected above the reporting limit shown															
^e	When benzene is not present.	MTCA	Model Toxics Control Act															
^f	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.	MCL	Maximum Containment Level															
^g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs	NSA	No Standard Available															
^h	Value is more protective than Federal MCLs.	TOC	Top of casing inside PVC well															
ⁱ	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.	°C	Degrees Celsius															
^j	Turbidity out of range. Well was purged using a bailer.	J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.															
[*]	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.	UJ	The constituent was analyzed for, but was not detected above the reported sample quantitation limit; however, the value reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.															
		J+	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.															
		B	Analyte detected in an associated Method Blank at a concentration greater than one-half of laboratory's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.															

Table D-6: Summary of Groundwater Sampling Results - Well MW-17A
Sea-Tac Development Site, SeaTac WA

	Field Parameters								Analytical Data									
Date Sampled ^c	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L) ^f	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
17-Mar-10	385.81	76.29	309.52	6.51	9.3	145	0.52	142.0	1.70	< 1.0	< 1.0	4	27	< 0.0095	< 1.0	63	-	-
11-Feb-14	394.00	83.80	310.20	6.36	11.3	82.5	1.06	137.0	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.08	< 0.20	0.74	< 0.10	< 0.20
29-May-14	394.00	84.00	310.00	6.22	12.2	175	2.06	39.7	< 0.10	0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	0.62 J+	< 0.10	< 0.20
10-Sep-14	394.00	84.51	309.49	6.28	12.4	162	1.42	18.8	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	0.64 J	< 0.10	< 0.20
Clean-up Level	MTCA Method A for Groundwater (unrestricted landuse)								0.8 ^d /1.0 ^a	5 ^g	1000 ^g	700 ^g	1000 ^h	0.01 ^h	NSA	160	0.5	0.5
	MTCA Method B for Groundwater (unrestricted landuse)								NSA	5 ⁱ	640	800	1600	0.022	480	160	NSA	NSA

Notes:																		
feet bgs	Feet below ground surface	-	Not measured or not available															
feet bmp	Feet below measuring point		Result exceeds Clean-up Level (CUL)															
feet msl	Feet above mean sea level	mg/L	Milligrams per liter															
^a	Well not surveyed, elevation estimated.	µg/L	Micrograms per liter															
^b	IAS/SVE in operation. Suction may be affecting WLs.	NTU	Nephelometric Turbidity Unit															
^c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.	µmhos/cm	Micromhos per centimeter															
^d	When benzene is present.	<	Analyte not detected above the reporting limit shown															
^e	When benzene is not present.	MTCA	Model Toxics Control Act															
^f	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.	MCL	Maximum Containment Level															
^g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs	NSA	No Standard Available															
^h	Value is more protective than Federal MCLs.	TOC	Top of casing inside PVC well															
ⁱ	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.	°C	Degrees Celsius															
^j	Turbidity out of range. Well was purged using a bailer.	J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.															
[*]	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.	UJ	The constituent was analyzed for, but was not detected above the reported sample quantitation limit; however, the value reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.															
		J+	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.															
		B	Analyte detected in an associated Method Blank at a concentration greater than one-half of laboratory's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.															

**Table D-7: Summary of Groundwater Sampling Results - Well MW-18
Sea-Tac Development Site, SeaTac WA**

	Field Parameters								Analytical Data									
Date Sampled ^c	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L) ^f	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
18-Mar-10	360.45	50.58	309.87	6.69	14.2	586	0.11	5.39	52	2,600	6,000	1,700	6690	2.5	350	420	-	
12-Feb-14	360.45	49.01	311.44	7.62	13.8	175	8.11	2.89	1.0	27	13	17	91.3	< 0.08	1.1	4.0	0.77 J	<0.20
29-May-14	360.45	49.75	310.70	7.98	15.2	369	10.60	7.95	0.14	6.6	1.5	4.7	9.2	< 0.07	0.64	0.84 J+	0.33 J	<0.20
11-Sep-14	360.45	50.33	310.12	8.23	15.2	498	11.23	13.1	< 0.10	0.72	0.27	0.4	0.72	< 0.010*	< 0.20	< 0.50	0.14	< 0.20
Clean-up Level	MTCA Method A for Groundwater (unrestricted landuse)								0.8 ^d /1.0 ^e	5 ^g	1000 ^g	700 ^g	1000 ^h	0.01 ^h	NSA	160	0.5	0.5
	MTCA Method B for Groundwater (unrestricted landuse)								NSA	5 ⁱ	640	800	1600	0.022	480	160	NSA	NSA

Notes:																		
feet bgs	Feet below ground surface	-																
feet bmp	Feet below measuring point																	
feet msl	Feet above mean sea level	mg/L																
^a	Well not surveyed, elevation estimated.	µg/L																
^b	IAS/SVE in operation. Suction may be affecting WLs.	NTU																
^c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.	µmhos/cm																
^d	When benzene is present.	<																
^e	When benzene is not present.	MTCA																
^f	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.	MCL																
^g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs	NSA																
^h	Value is more protective than Federal MCLs.	TOC																
ⁱ	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.	°C																
^j	Turbidity out of range. Well was purged using a bailer.	J																
[*]	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.	UJ																
		J+																
		B																

**Table D-8: Summary of Groundwater Sampling Results - Well MW-19
Sea-Tac Development Site, SeaTac WA**

Date Sampled ^c	Field Parameters								Analytical Data									
	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L) ^f	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
18-Mar-10	356.61	46.60	310.01	7.04	12.5	275	0.07	84.0	1.3	8.90	1.8	43	6.0	< 0.0096	2.8	< 5.0	-	-
11-Feb-14	356.61	45.46	311.15	6.98	12.7	105	0.15	3.20	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.08	4.3	< 0.50	< 0.10	< 0.20
29-May-14	356.61	45.74	310.87	6.96	13.7	290	0.04	0.42	< 0.10	< 0.25	0.40	< 0.25	0.58	< 0.07	0.3	< 0.50	< 0.10	< 0.20
10-Sep-14	356.61	46.28	310.33	6.93	14.5	379	0.16	0.30	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
Clean-up Level	MTCA Method A for Groundwater (unrestricted landuse)								0.8 ^g /1.0 ^e	5 ^g	1000 ^g	700 ^g	1000 ^h	0.01 ^h	NSA	160	0.5	0.5
	MTCA Method B for Groundwater (unrestricted landuse)								NSA	5 ⁱ	640	800	1600	0.022	480	160	NSA	NSA

Notes:																		
feet bgs	Feet below ground surface	-	Not measured or not available															
feet bmp	Feet below measuring point		Result exceeds Clean-up Level (CUL)															
feet msl	Feet above mean sea level	mg/L	Milligrams per liter															
^a	Well not surveyed, elevation estimated.	µg/L	Micrograms per liter															
^b	IAS/SVE in operation. Suction may be affecting WLs.	NTU	Nephelometric Turbidity Unit															
^c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.	µmhos/cm	Micromhos per centimeter															
^d	When benzene is present.	<	Analyte not detected above the reporting limit shown															
^e	When benzene is not present.	MTCA	Model Toxics Control Act															
^f	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.	MCL	Maximum Containment Level															
^g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs	NSA	No Standard Available															
^h	Value is more protective than Federal MCLs.	TOC	Top of casing inside PVC well															
ⁱ	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.	°C	Degrees Celsius															
^j	Turbidity out of range. Well was purged using a bailer.	J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.															
[*]	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.	UJ	The constituent was analyzed for, but was not detected above the reported sample quantitation limit; however, the value reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.															
		J+	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.															
		B	Analyte detected in an associated Method Blank at a concentration greater than one-half of laboratory's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.															

**Table D-9: Summary of Groundwater Sampling Results - Well MW-20
Sea-Tac Development Site, SeaTac WA**

	Field Parameters								Analytical Data									
Date Sampled ^c	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L) ^f	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
17-Mar-10	430.98	121.79	309.19	6.63	10.8	359	4.82	4.37	< 0.10	< 1.0	< 1.0	< 1.0	< 1.0	< 0.0095	< 1.0	< 5.0	-	-
20-Mar-14	416.61	106.13	310.48	6.74	11.4	377	7.82	3.32	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50 UJ	< 0.10	< 0.20
29-May-14	416.61	106.66	309.95	6.73	12.3	257	6.37	0.82	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
10-Sep-14	416.61	106.99	309.62	6.83	13.2	355	7.55	0.69	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
Clean-up Level	MTCA Method A for Groundwater (unrestricted landuse)								0.8 ^d /1.0 ^e	5 ^g	1000 ^g	700 ^g	1000 ^h	0.01 ^h	NSA	160	0.5	0.5
	MTCA Method B for Groundwater (unrestricted landuse)								NSA	5 ⁱ	640	800	1600	0.022	480	160	NSA	NSA

Notes:																		
feet bgs	Feet below ground surface	-	Not measured or not available															
feet bmp	Feet below measuring point		Result exceeds Clean-up Level (CUL)															
feet msl	Feet above mean sea level	mg/L	Milligrams per liter															
^a	Well not surveyed, elevation estimated.	µg/L	Micrograms per liter															
^b	IAS/SVE in operation. Suction may be affecting WLs.	NTU	Nephelometric Turbidity Unit															
^c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.	µmhos/cm	Micromhos per centimeter															
^d	When benzene is present.	<	Analyte not detected above the reporting limit shown															
^e	When benzene is not present.	MTCA	Model Toxics Control Act															
^f	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.	MCL	Maximum Containment Level															
^g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs	NSA	No Standard Available															
^h	Value is more protective than Federal MCLs.	TOC	Top of casing inside PVC well															
ⁱ	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.	°C	Degrees Celsius															
^j	Turbidity out of range. Well was purged using a bailer.	J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.															
[*]	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.	UJ	The constituent was analyzed for, but was not detected above the reported sample quantitation limit; however, the value reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.															
		J+	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.															
		B	Analyte detected in an associated Method Blank at a concentration greater than one-half of laboratory's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.															

Table D-10: Summary of Groundwater Sampling Results - Well MW-21
Sea-Tac Development Site, SeaTac WA

	Field Parameters								Analytical Data									
Date Sampled ^c	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L) ^f	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
17-Mar-10	390.79	81.26	309.53	5.97	11.5	257	3.21	5.13	< 0.10	< 1.0	< 1.0	< 1.0	< 1.0	< 0.0096	< 1.0	< 5.0	-	-
11-Feb-14	412.85	102.34	310.51	6.09	11.9	110	6.31	11.2	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.08	< 0.20	< 0.50	< 0.10	< 0.20
29-May-14	412.85	102.61	310.24	6.15	12.5	277	6.28	1.71	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
10-Sep-14	412.85	103.10	309.75	6.15	13.5	283	6.25	1.95	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
Clean-up Level	MTCA Method A for Groundwater (unrestricted landuse)								0.8 ^d /1.0 ^a	5 ^g	1000 ^g	700 ^g	1000 ^h	0.01 ^h	NSA	160	0.5	0.5
	MTCA Method B for Groundwater (unrestricted landuse)								NSA	5 ⁱ	640	800	1600	0.022	480	160	NSA	NSA

Notes:																		
feet bgs	Feet below ground surface	-	Not measured or not available															
feet bmp	Feet below measuring point		Result exceeds Clean-up Level (CUL)															
feet msl	Feet above mean sea level	mg/L	Milligrams per liter															
^a	Well not surveyed, elevation estimated.	µg/L	Micrograms per liter															
^b	IAS/SVE in operation. Suction may be affecting WLs.	NTU	Nephelometric Turbidity Unit															
^c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.	µmhos/cm	Micromhos per centimeter															
^d	When benzene is present.	<	Analyte not detected above the reporting limit shown															
^e	When benzene is not present.	MTCA	Model Toxics Control Act															
^f	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.	MCL	Maximum Containment Level															
^g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs	NSA	No Standard Available															
^h	Value is more protective than Federal MCLs.	TOC	Top of casing inside PVC well															
ⁱ	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.	°C	Degrees Celsius															
^j	Turbidity out of range. Well was purged using a bailer.	J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.															
[*]	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.	UJ	The constituent was analyzed for, but was not detected above the reported sample quantitation limit; however, the value reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.															
		J+	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.															
		B	Analyte detected in an associated Method Blank at a concentration greater than one-half of laboratory's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.															

Table D-11: Summary of Groundwater Sampling Results - Well MW-22
Sea-Tac Development Site, SeaTac WA

	Field Parameters								Analytical Data									
Date Sampled ^c	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L) ^f	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
16-Mar-10	393.31	83.63	309.68	6.65	12.5	586	0.25	82.0	15	23	74	1400	2420	< 0.0095	15	380	-	
20-Mar-14	393.31	82.93	310.38	6.68	12.2	381	0.87	64.8	17	5.7	12	990	1503	< 0.07	7.8	400 J	1.2 J	< 0.2
28-May-14	393.31	82.72	310.59	6.73	13.2	383	0.30	2.26	18	3.9	9.7	940	1900	< 0.07	8.6	420 B	1.7 J	< 0.2
12-Sep-14	393.31	82.99	310.32	6.81	13.7	423	0.29	1.03	16	4.8	9.3	690	1103	< 1.5	9.8	460 B J	1.1 J	< 0.2
Clean-up Level	MTCA Method A for Groundwater (unrestricted landuse)								0.8 ^d /1.0 ^e	5 ^g	1000 ^g	700 ^g	1000 ^h	0.01 ^h	NSA	160	0.5	0.
	MTCA Method B for Groundwater (unrestricted landuse)								NSA	5 ⁱ	640	800	1600	0.022	480	160	NSA	NSA

Notes:																		
feet bgs	Feet below ground surface	-	Not measured or not available															
feet bmp	Feet below measuring point		Result exceeds Clean-up Level (CUL)															
feet msl	Feet above mean sea level	mg/L	Milligrams per liter															
^a	Well not surveyed, elevation estimated.	µg/L	Micrograms per liter															
^b	IAS/SVE in operation. Suction may be affecting WLs.	NTU	Nephelometric Turbidity Unit															
^c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.	µmhos/cm	Micromhos per centimeter															
^d	When benzene is present.	<	Analyte not detected above the reporting limit shown															
^e	When benzene is not present.	MTCA	Model Toxics Control Act															
^f	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.	MCL	Maximum Containment Level															
^g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs	NSA	No Standard Available															
^h	Value is more protective than Federal MCLs.	TOC	Top of casing inside PVC well															
ⁱ	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.	°C	Degrees Celsius															
^j	Turbidity out of range. Well was purged using a bailer.	J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.															
[*]	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.	UJ	The constituent was analyzed for, but was not detected above the reported sample quantitation limit; however, the value reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.															
		J+	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.															
		B	Analyte detected in an associated Method Blank at a concentration greater than one-half of laboratory's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.															

**Table D-12: Summary of Groundwater Sampling Results - Well PORT-MW-B
Sea-Tac Development Site, SeaTac WA**

Date Sampled ^c	Field Parameters								Analytical Data									
	TOC Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	pH (standard units)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	NWTPH-Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (ethylene dibromide) (µg/L) ^f	N-hexane (µg/L)	Naphthalene (µg/L)	NWTPH-Diesel (mg/L)	NWTPH-Motor Oil (mg/L)
20-Mar-14	400.00	89.70	310.30	6.55	12.3	267	6.16	J	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50 UJ	< 0.10	< 0.20
28-May-14	400.00	89.50	310.50	6.50	14.2	317	4.63	98.3	< 0.10	< 0.25	< 0.25	< 0.25	< 0.50	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
12-Sep-14	400.00	89.69	310.31	6.56	14.0	266	3.56	6.2	< 0.10	< 0.25	< 0.25	1.1	1.9	< 0.07	< 0.20	< 0.50	< 0.10	< 0.20
Clean-up Level	MTCA Method A for Groundwater (unrestricted landuse)								0.8 ^d /1.0 ^e	5 ^g	1000 ^g	700 ^g	1000 ^h	0.01 ^h	NSA	160	0.5	0.5
	MTCA Method B for Groundwater (unrestricted landuse)								NSA	5 ⁱ	640	800	1600	0.022	480	160	NSA	NSA

Notes:																		
feet bgs	Feet below ground surface	-	Not measured or not available															
feet bmp	Feet below measuring point		Result exceeds Clean-up Level (CUL)															
feet msl	Feet above mean sea level	mg/L	Milligrams per liter															
^a	Well not surveyed, elevation estimated.	µg/L	Micrograms per liter															
^b	IAS/SVE in operation. Suction may be affecting WLs.	NTU	Nephelometric Turbidity Unit															
^c	Water levels collected at various times prior to sampling (see Table 1). Date/time is sampling time.	µmhos/cm	Micromhos per centimeter															
^d	When benzene is present.	<	Analyte not detected above the reporting limit shown															
^e	When benzene is not present.	MTCA	Model Toxics Control Act															
^f	Reported at Method Detection Limit (MDL). The MDL is greater than the MTCA CULs.	MCL	Maximum Containment Level															
^g	Inclusive of 40 CFR 141.61 Federal Law for drinking water MCLs	NSA	No Standard Available															
^h	Value is more protective than Federal MCLs.	TOC	Top of casing inside PVC well															
ⁱ	MTCA 173-340-705(5): Adjustments to cleanup levels based on applicable laws.	°C	Degrees Celsius															
^j	Turbidity out of range. Well was purged using a bailer.	J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.															
[*]	Reported at the Limit of Quantitation (LOQ). The LOQ is less than MTCA CULs.	UJ	The constituent was analyzed for, but was not detected above the reported sample quantitation limit; however, the value reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.															
		J+	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.															
		B	Analyte detected in an associated Method Blank at a concentration greater than one-half of laboratory's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.															

SUMMARY TREND GRAPHS

