Northern California ACCUTEST LABORATORIES

03/12/13

Technical Report for

Shell Oil Company

URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

46194348

Accutest Job Number: C26386

Sampling Dates: 02/21/13 - 02/22/13

Report to:

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ATTN: Brian Pletcher

Total number of pages in report: **59**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

James J. Rhudy
Lab Director

Client Service contact: Nutan Kabir 408-588-0200

Certifications: CA (08258CA) AZ (AZ0762) DoD/ISO/IEC 17025:2005 (L2242)

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Sample Summary

Shell Oil Company

Job No: C26386

URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Project No: 46194348

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
C26386-1	02/21/13	16:49	CP	02/26/13	AQ	Ground Water	TX-03A
C26386-2	02/21/13	12:43	CP	02/26/13	AQ	Ground Water	MW-301
C26386-3	02/21/13	11:03	CP	02/26/13	AQ	Ground Water	MW-303
C26386-4	02/21/13	15:24	CP	02/26/13	AQ	Ground Water	MW-309
C26386-5	02/21/13	09:17	CP	02/26/13	AQ	Ground Water	MW-310
C26386-6	02/22/13	14:54	CP	02/26/13	AQ	Ground Water	MW-302
C26386-7	02/22/13	13:27	CP	02/26/13	AQ	Ground Water	MW-304
C26386-8	02/22/13	08:38	CP	02/26/13	AQ	Ground Water	MW-307
C26386-9	02/22/13	09:48	CP	02/26/13	AQ	Ground Water	MW-308
C26386-10	02/21/13	00:00	CP	02/26/13	AQ	Trip Blank Water	TRIP BLANK

Summary of Hits

Job Number: C26386
Account: Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Collected: 02/21/13 thru 02/22/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
C26386-1	**TX-03A**					
Benzene		2810	40	8.0	ug/l	SW846 8260B
Toluene		40.3	40	8.0	ug/l	SW846 8260B
Ethylbenzene		42.1	40	8.0	ug/l	SW846 8260B
Xylene (total)		48.9 J	80	18	ug/l	SW846 8260B
TPH (Gasoline)		8.20	4.0	1.0	mg/l	NWTPH-GX
TPH (Diesel) [a]		0.320	0.10	0.050	mg/l	NWTPH-DX
C26386-2	**MW-301**					
Benzene		659	10	2.0	ug/l	SW846 8260B
Toluene		17.5	10	2.0	ug/l	SW846 8260B
Ethylbenzene		26.4	10	2.0	ug/l	SW846 8260B
Xylene (total)		17.3 J	20	4.6	ug/l	SW846 8260B
TPH (Gasoline)		3.98	1.0	0.25	mg/l	NWTPH-GX
TPH (Diesel) [a]		0.315	0.10	0.050	mg/l	NWTPH-DX
C26386-3	**MW-303**					
Benzene		2340	40	8.0	ug/l	SW846 8260B
Toluene		95.5	40	8.0	ug/l	SW846 8260B
Ethylbenzene		1290	40	8.0	ug/l	SW846 8260B
Xylene (total)		338	80	18	ug/l	SW846 8260B
TPH (Gasoline)		12.8	4.0	1.0	mg/l	NWTPH-GX
TPH (Diesel) [a]		0.674	0.10	0.050	mg/l	NWTPH-DX
C26386-4	**MW-309**					
TPH (Diesel) [a]		0.0790 J	0.10	0.050	mg/l	NWTPH-DX
C26386-5	**MW-310**					
Benzene		1800	25	5.0	ug/l	SW846 8260B
Toluene		76.8	25	5.0	ug/l	SW846 8260B
Ethylbenzene		506	25	5.0	ug/l	SW846 8260B
Xylene (total)		180	50	12	ug/l	SW846 8260B
TPH (Gasoline)		8.37	2.0	0.50	mg/l	NWTPH-GX
TPH (Diesel) [a]		0.603	0.10	0.050	mg/l	NWTPH-DX
C26386-6	**MW-302**					
Benzene		393	10	2.0	ug/l	SW846 8260B
Toluene		14.9	10	2.0	ug/l	SW846 8260B
Ethylbenzene		124	10	2.0	ug/l	SW846 8260B

Summary of Hits

Job Number: C26386
Account: Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Collected: 02/21/13 thru 02/22/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Xylene (total)		116	20	4.6	ug/l	SW846 8260B
TPH (Gasoline)		4.15	2.0	0.50	mg/l	NWTPH-GX
TPH (Diesel) [a]		0.435	0.10	0.050	mg/l	NWTPH-DX
C26386-7	**MW-304**					
Benzene		507	10	2.0	ug/l	SW846 8260B
Toluene		22.5	10	2.0	ug/l	SW846 8260B
Ethylbenzene		208	10	2.0	ug/l	SW846 8260B
Xylene (total)		149	20	4.6	ug/l	SW846 8260B
TPH (Gasoline)		5.56	2.0	0.50	mg/l	NWTPH-GX
TPH (Diesel) [a]		0.762	0.10	0.050	mg/l	NWTPH-DX
TPH (Motor Oil)		0.186 J	0.20	0.10	mg/l	NWTPH-DX
C26386-8	**MW-307**					
Benzene		497	10	2.0	ug/l	SW846 8260B
Toluene		35.8	10	2.0	ug/l	SW846 8260B
Ethylbenzene		226	10	2.0	ug/l	SW846 8260B
Xylene (total)		145	20	4.6	ug/l	SW846 8260B
TPH (Gasoline)		6.02	2.0	0.50	mg/l	NWTPH-GX
TPH (Diesel) [a]		0.604	0.094	0.047	mg/l	NWTPH-DX
C26386-9	**MW-308**					
Benzene		668	10	2.0	ug/l	SW846 8260B
Toluene		7.8 J	10	2.0	ug/l	SW846 8260B
Ethylbenzene		44.3	10	2.0	ug/l	SW846 8260B
Xylene (total)		5.9 J	20	4.6	ug/l	SW846 8260B
TPH (Gasoline)		3.48	1.0	0.25	mg/l	NWTPH-GX
TPH (Diesel) [a]		0.354	0.10	0.050	mg/l	NWTPH-DX
C26386-10	**TRIP BLANK**					

No hits reported in this sample.

(a) Diesel pattern is not present; higher boiling gasoline compounds in Diesel range.

Northern California ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	TX-03A		
Lab Sample ID:	C26386-1	**Date Sampled:**	02/21/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N37103.D	40	03/01/13	TF	n/a	n/a	VN1179
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	2810	40	8.0	ug/l	
108-88-3	Toluene	40.3	40	8.0	ug/l	
100-41-4	Ethylbenzene	42.1	40	8.0	ug/l	
1330-20-7	Xylene (total)	48.9	80	18	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%		70-130%
2037-26-5	Toluene-D8	104%		70-130%
460-00-4	4-Bromofluorobenzene	95%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TX-03A		
Lab Sample ID:	C26386-1	**Date Sampled:**	02/21/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK33883.D	20	03/01/13	TT	n/a	n/a	GJK1359
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	8.20	4.0	1.0	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	107%		50-150%
460-00-4	4-Bromofluorobenzene	97%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TX-03A		
Lab Sample ID:	C26386-1	**Date Sampled:**	02/21/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	NWTPH-DX SW846 3510C	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG41412.D	1	02/27/13	JH	02/26/13	OP7550	GGG1098
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel) [a]	0.320	0.10	0.050	mg/l	
	TPH (Motor Oil)	ND	0.20	0.10	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	107%		50-150%

(a) Diesel pattern is not present; higher boiling gasoline compounds in Diesel range.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-301		
Lab Sample ID:	C26386-2	**Date Sampled:**	02/21/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N37104.D	10	03/01/13	TF	n/a	n/a	VN1179
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	659	10	2.0	ug/l	
108-88-3	Toluene	17.5	10	2.0	ug/l	
100-41-4	Ethylbenzene	26.4	10	2.0	ug/l	
1330-20-7	Xylene (total)	17.3	20	4.6	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		70-130%
2037-26-5	Toluene-D8	104%		70-130%
460-00-4	4-Bromofluorobenzene	97%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-301		
Lab Sample ID:	C26386-2	**Date Sampled:**	02/21/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK33884.D	5	03/01/13	TT	n/a	n/a	GJK1359
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	3.98	1.0	0.25	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	113%		50-150%
460-00-4	4-Bromofluorobenzene	123%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-301		
Lab Sample ID:	C26386-2	**Date Sampled:**	02/21/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	NWTPH-DX SW846 3510C	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG41413.D	1	02/27/13	JH	02/26/13	OP7550	GGG1098
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel) [a]	0.315	0.10	0.050	mg/l	
	TPH (Motor Oil)	ND	0.20	0.10	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	107%		50-150%

(a) Diesel pattern is not present; higher boiling gasoline compounds in Diesel range.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-303		
Lab Sample ID:	C26386-3	**Date Sampled:**	02/21/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N37105.D	40	03/01/13	TF	n/a	n/a	VN1179
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	2340	40	8.0	ug/l	
108-88-3	Toluene	95.5	40	8.0	ug/l	
100-41-4	Ethylbenzene	1290	40	8.0	ug/l	
1330-20-7	Xylene (total)	338	80	18	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		70-130%
2037-26-5	Toluene-D8	104%		70-130%
460-00-4	4-Bromofluorobenzene	97%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-303		
Lab Sample ID:	C26386-3	**Date Sampled:**	02/21/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK33886.D	20	03/01/13	TT	n/a	n/a	GJK1359
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	12.8	4.0	1.0	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	110%		50-150%
460-00-4	4-Bromofluorobenzene	101%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-303		
Lab Sample ID:	C26386-3	**Date Sampled:**	02/21/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	NWTPH-DX SW846 3510C	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG41414.D	1	02/27/13	JH	02/26/13	OP7550	GGG1098
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel) [a]	0.674	0.10	0.050	mg/l	
	TPH (Motor Oil)	ND	0.20	0.10	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	100%		50-150%

(a) Diesel pattern is not present; higher boiling gasoline compounds in Diesel range.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-309		
Lab Sample ID:	C26386-4	**Date Sampled:**	02/21/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N37106.D	1	03/01/13	TF	n/a	n/a	VN1179
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%		70-130%
2037-26-5	Toluene-D8	106%		70-130%
460-00-4	4-Bromofluorobenzene	97%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-309		
Lab Sample ID:	C26386-4	**Date Sampled:**	02/21/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK33903.D	1	03/01/13	TT	n/a	n/a	GJK1360
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	ND	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	106%		50-150%
460-00-4	4-Bromofluorobenzene	95%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-309		
Lab Sample ID:	C26386-4	**Date Sampled:**	02/21/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	NWTPH-DX SW846 3510C	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG41415.D	1	02/27/13	JH	02/26/13	OP7550	GGG1098
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel) [a]	0.0790	0.10	0.050	mg/l	J
	TPH (Motor Oil)	ND	0.20	0.10	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	108%		50-150%

(a) Diesel pattern is not present; higher boiling gasoline compounds in Diesel range.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-310		
Lab Sample ID:	C26386-5	**Date Sampled:**	02/21/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R14864.D	25	03/02/13	KN	n/a	n/a	VR533
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1800	25	5.0	ug/l	
108-88-3	Toluene	76.8	25	5.0	ug/l	
100-41-4	Ethylbenzene	506	25	5.0	ug/l	
1330-20-7	Xylene (total)	180	50	12	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	112%		70-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	104%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-310		
Lab Sample ID:	C26386-5	**Date Sampled:**	02/21/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK33904.D	10	03/01/13	TT	n/a	n/a	GJK1360
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	8.37	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	110%		50-150%
460-00-4	4-Bromofluorobenzene	107%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-310		
Lab Sample ID:	C26386-5	**Date Sampled:**	02/21/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	NWTPH-DX SW846 3510C	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG41416.D	1	02/27/13	JH	02/26/13	OP7550	GGG1098
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel) [a]	0.603	0.10	0.050	mg/l	
	TPH (Motor Oil)	ND	0.20	0.10	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	107%		50-150%

(a) Diesel pattern is not present; higher boiling gasoline compounds in Diesel range.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-302		
Lab Sample ID:	C26386-6	**Date Sampled:**	02/22/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R14868.D	10	03/02/13	KN	n/a	n/a	VR533
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	393	10	2.0	ug/l	
108-88-3	Toluene	14.9	10	2.0	ug/l	
100-41-4	Ethylbenzene	124	10	2.0	ug/l	
1330-20-7	Xylene (total)	116	20	4.6	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		70-130%
2037-26-5	Toluene-D8	102%		70-130%
460-00-4	4-Bromofluorobenzene	100%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-302		
Lab Sample ID:	C26386-6	**Date Sampled:**	02/22/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK33905.D	10	03/01/13	TT	n/a	n/a	GJK1360
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	4.15	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	107%		50-150%
460-00-4	4-Bromofluorobenzene	101%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-302		
Lab Sample ID:	C26386-6	**Date Sampled:**	02/22/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	NWTPH-DX SW846 3510C	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG41417.D	1	02/27/13	JH	02/26/13	OP7550	GGG1098
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel) [a]	0.435	0.10	0.050	mg/l	
	TPH (Motor Oil)	ND	0.20	0.10	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	109%		50-150%

(a) Diesel pattern is not present; higher boiling gasoline compounds in Diesel range.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-304		
Lab Sample ID:	C26386-7	**Date Sampled:**	02/22/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R14865.D	10	03/02/13	KN	n/a	n/a	VR533
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	507	10	2.0	ug/l	
108-88-3	Toluene	22.5	10	2.0	ug/l	
100-41-4	Ethylbenzene	208	10	2.0	ug/l	
1330-20-7	Xylene (total)	149	20	4.6	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		70-130%
2037-26-5	Toluene-D8	103%		70-130%
460-00-4	4-Bromofluorobenzene	100%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-304		
Lab Sample ID:	C26386-7	**Date Sampled:**	02/22/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK33906.D	10	03/01/13	TT	n/a	n/a	GJK1360
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	5.56	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	109%		50-150%
460-00-4	4-Bromofluorobenzene	105%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-304		
Lab Sample ID:	C26386-7	**Date Sampled:**	02/22/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	NWTPH-DX SW846 3510C	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG41418.D	1	02/27/13	JH	02/26/13	OP7550	GGG1098
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel) [a]	0.762	0.10	0.050	mg/l	
	TPH (Motor Oil)	0.186	0.20	0.10	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	108%		50-150%

(a) Diesel pattern is not present; higher boiling gasoline compounds in Diesel range.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-307		
Lab Sample ID:	C26386-8	**Date Sampled:**	02/22/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R14869.D	10	03/02/13	KN	n/a	n/a	VR533
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	497	10	2.0	ug/l	
108-88-3	Toluene	35.8	10	2.0	ug/l	
100-41-4	Ethylbenzene	226	10	2.0	ug/l	
1330-20-7	Xylene (total)	145	20	4.6	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		70-130%
2037-26-5	Toluene-D8	103%		70-130%
460-00-4	4-Bromofluorobenzene	102%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-307		
Lab Sample ID:	C26386-8	**Date Sampled:**	02/22/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK33907.D	10	03/01/13	TT	n/a	n/a	GJK1360
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	6.02	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	111%		50-150%
460-00-4	4-Bromofluorobenzene	106%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-307		
Lab Sample ID:	C26386-8	**Date Sampled:**	02/22/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	NWTPH-DX SW846 3510C	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG41419.D	1	02/27/13	JH	02/26/13	OP7550	GGG1098
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel) [a]	0.604	0.094	0.047	mg/l	
	TPH (Motor Oil)	ND	0.19	0.094	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	107%		50-150%

(a) Diesel pattern is not present; higher boiling gasoline compounds in Diesel range.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-308		
Lab Sample ID:	C26386-9	**Date Sampled:**	02/22/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R14866.D	10	03/02/13	KN	n/a	n/a	VR533
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	668	10	2.0	ug/l	
108-88-3	Toluene	7.8	10	2.0	ug/l	J
100-41-4	Ethylbenzene	44.3	10	2.0	ug/l	
1330-20-7	Xylene (total)	5.9	20	4.6	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		70-130%
2037-26-5	Toluene-D8	102%		70-130%
460-00-4	4-Bromofluorobenzene	100%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-308		
Lab Sample ID:	C26386-9	**Date Sampled:**	02/22/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK33908.D	5	03/01/13	TT	n/a	n/a	GJK1360
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	3.48	1.0	0.25	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	110%		50-150%
460-00-4	4-Bromofluorobenzene	109%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-308		
Lab Sample ID:	C26386-9	**Date Sampled:**	02/22/13
Matrix:	AQ - Ground Water	**Date Received:**	02/26/13
Method:	NWTPH-DX SW846 3510C	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG41420.D	1	02/27/13	JH	02/26/13	OP7550	GGG1098
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel) [a]	0.354	0.10	0.050	mg/l	
	TPH (Motor Oil)	ND	0.20	0.10	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	112%		50-150%

(a) Diesel pattern is not present; higher boiling gasoline compounds in Diesel range.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	C26386-10	**Date Sampled:**	02/21/13
Matrix:	AQ - Trip Blank Water	**Date Received:**	02/26/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R14855.D	1	03/02/13	KN	n/a	n/a	VR533
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		70-130%
2037-26-5	Toluene-D8	102%		70-130%
460-00-4	4-Bromofluorobenzene	99%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Northern California ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SHELLWIC3660

Shell Oil Products Chain Of Custody Record

URS

LAB (LOCATION)
☑ ACCUTEST (SAN JOSE CA)
☐ CALSCIENCE (_____)
☐ TESTAMERICA (_____)
☐ Other (_____)
Lab Vendor # 1813640 (Accutest)

Please Check Appropriate Box:
☐ ENV. SERVICES ☐ MOTIVA RETAIL ☑ SHELL RETAIL
☐ MOTIVA SD&CH ☐ CONSULTANT ☐ LUBES
☐ SHELL PIPELINE ☐ OTHER

Print Bill To Contact Name:

INCIDENT # (ENV SERVICES): 3 0 0 0 3 6
☐ CHECK IF NO INCIDENT # APPLIES
DATE: 2/25/13
PAGE: 1 of 1

PO #:
SAP #: 3 5 7 0 3 2

SAMPLING COMPANY: URS Corporation
LOG CODE:
ADDRESS: 111 Southwest Columbia Street, Suite 1500, Portland, Oregon 97201
PROJECT CONTACT (Hardcopy or PDF Report to): Brian Pletcher
TELEPHONE: 503-222-7200
FAX: 503-222-4292
Bill To Contact E-MAIL: Brian.Pletcher@URS.com

SITE ADDRESS: Street and City: 2555 13th Avenue SW, Seattle
State: WA
GLOBAL ID NO.:
EDF DELIVERABLE TO (Name, Company, Office Location): Clifford J Pearson, URS, Portland
PHONE NO.: 503-222-7200
E-MAIL: Clifford.Pearson@URS.com
CONSULTANT PROJECT NO.: 46194348
SAMPLER NAME(S) (Print): CLIFF PEARSON
LAB USE ONLY: C26386

TURNAROUND TIME (CALENDAR DAYS)
☑ STANDARD (14 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND
☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:
DELIVERABLES: ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL 3 ☐ LEVEL 4 ☐ OTHER (SPECIFY)
TEMPERATURE ON RECEIPT C°: Cooler #1 | Cooler #2 | Cooler #3

SPECIAL INSTRUCTIONS OR NOTES :
☑ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☑ RECEIPT VERIFICATION REQUESTED
☐ PROVIDE LEDD DISK

REQUESTED ANALYSIS
UNIT COST | NON-UNIT COST

FIELD NOTES:
TEMPERATURE ON RECEIPT C°: 3.2°C / 5.7°C
Container PID Readings or Laboratory Notes

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	MVTPH-Gx	MVTPH-Dx w/Silica gel cleanup	BTEX (8260B)
-1	TX-03A	2/21/2013	1849	Water	X			X		7	X	X	X
-2	MW-301	2/21/2013	1243	Water	X			X		8	X	X	X
-3	MW-303	2/21/2013	1103	Water	X			X		8	X	X	X
-4	MW-309	2/21/2013	1524	Water	X			X		8	X	X	X
-5	MW-310	2/21/2013	917	Water	X			X		8	X	X	X
-6	MW-302	2/22/2013	1454	Water	X			X		7	X	X	X
-7	MW-304	2/22/2013	1327	Water	X			X		8	X	X	X
-8	MW-307	2/22/2013	838	Water	X			X		8	X	X	X
-9	MW-308	2/22/2013	948	Water	X			X		8	X	X	X
-10	TRIP BLANK	--	--	Water	X					6			X

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
CLIFF PEARSON URS CORP	FED EX	2/25/13	1600
FEDEX	Lee Barr	2/26/13	~~1315~~ 1315

05/2006 Revision

C26386: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: C26386 **Client:** SHELL OIL **Project:** 2555 13TH AVE SW, SEATTLE, WA

Date / Time Received: 2/26/2013 **Delivery Method:** FedEx **Airbill #'s:**

Cooler Temps (Initial/Adjusted): #1: (3.2/3.2); #2: (5.7/5.7); 0

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	2		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments TX-03A & MW-302 (1-liter Amber ONLY for NWTPH-Dx)

Accutest Laboratories
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C26386: Chain of Custody
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Northern California ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: C26386
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN1179-MB	N37087.D	1	03/01/13	TF	n/a	n/a	VN1179

The QC reported here applies to the following samples: **Method:** SW846 8260B

C26386-1, C26386-2, C26386-3, C26386-4

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	100%	70-130%
2037-26-5	Toluene-D8	102%	70-130%
460-00-4	4-Bromofluorobenzene	98%	70-130%

Method Blank Summary

Job Number: C26386
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR533-MB	R14853.D	1	03/02/13	KN	n/a	n/a	VR533

The QC reported here applies to the following samples: **Method:** SW846 8260B

C26386-5, C26386-6, C26386-7, C26386-8, C26386-9, C26386-10

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	102%	70-130%
2037-26-5	Toluene-D8	102%	70-130%
460-00-4	4-Bromofluorobenzene	99%	70-130%

Blank Spike/Blank Spike Duplicate Summary

Job Number: C26386
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN1179-BS	N37090.D	1	03/01/13	TF	n/a	n/a	VN1179
VN1179-BSD	N37091.D	1	03/01/13	TF	n/a	n/a	VN1179

The QC reported here applies to the following samples: **Method:** SW846 8260B

C26386-1, C26386-2, C26386-3, C26386-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	20	16.8	84	18.0	90	7	77-122/25
100-41-4	Ethylbenzene	20	16.4	82	17.4	87	6	76-126/17
108-88-3	Toluene	20	16.5	83	17.5	88	6	75-122/17
1330-20-7	Xylene (total)	60	48.0	80	50.7	85	5	77-125/17

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	100%	100%	70-130%
2037-26-5	Toluene-D8	101%	99%	70-130%
460-00-4	4-Bromofluorobenzene	101%	100%	70-130%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: C26386
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR533-BS	R14848.D	1	03/02/13	KN	n/a	n/a	VR533
VR533-BSD	R14849.D	1	03/02/13	KN	n/a	n/a	VR533

The QC reported here applies to the following samples: **Method:** SW846 8260B

C26386-5, C26386-6, C26386-7, C26386-8, C26386-9, C26386-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	20	20.6	103	20.6	103	0	77-122/25
100-41-4	Ethylbenzene	20	21.6	108	21.9	110	1	76-126/17
108-88-3	Toluene	20	21.1	106	21.3	107	1	75-122/17
1330-20-7	Xylene (total)	60	61.3	102	61.9	103	1	77-125/17

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	102%	100%	70-130%
2037-26-5	Toluene-D8	101%	100%	70-130%
460-00-4	4-Bromofluorobenzene	103%	103%	70-130%

* = Outside of Control Limits.

Laboratory Control Sample Summary

Job Number: C26386
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN1179-LCS	N37092.D	1	03/01/13	TF	n/a	n/a	VN1179

The QC reported here applies to the following samples: **Method:** SW846 8260B

C26386-1, C26386-2, C26386-3, C26386-4

CAS No.	Compound	Spike ug/l	LCS ug/l	LCS %	Limits

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	99%	70-130%
2037-26-5	Toluene-D8	102%	70-130%
460-00-4	4-Bromofluorobenzene	99%	70-130%

* = Outside of Control Limits.

Laboratory Control Sample Summary

Job Number: C26386
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR533-LCS	R14852.D	1	03/02/13	KN	n/a	n/a	VR533

The QC reported here applies to the following samples: **Method:** SW846 8260B

C26386-5, C26386-6, C26386-7, C26386-8, C26386-9, C26386-10

CAS No.	Compound	Spike ug/l	LCS ug/l	LCS %	Limits

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	101%	70-130%
2037-26-5	Toluene-D8	101%	70-130%
460-00-4	4-Bromofluorobenzene	101%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C26386
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C26459-1MS	N37107.D	1	03/01/13	TF	n/a	n/a	VN1179
C26459-1MSD	N37108.D	1	03/01/13	TF	n/a	n/a	VN1179
C26459-1	N37093.D	1	03/01/13	TF	n/a	n/a	VN1179

The QC reported here applies to the following samples: **Method:** SW846 8260B

C26386-1, C26386-2, C26386-3, C26386-4

CAS No.	Compound	C26459-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		20	19.3	97	19.8	99	3	77-122/16
100-41-4	Ethylbenzene	ND		20	19.6	98	20.7	104	5	76-126/17
108-88-3	Toluene	ND		20	19.3	97	20.3	102	5	75-122/17
1330-20-7	Xylene (total)	ND		60	56.2	94	59.2	99	5	77-125/17

CAS No.	Surrogate Recoveries	MS	MSD	C26459-1	Limits
1868-53-7	Dibromofluoromethane	95%	90%	97%	70-130%
2037-26-5	Toluene-D8	101%	103%	102%	70-130%
460-00-4	4-Bromofluorobenzene	98%	99%	98%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C26386
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C26386-9MS	R14871.D	10	03/02/13	KN	n/a	n/a	VR533
C26386-9MSD	R14872.D	10	03/02/13	KN	n/a	n/a	VR533
C26386-9	R14866.D	10	03/02/13	KN	n/a	n/a	VR533

The QC reported here applies to the following samples: **Method:** SW846 8260B

C26386-5, C26386-6, C26386-7, C26386-8, C26386-9, C26386-10

CAS No.	Compound	C26386-9 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	668		200	683	8* [a]	745	39* [a]	9	77-122/16
100-41-4	Ethylbenzene	44.3		200	247	101	256	106	4	76-126/17
108-88-3	Toluene	7.8	J	200	217	105	223	108	3	75-122/17
1330-20-7	Xylene (total)	5.9	J	600	616	102	633	105	3	77-125/17

CAS No.	Surrogate Recoveries	MS	MSD	C26386-9	Limits
1868-53-7	Dibromofluoromethane	98%	99%	98%	70-130%
2037-26-5	Toluene-D8	101%	102%	102%	70-130%
460-00-4	4-Bromofluorobenzene	103%	103%	100%	70-130%

(a) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

Northern California ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: C26386
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GJK1359-MB	JK33880.D	1	03/01/13	TT	n/a	n/a	GJK1359

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C26386-1, C26386-2, C26386-3

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	ND	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries		Limits
98-08-8	aaa-Trifluorotoluene	111%	50-150%
460-00-4	4-Bromofluorobenzene	94%	50-150%

Method Blank Summary

Job Number: C26386
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GJK1360-MB	JK33900.D	1	03/01/13	TT	n/a	n/a	GJK1360

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C26386-4, C26386-5, C26386-6, C26386-7, C26386-8, C26386-9

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	ND	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries		Limits
98-08-8	aaa-Trifluorotoluene	114%	50-150%
460-00-4	4-Bromofluorobenzene	97%	50-150%

Blank Spike/Blank Spike Duplicate Summary

Job Number: C26386
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GJK1359-BS	JK33881.D	1	03/01/13	TT	n/a	n/a	GJK1359
GJK1359-BSD	JK33882.D	1	03/01/13	TT	n/a	n/a	GJK1359

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C26386-1, C26386-2, C26386-3

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	BSD mg/l	BSD %	RPD	Limits Rec/RPD
	TPH (Gasoline)	0.4	0.410	103	0.403	101	2	60-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
98-08-8	aaa-Trifluorotoluene	108%	109%	50-150%
460-00-4	4-Bromofluorobenzene	94%	95%	50-150%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: C26386
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GJK1360-BS	JK33901.D	1	03/01/13	TT	n/a	n/a	GJK1360
GJK1360-BSD	JK33902.D	1	03/01/13	TT	n/a	n/a	GJK1360

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C26386-4, C26386-5, C26386-6, C26386-7, C26386-8, C26386-9

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	BSD mg/l	BSD %	RPD	Limits Rec/RPD
	TPH (Gasoline)	0.4	0.404	101	0.413	103	2	60-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
98-08-8	aaa-Trifluorotoluene	109%	112%	50-150%
460-00-4	4-Bromofluorobenzene	95%	98%	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: C26386
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C26386-4MS	JK33913.D	1	03/02/13	TT	n/a	n/a	GJK1360
C26386-4	JK33903.D	1	03/01/13	TT	n/a	n/a	GJK1360

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C26386-4, C26386-5, C26386-6, C26386-7, C26386-8, C26386-9

CAS No.	Compound	C26386-4 mg/l	Q	Spike mg/l	MS mg/l	MS %	Limits
	TPH (Gasoline)	ND		0.4	0.404	101	60-140

CAS No.	Surrogate Recoveries	MS	C26386-4	Limits
98-08-8	aaa-Trifluorotoluene	101%	106%	50-150%
460-00-4	4-Bromofluorobenzene	93%	95%	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: C26386
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C26386-4MS	JK33914.D	1	03/02/13	TT	n/a	n/a	GJK1360
C26386-4	JK33903.D	1	03/01/13	TT	n/a	n/a	GJK1360

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C26386-4, C26386-5, C26386-6, C26386-7, C26386-8, C26386-9

CAS No.	Compound	C26386-4 mg/l	Q	Spike mg/l	MS mg/l	MS %	Limits
	TPH (Gasoline)	ND		0.4	0.394	99	60-140

CAS No.	Surrogate Recoveries	MS	C26386-4	Limits
98-08-8	aaa-Trifluorotoluene	104%	106%	50-150%
460-00-4	4-Bromofluorobenzene	96%	95%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: C26386
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C26386-2DUP	JK33885.D	5	03/01/13	TT	n/a	n/a	GJK1359
C26386-2	JK33884.D	5	03/01/13	TT	n/a	n/a	GJK1359

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C26386-1, C26386-2, C26386-3

CAS No.	Compound	C26386-2 mg/l	Q	DUP mg/l	Q	RPD	Limits
	TPH (Gasoline)	3.98		4.02		1	20

CAS No.	Surrogate Recoveries	DUP	C26386-2	Limits
98-08-8	aaa-Trifluorotoluene	122%	113%	50-150%
460-00-4	4-Bromofluorobenzene	131%	123%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: C26386
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C26364-11DUP	JK33911.D	1	03/01/13	TT	n/a	n/a	GJK1360
C26364-11	JK33910.D	1	03/01/13	TT	n/a	n/a	GJK1360

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C26386-4, C26386-5, C26386-6, C26386-7, C26386-8, C26386-9

CAS No.	Compound	C26364-11 mg/l	Q	DUP mg/l	Q	RPD	Limits
	TPH (Gasoline)	ND		ND		nc	20

CAS No.	Surrogate Recoveries	DUP	C26364-11	Limits
98-08-8	aaa-Trifluorotoluene	103%	107%	50-150%
460-00-4	4-Bromofluorobenzene	93%	95%	50-150%

* = Outside of Control Limits.

Northern California ACCUTEST LABORATORIES

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: C26386
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7550-MB	GG41399.D	1	02/26/13	JH	02/26/13	OP7550	GGG1097

The QC reported here applies to the following samples: **Method:** NWTPH-DX

C26386-1, C26386-2, C26386-3, C26386-4, C26386-5, C26386-6, C26386-7, C26386-8, C26386-9

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	ND	0.10	0.050	mg/l	
	TPH (Motor Oil)	ND	0.20	0.10	mg/l	

CAS No.	Surrogate Recoveries		Limits
630-01-3	Hexacosane	91%	50-150%

Blank Spike/Blank Spike Duplicate Summary

Job Number: C26386
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7550-BS	GG41400.D	1	02/26/13	JH	02/26/13	OP7550	GGG1097
OP7550-BSD	GG41401.D	1	02/26/13	JH	02/26/13	OP7550	GGG1097

The QC reported here applies to the following samples: **Method:** NWTPH-DX

C26386-1, C26386-2, C26386-3, C26386-4, C26386-5, C26386-6, C26386-7, C26386-8, C26386-9

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	BSD mg/l	BSD %	RPD	Limits Rec/RPD
	TPH (Diesel)	1	0.745	75	0.853	85	14	45-140/30
	TPH (Motor Oil)	1	0.699	70	0.753	75	7	45-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
630-01-3	Hexacosane	94%	110%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: C26386
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7550-DUP2	GG41421.D	1	02/27/13	JH	02/27/13	OP7550	GGG1098
C26386-8	GG41419.D	1	02/27/13	JH	02/26/13	OP7550	GGG1098

The QC reported here applies to the following samples: **Method:** NWTPH-DX

C26386-1, C26386-2, C26386-3, C26386-4, C26386-5, C26386-6, C26386-7, C26386-8, C26386-9

CAS No.	Compound	C26386-8 mg/l	Q	DUP mg/l	Q	RPD	Limits
	TPH (Diesel)	0.604		0.538		12	25
	TPH (Motor Oil)	ND		ND		nc	25

CAS No.	Surrogate Recoveries	DUP	C26386-8	Limits
630-01-3	Hexacosane	104%	107%	50-150%

* = Outside of Control Limits.

Data Review

The data quality review of the nine primary groundwater samples and one trip blank collected on February 21st and February 22nd, 2013 at the Harbor Island site in Seattle, Washington has been completed. Samples were submitted to Accutest Laboratories (Accutest) of San Jose, California. The samples submitted were analyzed for one or more of the following: benzene, toluene, ethylbenzene, and total xylene (BTEX; EPA Method 8260B); total petroleum hydrocarbons (TPH) as diesel (NWTPH-Dx) with silica gel cleanup; and TPH gasoline (NWTPH-Gx).

The review included the analytical data presented in Accutest report C26386. The data were reviewed based on *United States Environmental Protection Agency (USEPA) Contract Laboratory Program National Functional Guidelines (NFGs) for Organic Data Review*, June 2008 and laboratory quality control criteria. Items reviewed included: chain-of-custody (COC) records, hold times, surrogate recoveries, matrix spike and matrix spike duplicate results, laboratory control and laboratory control duplicate results, laboratory duplicate results, method blank results and trip blank results. No data qualifiers were assigned as a result of this review.

The following criteria were evaluated during the review:

- COC Records – Acceptable with the following exceptions:

  The laboratory noted only one one-liter amber bottle was received for the samples TX-03A and MW-302 for NWTPH-Dx analysis. Adequate sample volume was available for analysis, therefore; no qualification is necessary.

- Temperature – Acceptable
- Preservation – Acceptable
- Hold Times – Acceptable
- Trip Blanks – Acceptable
- Method Blanks – Acceptable
- Surrogates – Acceptable
- Laboratory Control Samples (LCS/LCSD) – Acceptable
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) – Acceptable
- Reporting Limits – The laboratory reported all detections between the method detection limit (MDL) and method reporting limit (MRL) as estimated and flagged the results ‘J’.

- Laboratory Notes –

  Accutest commented that higher boiling gasoline compounds in the diesel range are present in the samples and a diesel pattern is not present and flagged the results 'a'. These comments are available in the Accutest reports. None of the diesel range hydrocarbon results were qualified based on the Accutest comments.

Overall Assessment of Data

The completeness of the analytical reports for this groundwater monitoring event is 100%. The usefulness of the data is based on the USEPA guidance documents referenced in the introduction of this report. Upon consideration of the information presented above, the data are considered usable. Additional qualifiers were not added during the data review process.

References

USEPA, 2008. U.S. Environmental Protection Agency (USEPA) Contract Laboratory Program National Functional Guidelines for Organic Data Review. June 2008.

Data Review

The data quality review of the eighteen primary groundwater samples, three field duplicates, and one trip blank collected May 14th to May 16th, 2013 at the Harbor Island site in Seattle, Washington has been completed. Samples were submitted to Accutest Laboratories (Accutest) of San Jose, California. The samples submitted were analyzed for one or more of the following: benzene, toluene, ethylbenzene, and total xylene (BTEX; EPA Method 8260B); total petroleum hydrocarbons (TPH) as diesel (NWTPH-Dx) with silica gel cleanup; TPH gasoline (NWTPH-Gx); total lead (EPA Method 6010B); and polycyclic aromatic hydrocarbons (EPA 8270C SIM);

The review included the analytical data presented in Accutest report C27781. The data were reviewed based on *United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines (NFGs) for Organic Data Review*, June 2008, *USEPA CLP NFGs for Inorganic Superfund Data Review*, January 2010, and laboratory quality control criteria. Items reviewed included: chain-of-custody (COC) records, hold times, surrogate recoveries, matrix spike and matrix spike duplicate results, field duplicates, laboratory control and laboratory control duplicate results, laboratory duplicate results, method blank results and trip blank results. No data qualifiers were assigned as a result of this review.

The following criteria were evaluated during the review:

- COC Records – Acceptable
- Temperature – Acceptable
- Preservation – Acceptable
- Hold Times – Acceptable
- Trip Blanks – Acceptable
- Method Blanks – Acceptable
- Surrogates – Acceptable
- Laboratory Control Samples (LCS/LCSD) – Acceptable
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) – Acceptable
- Field Duplicates - Sample MW-301D-0513 (C27781-9) was submitted as a field duplicate of primary sample MW-301-0513 (C27781-8), sample MW-214D-0513 (C27781-13) was submitted as a field duplicate of primary sample MW-214-0513 (C27781-12), and sample MW-305D-0513 (C27781-15) was submitted as a field duplicate of primary sample MW-305-0513 (C27781-14). Relative percent difference (RPD) calculations were performed on the field duplicate sample pair results when the sample results were greater than five times the method reporting limit. All calculated RPDs for duplicate pairs were within the historical project

control limit of 20%.

- Reporting Limits – The laboratory reported all detections between the method detection limit (MDL) and method reporting limit (MRL) as estimated and flagged the results 'J'.

Overall Assessment of Data

The completeness of the analytical reports for this groundwater monitoring event is 100%. The usefulness of the data is based on the USEPA guidance documents referenced in the introduction of this report. Upon consideration of the information presented above, the data are considered usable. Additional qualifiers were not added during the data review process.

References

USEPA, 2008. U.S. Environmental Protection Agency Contract Laboratory Program National Functional Guidelines for Organic Data Review. June 2008.

USEPA, 2010. U.S. Environmental Protection Agency (USEPA) Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review. January 2010.

Northern California ACCUTEST LABORATORIES

06/01/13

Technical Report for

Shell Oil Company

URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

46194348

Accutest Job Number: C27781

Sampling Dates: 05/14/13 - 05/16/13

Report to:

URS Corporation
111 SW Columbia, Suite 1500
Portland, OR 97201-5850
brian.pletcher@urs.com

ATTN: Brian Pletcher

Total number of pages in report: **101**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

James J. Rhudy
Lab Director

Client Service contact: Nutan Kabir 408-588-0200

Certifications: CA (08258CA) AZ (AZ0762) DoD/ISO/IEC 17025:2005 (L2242)

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Sections:

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Sample Summary

Shell Oil Company

Job No: C27781

URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Project No: 46194348

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
C27781-1	05/14/13	10:00	DL	05/17/13	AQ	Ground Water	MW-104-0513
C27781-2	05/14/13	11:35	DL	05/17/13	AQ	Ground Water	MW-302-0513
C27781-3	05/14/13	13:55	DL	05/17/13	AQ	Ground Water	MW-304-0513
C27781-4	05/14/13	15:00	DL	05/17/13	AQ	Ground Water	MW-310-0513
C27781-5	05/15/13	08:35	DL	05/17/13	AQ	Ground Water	MW-202-0513
C27781-6	05/15/13	11:00	DL	05/17/13	AQ	Ground Water	TX-03A-0513
C27781-7	05/15/13	11:30	DL	05/17/13	AQ	Ground Water	MW-203-0513
C27781-8	05/15/13	13:10	DL	05/17/13	AQ	Ground Water	MW-301-0513
C27781-9	05/15/13	13:30	DL	05/17/13	AQ	Ground Water	MW-301D-0513
C27781-10	05/15/13	00:00	DL	05/17/13	AQ	Trip Blank Water	TRIP BLANK
C27781-11	05/15/13	15:45	DL	05/17/13	AQ	Ground Water	MW-213-0513
C27781-12	05/15/13	16:20	DL	05/17/13	AQ	Ground Water	MW-214-0513
C27781-13	05/15/13	16:30	DL	05/17/13	AQ	Ground Water	MW-214D-0513

Sample Summary
(continued)

Shell Oil Company

Job No: C27781

URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Project No: 46194348

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
C27781-14	05/15/13	13:07	DL	05/17/13	AQ	Ground Water	MW-305-0513
C27781-15	05/15/13	13:15	DL	05/17/13	AQ	Ground Water	MW-305D-0513
C27781-16	05/15/13	10:45	DL	05/17/13	AQ	Ground Water	MW-306-0513
C27781-17	05/15/13	08:40	DL	05/17/13	AQ	Ground Water	MW-307-0513
C27781-18	05/15/13	09:28	DL	05/17/13	AQ	Ground Water	MW-308-0513
C27781-19	05/15/13	14:25	DL	05/17/13	AQ	Ground Water	SH-04-0513
C27781-20	05/16/13	08:07	DL	05/17/13	AQ	Ground Water	MW-303-0513
C27781-21	05/16/13	08:51	DL	05/17/13	AQ	Ground Water	MW-309-0513

Summary of Hits

Job Number: C27781
Account: Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Collected: 05/14/13 thru 05/16/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
C27781-1	**MW-104-0513**					
TPH (Gasoline)		5.07	2.0	0.50	mg/l	NWTPH-GX
TPH (Diesel)		0.601	0.096	0.048	mg/l	NWTPH-DX
C27781-2	**MW-302-0513**					
Benzene		873	10	2.0	ug/l	SW846 8260B
Toluene		23.1	10	2.0	ug/l	SW846 8260B
Ethylbenzene		236	10	2.0	ug/l	SW846 8260B
Xylene (total)		145	20	4.6	ug/l	SW846 8260B
TPH (Gasoline)		4.19	2.0	0.50	mg/l	NWTPH-GX
C27781-3	**MW-304-0513**					
Benzene		645	10	2.0	ug/l	SW846 8260B
Toluene		28.3	10	2.0	ug/l	SW846 8260B
Ethylbenzene		209	10	2.0	ug/l	SW846 8260B
Xylene (total)		144	20	4.6	ug/l	SW846 8260B
TPH (Gasoline)		4.73	2.0	0.50	mg/l	NWTPH-GX
C27781-4	**MW-310-0513**					
Benzene		993	10	2.0	ug/l	SW846 8260B
Toluene		70.3	10	2.0	ug/l	SW846 8260B
Ethylbenzene		654	10	2.0	ug/l	SW846 8260B
Xylene (total)		175	20	4.6	ug/l	SW846 8260B
TPH (Gasoline)		6.49	2.0	0.50	mg/l	NWTPH-GX
C27781-5	**MW-202-0513**					
TPH (Gasoline)		3.83	2.0	0.50	mg/l	NWTPH-GX
TPH (Diesel)		1.62	0.096	0.048	mg/l	NWTPH-DX
C27781-6	**TX-03A-0513**					
Benzene		2150	50	10	ug/l	SW846 8260B
Toluene		45.9 J	50	10	ug/l	SW846 8260B
Ethylbenzene		189	50	10	ug/l	SW846 8260B
Xylene (total)		64.3 J	100	23	ug/l	SW846 8260B
TPH (Gasoline)		3.11	2.0	0.50	mg/l	NWTPH-GX
C27781-7	**MW-203-0513**					
TPH (Gasoline)		0.144 J	0.20	0.050	mg/l	NWTPH-GX

Summary of Hits

Job Number: C27781
Account: Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Collected: 05/14/13 thru 05/16/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
C27781-8	**MW-301-0513**					
Benzene		357	5.0	1.0	ug/l	SW846 8260B
Toluene		12.2	5.0	1.0	ug/l	SW846 8260B
Ethylbenzene		23.1	5.0	1.0	ug/l	SW846 8260B
Xylene (total)		14.5	10	2.3	ug/l	SW846 8260B
TPH (Gasoline)		3.63	2.0	0.50	mg/l	NWTPH-GX
C27781-9	**MW-301D-0513**					
Benzene		363	10	2.0	ug/l	SW846 8260B
Toluene		12.5	10	2.0	ug/l	SW846 8260B
Ethylbenzene		26.4	10	2.0	ug/l	SW846 8260B
Xylene (total)		14.8 J	20	4.6	ug/l	SW846 8260B
TPH (Gasoline)		3.62	2.0	0.50	mg/l	NWTPH-GX
C27781-10	**TRIP BLANK**					
No hits reported in this sample.						
C27781-11	**MW-213-0513**					
No hits reported in this sample.						
C27781-12	**MW-214-0513**					
TPH (Diesel)		0.0857 J	0.096	0.048	mg/l	NWTPH-DX
C27781-13	**MW-214D-0513**					
TPH (Diesel)		0.0932 J	0.096	0.048	mg/l	NWTPH-DX
C27781-14	**MW-305-0513**					
Benzene		397	10	2.0	ug/l	SW846 8260B
Toluene		26.3	10	2.0	ug/l	SW846 8260B
Ethylbenzene		290	10	2.0	ug/l	SW846 8260B
Xylene (total)		86.7	20	4.6	ug/l	SW846 8260B
TPH (Gasoline)		6.28	4.0	1.0	mg/l	NWTPH-GX
C27781-15	**MW-305D-0513**					
Benzene		318	10	2.0	ug/l	SW846 8260B
Toluene		21.7	10	2.0	ug/l	SW846 8260B

Summary of Hits

Job Number: C27781
Account: Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Collected: 05/14/13 thru 05/16/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Ethylbenzene		233	10	2.0	ug/l	SW846 8260B
Xylene (total)		68.9	20	4.6	ug/l	SW846 8260B
TPH (Gasoline)		6.42	2.0	0.50	mg/l	NWTPH-GX
C27781-16	**MW-306-0513**					
Benzene		746	20	4.0	ug/l	SW846 8260B
Toluene		47.2	20	4.0	ug/l	SW846 8260B
Ethylbenzene		837	20	4.0	ug/l	SW846 8260B
Xylene (total)		3700	40	9.2	ug/l	SW846 8260B
TPH (Gasoline)		18.5	8.0	2.0	mg/l	NWTPH-GX
C27781-17	**MW-307-0513**					
Benzene		437	10	2.0	ug/l	SW846 8260B
Toluene		46.1	10	2.0	ug/l	SW846 8260B
Ethylbenzene		167	10	2.0	ug/l	SW846 8260B
Xylene (total)		120	20	4.6	ug/l	SW846 8260B
TPH (Gasoline)		4.56	2.0	0.50	mg/l	NWTPH-GX
C27781-18	**MW-308-0513**					
Benzene		392	10	2.0	ug/l	SW846 8260B
Toluene		5.2 J	10	2.0	ug/l	SW846 8260B
Ethylbenzene		42.7	10	2.0	ug/l	SW846 8260B
TPH (Gasoline)		2.54	1.0	0.25	mg/l	NWTPH-GX
C27781-19	**SH-04-0513**					
Benzene [a]		1.6 J	2.5	0.50	ug/l	SW846 8260B
Ethylbenzene [a]		4.2	2.5	0.50	ug/l	SW846 8260B
Xylene (total) [a]		3.2 J	5.0	1.2	ug/l	SW846 8260B
TPH (Gasoline)		2.16	0.50	0.13	mg/l	NWTPH-GX
TPH (Diesel)		0.376	0.096	0.048	mg/l	NWTPH-DX
C27781-20	**MW-303-0513**					
Benzene		1900	50	10	ug/l	SW846 8260B
Toluene		86.4	50	10	ug/l	SW846 8260B
Ethylbenzene		983	50	10	ug/l	SW846 8260B
Xylene (total)		272	100	23	ug/l	SW846 8260B
TPH (Gasoline)		10.6	8.0	2.0	mg/l	NWTPH-GX

Summary of Hits

Job Number: C27781
Account: Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Collected: 05/14/13 thru 05/16/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method

C27781-21 **MW-309-0513**

No hits reported in this sample.

(a) Dilution required due to high concentration of non-target hydrocarbons.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MW-104-0513		
Lab Sample ID:	C27781-1	**Date Sampled:**	05/14/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK35829.D	10	05/22/13	TT	n/a	n/a	GJK1445
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	5.07	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	99%		50-150%
460-00-4	4-Bromofluorobenzene	100%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-104-0513		
Lab Sample ID:	C27781-1	**Date Sampled:**	05/14/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	NWTPH-DX SW846 3510C	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH303599.D	1	05/19/13	AG	05/18/13	OP8007	GHH984
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	0.601	0.096	0.048	mg/l	
	TPH (Motor Oil)	ND	0.19	0.096	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	71%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-104-0513		
Lab Sample ID:	C27781-1	**Date Sampled:**	05/14/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 10	10	ug/l	1	05/20/13	05/21/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3174
(2) Prep QC Batch: MP6223

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-302-0513		
Lab Sample ID:	C27781-2	**Date Sampled:**	05/14/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U11117.D	10	05/21/13	TF	n/a	n/a	VU426
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	873	10	2.0	ug/l	
108-88-3	Toluene	23.1	10	2.0	ug/l	
100-41-4	Ethylbenzene	236	10	2.0	ug/l	
1330-20-7	Xylene (total)	145	20	4.6	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	115%		70-130%
2037-26-5	Toluene-D8	101%		70-130%
460-00-4	4-Bromofluorobenzene	103%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-302-0513		
Lab Sample ID:	C27781-2	**Date Sampled:**	05/14/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK35830.D	10	05/22/13	TT	n/a	n/a	GJK1445
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	4.19	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	102%		50-150%
460-00-4	4-Bromofluorobenzene	83%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-304-0513		
Lab Sample ID:	C27781-3	**Date Sampled:**	05/14/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q15020.D	10	05/22/13	PH	n/a	n/a	VQ603
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	645	10	2.0	ug/l	
108-88-3	Toluene	28.3	10	2.0	ug/l	
100-41-4	Ethylbenzene	209	10	2.0	ug/l	
1330-20-7	Xylene (total)	144	20	4.6	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		70-130%
2037-26-5	Toluene-D8	104%		70-130%
460-00-4	4-Bromofluorobenzene	106%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-304-0513		
Lab Sample ID:	C27781-3	**Date Sampled:**	05/14/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK35832.D	10	05/22/13	TT	n/a	n/a	GJK1445
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	4.73	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	104%		50-150%
460-00-4	4-Bromofluorobenzene	84%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-310-0513		
Lab Sample ID:	C27781-4	**Date Sampled:**	05/14/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q15021.D	10	05/22/13	PH	n/a	n/a	VQ603
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	993	10	2.0	ug/l	
108-88-3	Toluene	70.3	10	2.0	ug/l	
100-41-4	Ethylbenzene	654	10	2.0	ug/l	
1330-20-7	Xylene (total)	175	20	4.6	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%		70-130%
2037-26-5	Toluene-D8	103%		70-130%
460-00-4	4-Bromofluorobenzene	105%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-310-0513		
Lab Sample ID:	C27781-4	**Date Sampled:**	05/14/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK35833.D	10	05/22/13	TT	n/a	n/a	GJK1445
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	6.49	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	102%		50-150%
460-00-4	4-Bromofluorobenzene	85%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-202-0513		
Lab Sample ID:	C27781-5	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK35834.D	10	05/22/13	TT	n/a	n/a	GJK1445
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	3.83	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	102%		50-150%
460-00-4	4-Bromofluorobenzene	76%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-202-0513		
Lab Sample ID:	C27781-5	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	NWTPH-DX SW846 3510C	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH303600.D	1	05/19/13	AG	05/18/13	OP8007	GHH984
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	1.62	0.096	0.048	mg/l	
	TPH (Motor Oil)	ND	0.19	0.096	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	71%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TX-03A-0513		
Lab Sample ID:	C27781-6	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q15022.D	50	05/22/13	PH	n/a	n/a	VQ603
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	2150	50	10	ug/l	
108-88-3	Toluene	45.9	50	10	ug/l	J
100-41-4	Ethylbenzene	189	50	10	ug/l	
1330-20-7	Xylene (total)	64.3	100	23	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%		70-130%
2037-26-5	Toluene-D8	105%		70-130%
460-00-4	4-Bromofluorobenzene	106%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TX-03A-0513		
Lab Sample ID:	C27781-6	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK35835.D	10	05/22/13	TT	n/a	n/a	GJK1445
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	3.11	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	102%		50-150%
460-00-4	4-Bromofluorobenzene	78%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-203-0513		
Lab Sample ID:	C27781-7	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK35837.D	1	05/23/13	TT	n/a	n/a	GJK1445
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	0.144	0.20	0.050	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	102%		50-150%
460-00-4	4-Bromofluorobenzene	74%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-203-0513		
Lab Sample ID:	C27781-7	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	NWTPH-DX SW846 3510C	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH303601.D	1	05/19/13	AG	05/18/13	OP8007	GHH984
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	ND	0.096	0.048	mg/l	
	TPH (Motor Oil)	ND	0.19	0.096	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	72%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-301-0513		
Lab Sample ID:	C27781-8	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q15023.D	5	05/22/13	PH	n/a	n/a	VQ603
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	357	5.0	1.0	ug/l	
108-88-3	Toluene	12.2	5.0	1.0	ug/l	
100-41-4	Ethylbenzene	23.1	5.0	1.0	ug/l	
1330-20-7	Xylene (total)	14.5	10	2.3	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		70-130%
2037-26-5	Toluene-D8	100%		70-130%
460-00-4	4-Bromofluorobenzene	108%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-301-0513		
Lab Sample ID:	C27781-8	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK35838.D	10	05/23/13	TT	n/a	n/a	GJK1445
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	3.63	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	103%		50-150%
460-00-4	4-Bromofluorobenzene	85%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-301D-0513		
Lab Sample ID:	C27781-9	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q15024.D	10	05/22/13	PH	n/a	n/a	VQ603
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	363	10	2.0	ug/l	
108-88-3	Toluene	12.5	10	2.0	ug/l	
100-41-4	Ethylbenzene	26.4	10	2.0	ug/l	
1330-20-7	Xylene (total)	14.8	20	4.6	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%		70-130%
2037-26-5	Toluene-D8	102%		70-130%
460-00-4	4-Bromofluorobenzene	106%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-301D-0513		
Lab Sample ID:	C27781-9	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK35839.D	10	05/23/13	TT	n/a	n/a	GJK1445
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	3.62	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	103%		50-150%
460-00-4	4-Bromofluorobenzene	88%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	C27781-10	**Date Sampled:**	05/15/13
Matrix:	AQ - Trip Blank Water	**Date Received:**	05/17/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q15027.D	1	05/22/13	PH	n/a	n/a	VQ603
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	91%		70-130%
2037-26-5	Toluene-D8	106%		70-130%
460-00-4	4-Bromofluorobenzene	105%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	C27781-10	**Date Sampled:**	05/15/13
Matrix:	AQ - Trip Blank Water	**Date Received:**	05/17/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK35840.D	1	05/23/13	TT	n/a	n/a	GJK1445
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	ND	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	99%		50-150%
460-00-4	4-Bromofluorobenzene	72%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-213-0513		
Lab Sample ID:	C27781-11	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q15028.D	1	05/22/13	PH	n/a	n/a	VQ603
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		70-130%
2037-26-5	Toluene-D8	106%		70-130%
460-00-4	4-Bromofluorobenzene	107%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-213-0513
Lab Sample ID: C27781-11 **Date Sampled:** 05/15/13
Matrix: AQ - Ground Water **Date Received:** 05/17/13
Method: SW846 8270C BY SIM SW846 3510C **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T8801.D	1	05/20/13	NL	05/17/13	OP8000	ET401
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.47	0.047	ug/l	
208-96-8	Acenaphthylene	ND	0.47	0.047	ug/l	
120-12-7	Anthracene	ND	0.47	0.047	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.094	0.050	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.094	0.039	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.094	0.033	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.094	0.034	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.094	0.037	ug/l	
218-01-9	Chrysene	ND	0.094	0.042	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.094	0.033	ug/l	
206-44-0	Fluoranthene	ND	0.47	0.047	ug/l	
86-73-7	Fluorene	ND	0.47	0.047	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.094	0.033	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.47	0.094	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.47	0.094	ug/l	
91-20-3	Naphthalene	ND	0.47	0.094	ug/l	
85-01-8	Phenanthrene	ND	0.47	0.047	ug/l	
129-00-0	Pyrene	ND	0.47	0.047	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	71%		31-128%
321-60-8	2-Fluorobiphenyl	70%		34-123%
1718-51-0	Terphenyl-d14	78%		43-136%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-213-0513		
Lab Sample ID:	C27781-11	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK35841.D	1	05/23/13	TT	n/a	n/a	GJK1445
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	ND	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	96%		50-150%
460-00-4	4-Bromofluorobenzene	73%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-213-0513
Lab Sample ID: C27781-11 **Date Sampled:** 05/15/13
Matrix: AQ - Ground Water **Date Received:** 05/17/13
Method: NWTPH-DX SW846 3510C **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH303602.D	1	05/19/13	AG	05/18/13	OP8007	GHH984
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	ND	0.096	0.048	mg/l	
	TPH (Motor Oil)	ND	0.19	0.096	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	74%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-214-0513		
Lab Sample ID:	C27781-12	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q15029.D	1	05/22/13	PH	n/a	n/a	VQ603
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		70-130%
2037-26-5	Toluene-D8	106%		70-130%
460-00-4	4-Bromofluorobenzene	106%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-214-0513
Lab Sample ID: C27781-12 **Date Sampled:** 05/15/13
Matrix: AQ - Ground Water **Date Received:** 05/17/13
Method: SW846 8270C BY SIM SW846 3510C **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T8802.D	1	05/20/13	NL	05/17/13	OP8000	ET401
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.47	0.047	ug/l	
208-96-8	Acenaphthylene	ND	0.47	0.047	ug/l	
120-12-7	Anthracene	ND	0.47	0.047	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.094	0.050	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.094	0.039	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.094	0.033	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.094	0.034	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.094	0.037	ug/l	
218-01-9	Chrysene	ND	0.094	0.042	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.094	0.033	ug/l	
206-44-0	Fluoranthene	ND	0.47	0.047	ug/l	
86-73-7	Fluorene	ND	0.47	0.047	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.094	0.033	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.47	0.094	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.47	0.094	ug/l	
91-20-3	Naphthalene	ND	0.47	0.094	ug/l	
85-01-8	Phenanthrene	ND	0.47	0.047	ug/l	
129-00-0	Pyrene	ND	0.47	0.047	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	73%		31-128%
321-60-8	2-Fluorobiphenyl	77%		34-123%
1718-51-0	Terphenyl-d14	78%		43-136%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-214-0513		
Lab Sample ID:	C27781-12	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK35842.D	1	05/23/13	TT	n/a	n/a	GJK1445
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	ND	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	103%		50-150%
460-00-4	4-Bromofluorobenzene	76%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-214-0513
Lab Sample ID: C27781-12 **Date Sampled:** 05/15/13
Matrix: AQ - Ground Water **Date Received:** 05/17/13
Method: NWTPH-DX SW846 3510C **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH303603.D	1	05/19/13	AG	05/18/13	OP8007	GHH984
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	0.0857	0.096	0.048	mg/l	J
	TPH (Motor Oil)	ND	0.19	0.096	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	73%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-214D-0513		
Lab Sample ID:	C27781-13	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q15030.D	1	05/22/13	PH	n/a	n/a	VQ603
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		70-130%
2037-26-5	Toluene-D8	107%		70-130%
460-00-4	4-Bromofluorobenzene	106%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-214D-0513
Lab Sample ID: C27781-13 **Date Sampled:** 05/15/13
Matrix: AQ - Ground Water **Date Received:** 05/17/13
Method: SW846 8270C BY SIM SW846 3510C **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T8803.D	1	05/20/13	NL	05/17/13	OP8000	ET401
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.48	0.048	ug/l	
208-96-8	Acenaphthylene	ND	0.48	0.048	ug/l	
120-12-7	Anthracene	ND	0.48	0.048	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.095	0.050	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.095	0.039	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.095	0.033	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.095	0.034	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.095	0.037	ug/l	
218-01-9	Chrysene	ND	0.095	0.043	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.095	0.033	ug/l	
206-44-0	Fluoranthene	ND	0.48	0.048	ug/l	
86-73-7	Fluorene	ND	0.48	0.048	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.095	0.033	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.48	0.095	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.48	0.095	ug/l	
91-20-3	Naphthalene	ND	0.48	0.095	ug/l	
85-01-8	Phenanthrene	ND	0.48	0.048	ug/l	
129-00-0	Pyrene	ND	0.48	0.048	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	69%		31-128%
321-60-8	2-Fluorobiphenyl	67%		34-123%
1718-51-0	Terphenyl-d14	68%		43-136%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-214D-0513		
Lab Sample ID:	C27781-13	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK35853.D	1	05/23/13	TT	n/a	n/a	GJK1445
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	ND	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	98%		50-150%
460-00-4	4-Bromofluorobenzene	73%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-214D-0513
Lab Sample ID: C27781-13 **Date Sampled:** 05/15/13
Matrix: AQ - Ground Water **Date Received:** 05/17/13
Method: NWTPH-DX SW846 3510C **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH303604.D	1	05/19/13	AG	05/18/13	OP8007	GHH984
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	0.0932	0.096	0.048	mg/l	J
	TPH (Motor Oil)	ND	0.19	0.096	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	72%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-305-0513		
Lab Sample ID:	C27781-14	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q15031.D	10	05/22/13	PH	n/a	n/a	VQ603
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	397	10	2.0	ug/l	
108-88-3	Toluene	26.3	10	2.0	ug/l	
100-41-4	Ethylbenzene	290	10	2.0	ug/l	
1330-20-7	Xylene (total)	86.7	20	4.6	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		70-130%
2037-26-5	Toluene-D8	105%		70-130%
460-00-4	4-Bromofluorobenzene	108%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-305-0513		
Lab Sample ID:	C27781-14	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK35845.D	20	05/23/13	TT	n/a	n/a	GJK1445
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	6.28	4.0	1.0	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	100%		50-150%
460-00-4	4-Bromofluorobenzene	77%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-305D-0513		
Lab Sample ID:	C27781-15	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q15032.D	10	05/22/13	PH	n/a	n/a	VQ603
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	318	10	2.0	ug/l	
108-88-3	Toluene	21.7	10	2.0	ug/l	
100-41-4	Ethylbenzene	233	10	2.0	ug/l	
1330-20-7	Xylene (total)	68.9	20	4.6	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%		70-130%
2037-26-5	Toluene-D8	105%		70-130%
460-00-4	4-Bromofluorobenzene	106%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-305D-0513		
Lab Sample ID:	C27781-15	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK35846.D	10	05/23/13	TT	n/a	n/a	GJK1445
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	6.42	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	101%		50-150%
460-00-4	4-Bromofluorobenzene	83%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-306-0513		
Lab Sample ID:	C27781-16	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q15033.D	20	05/22/13	PH	n/a	n/a	VQ603
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	746	20	4.0	ug/l	
108-88-3	Toluene	47.2	20	4.0	ug/l	
100-41-4	Ethylbenzene	837	20	4.0	ug/l	
1330-20-7	Xylene (total)	3700	40	9.2	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		70-130%
2037-26-5	Toluene-D8	106%		70-130%
460-00-4	4-Bromofluorobenzene	107%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-306-0513		
Lab Sample ID:	C27781-16	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK35848.D	40	05/23/13	TT	n/a	n/a	GJK1445
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	18.5	8.0	2.0	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	101%		50-150%
460-00-4	4-Bromofluorobenzene	77%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-307-0513		
Lab Sample ID:	C27781-17	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R17182.D	10	05/22/13	TN	n/a	n/a	VR626
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	437	10	2.0	ug/l	
108-88-3	Toluene	46.1	10	2.0	ug/l	
100-41-4	Ethylbenzene	167	10	2.0	ug/l	
1330-20-7	Xylene (total)	120	20	4.6	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		70-130%
2037-26-5	Toluene-D8	98%		70-130%
460-00-4	4-Bromofluorobenzene	97%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-307-0513		
Lab Sample ID:	C27781-17	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK35849.D	10	05/23/13	TT	n/a	n/a	GJK1445
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	4.56	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	99%		50-150%
460-00-4	4-Bromofluorobenzene	80%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-308-0513
Lab Sample ID: C27781-18
Matrix: AQ - Ground Water
Method: SW846 8260B
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Date Sampled: 05/15/13
Date Received: 05/17/13
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R17183.D	10	05/22/13	TN	n/a	n/a	VR626
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	392	10	2.0	ug/l	
108-88-3	Toluene	5.2	10	2.0	ug/l	J
100-41-4	Ethylbenzene	42.7	10	2.0	ug/l	
1330-20-7	Xylene (total)	ND	20	4.6	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		70-130%
2037-26-5	Toluene-D8	97%		70-130%
460-00-4	4-Bromofluorobenzene	98%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-308-0513		
Lab Sample ID:	C27781-18	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK35850.D	5	05/23/13	TT	n/a	n/a	GJK1445
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	2.54	1.0	0.25	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	99%		50-150%
460-00-4	4-Bromofluorobenzene	83%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SH-04-0513		
Lab Sample ID:	C27781-19	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	R17184.D	2.5	05/22/13	TN	n/a	n/a	VR626
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1.6	2.5	0.50	ug/l	J
108-88-3	Toluene	ND	2.5	0.50	ug/l	
100-41-4	Ethylbenzene	4.2	2.5	0.50	ug/l	
1330-20-7	Xylene (total)	3.2	5.0	1.2	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		70-130%
2037-26-5	Toluene-D8	90%		70-130%
460-00-4	4-Bromofluorobenzene	97%		70-130%

(a) Dilution required due to high concentration of non-target hydrocarbons.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SH-04-0513		
Lab Sample ID:	C27781-19	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK35862.D	2.5	05/23/13	TT	n/a	n/a	GJK1446
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	2.16	0.50	0.13	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	95%		50-150%
460-00-4	4-Bromofluorobenzene	77%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SH-04-0513		
Lab Sample ID:	C27781-19	**Date Sampled:**	05/15/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	NWTPH-DX SW846 3510C	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH303605.D	1	05/19/13	AG	05/18/13	OP8007	GHH984
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	0.376	0.096	0.048	mg/l	
	TPH (Motor Oil)	ND	0.19	0.096	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	71%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-303-0513		
Lab Sample ID:	C27781-20	**Date Sampled:**	05/16/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R17185.D	50	05/22/13	TN	n/a	n/a	VR626
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1900	50	10	ug/l	
108-88-3	Toluene	86.4	50	10	ug/l	
100-41-4	Ethylbenzene	983	50	10	ug/l	
1330-20-7	Xylene (total)	272	100	23	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		70-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	97%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-303-0513		
Lab Sample ID:	C27781-20	**Date Sampled:**	05/16/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK35864.D	40	05/23/13	TT	n/a	n/a	GJK1446
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	10.6	8.0	2.0	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	98%		50-150%
460-00-4	4-Bromofluorobenzene	81%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-309-0513		
Lab Sample ID:	C27781-21	**Date Sampled:**	05/16/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R17186.D	1	05/22/13	TN	n/a	n/a	VR626
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		70-130%
2037-26-5	Toluene-D8	90%		70-130%
460-00-4	4-Bromofluorobenzene	95%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-309-0513		
Lab Sample ID:	C27781-21	**Date Sampled:**	05/16/13
Matrix:	AQ - Ground Water	**Date Received:**	05/17/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK35865.D	1	05/23/13	TT	n/a	n/a	GJK1446
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	ND	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	95%		50-150%
460-00-4	4-Bromofluorobenzene	80%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Northern California ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SHELLWIC3660 FEDEX # 8020 0829 5012

LAB (LOCATION)
XENCO ( )
CALSCIENCE ( )
TEST AMERICA ( )
STL ( )
OTHER (ACCUTEST)

Shell Oil Products Chain Of Custody Record

Please Check Appropriate Box:
ENV. SERVICES | MOTIVA RETAIL | SHELL RETAIL
MOTIVA SD&M | CONSULTANT | UBES
SHELL PIPELINE | OTHER

Print Bill To Contact Name:
PO #
INCIDENT # (ENV SERVICES): 3 5 1 0 3 2
SAP #: 3 0 0 0 3 6
CHECK IF NO INCIDENT # APPLIES
DATE:
PAGE: 1 of 3

CONSULTANT COMPANY: URS
ADDRESS: 111 SW COLUMBIA
CITY: PORTLAND, OR
TELEPHONE: 503-222-7200 FAX: E-MAIL: brian.pletcher@urs.com

SITE ADDRESS (Street, City and State): SHELL HARBOR ISLAND 2555 13th ave SW SEATTLE, WA
CONSULTANT PROJECT CONTACT (Report to): BRIAN PLETCHER
CONSULTANT PROJECT NO: 46194343
SAMPLER NAME(S) (Print): DAVE LEWIS / MARK TAUSCHER / CLIFFORD PEARSON
LAB USE ONLY: C27781

TURNAROUND TIME (CALENDAR DAYS): X STANDARD (14 DAY) | 5 DAYS | 3 DAYS | 2 DAYS | 24 HOURS | RESULTS NEEDED ON WEEKEND
DELIVERABLES: LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 | OTHER (SPECIFY)
TEMPERATURE ON RECEIPT C°: Cooler #1 | Cooler #2 | Cooler #3

SPECIAL INSTRUCTIONS OR NOTES :
X SHELL CONTRACT RATE APPLIES
STATE REIMBURSEMENT RATE APPLIES
PROVIDE LEDD DISK

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	NWTPH-GX	NWTPH-DX SILICA-GEL CLEAN-UP	BTEX	LEAD	PAHs	Container PID Readings or Laboratory Notes
1	MW-104-0513	4/4/13	1000	H2O	X	X		X	X	6	X	X		X		
2	MW-302-0513	4/4/13	1135	"	X					6	X		X			
3	MW-304-0513	4/4/13	1355	"	X					6	X		X			
4	MW-310-0513	4/4/13	1520	"	X					6	X		X			
5	MW-202-0513	4/5/13	0835	"	X			X		5	X	X				
6	TX-03A-0513	4/5/13	1100	"	X					6	X		X			
7	MW-203-0513	4/5/13	1130	"	X			X		5	X	X				
8	MW-301-0513	4/5/13	1310	"	X					6	X		X			
9	MW-301D-0513	4/5/13	1330	"	X					6	X		X			
10	TRIP BLANK	5/8/13	—	"						9	X		X			

SILICA-GEL CLEAN-UP ON NWTPH-DX
5.4°C / 5.3°C / 5.5°C

Relinquished by: (Signature) Dave Lewis 5/16/13 1200 | Received by: (Signature) | Date: | Time:
Relinquished by: (Signature) FEDEX 5/17/13 | Received by: (Signature) Lee Bauer | Date: 5/17/13 05/19/13 | Time: 0850
Relinquished by: (Signature) | Received by: (Signature) | Date: | Time:

05/2/06 Revision

CUSTODY SEALS INTACT

C27781: Chain of Custody
Page 1 of 4

LAB (LOCATION)
☐ XENCO (_____)
☐ CALSCIENCE (_____)
☐ TEST AMERICA (_____)
☐ SPL (_____)
☒ OTHER (ACCU TEST)

Shell Oil Products Chain Of Custody Record

Please Check Appropriate Box:
☐ ENV. SERVICES ☐ MOTIVA RETAIL ☐ SHELL RETAIL
☐ MOTIVA SD&CM ☐ CONSULTANT ☐ LUBES
☐ SHELL PIPELINE ☐ OTHER _____

Print Bill To Contact Name:
INCIDENT # (ENV SERVICES)
☐ CHECK IF NO INCIDENT # APPLIES
DATE:
PO #
SAP #
PAGE: 2 of 3

CONSULTANT COMPANY: URS
ADDRESS: 111 SW Columbia
CITY: Portland OR
TELEPHONE: 503-222-7200 FAX: E-MAIL: brian.pletcher@urs.com

SITE ADDRESS (Street, City and State): SHELL HARBOR ISLAND 2555 13TH AVE SW Seattle, WA
CONSULTANT PROJECT CONTACT (Report to): BRIAN PLETCHER
CONSULTANT PROJECT NO:
SAMPLER NAME(S) (Print): DAVE LEWIS / CLIFFORD PLETCHER / MARK TAUSCHER
LAB USE ONLY C27781

TURNAROUND TIME (CALENDAR DAYS):
☒ STANDARD (14 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND
DELIVERABLES: ☐ LEVEL 1 ☐ LEVEL 2 ☐ LEVEL 3 ☐ LEVEL 4 ☐ OTHER (SPECIFY) _____
TEMPERATURE ON RECEIPT C°: Cooler #1 Cooler #2 Cooler #3

SPECIAL INSTRUCTIONS OR NOTES :
☒ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ PROVIDE LEDD DISK

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	NWTPH-GX	NWTPH-DX	BTEX	PAHs	Container PID Readings or Laboratory Notes
11	MW-213-0513	5/15/13	1545	H2O	X			X		10	X	X	X	X	
12	MW-214-0513	5/15	1620	H2O	X			X		10	X	X	X	X	
13	MW-214D-0513	5/15	1630	H2O	X			X		10	X	X	X	X	
14	MW-305-0513	5/15	1307	H2O	X					6	X		X		
15	MW-305D-0513	5/15	1315	H2O	X					6	X		X		
16	MW-306-0513	5/15	1045	H2O	X					6	X		X		
17	MW-307-0513	5/15	0840	H2O	X					6	X		X		
18	MW-308-0513	5/15	0928	H2O	X					6	X		X		
19	SH-04-0513	5/15	1425	H2O	X			X		8	X	X	X		
20	MW-303-0513	5/16	0837	H2O	X					6	X		X		

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Dave Lewis 5/16/13 1200			
FEDEX	Lee Barnes	5/17/13	0850

05/2/08 Revision

Shell Oil Products Chain Of Custody Record

URS

LAB (LOCATION)
☒ ACCUTEST (SAN JOSE)
☐ CALSCIENCE ( )
☐ TESTAMERICA ( )
☑ Other ( )
Lab Vendor # See Dropdown

Please Check Appropriate Box:
☐ ENV. SERVICES ☐ MOTIVA RETAIL ☑ SHELL RETAIL
☐ MOTIVA SD&CM ☐ CONSULTANT ☐ LUBES
☐ SHELL PIPELINE ☐ OTHER

Print Bill To Contact Name:

INCIDENT # (ENV SERVICES): 3 5 7 0 3 2
☐ CHECK IF NO INCIDENT # APPLIES

PO #:

SAP #: 3 0 0 0 3 6

DATE:
PAGE: 3 OF 3

SAMPLING COMPANY: URS Corporation	LOG CODE:
ADDRESS: 111 Southwest Columbia Street, Suite 1500, Portland, Oregon 97201	
PROJECT CONTACT (Hardcopy or PDF Report to): Brian Pletcher	
TELEPHONE: 503-222-7200	FAX: 503-222-4292
Bill To Contact E-MAIL: Brian.Pletcher@urs.com	
SITE ADDRESS: Street and City: 2555 13th Avenue SW, Seattle	State: WA
GLOBAL ID NO.:	
EDF DELIVERABLE TO (Name, Company, Office Location): Clifford J Pearson, URS, Portland, OR	PHONE NO.: 503-222-7200
E-MAIL: Clifford.Pearson@URS.com	CONSULTANT PROJECT NO.: 44914348
SAMPLER NAME(S) (Print): C. PEARSON, DAVE LEWIS & MARK TAUSCHER	LAB USE ONLY: C27781

TURNAROUND TIME (CALENDAR DAYS): ☑ STANDARD (14 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:

DELIVERABLES: ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL 3 ☐ LEVEL 4 ☐ OTHER (SPECIFY)

TEMPERATURE ON RECEIPT C°: Cooler #1 Cooler #2 Cooler #3

SPECIAL INSTRUCTIONS OR NOTES :
☑ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☑ RECEIPT VERIFICATION REQUESTED
☐ PROVIDE EDD DISK

REQUESTED ANALYSIS: UNIT COST / NON-UNIT COST

FIELD NOTES:
TEMPERATURE ON RECEIPT C°
Container PID Readings or Laboratory Notes

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	MtdStandard TO-15 Low Level	TPH-Gx	BTEX
21	MW-309-0513	5/16	0851	H2O	X					6		X	X

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Dave Lewis 5/16/13 1200			
FEDEX	Lee Barr	5/17/13	0850

05/2/06 Revision

C27781: Chain of Custody
Page 3 of 4

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: C27781 **Client:** SHELL OIL **Project:** 2555 13TH AVE SW, SEATTLE, WA

Date / Time Received: 5/17/2013 **Delivery Method:** FedEx **Airbill #'s:** 802008295012; 795781593963; 795781593974

Cooler Temps (Initial/Adjusted): #1: (5.4/5.4); #2: (5.3/5.3); #3: (5.5/5.5); 0

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	3		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Accutest Laboratories
V:408.588.0200
2105 Lundy Avenue
F: 408.588.0201
San Jose, CA 95131
www/accutest.com

C27781: Chain of Custody
Page 4 of 4

Northern California ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VU426-MB	U11101.D	1	05/21/13	TF	n/a	n/a	VU426

The QC reported here applies to the following samples: **Method:** SW846 8260B

C27781-2

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	109%	70-130%
2037-26-5	Toluene-D8	105%	70-130%
460-00-4	4-Bromofluorobenzene	97%	70-130%

Method Blank Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VQ603-MB	Q15019.D	1	05/22/13	PH	n/a	n/a	VQ603

The QC reported here applies to the following samples: **Method:** SW846 8260B

C27781-3, C27781-4, C27781-6, C27781-8, C27781-9, C27781-10, C27781-11, C27781-12, C27781-13, C27781-14, C27781-15, C27781-16

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	88%	70-130%
2037-26-5	Toluene-D8	106%	70-130%
460-00-4	4-Bromofluorobenzene	105%	70-130%

Method Blank Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR626-MB	R17181.D	1	05/22/13	TN	n/a	n/a	VR626

The QC reported here applies to the following samples: **Method:** SW846 8260B

C27781-17, C27781-18, C27781-19, C27781-20, C27781-21

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	95%	70-130%
2037-26-5	Toluene-D8	101%	70-130%
460-00-4	4-Bromofluorobenzene	96%	70-130%

Blank Spike/Blank Spike Duplicate Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VU426-BS	U11097.D	1	05/20/13	TF	n/a	n/a	VU426
VU426-BSD	U11098.D	1	05/20/13	TF	n/a	n/a	VU426

The QC reported here applies to the following samples: **Method:** SW846 8260B

C27781-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	20	20.4	102	20.2	101	1	77-122/25
100-41-4	Ethylbenzene	20	20.6	103	20.7	104	0	76-126/17
108-88-3	Toluene	20	20.2	101	20.4	102	1	75-122/17
1330-20-7	Xylene (total)	60	58.8	98	59.2	99	1	77-125/17

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	104%	104%	70-130%
2037-26-5	Toluene-D8	103%	103%	70-130%
460-00-4	4-Bromofluorobenzene	102%	104%	70-130%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VQ603-BS	Q15016.D	1	05/21/13	PH	n/a	n/a	VQ603
VQ603-BSD	Q15017.D	1	05/21/13	PH	n/a	n/a	VQ603

The QC reported here applies to the following samples: **Method:** SW846 8260B

C27781-3, C27781-4, C27781-6, C27781-8, C27781-9, C27781-10, C27781-11, C27781-12, C27781-13, C27781-14, C27781-15, C27781-16

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	20	18.2	91	18.3	92	1	77-122/25
100-41-4	Ethylbenzene	20	21.5	108	20.8	104	3	76-126/17
108-88-3	Toluene	20	19.9	100	19.8	99	1	75-122/17
1330-20-7	Xylene (total)	60	57.3	96	57.1	95	0	77-125/17

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	97%	100%	70-130%
2037-26-5	Toluene-D8	105%	104%	70-130%
460-00-4	4-Bromofluorobenzene	105%	106%	70-130%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR626-BS	R17178.D	1	05/22/13	TN	n/a	n/a	VR626
VR626-BSD	R17179.D	1	05/22/13	TN	n/a	n/a	VR626

The QC reported here applies to the following samples: **Method:** SW846 8260B

C27781-17, C27781-18, C27781-19, C27781-20, C27781-21

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	20	20.5	103	20.7	104	1	77-122/25
100-41-4	Ethylbenzene	20	21.5	108	21.9	110	2	76-126/17
108-88-3	Toluene	20	20.9	105	21.3	107	2	75-122/17
1330-20-7	Xylene (total)	60	60.2	100	61.2	102	2	77-125/17

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	101%	103%	70-130%
2037-26-5	Toluene-D8	99%	99%	70-130%
460-00-4	4-Bromofluorobenzene	98%	98%	70-130%

* = Outside of Control Limits.

Laboratory Control Sample Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VU426-LCS	U11099.D	1	05/20/13	TF	n/a	n/a	VU426

The QC reported here applies to the following samples: **Method:** SW846 8260B

C27781-2

CAS No.	Compound	Spike ug/l	LCS ug/l	LCS %	Limits

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	104%	70-130%
2037-26-5	Toluene-D8	105%	70-130%
460-00-4	4-Bromofluorobenzene	100%	70-130%

* = Outside of Control Limits.

Laboratory Control Sample Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VR626-LCS	R17180.D	1	05/22/13	TN	n/a	n/a	VR626

The QC reported here applies to the following samples: **Method:** SW846 8260B

C27781-17, C27781-18, C27781-19, C27781-20, C27781-21

CAS No.	Compound	Spike ug/l	LCS ug/l	LCS %	Limits

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	99%	70-130%
2037-26-5	Toluene-D8	99%	70-130%
460-00-4	4-Bromofluorobenzene	97%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C27781-2MS	U11118.D	10	05/21/13	TF	n/a	n/a	VU426
C27781-2MSD	U11119.D	10	05/21/13	TF	n/a	n/a	VU426
C27781-2	U11117.D	10	05/21/13	TF	n/a	n/a	VU426

The QC reported here applies to the following samples: **Method:** SW846 8260B

C27781-2

CAS No.	Compound	C27781-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	873		200	1130	129* [a]	1240	184* [a]	9	77-122/16
100-41-4	Ethylbenzene	236		200	467	116	526	145* [a]	12	76-126/17
108-88-3	Toluene	23.1		200	233	105	269	123*	14	75-122/17
1330-20-7	Xylene (total)	145		600	775	105	885	123	13	77-125/17

CAS No.	Surrogate Recoveries	MS	MSD	C27781-2	Limits
1868-53-7	Dibromofluoromethane	111%	104%	115%	70-130%
2037-26-5	Toluene-D8	101%	101%	101%	70-130%
460-00-4	4-Bromofluorobenzene	106%	103%	103%	70-130%

(a) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C27781-15MS	Q15034.D	10	05/22/13	PH	n/a	n/a	VQ603
C27781-15MSD	Q15035.D	10	05/22/13	PH	n/a	n/a	VQ603
C27781-15	Q15032.D	10	05/22/13	PH	n/a	n/a	VQ603

The QC reported here applies to the following samples: **Method:** SW846 8260B

C27781-3, C27781-4, C27781-6, C27781-8, C27781-9, C27781-10, C27781-11, C27781-12, C27781-13, C27781-14, C27781-15, C27781-16

CAS No.	Compound	C27781-15 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	318		200	490	86	490	86	0	77-122/16
100-41-4	Ethylbenzene	233		200	446	107	433	100	3	76-126/17
108-88-3	Toluene	21.7		200	217	98	218	98	0	75-122/17
1330-20-7	Xylene (total)	68.9		600	638	95	637	95	0	77-125/17

CAS No.	Surrogate Recoveries	MS	MSD	C27781-15	Limits
1868-53-7	Dibromofluoromethane	99%	97%	92%	70-130%
2037-26-5	Toluene-D8	104%	105%	105%	70-130%
460-00-4	4-Bromofluorobenzene	107%	107%	106%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C27798-17MS	R17201.D	1	05/22/13	TN	n/a	n/a	VR626
C27798-17MSD	R17202.D	1	05/22/13	TN	n/a	n/a	VR626
C27798-17	R17199.D	1	05/22/13	TN	n/a	n/a	VR626

The QC reported here applies to the following samples: **Method:** SW846 8260B

C27781-17, C27781-18, C27781-19, C27781-20, C27781-21

CAS No.	Compound	C27798-17 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		20	19.4	97	19.4	97	0	77-122/16
100-41-4	Ethylbenzene	ND		20	20.9	105	21.2	106	1	76-126/17
108-88-3	Toluene	ND		20	20.0	100	20.1	101	0	75-122/17
1330-20-7	Xylene (total)	ND		60	56.7	95	57.2	95	1	77-125/17

CAS No.	Surrogate Recoveries	MS	MSD	C27798-17	Limits
1868-53-7	Dibromofluoromethane	99%	96%	100%	70-130%
2037-26-5	Toluene-D8	100%	99%	99%	70-130%
460-00-4	4-Bromofluorobenzene	98%	98%	97%	70-130%

* = Outside of Control Limits.

Northern California ACCUTEST LABORATORIES

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8000-MB	T8779.D	1	05/17/13	NL	05/17/13	OP8000	ET400

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

C27781-11, C27781-12, C27781-13

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.50	0.050	ug/l	
208-96-8	Acenaphthylene	ND	0.50	0.050	ug/l	
120-12-7	Anthracene	ND	0.50	0.050	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.10	0.053	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.041	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.10	0.035	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.036	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.039	ug/l	
218-01-9	Chrysene	ND	0.10	0.045	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.035	ug/l	
206-44-0	Fluoranthene	ND	0.50	0.050	ug/l	
86-73-7	Fluorene	ND	0.50	0.050	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.035	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.50	0.10	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.50	0.10	ug/l	
91-20-3	Naphthalene	ND	0.50	0.10	ug/l	
85-01-8	Phenanthrene	ND	0.50	0.050	ug/l	
129-00-0	Pyrene	ND	0.50	0.050	ug/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	77%	31-128%
321-60-8	2-Fluorobiphenyl	74%	34-123%
1718-51-0	Terphenyl-d14	84%	43-136%

Blank Spike/Blank Spike Duplicate Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8000-BS	T8780.D	1	05/17/13	NL	05/17/13	OP8000	ET400
OP8000-BSD	T8781.D	1	05/17/13	NL	05/17/13	OP8000	ET400

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

C27781-11, C27781-12, C27781-13

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	5	3.8	76	3.8	76	0	57-113/24
208-96-8	Acenaphthylene	5	3.5	70	3.7	74	6	58-117/25
120-12-7	Anthracene	5	3.9	78	4.1	82	5	65-121/23
56-55-3	Benzo(a)anthracene	5	4.3	86	4.3	86	0	62-121/21
50-32-8	Benzo(a)pyrene	5	4.5	90	4.6	92	2	65-125/20
205-99-2	Benzo(b)fluoranthene	5	4.5	90	4.0	80	12	62-126/22
191-24-2	Benzo(g,h,i)perylene	5	3.9	78	4.3	86	10	45-133/22
207-08-9	Benzo(k)fluoranthene	5	4.6	92	5.1	102	10	61-122/20
218-01-9	Chrysene	5	4.3	86	4.3	86	0	62-118/20
53-70-3	Dibenzo(a,h)anthracene	5	3.7	74	4.1	82	10	45-135/25
206-44-0	Fluoranthene	5	4.2	84	4.3	86	2	63-118/21
86-73-7	Fluorene	5	3.8	76	3.9	78	3	59-115/24
193-39-5	Indeno(1,2,3-cd)pyrene	5	3.5	70	3.9	78	11	51-130/26
90-12-0	1-Methylnaphthalene	5	3.5	70	3.5	70	0	53-107/25
91-57-6	2-Methylnaphthalene	5	3.3	66	3.7	74	11	56-115/26
91-20-3	Naphthalene	5	3.4	68	3.4	68	0	54-110/23
85-01-8	Phenanthrene	5	3.8	76	3.9	78	3	60-114/26
129-00-0	Pyrene	5	4.1	82	4.0	80	2	58-124/21

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
4165-60-0	Nitrobenzene-d5	82%	74%	31-128%
321-60-8	2-Fluorobiphenyl	82%	74%	34-123%
1718-51-0	Terphenyl-d14	91%	87%	43-136%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8000-MS	T8793.D	1	05/17/13	NL	05/17/13	OP8000	ET400
OP8000-MSD	T8794.D	1	05/17/13	NL	05/17/13	OP8000	ET400
C27752-8	T8784.D	1	05/17/13	NL	05/17/13	OP8000	ET400

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

C27781-11, C27781-12, C27781-13

CAS No.	Compound	C27752-8 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	0.47	U	5	3.8	76	3.7	74	3	57-113/24
208-96-8	Acenaphthylene	0.47	U	5	3.9	78	3.7	74	5	58-117/25
120-12-7	Anthracene	0.47	U	5	3.9	78	3.9	78	0	65-121/23
56-55-3	Benzo(a)anthracene	0.094	U	5	4.0	80	3.5	70	13	62-121/21
50-32-8	Benzo(a)pyrene	0.094	U	5	4.1	82	3.8	76	8	65-125/20
205-99-2	Benzo(b)fluoranthene	0.094	U	5	3.4	68	3.7	74	8	62-126/22
191-24-2	Benzo(g,h,i)perylene	0.094	U	5	3.4	68	3.1	62	9	45-133/22
207-08-9	Benzo(k)fluoranthene	0.094	U	5	4.4	88	3.8	76	15	61-122/20
218-01-9	Chrysene	0.094	U	5	3.9	78	3.7	74	5	62-118/20
53-70-3	Dibenzo(a,h)anthracene	0.094	U	5	3.5	70	2.9	58	19	45-135/25
206-44-0	Fluoranthene	0.47	U	5	4.0	80	4.0	80	0	63-118/21
86-73-7	Fluorene	0.47	U	5	3.9	78	3.6	72	8	59-115/24
193-39-5	Indeno(1,2,3-cd)pyrene	0.094	U	5	3.2	64	2.5	50* [a]	25	51-130/26
90-12-0	1-Methylnaphthalene	0.47	U	5	3.6	72	3.5	70	3	53-107/25
91-57-6	2-Methylnaphthalene	0.47	U	5	3.7	74	3.7	74	0	56-115/26
91-20-3	Naphthalene	0.47	U	5	3.6	72	3.5	70	3	54-110/23
85-01-8	Phenanthrene	0.47	U	5	3.9	78	3.8	76	3	60-114/26
129-00-0	Pyrene	0.47	U	5	3.9	78	3.9	78	0	58-124/21

CAS No.	Surrogate Recoveries	MS	MSD	C27752-8	Limits
4165-60-0	Nitrobenzene-d5	78%	82%	70%	31-128%
321-60-8	2-Fluorobiphenyl	80%	77%	68%	34-123%
1718-51-0	Terphenyl-d14	77%	80%	65%	43-136%

(a) Outside control limits due to matrix interference. Sample formed emulsion during extraction process.

* = Outside of Control Limits.

Northern California ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GJK1445-MB	JK35826.D	1	05/22/13	TT	n/a	n/a	GJK1445

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C27781-1, C27781-2, C27781-3, C27781-4, C27781-5, C27781-6, C27781-7, C27781-8, C27781-9, C27781-10, C27781-11, C27781-12, C27781-13, C27781-14, C27781-15, C27781-16, C27781-17, C27781-18

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	ND	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries		Limits
98-08-8	aaa-Trifluorotoluene	95%	50-150%
460-00-4	4-Bromofluorobenzene	75%	50-150%

Method Blank Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GJK1446-MB	JK35859.D	1	05/23/13	TT	n/a	n/a	GJK1446

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C27781-19, C27781-20, C27781-21

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	ND	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries		Limits
98-08-8	aaa-Trifluorotoluene	99%	50-150%
460-00-4	4-Bromofluorobenzene	80%	50-150%

Blank Spike/Blank Spike Duplicate Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GJK1445-BS	JK35827.D	1	05/22/13	TT	n/a	n/a	GJK1445
GJK1445-BSD	JK35828.D	1	05/22/13	TT	n/a	n/a	GJK1445

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C27781-1, C27781-2, C27781-3, C27781-4, C27781-5, C27781-6, C27781-7, C27781-8, C27781-9, C27781-10, C27781-11, C27781-12, C27781-13, C27781-14, C27781-15, C27781-16, C27781-17, C27781-18

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	BSD mg/l	BSD %	RPD	Limits Rec/RPD
	TPH (Gasoline)	0.4	0.414	104	0.405	101	2	60-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
98-08-8	aaa-Trifluorotoluene	88%	88%	50-150%
460-00-4	4-Bromofluorobenzene	73%	73%	50-150%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GJK1446-BS	JK35860.D	1	05/23/13	TT	n/a	n/a	GJK1446
GJK1446-BSD	JK35861.D	1	05/23/13	TT	n/a	n/a	GJK1446

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C27781-19, C27781-20, C27781-21

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	BSD mg/l	BSD %	RPD	Limits Rec/RPD
	TPH (Gasoline)	0.4	0.390	98	0.392	98	1	60-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
98-08-8	aaa-Trifluorotoluene	89%	92%	50-150%
460-00-4	4-Bromofluorobenzene	77%	77%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C27781-11MS	JK35851.D	1	05/23/13	TT	n/a	n/a	GJK1445
C27781-11MSD	JK35852.D	1	05/23/13	TT	n/a	n/a	GJK1445
C27781-11	JK35841.D	1	05/23/13	TT	n/a	n/a	GJK1445

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C27781-1, C27781-2, C27781-3, C27781-4, C27781-5, C27781-6, C27781-7, C27781-8, C27781-9, C27781-10, C27781-11, C27781-12, C27781-13, C27781-14, C27781-15, C27781-16, C27781-17, C27781-18

CAS No.	Compound	C27781-11 mg/l	Q	Spike mg/l	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH (Gasoline)	ND		0.4	0.362	91	0.381	95	5	60-140/20

CAS No.	Surrogate Recoveries	MS	MSD	C27781-11	Limits
98-08-8	aaa-Trifluorotoluene	87%	94%	96%	50-150%
460-00-4	4-Bromofluorobenzene	67%	72%	73%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C27781-21MS	JK35866.D	1	05/23/13	TT	n/a	n/a	GJK1446
C27781-21MSD	JK35867.D	1	05/23/13	TT	n/a	n/a	GJK1446
C27781-21	JK35865.D	1	05/23/13	TT	n/a	n/a	GJK1446

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C27781-19, C27781-20, C27781-21

CAS No.	Compound	C27781-21 mg/l	Q	Spike mg/l	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH (Gasoline)	ND		0.4	0.411	103	0.431	108	5	60-140/20

CAS No.	Surrogate Recoveries	MS	MSD	C27781-21	Limits
98-08-8	aaa-Trifluorotoluene	98%	90%	95%	50-150%
460-00-4	4-Bromofluorobenzene	82%	78%	80%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C27781-2DUP	JK35831.D	10	05/22/13	TT	n/a	n/a	GJK1445
C27781-2	JK35830.D	10	05/22/13	TT	n/a	n/a	GJK1445

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C27781-2

CAS No.	Compound	C27781-2 mg/l	Q	DUP mg/l	Q	RPD	Limits
	TPH (Gasoline)	4.19		4.18		0	20

CAS No.	Surrogate Recoveries	DUP	C27781-2	Limits
98-08-8	aaa-Trifluorotoluene	109%	102%	50-150%
460-00-4	4-Bromofluorobenzene	87%	83%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C27781-12DUP	JK35843.D	1	05/23/13	TT	n/a	n/a	GJK1445
C27781-12	JK35842.D	1	05/23/13	TT	n/a	n/a	GJK1445

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C27781-1, C27781-3, C27781-4, C27781-5, C27781-6, C27781-7, C27781-8, C27781-9, C27781-10, C27781-11, C27781-12, C27781-13, C27781-14, C27781-15, C27781-16, C27781-17, C27781-18

CAS No.	Compound	C27781-12 mg/l	Q	DUP mg/l	Q	RPD	Limits
	TPH (Gasoline)	ND		ND		nc	20

CAS No.	Surrogate Recoveries	DUP	C27781-12	Limits
98-08-8	aaa-Trifluorotoluene	103%	103%	50-150%
460-00-4	4-Bromofluorobenzene	75%	76%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C27781-19DUP	JK35863.D	2.5	05/23/13	TT	n/a	n/a	GJK1446
C27781-19	JK35862.D	2.5	05/23/13	TT	n/a	n/a	GJK1446

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C27781-19, C27781-20, C27781-21

CAS No.	Compound	C27781-19 mg/l	Q	DUP mg/l	Q	RPD	Limits
	TPH (Gasoline)	2.16		2.29		6	20

CAS No.	Surrogate Recoveries	DUP	C27781-19	Limits
98-08-8	aaa-Trifluorotoluene	94%	95%	50-150%
460-00-4	4-Bromofluorobenzene	76%	77%	50-150%

* = Outside of Control Limits.

Northern California ACCUTEST LABORATORIES

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8007-MB	HH303610.D	1	05/19/13	AG	05/18/13	OP8007	GHH984

The QC reported here applies to the following samples: **Method:** NWTPH-DX

C27781-1, C27781-5, C27781-7, C27781-11, C27781-12, C27781-13, C27781-19

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	ND	0.10	0.050	mg/l	
	TPH (Motor Oil)	ND	0.20	0.10	mg/l	

CAS No.	Surrogate Recoveries		Limits
630-01-3	Hexacosane	70%	50-150%

Blank Spike/Blank Spike Duplicate Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8007-BS	HH303607.D	1	05/19/13	AG	05/18/13	OP8007	GHH984
OP8007-BSD	HH303608.D	1	05/19/13	AG	05/18/13	OP8007	GHH984

The QC reported here applies to the following samples: **Method:** NWTPH-DX

C27781-1, C27781-5, C27781-7, C27781-11, C27781-12, C27781-13, C27781-19

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	BSD mg/l	BSD %	RPD	Limits Rec/RPD
	TPH (Diesel)	1	0.888	89	0.902	90	2	45-140/30
	TPH (Motor Oil)	1	0.961	96	0.979	98	2	45-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
630-01-3	Hexacosane	77%	77%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: C27781
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8007-DUP1	HH303606.D	1	05/19/13	AG	05/18/13	OP8007	GHH984
C27781-11	HH303602.D	1	05/19/13	AG	05/18/13	OP8007	GHH984

The QC reported here applies to the following samples: **Method:** NWTPH-DX

C27781-1, C27781-5, C27781-7, C27781-11, C27781-12, C27781-13, C27781-19

CAS No.	Compound	C27781-11 mg/l	Q	DUP mg/l	Q	RPD	Limits
	TPH (Diesel)	ND		ND		nc	25
	TPH (Motor Oil)	ND		ND		nc	25

CAS No.	Surrogate Recoveries	DUP	C27781-11	Limits
630-01-3	Hexacosane	65%	74%	50-150%

* = Outside of Control Limits.

8.3.1

8

Northern California ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: C27781
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP6223
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 05/20/13

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	13	8.5		
Antimony	6.0	.7	.51		
Arsenic	10	.7	.65		
Barium	200	.4	.35		
Beryllium	5.0	.2	.4		
Bismuth	20		2.9		
Boron	100	.9	.64		
Cadmium	2.0	.2	.15		
Calcium	5000	7.1	12		
Chromium	10	.3	.41		
Cobalt	5.0	.2	.3		
Copper	10	1.2	3		
Iron	200	6.4	12		
Lead	10	.7	.85	-0.20	<10
Lithium	50		2		
Magnesium	5000	27	36		
Manganese	15	.1	1.3		
Molybdenum	20	.2	.22		
Nickel	5.0	.2	.12		
Potassium	10000	18	44		
Selenium	10	1.8	2.2		
Silicon	100	1.2	6.9		
Silver	5.0	.3	.47		
Sodium	10000	15	13		
Strontium	10	.2	.24		
Thallium	10	.5	.54		
Tin	50	.2	.7		
Titanium	10	.4	.34		
Vanadium	10	.3	.3		
Zinc	20	.3	4.2		

Associated samples MP6223: C27781-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C27781
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP6223
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 05/20/13

Metal	C27781-1 Original	MS	Spikelot MPIR4A	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium					
Beryllium					
Bismuth					
Boron					
Cadmium					
Calcium					
Chromium	anr				
Cobalt					
Copper					
Iron					
Lead	3.7	553	500	109.9	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	anr				
Potassium					
Selenium					
Silicon					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Vanadium					
Zinc					

Associated samples MP6223: C27781-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C27781
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP6223 Methods: SW846 6010B
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 05/20/13

Metal	C27781-1 Original	MSD	Spikelot MPIR4A	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium						
Beryllium						
Bismuth						
Boron						
Cadmium						
Calcium						
Chromium	anr					
Cobalt						
Copper						
Iron						
Lead	3.7	562	500	111.7	1.6	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	anr					
Potassium						
Selenium						
Silicon						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP6223: C27781-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: C27781
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP6223
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:			05/20/13					05/20/13	
Metal	BSP Result	Spikelot MPIR4A	% Rec	QC Limits	BSD Result	Spikelot MPIR4A	% Rec	BSD RPD	QC Limit
Aluminum									
Antimony									
Arsenic	anr								
Barium									
Beryllium									
Bismuth									
Boron									
Cadmium									
Calcium									
Chromium	anr								
Cobalt									
Copper									
Iron									
Lead	556	500	111.2	80-120	563	500	112.6	1.3	
Lithium									
Magnesium									
Manganese									
Molybdenum									
Nickel	anr								
Potassium									
Selenium									
Silicon									
Silver									
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc									

Associated samples MP6223: C27781-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: C27781
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP6223
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 05/20/13

Metal	C27781-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium				
Beryllium				
Bismuth				
Boron				
Cadmium				
Calcium				
Chromium	anr			
Cobalt				
Copper				
Iron				
Lead	3.70	0.00	100.0(a)	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Potassium				
Selenium				
Silicon				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP6223: C27781-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

GORE Surveys
FOR ENVIRONMENTAL

Laboratory Report

Site: Shell Harbor Island Terminal
Seattle WA

Prepared for:

URS CORPORATION
111 SW COLUMBIA, SUITE 1500
PORTLAND, OR
UNITED STATES

Prepared on:
May 23, 2013

Project Summary and Objective

W. L. Gore & Associates, Inc. (Gore) provided the GORE® Survey (Survey) used at:

Shell Harbor Island Terminal

Seattle WA

The service provided by Gore included delivery of the required quantity of GORE® Modules, analysis by the method described below for the requested organic compounds, reporting of the data, and contour mapping (as needed).

This report includes results for only the samples noted under the Laboratory Sample Report section. If contour maps are part of the project deliverable, the maps will be prepared and issued under a separate report cover, upon receipt of a usable sitemap (electronic) and compound choices for contouring.

Written/submitted by:

Dayna M Cobb

Project Manager

Reviewed/approved by:

Jay W Hodny

Project Manager

Analytical data approved by:

Jasmine R. Smith

Chemist

Quality Assurance Statement

The Survey Products Group laboratory, at W. L. Gore & Associates' facility in Elkton, MD USA, operates under the guidelines of its ISO Standard 17025 DoD ELAP accreditation, and its Quality Assurance Manual, Operating Procedures, and Methods (SPG-SOP-0462).

For this project, the analytical method, results, and observations reported do [ ] do not [√] fall within the scope of W. L. Gore's ISO 17025 accreditation.

Screening/Concentration Method

The GORE® Modules are analyzed at Gore's fixed laboratory using thermal desorption-gas chromatography/mass spectrometry (TD-GC/MS) instrumentation following U.S. EPA Method 8260 (SPG-WI-0292) which includes the following:

- **BFB Tuning Frequency:** A BFB tune is analyzed at the start of each analytical run and after every 30 samples.
- **Initial Calibration:** A minimum of a five point calibration curve is analyzed prior to the analysis of samples.
- **Linearity of Target Compounds:** If the RSD of any target analyte is less than or equal to 25% then average response factor can be used for quantitation. If the RSD exceeds 25% for a target compound a regression equation can be used for quantitation.
- **Continuing Calibration Verification:** After every 10 samples, and at the end of each analytical batch, and a second-source Reference Standard is analyzed near the mid point of the calibration curve. The acceptance criteria for all target analytes in the reference standards are +/- 50% of the true value.
- **Method Blank:** Analyzed prior to the analysis of field samples and every 30 samples.

Note: Analyte levels reported for the field-deployed GORE® Modules that exceed trip and method blank levels, and/or method detection limit, are more likely to have originated from on-site sources.

Media Sampled:	SOIL GAS
Chemist - sample analysis:	Kelly J Stringham
Chemist - data processor:	Kelly J Stringham
Chemist - data review:	Jasmine R. Smith

Method deviations: None.

Please note that data file names ending with R are rerun samples using the second pair of sorbers, in which the original results were not reported. Data file names ending in D are duplicate analysis results for the second set of sorbers from the same module, and are reported.

Additional Report Information

- Comments
- Laboratory Sample Report
- Chain of Custody
- Installation and Retrieval Log
- Data Table(s)
- Concentration Calculation Method Summary (as applicable)
- Total Ion Chromatograms

Project Specific Comments

Survey period [1]	Modules were installed on May 14, 2013 and retrieved on May 17, 2013 for a 3 day exposure period.	
Tamper seal intact:	Yes	
Date received:	5/20/2013 9:00 AM	By: Darlene Yellowdy
COC returned:	Yes	
Comments:		

1 - Installation start to end of retrieval, as reported. See installation and retrieval log for individual deployment and retrieval dates and times (i.e., sampler exposure time).

General Comments

Analytical QA/QC

Laboratory instrumentation consists of gas chromatographs equipped with mass selective detectors, coupled with automated thermal desorption units. Sample preparation involves cutting the tip off the bottom of the GORE® Module, and transferring one or more "sorbers" to a thermal desorption tube for analysis. The insertion/retrieval cord prevents soil, water and other interferences from coming in contact with the adsorbent. No further sample preparation is required. Any replicate sorbers not consumed in the initial analysis will be discarded fifteen (15) days from the date of the laboratory report.

Data are archived and stored in a secure manner as per Gore's Quality Assurance program (SPG-SOP-0462).

Total petroleum hydrocarbons (TPH), gasoline-range petroleum hydrocarbons (GRPH), and/or diesel range petroleum hydrocarbons (DRPH), when reported, are calculated using the area under the peaks observed in m/z 55 and 57 selected ion chromatograms. Quantitation of the mass values was performed using the response factor for a specific alkane (present in the calibration standards). TPH values include the entire chromatogram and provide estimates for aliphatic hydrocarbon ranges of C4 to C20. GRPH and DRPH include only the relevant regions of the chromatograms and provide estimates for C4 to C10 and C10 to C20 aliphatic hydrocarbons, respectively.

Trip blanks were provided to document potential exposures that were not part of the signal of interest (e.g., impact during sampler shipment, installation and/or retrieval, and storage). The trip blanks are identically manufactured and packaged GORE® Modules to those modules deployed in the field. The trip blanks remain unopened during all phases of the project. Levels reported on the trip blanks may indicate potential impact to the modules other than the contaminant source of interest.

Unresolved peak envelopes (UPEs) are represented as a series of compound peaks clustered together around a central gas chromatograph elution time in the total ion chromatogram. UPEs may be indicative of complex fluid mixtures. UPEs observed early in the chromatograms are considered to indicate presence of more volatile fluids, while UPEs observed later in the chromatogram may indicate the presence of less volatile fluids. Multiple UPEs may indicate the presence of multiple complex fluids.

Total ion chromatograms (TICs) are included in the Attachments. The eight-digit serial number of each module is incorporated in the TIC identification (e.g., 12345678.D represents GORE® Module 12345678).

General Comments

Soil Gas Sampling

For soil gas sampling, the GORE® Survey reports mass levels migrating through the open pore spaces of the soil and diffusing through the sampler membrane for sorption by the engineered, hydrophobic adsorbents, housed within the membrane tube. During the migration of the soil gas away from the source to the GORE® Module, the vapors are subject to a variety of attenuation factors. The soil gas masses reported on the modules compare favorably with the concentrations reported in the soil or groundwater (e.g., where soil gas levels are reported at greater levels to other sampled locations on the site, the matrix data should reveal the same pattern, and vice versa). However, due to a variety of factors, a perfect comparison between matrix data and soil gas levels can rarely be achieved.

Soil gas concentrations (µg/m3) are calculated following the method described in the Additional Report Information section.

Soil gas signals reported by this method cannot be correlated specifically to soil adsorbed, groundwater, and/or free-phase contamination. The soil gas signal reported from each GORE® Module can evolve from all of these sources. Differentiation between soil and groundwater contamination can only be achieved with prior knowledge of the site history (i.e., the site is known to have groundwater contamination only).

Air Sampling

For indoor, outdoor, and crawlspace air sampling, the GORE® Survey reports mass levels present in the air and diffusing through the sampler membrane for sorption by the engineered adsorbents housed within the membrane tube.

Air concentrations (µg/m3) are calculated following the method described in the Additional Report Information section.

Groundwater and Sediment Porewater Sampling

For groundwater and sediment porewater sampling, the GORE® Survey reports the mass levels of compounds present in the water which, when coming in contact with the sampler membrane, partitions out of solution, and diffuses through the sampler membrane for sorption by the engineered adsorbents.

Water concentrations (µg/L) are calculated using the quantified mass, exposure period and the compound specific uptake rate. The rates were measured under controlled experimental conditions. The uptake rates are corrected for water pressure (depth of the GORE® Module below the water table), water temperature and the aquifer flow rate.

LABORATORY SAMPLE REPORT

Project: ENV 22212579 **Site Name: Shell Harbor Island Terminal** **Module Type: SPG0008**

Module ID	Sample Type	Field ID
00714161	FIELD_SAMPLE	SG09
00714162	FIELD_SAMPLE	SG10
00714163	FIELD_SAMPLE	SG19
00714164	TRIP_BLANK	Trip Blank
00714165	TRIP_BLANK	Trip Blank
00714166	FIELD_SAMPLE	SG20
00714167	FIELD_SAMPLE	SG07
00714168	FIELD_SAMPLE	SG13
00714169	FIELD_SAMPLE	SG12
00714170	FIELD_SAMPLE	SG15
00714171	FIELD_SAMPLE	SG16
00714172	FIELD_SAMPLE	SG05
00714173	FIELD_SAMPLE	SG14
00714174	FIELD_SAMPLE	SG18
00714175	FIELD_SAMPLE	SG06
00714176	FIELD_SAMPLE	SG17
00714177	FIELD_SAMPLE	SG11
00714178	FIELD_SAMPLE	SG08
00714179	FIELD_SAMPLE	SG01
00714180	FIELD_SAMPLE	SG02
00714181	FIELD_SAMPLE	SG04
00714182	FIELD_SAMPLE	SG03

Total # "FIELD SAMPLES"	Total # "TRIP BLANKS"	Total # "UNUSED"	Total # "LOST"
20	2	0	0

Duplicate samples: 0

Sample ID	Date / Time Deployed	Date / Time Retreived
SG-01	5/14/2013 11:45	5/17/2013 7:46
SG-02	5/14/2013 11:35	5/17/2013 7:45
SG-03	5/14/2013 11:25	5/17/2013 7:43
SG-04	5/14/2013 10:30	5/17/2013 7:41
SG-05	5/14/2013 12:55	5/17/2013 7:58
SG-06	5/14/2013 12:45	5/17/2013 8:00
SG-07	5/14/2013 13:05	5/17/2013 8:03
SG-08	5/14/2013 10:00	5/17/2013 7:39
SG-09	5/14/2013 13:10	5/17/2013 7:37
SG-10	5/14/2013 13:35	5/17/2013 7:35
SG-11	5/14/2013 11:55	5/17/2013 7:49
SG-12	5/14/2013 13:50	5/17/2013 8:07
SG-13	5/14/2013 13:45	5/17/2013 8:05
SG-14	5/14/2013 12:05	5/17/2013 7:51
SG-15	5/14/2013 14:05	5/17/2013 8:09
SG-16	5/14/2013 14:30	5/17/2013 8:11
SG-17	5/14/2013 12:15	5/17/2013 7:53
SG-18	5/14/2013 12:25	5/17/2013 7:55
SG-19	5/14/2013 14:55	5/17/2013 8:17
SG-20	5/14/2013 14:45	5/17/2013 8:15

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
+1 410 392 7600 ENVIRONMENTAL@WLGORE.COM

GORE® Survey Chain of Custody
Soil gas and/or Air Sampling

Production Order #: 22212579

Customer Name: URS CORPORATION
Address: P O BOX 203970
ATTN: ACCOUNTS PAYABLE

AUSTIN, TX 78720
USA

Site Name: Shell Harbor Island Terminal
Site Address: Seattle WA

Project Manager:
BRIAN PLETCHER
URS CORPORATION

Serial # of GORE Modules Shipped
00714161 - 00714182

# of Modules for Installation 20.00
Total Modules Shipped 22.00
Total Modules Received _____
Total Modules Installed _____

# of Trip Blanks 2
Pieces
Pieces
Pieces

Serial # of Trip Blanks (Client Decides)

Prepared By: Clarence Ulrich
Verified By: [signature]

Installation Method: (Circle those that apply)
Slide Hammer Hammer Drill Auger
(Other) SOIL PROBE

Installation Performed By:
Name: CLIFFORD J. PEARSON
Company: URS CORP

Retrieval Performed By:
Name: CLIFFORD J. PEARSON
Company: URS CORP

Installation Start Date / Time: 5/14/13 1000
Installation Complete Date / Time: 5/14/13 1300

Retrieval Start Date / Time: 5/17/13 0735
Retrieval Complete Date / Time 5/17/13 0817

Total Modules Retrieved: 22
Total Modules Lost In Field: 0
Total Unused Modules Returned: 0

Relinquished By	Clarence Ulrich	**Date/Time** 5/16/13 12:00	**Received By:**	Clifford P	**Date/Time** 5/9/13 1100
Company:	W. L. Gore		**Company:**	URS	
Relinquished By	Clifford P	**Date/Time** 5/17/13 1600	**Received By:**	FED EX	**Date/Time** 5/17/13 1600
Company:	URS CORP		**Company:**	"	
Relinquished By		**Date/Time**	**Received By:**	Darlene Gillowdy	**Date/Time** 5/20/13 9:00 AM
Company:			**Company:**	W.L. Gore	

Shell Oil Products Chain Of Custody Record

URS

LAB (LOCATION)
- ☐ ACCUTEST (______)
- ☐ CALSCIENCE (______)
- ☐ TESTAMERICA (______)
- ☑ Other (GORE)

Lab Vendor # See Dropdown

Please Check Appropriate Box:
- ☐ ENV. SERVICES ☐ MOTIVA RETAIL ☑ SHELL RETAIL
- ☐ MOTIVA SD&CM ☐ CONSULTANT ☐ LUBES
- ☐ SHELL PIPELINE ☐ OTHER ______

Print Bill To Contact Name:

INCIDENT # (ENV SERVICES): 3 5 7 0 3 2 ☐ CHECK IF NO INCIDENT # APPLIES

PO #

SAP #: 3 0 0 0 3 6

DATE: May 17, 2013

PAGE: 1 of 3

SAMPLING COMPANY: URS Corporation

LOG CODE:

ADDRESS: 111 Southwest Columbia Street, Suite 1500, Portland, Oregon 97201

PROJECT CONTACT (Hardcopy or PDF Report to): Brian Pletcher

TELEPHONE: 503-222-7200 FAX: 503-222-4292 Bill To Contact E-MAIL: Brian.Pletcher@urs.com

SITE ADDRESS: Street and City: 2555 13th Avenue SW, Seattle State: WA GLOBAL ID NO.:

EDF DELIVERABLE TO (Name, Company, Office Location): Clifford J Pearson, URS, Portland, OR PHONE NO.: 503-222-7200 E-MAIL: Clifford.Pearson@URS.com

CONSULTANT PROJECT NO.: 46194348

SAMPLER NAME(S) (Print): C. Pearson & M. Tauscher

LAB USE ONLY

TURNAROUND TIME (CALENDAR DAYS): ☐ STANDARD (14 DAY) ☑ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:

DELIVERABLES: ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL 3 ☐ LEVEL 4 ☐ OTHER (SPECIFY) ______

TEMPERATURE ON RECEIPT C°: Cooler #1 Cooler #2 Cooler #3

SPECIAL INSTRUCTIONS OR NOTES :
SEE QUOTE NO.
URS CORPORATION _ SEATTLE SHELL HARBOR
ISLAND TERMINAL _ 130430

- ☑ SHELL CONTRACT RATE APPLIES
- ☐ STATE REIMBURSEMENT RATE APPLIES
- ☐ EDD NOT NEEDED
- ☑ RECEIPT VERIFICATION REQUESTED
- ☐ PROVIDE EDD DISK

REQUESTED ANALYSIS — UNIT COST | NON-UNIT COST

Modified TO-15 Low Level

[redacted]

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.
	SG-01	5/17	746	AIR				X		1
	SG-02	5/17	745	AIR				X		1
	SG-03	5/17	743	AIR				X		1
	SG-04	5/17	741	AIR				X		1
	SG-05	5/17	758	AIR				X		1
	SG-06	5/17	800	AIR				X		1
	SG-07	5/17	803	AIR				X		1
	SG-08	5/17	739	AIR				X		1
	SG-09	5/17	737	AIR				X		1
	SG-10	5/17	735	AIR				X		1

FIELD NOTES:

TEMPERATURE ON RECEIPT C°

Container PID Readings or Laboratory Notes

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

05/2/06 Revision

Shell Oil Products Chain Of Custody Record

URS

LAB (LOCATION)

- ☐ ACCUTEST ( )
- ☐ CALSCIENCE ( )
- ☐ TESTAMERICA ( )
- ☑ Other (GORE)

Lab Vendor # See Dropdown

Please Check Appropriate Box:

- ☐ ENV. SERVICES
- ☐ MOTIVA RETAIL
- ☑ SHELL RETAIL
- ☐ MOTIVA SD&CM
- ☐ CONSULTANT
- ☐ LUBES
- ☐ SHELL PIPELINE
- ☐ OTHER

Print Bill To Contact Name:

PO #

INCIDENT # (ENV SERVICES): 3 5 7 0 3 2

☐ CHECK IF NO INCIDENT # APPLIES

SAP #: 3 0 0 0 3 6

DATE: May 17, 2013

PAGE: 2 of 3

SAMPLING COMPANY: URS Corporation

LOG CODE:

ADDRESS: 111 Southwest Columbia Street, Suite 1500, Portland, Oregon 97201

PROJECT CONTACT (Hardcopy or PDF Report to): Brian Pletcher

TELEPHONE: 503-222-7200

FAX: 503-222-4292

Bill To Contact E-MAIL: Brian.Pletcher@urs.com

SITE ADDRESS: Street and City: 2555 13th Avenue SW, Seattle

State: WA

GLOBAL ID NO.:

EDF DELIVERABLE TO (Name, Company, Office Location): Clifford J Pearson, URS, Portland, OR

PHONE NO.: 503-222-7200

E-MAIL: Clifford.Pearson@URS.com

CONSULTANT PROJECT NO.: 46194348

SAMPLER NAME(S) (Print): C. Pearson & M. Tauscher

LAB USE ONLY

TURNAROUND TIME (CALENDAR DAYS): ☒ STANDARD (14 DAY) ☒ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:

DELIVERABLES: ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL 3 ☐ LEVEL 4 ☐ OTHER (SPECIFY)

TEMPERATURE ON RECEIPT C° Cooler #1 Cooler #2 Cooler #3

SPECIAL INSTRUCTIONS OR NOTES :

SEE QUOTE NO.
URS CORPORATION - SEATTLE SHELL HARBOR ISLAND TERMINAL - 130130

- ☑ SHELL CONTRACT RATE APPLIES
- ☐ STATE REIMBURSEMENT RATE APPLIES
- ☐ EDD NOT NEEDED
- ☑ RECEIPT VERIFICATION REQUESTED
- ☐ PROVIDE LEDD DISK

REQUESTED ANALYSIS — UNIT COST / NON-UNIT COST

Modified TO-15 Low Level

[redacted]

FIELD NOTES:

TEMPERATURE ON RECEIPT C°

Container PID Readings or Laboratory Notes

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.
	SG-11	5/17	749	AIR				x		1
	SG-12	5/17	807	AIR				x		1
	SG-13	5/17	805	AIR				x		1
	SG-14	5/17	751	AIR				x		1
	SG-15	5/17	809	AIR				x		1
	SG-16	5/17	811	AIR				x		1
	SG-17	5/17	753	AIR				x		1
	SG-18	5/17	755	AIR				x		1
	SG-19	5/17	817	AIR				x		1
	SG-20	5/17	815	AIR				x		1

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

05/2/06 Revision

Shell Oil Products Chain Of Custody Record

URS

LAB (LOCATION)
- ☐ ACCUTEST (_____)
- ☐ CALSCIENCE (_____)
- ☐ TESTAMERICA (_____)
- ☑ Other (GORE)

Lab Vendor # See Dropdown

Please Check Appropriate Box:
- ☐ ENV. SERVICES
- ☐ MOTIVA RETAIL
- ☑ SHELL RETAIL
- ☐ MOTIVA SD&CM
- ☐ CONSULTANT
- ☐ LUBES
- ☐ SHELL PIPELINE
- ☐ OTHER _____

Print Bill To Contact Name:

INCIDENT # (ENV SERVICES): 3 5 7 0 3 2

☐ CHECK IF NO INCIDENT # APPLIES

DATE: May 17, 2013

PAGE: 3 of 3

PO #:

SAP #: 3 0 0 0 3 6

SAMPLING COMPANY: URS Corporation

LOG CODE:

SITE ADDRESS: Street and City: 2555 13th Avenue SW, Seattle

State: WA

GLOBAL ID NO.:

ADDRESS: 111 Southwest Columbia Street, Suite 1500, Portland, Oregon 97201

EDF DELIVERABLE TO (Name, Company, Office Location): Clifford J Pearson, URS, Portland, OR

PHONE NO.: 503-222-7200

E-MAIL: Clifford.Pearson@URS.com

CONSULTANT PROJECT NO.: 46194348

PROJECT CONTACT (Hardcopy or PDF Report to): Brian Pletcher

TELEPHONE: 503-222-7200

FAX: 503-222-4292

Bill To Contact E-MAIL: Brian.Pletcher@urs.com

SAMPLER NAME(S) (Print): C. PEARSON & M. TAUSCHER

LAB USE ONLY

TURNAROUND TIME (CALENDAR DAYS):
- ☑ ~~STANDARD (21 DAY)~~
- ☑ 5 DAYS
- ☐ 3 DAYS
- ☐ 2 DAYS
- ☐ 24 HOURS
- ☐ RESULTS NEEDED ON WEEKEND

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:

DELIVERABLES: ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL 3 ☐ LEVEL 4 ☐ OTHER (SPECIFY) _____

TEMPERATURE ON RECEIPT C° | Cooler #1 | Cooler #2 | Cooler #3

SPECIAL INSTRUCTIONS OR NOTES:
SEE QUOTE NO.
URS CORPORATION – SEATTLE SHELL
HARBOR ISLAND TERMINAL – 130430

- ☑ SHELL CONTRACT RATE APPLIES
- ☐ STATE REIMBURSEMENT RATE APPLIES
- ☐ COD NOT NEEDED
- ☑ RECEIPT VERIFICATION REQUESTED
- ☐ PROVIDE LEDD DISK

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	UNIT COST	NON-UNIT COST	FIELD NOTES:
	TRIP BLANK	—		AIR				X		2			TEMPERATURE ON RECEIPT C°
													Container PID Readings or Laboratory Notes

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time

05/2008 Revision

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
+1 410 392 7600 ENVIRONMENTAL@WLGORE.COM

PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714161DL FIELD_SAMPLE
Dilution Factor: 13 Field ID: SG09
Installation Date: 5/14/2013 1:10:00PM
Retrieval Date: 5/17/2013 7:37:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/22/2013 3:57:00AM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
Methyl tert-butyl ether	1634-04-4	<0.26	0.26
trans-1,2-Dichloroethene	156-60-5	<0.26	0.26
1,1-Dichloroethane	75-34-3	<0.26	0.26
cis-1,2-Dichloroethene	156-59-2	<0.26	0.26
Chloroform	67-66-3	<0.26	0.26
1,1,1-Trichloroethane	71-55-6	<0.26	0.26
1,2-Dichloroethane	107-06-2	<0.26	0.26
Benzene	**71-43-2**	**0.72**	**0.26**
Carbon Tetrachloride	56-23-5	<0.26	0.26
Trichloroethene	79-01-6	<0.26	0.26
1,1,2-Trichloroethane	79-00-5	<0.26	0.26
Toluene	108-88-3	<0.26	0.26
Octane	**111-65-9**	**6.87**	**0.26**
Tetrachloroethene	127-18-4	<0.26	0.26
Chlorobenzene	108-90-7	<0.26	0.26
1,1,1,2-Tetrachloroethane	630-20-6	<0.26	0.26
Ethylbenzene	**100-41-4**	**2.14**	**0.26**
m,p-Xylene	**108-38-3/106-42-3**	**2.01**	**0.26**
o-Xylene	95-47-6	<0.26	0.26
1,1,2,2-Tetrachloroethane	79-34-5	<0.26	0.26
1,3,5-Trimethylbenzene	108-67-8	<0.26	0.26
1,2,4-Trimethylbenzene	95-63-6	<0.26	0.26
1,3-Dichlorobenzene	541-73-1	<0.26	0.26
1,4-Dichlorobenzene	106-46-7	<0.26	0.26
1,2-Dichlorobenzene	95-50-1	<0.26	0.26
Undecane	1120-21-4	<0.65	0.65
Naphthalene	91-20-3	<0.65	0.65
Tridecane	629-50-5	<0.65	0.65
2-Methylnaphthalene	91-57-6	<0.65	0.65
Acenaphthylene	208-96-8	<0.65	0.65
Pentadecane	629-62-9	<0.65	0.65
Acenaphthene	83-32-9	<0.65	0.65
Fluorene	86-73-7	<0.65	0.65
TPH		**584.75**	**6.50**

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
+1 410 392 7600 ENVIRONMENTAL@WLGORE.COM

PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714161DL FIELD_SAMPLE
Dilution Factor: 13 Field ID: SG09
Installation Date: 5/14/2013 1:10:00PM
Retrieval Date: 5/17/2013 7:37:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/22/2013 3:57:00AM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
BTEX		4.87	0.26

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
+1 410 392 7600 ENVIRONMENTAL@WLGORE.COM

PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714162DL FIELD_SAMPLE
Dilution Factor: 13 Field ID: SG10
Installation Date: 5/14/2013 1:35:00PM
Retrieval Date: 5/17/2013 7:35:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14

Date Analyzed: 5/22/2013 9:11:00AM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
Methyl tert-butyl ether	1634-04-4	<0.26	0.26
trans-1,2-Dichloroethene	156-60-5	<0.26	0.26
1,1-Dichloroethane	75-34-3	<0.26	0.26
cis-1,2-Dichloroethene	156-59-2	<0.26	0.26
Chloroform	67-66-3	<0.26	0.26
1,1,1-Trichloroethane	71-55-6	<0.26	0.26
1,2-Dichloroethane	107-06-2	<0.26	0.26
Benzene	**71-43-2**	**0.41**	**0.26**
Carbon Tetrachloride	56-23-5	<0.26	0.26
Trichloroethene	79-01-6	<0.26	0.26
1,1,2-Trichloroethane	79-00-5	<0.26	0.26
Toluene	**108-88-3**	**0.60**	**0.26**
Octane	**111-65-9**	**2.44**	**0.26**
Tetrachloroethene	127-18-4	<0.26	0.26
Chlorobenzene	108-90-7	<0.26	0.26
1,1,1,2-Tetrachloroethane	630-20-6	<0.26	0.26
Ethylbenzene	**100-41-4**	**38.89**	**0.26**
m,p-Xylene	**108-38-3/106-42-3**	**75.95**	**0.26**
o-Xylene	**95-47-6**	**0.33**	**0.26**
1,1,2,2-Tetrachloroethane	79-34-5	<0.26	0.26
1,3,5-Trimethylbenzene	**108-67-8**	**21.78**	**0.26**
1,2,4-Trimethylbenzene	**95-63-6**	**89.95**	**0.26**
1,3-Dichlorobenzene	541-73-1	<0.26	0.26
1,4-Dichlorobenzene	106-46-7	<0.26	0.26
1,2-Dichlorobenzene	95-50-1	<0.26	0.26
Undecane	**1120-21-4**	**2.01**	**0.65**
Naphthalene	**91-20-3**	**20.14**	**0.65**
Tridecane	**629-50-5**	**2.73**	**0.65**
2-Methylnaphthalene	**91-57-6**	**23.39**	**0.65**
Acenaphthylene	208-96-8	<0.65	0.65
Pentadecane	629-62-9	<0.65	0.65
Acenaphthene	83-32-9	<0.65	0.65
Fluorene	86-73-7	<0.65	0.65
TPH		**1,071.33**	**6.50**

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PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714162DL FIELD_SAMPLE
Dilution Factor: 13 Field ID: SG10
Installation Date: 5/14/2013 1:35:00PM
Retrieval Date: 5/17/2013 7:35:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/22/2013 9:11:00AM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
BTEX		116.17	0.26

GORE SURVEY PRODUCTS GROUP
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PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714163DL FIELD_SAMPLE
Dilution Factor: 13 Field ID: SG19
Installation Date: 5/14/2013 2:55:00PM
Retrieval Date: 5/17/2013 8:17:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14

Date Analyzed: 5/22/2013 2:03:00AM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
Methyl tert-butyl ether	1634-04-4	<0.26	0.26
trans-1,2-Dichloroethene	156-60-5	<0.26	0.26
1,1-Dichloroethane	75-34-3	<0.26	0.26
cis-1,2-Dichloroethene	156-59-2	<0.26	0.26
Chloroform	67-66-3	<0.26	0.26
1,1,1-Trichloroethane	71-55-6	<0.26	0.26
1,2-Dichloroethane	107-06-2	<0.26	0.26
Benzene	71-43-2	<0.26	0.26
Carbon Tetrachloride	56-23-5	<0.26	0.26
Trichloroethene	79-01-6	<0.26	0.26
1,1,2-Trichloroethane	79-00-5	<0.26	0.26
Toluene	108-88-3	<0.26	0.26
Octane	111-65-9	<0.26	0.26
Tetrachloroethene	127-18-4	<0.26	0.26
Chlorobenzene	108-90-7	<0.26	0.26
1,1,1,2-Tetrachloroethane	630-20-6	<0.26	0.26
Ethylbenzene	100-41-4	<0.26	0.26
m,p-Xylene	108-38-3/106-42-3	<0.26	0.26
o-Xylene	95-47-6	<0.26	0.26
1,1,2,2-Tetrachloroethane	79-34-5	<0.26	0.26
1,3,5-Trimethylbenzene	108-67-8	<0.26	0.26
1,2,4-Trimethylbenzene	95-63-6	<0.26	0.26
1,3-Dichlorobenzene	541-73-1	<0.26	0.26
1,4-Dichlorobenzene	106-46-7	<0.26	0.26
1,2-Dichlorobenzene	95-50-1	<0.26	0.26
Undecane	1120-21-4	<0.65	0.65
Naphthalene	91-20-3	<0.65	0.65
Tridecane	629-50-5	<0.65	0.65
2-Methylnaphthalene	91-57-6	<0.65	0.65
Acenaphthylene	208-96-8	<0.65	0.65
Pentadecane	629-62-9	<0.65	0.65
Acenaphthene	83-32-9	<0.65	0.65
Fluorene	86-73-7	<0.65	0.65
TPH		**287.25**	**6.50**

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
+1 410 392 7600 ENVIRONMENTAL@WLGORE.COM

PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714163DL FIELD_SAMPLE
Dilution Factor: 13 Field ID: SG19
Installation Date: 5/14/2013 2:55:00PM
Retrieval Date: 5/17/2013 8:17:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/22/2013 2:03:00AM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
BTEX		<0.26	0.26

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
+1 410 392 7600 ENVIRONMENTAL@WLGORE.COM

PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714164 TRIP_BLANK
Dilution Factor: 1
Field ID: Trip Blank
Matrix: SOIL GAS
Porosity:
Product: SPG0008
Water Filled Voids:

Date Analyzed: 5/21/2013 5:57:00PM

Analyst: Kelly J Stringham
Method: SPG-WI-0292
Batch: ENV-130521-1
Reviewer: Jasmine R. Smith

Compound	CAS #	Result (ug)	RL (ug)
Methyl tert-butyl ether	1634-04-4	<0.02	0.02
trans-1,2-Dichloroethene	156-60-5	<0.02	0.02
1,1-Dichloroethane	75-34-3	<0.02	0.02
cis-1,2-Dichloroethene	156-59-2	<0.02	0.02
Chloroform	67-66-3	<0.02	0.02
1,1,1-Trichloroethane	71-55-6	<0.02	0.02
1,2-Dichloroethane	107-06-2	<0.02	0.02
Benzene	71-43-2	<0.02	0.02
Carbon Tetrachloride	56-23-5	<0.02	0.02
Trichloroethene	79-01-6	<0.02	0.02
1,1,2-Trichloroethane	79-00-5	<0.02	0.02
Toluene	108-88-3	<0.02	0.02
Octane	111-65-9	<0.02	0.02
Tetrachloroethene	127-18-4	<0.02	0.02
Chlorobenzene	108-90-7	<0.02	0.02
1,1,1,2-Tetrachloroethane	630-20-6	<0.02	0.02
Ethylbenzene	100-41-4	<0.02	0.02
m,p-Xylene	108-38-3/106-42-3	<0.02	0.02
o-Xylene	95-47-6	<0.02	0.02
1,1,2,2-Tetrachloroethane	79-34-5	<0.02	0.02
1,3,5-Trimethylbenzene	108-67-8	<0.02	0.02
1,2,4-Trimethylbenzene	95-63-6	<0.02	0.02
1,3-Dichlorobenzene	541-73-1	<0.02	0.02
1,4-Dichlorobenzene	106-46-7	<0.02	0.02
1,2-Dichlorobenzene	95-50-1	<0.02	0.02
Undecane	1120-21-4	<0.05	0.05
Naphthalene	91-20-3	<0.05	0.05
Tridecane	629-50-5	<0.05	0.05
2-Methylnaphthalene	91-57-6	<0.05	0.05
Acenaphthylene	208-96-8	<0.05	0.05
Pentadecane	629-62-9	<0.05	0.05
Acenaphthene	83-32-9	<0.05	0.05
Fluorene	86-73-7	<0.05	0.05
TPH		<0.50	0.50

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
+1 410 392 7600 ENVIRONMENTAL@WLGORE.COM

PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714164 TRIP_BLANK
Dilution Factor: 1
Field ID: Trip Blank
Matrix: SOIL GAS
Porosity:
Product: SPG0008
Water Filled Voids:

Date Analyzed: 5/21/2013 5:57:00PM

Analyst: Kelly J Stringham
Method: SPG-WI-0292
Batch: ENV-130521-1
Reviewer: Jasmine R. Smith

Compound	CAS #	Result (ug)	RL (ug)
BTEX		<0.02	0.02

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
+1 410 392 7600 ENVIRONMENTAL@WLGORE.COM

PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714165 TRIP_BLANK
Dilution Factor: 1
Field ID: Trip Blank
Matrix: SOIL GAS
Porosity:
Product: SPG0008
Water Filled Voids:

Date Analyzed: 5/21/2013 10:43:00PM

Analyst: Kelly J Stringham
Method: SPG-WI-0292
Batch: ENV-130521-1
Reviewer: Jasmine R. Smith

Compound	CAS #	Result (ug)	RL (ug)
Methyl tert-butyl ether	1634-04-4	<0.02	0.02
trans-1,2-Dichloroethene	156-60-5	<0.02	0.02
1,1-Dichloroethane	75-34-3	<0.02	0.02
cis-1,2-Dichloroethene	156-59-2	<0.02	0.02
Chloroform	67-66-3	<0.02	0.02
1,1,1-Trichloroethane	71-55-6	<0.02	0.02
1,2-Dichloroethane	107-06-2	<0.02	0.02
Benzene	71-43-2	<0.02	0.02
Carbon Tetrachloride	56-23-5	<0.02	0.02
Trichloroethene	79-01-6	<0.02	0.02
1,1,2-Trichloroethane	79-00-5	<0.02	0.02
Toluene	108-88-3	<0.02	0.02
Octane	111-65-9	<0.02	0.02
Tetrachloroethene	127-18-4	<0.02	0.02
Chlorobenzene	108-90-7	<0.02	0.02
1,1,1,2-Tetrachloroethane	630-20-6	<0.02	0.02
Ethylbenzene	100-41-4	<0.02	0.02
m,p-Xylene	108-38-3/106-42-3	<0.02	0.02
o-Xylene	95-47-6	<0.02	0.02
1,1,2,2-Tetrachloroethane	79-34-5	<0.02	0.02
1,3,5-Trimethylbenzene	108-67-8	<0.02	0.02
1,2,4-Trimethylbenzene	95-63-6	<0.02	0.02
1,3-Dichlorobenzene	541-73-1	<0.02	0.02
1,4-Dichlorobenzene	106-46-7	<0.02	0.02
1,2-Dichlorobenzene	95-50-1	<0.02	0.02
Undecane	1120-21-4	<0.05	0.05
Naphthalene	91-20-3	<0.05	0.05
Tridecane	629-50-5	<0.05	0.05
2-Methylnaphthalene	91-57-6	<0.05	0.05
Acenaphthylene	208-96-8	<0.05	0.05
Pentadecane	629-62-9	<0.05	0.05
Acenaphthene	83-32-9	<0.05	0.05
Fluorene	86-73-7	<0.05	0.05
TPH		<0.50	0.50

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
+1 410 392 7600 ENVIRONMENTAL@WLGORE.COM

PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714165 TRIP_BLANK
Dilution Factor: 1
Field ID: Trip Blank
Matrix: SOIL GAS
Porosity:
Product: SPG0008
Water Filled Voids:

Date Analyzed: 5/21/2013 10:43:00PM

Analyst: Kelly J Stringham
Method: SPG-WI-0292
Batch: ENV-130521-1
Reviewer: Jasmine R. Smith

Compound	CAS #	Result (ug)	RL (ug)
BTEX		<0.02	0.02

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
+1 410 392 7600 ENVIRONMENTAL@WLGORE.COM

PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714166 FIELD_SAMPLE
Dilution Factor: 1 Field ID: SG20
Installation Date: 5/14/2013 2:45:00PM
Retrieval Date: 5/17/2013 8:15:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/21/2013 8:20:00PM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
Methyl tert-butyl ether	1634-04-4	<0.02	0.02
trans-1,2-Dichloroethene	156-60-5	<0.02	0.02
1,1-Dichloroethane	75-34-3	<0.02	0.02
cis-1,2-Dichloroethene	156-59-2	<0.02	0.02
Chloroform	67-66-3	<0.02	0.02
1,1,1-Trichloroethane	71-55-6	<0.02	0.02
1,2-Dichloroethane	107-06-2	<0.02	0.02
Benzene	71-43-2	<0.02	0.02
Carbon Tetrachloride	56-23-5	<0.02	0.02
Trichloroethene	79-01-6	<0.02	0.02
1,1,2-Trichloroethane	79-00-5	<0.02	0.02
Toluene	108-88-3	<0.02	0.02
Octane	111-65-9	<0.02	0.02
Tetrachloroethene	127-18-4	<0.02	0.02
Chlorobenzene	108-90-7	<0.02	0.02
1,1,1,2-Tetrachloroethane	630-20-6	<0.02	0.02
Ethylbenzene	100-41-4	<0.02	0.02
m,p-Xylene	108-38-3/106-42-3	<0.02	0.02
o-Xylene	95-47-6	<0.02	0.02
1,1,2,2-Tetrachloroethane	79-34-5	<0.02	0.02
1,3,5-Trimethylbenzene	108-67-8	<0.02	0.02
1,2,4-Trimethylbenzene	95-63-6	<0.02	0.02
1,3-Dichlorobenzene	541-73-1	<0.02	0.02
1,4-Dichlorobenzene	106-46-7	<0.02	0.02
1,2-Dichlorobenzene	95-50-1	<0.02	0.02
Undecane	1120-21-4	<0.05	0.05
Naphthalene	91-20-3	<0.05	0.05
Tridecane	629-50-5	<0.05	0.05
2-Methylnaphthalene	91-57-6	<0.05	0.05
Acenaphthylene	208-96-8	<0.05	0.05
Pentadecane	629-62-9	<0.05	0.05
Acenaphthene	83-32-9	<0.05	0.05
Fluorene	86-73-7	<0.05	0.05
TPH		**1.17**	**0.50**

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
+1 410 392 7600 ENVIRONMENTAL@WLGORE.COM

PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714166 FIELD_SAMPLE
Dilution Factor: 1 Field ID: SG20
Installation Date: 5/14/2013 2:45:00PM
Retrieval Date: 5/17/2013 8:15:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/21/2013 8:20:00PM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
BTEX		<0.02	0.02

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
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PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714167 FIELD_SAMPLE
Dilution Factor: 1 Field ID: SG07
Installation Date: 5/14/2013 1:05:00PM
Retrieval Date: 5/17/2013 8:03:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/21/2013 7:22:00PM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
Methyl tert-butyl ether	1634-04-4	<0.02	0.02
trans-1,2-Dichloroethene	156-60-5	<0.02	0.02
1,1-Dichloroethane	75-34-3	<0.02	0.02
cis-1,2-Dichloroethene	156-59-2	<0.02	0.02
Chloroform	67-66-3	<0.02	0.02
1,1,1-Trichloroethane	71-55-6	<0.02	0.02
1,2-Dichloroethane	107-06-2	<0.02	0.02
Benzene	71-43-2	<0.02	0.02
Carbon Tetrachloride	56-23-5	<0.02	0.02
Trichloroethene	79-01-6	<0.02	0.02
1,1,2-Trichloroethane	79-00-5	<0.02	0.02
Toluene	108-88-3	<0.02	0.02
Octane	111-65-9	<0.02	0.02
Tetrachloroethene	127-18-4	<0.02	0.02
Chlorobenzene	108-90-7	<0.02	0.02
1,1,1,2-Tetrachloroethane	630-20-6	<0.02	0.02
Ethylbenzene	100-41-4	<0.02	0.02
m,p-Xylene	108-38-3/106-42-3	<0.02	0.02
o-Xylene	95-47-6	<0.02	0.02
1,1,2,2-Tetrachloroethane	79-34-5	<0.02	0.02
1,3,5-Trimethylbenzene	108-67-8	<0.02	0.02
1,2,4-Trimethylbenzene	95-63-6	<0.02	0.02
1,3-Dichlorobenzene	541-73-1	<0.02	0.02
1,4-Dichlorobenzene	106-46-7	<0.02	0.02
1,2-Dichlorobenzene	95-50-1	<0.02	0.02
Undecane	1120-21-4	<0.05	0.05
Naphthalene	91-20-3	<0.05	0.05
Tridecane	629-50-5	<0.05	0.05
2-Methylnaphthalene	91-57-6	<0.05	0.05
Acenaphthylene	208-96-8	<0.05	0.05
Pentadecane	629-62-9	<0.05	0.05
Acenaphthene	83-32-9	<0.05	0.05
Fluorene	86-73-7	<0.05	0.05
TPH		**1.12**	**0.50**

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
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PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714167 FIELD_SAMPLE
Dilution Factor: 1 Field ID: SG07
Installation Date: 5/14/2013 1:05:00PM
Retrieval Date: 5/17/2013 8:03:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/21/2013 7:22:00PM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
BTEX		<0.02	0.02

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
+1 410 392 7600 ENVIRONMENTAL@WLGORE.COM

PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714168 FIELD_SAMPLE
Dilution Factor: 1 Field ID: SG13
Installation Date: 5/14/2013 1:45:00PM
Retrieval Date: 5/17/2013 8:05:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/21/2013 8:48:00PM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
Methyl tert-butyl ether	1634-04-4	<0.02	0.02
trans-1,2-Dichloroethene	156-60-5	<0.02	0.02
1,1-Dichloroethane	75-34-3	<0.02	0.02
cis-1,2-Dichloroethene	156-59-2	<0.02	0.02
Chloroform	67-66-3	<0.02	0.02
1,1,1-Trichloroethane	71-55-6	<0.02	0.02
1,2-Dichloroethane	107-06-2	<0.02	0.02
Benzene	71-43-2	<0.02	0.02
Carbon Tetrachloride	56-23-5	<0.02	0.02
Trichloroethene	79-01-6	<0.02	0.02
1,1,2-Trichloroethane	79-00-5	<0.02	0.02
Toluene	108-88-3	<0.02	0.02
Octane	111-65-9	<0.02	0.02
Tetrachloroethene	127-18-4	<0.02	0.02
Chlorobenzene	108-90-7	<0.02	0.02
1,1,1,2-Tetrachloroethane	630-20-6	<0.02	0.02
Ethylbenzene	100-41-4	<0.02	0.02
m,p-Xylene	108-38-3/106-42-3	<0.02	0.02
o-Xylene	95-47-6	<0.02	0.02
1,1,2,2-Tetrachloroethane	79-34-5	<0.02	0.02
1,3,5-Trimethylbenzene	108-67-8	<0.02	0.02
1,2,4-Trimethylbenzene	95-63-6	<0.02	0.02
1,3-Dichlorobenzene	541-73-1	<0.02	0.02
1,4-Dichlorobenzene	106-46-7	<0.02	0.02
1,2-Dichlorobenzene	95-50-1	<0.02	0.02
Undecane	1120-21-4	<0.05	0.05
Naphthalene	91-20-3	<0.05	0.05
Tridecane	629-50-5	<0.05	0.05
2-Methylnaphthalene	91-57-6	<0.05	0.05
Acenaphthylene	208-96-8	<0.05	0.05
Pentadecane	629-62-9	<0.05	0.05
Acenaphthene	83-32-9	<0.05	0.05
Fluorene	86-73-7	<0.05	0.05
TPH		**0.95**	**0.50**

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
+1 410 392 7600 ENVIRONMENTAL@WLGORE.COM

PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714168 FIELD_SAMPLE
Dilution Factor: 1 Field ID: SG13
Installation Date: 5/14/2013 1:45:00PM
Retrieval Date: 5/17/2013 8:05:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/21/2013 8:48:00PM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
BTEX		<0.02	0.02

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
+1 410 392 7600 ENVIRONMENTAL@WLGORE.COM

PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714169 FIELD_SAMPLE
Dilution Factor: 1 Field ID: SG12
Installation Date: 5/14/2013 1:50:00PM
Retrieval Date: 5/17/2013 8:07:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/21/2013 7:51:00PM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
Methyl tert-butyl ether	1634-04-4	<0.02	0.02
trans-1,2-Dichloroethene	156-60-5	<0.02	0.02
1,1-Dichloroethane	75-34-3	<0.02	0.02
cis-1,2-Dichloroethene	156-59-2	<0.02	0.02
Chloroform	67-66-3	<0.02	0.02
1,1,1-Trichloroethane	71-55-6	<0.02	0.02
1,2-Dichloroethane	107-06-2	<0.02	0.02
Benzene	71-43-2	<0.02	0.02
Carbon Tetrachloride	56-23-5	<0.02	0.02
Trichloroethene	79-01-6	<0.02	0.02
1,1,2-Trichloroethane	79-00-5	<0.02	0.02
Toluene	108-88-3	<0.02	0.02
Octane	111-65-9	<0.02	0.02
Tetrachloroethene	127-18-4	<0.02	0.02
Chlorobenzene	108-90-7	<0.02	0.02
1,1,1,2-Tetrachloroethane	630-20-6	<0.02	0.02
Ethylbenzene	100-41-4	<0.02	0.02
m,p-Xylene	108-38-3/106-42-3	<0.02	0.02
o-Xylene	95-47-6	<0.02	0.02
1,1,2,2-Tetrachloroethane	79-34-5	<0.02	0.02
1,3,5-Trimethylbenzene	108-67-8	<0.02	0.02
1,2,4-Trimethylbenzene	95-63-6	<0.02	0.02
1,3-Dichlorobenzene	541-73-1	<0.02	0.02
1,4-Dichlorobenzene	106-46-7	<0.02	0.02
1,2-Dichlorobenzene	95-50-1	<0.02	0.02
Undecane	1120-21-4	<0.05	0.05
Naphthalene	91-20-3	<0.05	0.05
Tridecane	629-50-5	<0.05	0.05
2-Methylnaphthalene	91-57-6	<0.05	0.05
Acenaphthylene	208-96-8	<0.05	0.05
Pentadecane	629-62-9	<0.05	0.05
Acenaphthene	83-32-9	<0.05	0.05
Fluorene	86-73-7	<0.05	0.05
TPH		**1.14**	**0.50**

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
+1 410 392 7600 ENVIRONMENTAL@WLGORE.COM

PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714169 FIELD_SAMPLE
Dilution Factor: 1 Field ID: SG12
Installation Date: 5/14/2013 1:50:00PM
Retrieval Date: 5/17/2013 8:07:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/21/2013 7:51:00PM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
BTEX		<0.02	0.02

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
+1 410 392 7600 ENVIRONMENTAL@WLGORE.COM

PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714170DL FIELD_SAMPLE
Dilution Factor: 13 Field ID: SG15
Installation Date: 5/14/2013 2:05:00PM
Retrieval Date: 5/17/2013 8:09:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/22/2013 4:54:00AM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
Methyl tert-butyl ether	1634-04-4	<0.26	0.26
trans-1,2-Dichloroethene	156-60-5	<0.26	0.26
1,1-Dichloroethane	75-34-3	<0.26	0.26
cis-1,2-Dichloroethene	156-59-2	<0.26	0.26
Chloroform	67-66-3	<0.26	0.26
1,1,1-Trichloroethane	71-55-6	<0.26	0.26
1,2-Dichloroethane	107-06-2	<0.26	0.26
Benzene	**71-43-2**	**74.33**	**0.26**
Carbon Tetrachloride	56-23-5	<0.26	0.26
Trichloroethene	79-01-6	<0.26	0.26
1,1,2-Trichloroethane	79-00-5	<0.26	0.26
Toluene	**108-88-3**	**2.45**	**0.26**
Octane	**111-65-9**	**0.38**	**0.26**
Tetrachloroethene	127-18-4	<0.26	0.26
Chlorobenzene	108-90-7	<0.26	0.26
1,1,1,2-Tetrachloroethane	630-20-6	<0.26	0.26
Ethylbenzene	**100-41-4**	**61.43**	**0.26**
m,p-Xylene	**108-38-3/106-42-3**	**3.56**	**0.26**
o-Xylene	**95-47-6**	**0.51**	**0.26**
1,1,2,2-Tetrachloroethane	79-34-5	<0.26	0.26
1,3,5-Trimethylbenzene	**108-67-8**	**3.23**	**0.26**
1,2,4-Trimethylbenzene	**95-63-6**	**1.95**	**0.26**
1,3-Dichlorobenzene	541-73-1	<0.26	0.26
1,4-Dichlorobenzene	106-46-7	<0.26	0.26
1,2-Dichlorobenzene	95-50-1	<0.26	0.26
Undecane	1120-21-4	<0.65	0.65
Naphthalene	**91-20-3**	**1.87**	**0.65**
Tridecane	629-50-5	<0.65	0.65
2-Methylnaphthalene	91-57-6	<0.65	0.65
Acenaphthylene	208-96-8	<0.65	0.65
Pentadecane	629-62-9	<0.65	0.65
Acenaphthene	83-32-9	<0.65	0.65
Fluorene	86-73-7	<0.65	0.65
TPH		**134.95**	**6.50**

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
+1 410 392 7600 ENVIRONMENTAL@WLGORE.COM

PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714170DL FIELD_SAMPLE
Dilution Factor: 13 Field ID: SG15
Installation Date: 5/14/2013 2:05:00PM
Retrieval Date: 5/17/2013 8:09:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/22/2013 4:54:00AM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
BTEX		142.27	0.26

GORE SURVEY PRODUCTS GROUP
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PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714171DL FIELD_SAMPLE
Dilution Factor: 13 Field ID: SG16
Installation Date: 5/14/2013 2:30:00PM
Retrieval Date: 5/17/2013 8:11:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/22/2013 12:08:00PM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
Methyl tert-butyl ether	1634-04-4	<0.26	0.26
trans-1,2-Dichloroethene	156-60-5	<0.26	0.26
1,1-Dichloroethane	75-34-3	<0.26	0.26
cis-1,2-Dichloroethene	156-59-2	<0.26	0.26
Chloroform	67-66-3	<0.26	0.26
1,1,1-Trichloroethane	71-55-6	<0.26	0.26
1,2-Dichloroethane	107-06-2	<0.26	0.26
Benzene	**71-43-2**	**0.62**	**0.26**
Carbon Tetrachloride	56-23-5	<0.26	0.26
Trichloroethene	79-01-6	<0.26	0.26
1,1,2-Trichloroethane	79-00-5	<0.26	0.26
Toluene	**108-88-3**	**0.37**	**0.26**
Octane	111-65-9	<0.26	0.26
Tetrachloroethene	127-18-4	<0.26	0.26
Chlorobenzene	108-90-7	<0.26	0.26
1,1,1,2-Tetrachloroethane	630-20-6	<0.26	0.26
Ethylbenzene	**100-41-4**	**0.73**	**0.26**
m,p-Xylene	**108-38-3/106-42-3**	**0.82**	**0.26**
o-Xylene	95-47-6	<0.26	0.26
1,1,2,2-Tetrachloroethane	79-34-5	<0.26	0.26
1,3,5-Trimethylbenzene	108-67-8	<0.26	0.26
1,2,4-Trimethylbenzene	95-63-6	<0.26	0.26
1,3-Dichlorobenzene	541-73-1	<0.26	0.26
1,4-Dichlorobenzene	106-46-7	<0.26	0.26
1,2-Dichlorobenzene	95-50-1	<0.26	0.26
Undecane	**1120-21-4**	**3.37**	**0.65**
Naphthalene	91-20-3	<0.65	0.65
Tridecane	629-50-5	<0.65	0.65
2-Methylnaphthalene	91-57-6	<0.65	0.65
Acenaphthylene	208-96-8	<0.65	0.65
Pentadecane	629-62-9	<0.65	0.65
Acenaphthene	83-32-9	<0.65	0.65
Fluorene	86-73-7	<0.65	0.65
TPH		**2,600.41**	**6.50**

GORE SURVEY PRODUCTS GROUP
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PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714171DL FIELD_SAMPLE
Dilution Factor: 13 Field ID: SG16
Installation Date: 5/14/2013 2:30:00PM
Retrieval Date: 5/17/2013 8:11:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/22/2013 12:08:00PM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
BTEX		2.54	0.26

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PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714172DL FIELD_SAMPLE
Dilution Factor: 13 Field ID: SG05
Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Installation Date: 5/14/2013 12:55:00PM
Retrieval Date: 5/17/2013 7:58:00AM
Date Analyzed: 5/22/2013 10:08:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292** **Batch: ENV-130521-1**
Reviewer: Jasmine R. Smith

Compound	CAS #	Result (ug)	RL (ug)
Methyl tert-butyl ether	1634-04-4	<0.26	0.26
trans-1,2-Dichloroethene	156-60-5	<0.26	0.26
1,1-Dichloroethane	75-34-3	<0.26	0.26
cis-1,2-Dichloroethene	156-59-2	<0.26	0.26
Chloroform	67-66-3	<0.26	0.26
1,1,1-Trichloroethane	71-55-6	<0.26	0.26
1,2-Dichloroethane	107-06-2	<0.26	0.26
Benzene	**71-43-2**	**0.49**	**0.26**
Carbon Tetrachloride	56-23-5	<0.26	0.26
Trichloroethene	79-01-6	<0.26	0.26
1,1,2-Trichloroethane	79-00-5	<0.26	0.26
Toluene	108-88-3	<0.26	0.26
Octane	**111-65-9**	**17.37**	**0.26**
Tetrachloroethene	127-18-4	<0.26	0.26
Chlorobenzene	108-90-7	<0.26	0.26
1,1,1,2-Tetrachloroethane	630-20-6	<0.26	0.26
Ethylbenzene	**100-41-4**	**3.84**	**0.26**
m,p-Xylene	**108-38-3/106-42-3**	**5.90**	**0.26**
o-Xylene	95-47-6	<0.26	0.26
1,1,2,2-Tetrachloroethane	79-34-5	<0.26	0.26
1,3,5-Trimethylbenzene	**108-67-8**	**0.46**	**0.26**
1,2,4-Trimethylbenzene	**95-63-6**	**0.78**	**0.26**
1,3-Dichlorobenzene	541-73-1	<0.26	0.26
1,4-Dichlorobenzene	106-46-7	<0.26	0.26
1,2-Dichlorobenzene	95-50-1	<0.26	0.26
Undecane	1120-21-4	<0.65	0.65
Naphthalene	91-20-3	<0.65	0.65
Tridecane	629-50-5	<0.65	0.65
2-Methylnaphthalene	91-57-6	<0.65	0.65
Acenaphthylene	208-96-8	<0.65	0.65
Pentadecane	629-62-9	<0.65	0.65
Acenaphthene	83-32-9	<0.65	0.65
Fluorene	86-73-7	<0.65	0.65
TPH		**827.77**	**6.50**

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PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714172DL FIELD_SAMPLE
Dilution Factor: 13 Field ID: SG05
Installation Date: 5/14/2013 12:55:00PM
Retrieval Date: 5/17/2013 7:58:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/22/2013 10:08:00AM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
BTEX		10.22	0.26

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PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714173 FIELD_SAMPLE
Dilution Factor: 1 Field ID: SG14
Installation Date: 5/14/2013 12:05:00PM
Retrieval Date: 5/17/2013 7:51:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/21/2013 6:54:00PM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
Methyl tert-butyl ether	1634-04-4	<0.02	0.02
trans-1,2-Dichloroethene	156-60-5	<0.02	0.02
1,1-Dichloroethane	75-34-3	<0.02	0.02
cis-1,2-Dichloroethene	156-59-2	<0.02	0.02
Chloroform	67-66-3	<0.02	0.02
1,1,1-Trichloroethane	71-55-6	<0.02	0.02
1,2-Dichloroethane	107-06-2	<0.02	0.02
Benzene	71-43-2	<0.02	0.02
Carbon Tetrachloride	56-23-5	<0.02	0.02
Trichloroethene	79-01-6	<0.02	0.02
1,1,2-Trichloroethane	79-00-5	<0.02	0.02
Toluene	**108-88-3**	**0.04**	**0.02**
Octane	111-65-9	<0.02	0.02
Tetrachloroethene	127-18-4	<0.02	0.02
Chlorobenzene	108-90-7	<0.02	0.02
1,1,1,2-Tetrachloroethane	630-20-6	<0.02	0.02
Ethylbenzene	100-41-4	<0.02	0.02
m,p-Xylene	108-38-3/106-42-3	<0.02	0.02
o-Xylene	95-47-6	<0.02	0.02
1,1,2,2-Tetrachloroethane	79-34-5	<0.02	0.02
1,3,5-Trimethylbenzene	108-67-8	<0.02	0.02
1,2,4-Trimethylbenzene	95-63-6	<0.02	0.02
1,3-Dichlorobenzene	541-73-1	<0.02	0.02
1,4-Dichlorobenzene	106-46-7	<0.02	0.02
1,2-Dichlorobenzene	95-50-1	<0.02	0.02
Undecane	1120-21-4	<0.05	0.05
Naphthalene	91-20-3	<0.05	0.05
Tridecane	629-50-5	<0.05	0.05
2-Methylnaphthalene	91-57-6	<0.05	0.05
Acenaphthylene	208-96-8	<0.05	0.05
Pentadecane	629-62-9	<0.05	0.05
Acenaphthene	83-32-9	<0.05	0.05
Fluorene	86-73-7	<0.05	0.05
TPH		**10.42**	**0.50**

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PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714173 FIELD_SAMPLE
Dilution Factor: 1 Field ID: SG14
Installation Date: 5/14/2013 12:05:00PM
Retrieval Date: 5/17/2013 7:51:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/21/2013 6:54:00PM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
BTEX		0.04	0.02

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PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714174 FIELD_SAMPLE
Dilution Factor: 1 Field ID: SG18
Installation Date: 5/14/2013 12:25:00PM
Retrieval Date: 5/17/2013 7:55:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/22/2013 11:05:00AM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
Methyl tert-butyl ether	1634-04-4	<0.02	0.02
trans-1,2-Dichloroethene	156-60-5	<0.02	0.02
1,1-Dichloroethane	75-34-3	<0.02	0.02
cis-1,2-Dichloroethene	156-59-2	<0.02	0.02
Chloroform	67-66-3	<0.02	0.02
1,1,1-Trichloroethane	71-55-6	<0.02	0.02
1,2-Dichloroethane	107-06-2	<0.02	0.02
Benzene	**71-43-2**	**0.05**	**0.02**
Carbon Tetrachloride	56-23-5	<0.02	0.02
Trichloroethene	79-01-6	<0.02	0.02
1,1,2-Trichloroethane	79-00-5	<0.02	0.02
Toluene	**108-88-3**	**0.07**	**0.02**
Octane	**111-65-9**	**7.93**	**0.02**
Tetrachloroethene	127-18-4	<0.02	0.02
Chlorobenzene	108-90-7	<0.02	0.02
1,1,1,2-Tetrachloroethane	630-20-6	<0.02	0.02
Ethylbenzene	**100-41-4**	**2.10**	**0.02**
m,p-Xylene	**108-38-3/106-42-3**	**0.70**	**0.02**
o-Xylene	**95-47-6**	**0.05**	**0.02**
1,1,2,2-Tetrachloroethane	79-34-5	<0.02	0.02
1,3,5-Trimethylbenzene	**108-67-8**	**0.07**	**0.02**
1,2,4-Trimethylbenzene	**95-63-6**	**0.22**	**0.02**
1,3-Dichlorobenzene	541-73-1	<0.02	0.02
1,4-Dichlorobenzene	106-46-7	<0.02	0.02
1,2-Dichlorobenzene	95-50-1	<0.02	0.02
Undecane	**1120-21-4**	**1.83**	**0.05**
Naphthalene	91-20-3	<0.05	0.05
Tridecane	629-50-5	<0.05	0.05
2-Methylnaphthalene	91-57-6	<0.05	0.05
Acenaphthylene	208-96-8	<0.05	0.05
Pentadecane	629-62-9	<0.05	0.05
Acenaphthene	83-32-9	<0.05	0.05
Fluorene	86-73-7	<0.05	0.05
TPH		**592.37**	**0.50**

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PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714174 FIELD_SAMPLE
Dilution Factor: 1 Field ID: SG18
Installation Date: 5/14/2013 12:25:00PM
Retrieval Date: 5/17/2013 7:55:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/22/2013 11:05:00AM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
BTEX		2.97	0.02

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
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PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714175DL FIELD_SAMPLE
Dilution Factor: 13 Field ID: SG06
Installation Date: 5/14/2013 12:45:00PM
Retrieval Date: 5/17/2013 8:00:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/22/2013 6:48:00AM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
Methyl tert-butyl ether	1634-04-4	<0.26	0.26
trans-1,2-Dichloroethene	156-60-5	<0.26	0.26
1,1-Dichloroethane	75-34-3	<0.26	0.26
cis-1,2-Dichloroethene	156-59-2	<0.26	0.26
Chloroform	67-66-3	<0.26	0.26
1,1,1-Trichloroethane	71-55-6	<0.26	0.26
1,2-Dichloroethane	107-06-2	<0.26	0.26
Benzene	**71-43-2**	**10.41**	**0.26**
Carbon Tetrachloride	56-23-5	<0.26	0.26
Trichloroethene	79-01-6	<0.26	0.26
1,1,2-Trichloroethane	79-00-5	<0.26	0.26
Toluene	**108-88-3**	**1.30**	**0.26**
Octane	**111-65-9**	**4.22**	**0.26**
Tetrachloroethene	127-18-4	<0.26	0.26
Chlorobenzene	108-90-7	<0.26	0.26
1,1,1,2-Tetrachloroethane	630-20-6	<0.26	0.26
Ethylbenzene	**100-41-4**	**77.83**	**0.26**
m,p-Xylene	**108-38-3/106-42-3**	**17.01**	**0.26**
o-Xylene	**95-47-6**	**0.38**	**0.26**
1,1,2,2-Tetrachloroethane	79-34-5	<0.26	0.26
1,3,5-Trimethylbenzene	**108-67-8**	**6.18**	**0.26**
1,2,4-Trimethylbenzene	**95-63-6**	**5.12**	**0.26**
1,3-Dichlorobenzene	541-73-1	<0.26	0.26
1,4-Dichlorobenzene	106-46-7	<0.26	0.26
1,2-Dichlorobenzene	95-50-1	<0.26	0.26
Undecane	**1120-21-4**	**1.49**	**0.65**
Naphthalene	**91-20-3**	**14.59**	**0.65**
Tridecane	629-50-5	<0.65	0.65
2-Methylnaphthalene	**91-57-6**	**5.60**	**0.65**
Acenaphthylene	208-96-8	<0.65	0.65
Pentadecane	629-62-9	<0.65	0.65
Acenaphthene	83-32-9	<0.65	0.65
Fluorene	86-73-7	<0.65	0.65
TPH		**972.56**	**6.50**

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
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PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714175DL FIELD_SAMPLE
Dilution Factor: 13 Field ID: SG06
Installation Date: 5/14/2013 12:45:00PM
Retrieval Date: 5/17/2013 8:00:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/22/2013 6:48:00AM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
BTEX		106.92	0.26

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
+1 410 392 7600 ENVIRONMENTAL@WLGORE.COM

PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714176 FIELD_SAMPLE
Dilution Factor: 1 Field ID: SG17
Installation Date: 5/14/2013 12:15:00PM
Retrieval Date: 5/17/2013 7:53:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/21/2013 11:11:00PM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
Methyl tert-butyl ether	1634-04-4	<0.02	0.02
trans-1,2-Dichloroethene	156-60-5	<0.02	0.02
1,1-Dichloroethane	75-34-3	<0.02	0.02
cis-1,2-Dichloroethene	156-59-2	<0.02	0.02
Chloroform	67-66-3	<0.02	0.02
1,1,1-Trichloroethane	71-55-6	<0.02	0.02
1,2-Dichloroethane	107-06-2	<0.02	0.02
Benzene	71-43-2	<0.02	0.02
Carbon Tetrachloride	56-23-5	<0.02	0.02
Trichloroethene	79-01-6	<0.02	0.02
1,1,2-Trichloroethane	79-00-5	<0.02	0.02
Toluene	108-88-3	<0.02	0.02
Octane	111-65-9	<0.02	0.02
Tetrachloroethene	127-18-4	<0.02	0.02
Chlorobenzene	108-90-7	<0.02	0.02
1,1,1,2-Tetrachloroethane	630-20-6	<0.02	0.02
Ethylbenzene	100-41-4	<0.02	0.02
m,p-Xylene	108-38-3/106-42-3	<0.02	0.02
o-Xylene	95-47-6	<0.02	0.02
1,1,2,2-Tetrachloroethane	79-34-5	<0.02	0.02
1,3,5-Trimethylbenzene	108-67-8	<0.02	0.02
1,2,4-Trimethylbenzene	95-63-6	<0.02	0.02
1,3-Dichlorobenzene	541-73-1	<0.02	0.02
1,4-Dichlorobenzene	106-46-7	<0.02	0.02
1,2-Dichlorobenzene	95-50-1	<0.02	0.02
Undecane	1120-21-4	<0.05	0.05
Naphthalene	91-20-3	<0.05	0.05
Tridecane	629-50-5	<0.05	0.05
2-Methylnaphthalene	91-57-6	<0.05	0.05
Acenaphthylene	208-96-8	<0.05	0.05
Pentadecane	629-62-9	<0.05	0.05
Acenaphthene	83-32-9	<0.05	0.05
Fluorene	86-73-7	<0.05	0.05
TPH		**63.17**	**0.50**

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
+1 410 392 7600 ENVIRONMENTAL@WLGORE.COM

PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714176 FIELD_SAMPLE
Dilution Factor: 1 Field ID: SG17
Installation Date: 5/14/2013 12:15:00PM
Retrieval Date: 5/17/2013 7:53:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/21/2013 11:11:00PM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
BTEX		<0.02	0.02

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
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PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714177 FIELD_SAMPLE
Dilution Factor: 1 Field ID: SG11
Installation Date: 5/14/2013 11:55:00AM
Retrieval Date: 5/17/2013 7:49:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14

Date Analyzed: 5/21/2013 6:25:00PM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
Methyl tert-butyl ether	1634-04-4	<0.02	0.02
trans-1,2-Dichloroethene	156-60-5	<0.02	0.02
1,1-Dichloroethane	75-34-3	<0.02	0.02
cis-1,2-Dichloroethene	156-59-2	<0.02	0.02
Chloroform	67-66-3	<0.02	0.02
1,1,1-Trichloroethane	71-55-6	<0.02	0.02
1,2-Dichloroethane	107-06-2	<0.02	0.02
Benzene	71-43-2	<0.02	0.02
Carbon Tetrachloride	56-23-5	<0.02	0.02
Trichloroethene	79-01-6	<0.02	0.02
1,1,2-Trichloroethane	79-00-5	<0.02	0.02
Toluene	**108-88-3**	**0.03**	**0.02**
Octane	111-65-9	<0.02	0.02
Tetrachloroethene	127-18-4	<0.02	0.02
Chlorobenzene	108-90-7	<0.02	0.02
1,1,1,2-Tetrachloroethane	630-20-6	<0.02	0.02
Ethylbenzene	100-41-4	<0.02	0.02
m,p-Xylene	108-38-3/106-42-3	<0.02	0.02
o-Xylene	95-47-6	<0.02	0.02
1,1,2,2-Tetrachloroethane	79-34-5	<0.02	0.02
1,3,5-Trimethylbenzene	108-67-8	<0.02	0.02
1,2,4-Trimethylbenzene	95-63-6	<0.02	0.02
1,3-Dichlorobenzene	541-73-1	<0.02	0.02
1,4-Dichlorobenzene	106-46-7	<0.02	0.02
1,2-Dichlorobenzene	95-50-1	<0.02	0.02
Undecane	1120-21-4	<0.05	0.05
Naphthalene	91-20-3	<0.05	0.05
Tridecane	629-50-5	<0.05	0.05
2-Methylnaphthalene	91-57-6	<0.05	0.05
Acenaphthylene	208-96-8	<0.05	0.05
Pentadecane	629-62-9	<0.05	0.05
Acenaphthene	83-32-9	<0.05	0.05
Fluorene	86-73-7	<0.05	0.05
TPH		**1.18**	**0.50**

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
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PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714177 FIELD_SAMPLE
Dilution Factor: 1 Field ID: SG11
Installation Date: 5/14/2013 11:55:00AM
Retrieval Date: 5/17/2013 7:49:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/21/2013 6:25:00PM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
BTEX		0.03	0.02

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
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PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714178DL FIELD_SAMPLE
Dilution Factor: 13 Field ID: SG08
Installation Date: 5/14/2013 10:00:00AM
Retrieval Date: 5/17/2013 7:39:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/22/2013 5:51:00AM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
Methyl tert-butyl ether	1634-04-4	<0.26	0.26
trans-1,2-Dichloroethene	156-60-5	<0.26	0.26
1,1-Dichloroethane	75-34-3	<0.26	0.26
cis-1,2-Dichloroethene	156-59-2	<0.26	0.26
Chloroform	67-66-3	<0.26	0.26
1,1,1-Trichloroethane	71-55-6	<0.26	0.26
1,2-Dichloroethane	107-06-2	<0.26	0.26
Benzene	**71-43-2**	**0.46**	**0.26**
Carbon Tetrachloride	56-23-5	<0.26	0.26
Trichloroethene	79-01-6	<0.26	0.26
1,1,2-Trichloroethane	79-00-5	<0.26	0.26
Toluene	108-88-3	<0.26	0.26
Octane	**111-65-9**	**5.89**	**0.26**
Tetrachloroethene	127-18-4	<0.26	0.26
Chlorobenzene	108-90-7	<0.26	0.26
1,1,1,2-Tetrachloroethane	630-20-6	<0.26	0.26
Ethylbenzene	**100-41-4**	**1.39**	**0.26**
m,p-Xylene	**108-38-3/106-42-3**	**0.86**	**0.26**
o-Xylene	95-47-6	<0.26	0.26
1,1,2,2-Tetrachloroethane	79-34-5	<0.26	0.26
1,3,5-Trimethylbenzene	**108-67-8**	**0.30**	**0.26**
1,2,4-Trimethylbenzene	**95-63-6**	**0.35**	**0.26**
1,3-Dichlorobenzene	541-73-1	<0.26	0.26
1,4-Dichlorobenzene	106-46-7	<0.26	0.26
1,2-Dichlorobenzene	95-50-1	<0.26	0.26
Undecane	**1120-21-4**	**0.69**	**0.65**
Naphthalene	91-20-3	<0.65	0.65
Tridecane	629-50-5	<0.65	0.65
2-Methylnaphthalene	91-57-6	<0.65	0.65
Acenaphthylene	208-96-8	<0.65	0.65
Pentadecane	629-62-9	<0.65	0.65
Acenaphthene	83-32-9	<0.65	0.65
Fluorene	86-73-7	<0.65	0.65
TPH		**757.36**	**6.50**

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
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PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714178DL FIELD_SAMPLE
Dilution Factor: 13 Field ID: SG08
Installation Date: 5/14/2013 10:00:00AM
Retrieval Date: 5/17/2013 7:39:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/22/2013 5:51:00AM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
BTEX		2.71	0.26

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
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PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714179 FIELD_SAMPLE
Dilution Factor: 1 Field ID: SG01
Installation Date: 5/14/2013 11:45:00AM
Retrieval Date: 5/17/2013 7:46:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/21/2013 4:31:00PM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
Methyl tert-butyl ether	1634-04-4	<0.02	0.02
trans-1,2-Dichloroethene	156-60-5	<0.02	0.02
1,1-Dichloroethane	75-34-3	<0.02	0.02
cis-1,2-Dichloroethene	156-59-2	<0.02	0.02
Chloroform	67-66-3	<0.02	0.02
1,1,1-Trichloroethane	71-55-6	<0.02	0.02
1,2-Dichloroethane	107-06-2	<0.02	0.02
Benzene	71-43-2	<0.02	0.02
Carbon Tetrachloride	56-23-5	<0.02	0.02
Trichloroethene	79-01-6	<0.02	0.02
1,1,2-Trichloroethane	79-00-5	<0.02	0.02
Toluene	**108-88-3**	**0.03**	**0.02**
Octane	111-65-9	<0.02	0.02
Tetrachloroethene	127-18-4	<0.02	0.02
Chlorobenzene	108-90-7	<0.02	0.02
1,1,1,2-Tetrachloroethane	630-20-6	<0.02	0.02
Ethylbenzene	100-41-4	<0.02	0.02
m,p-Xylene	108-38-3/106-42-3	<0.02	0.02
o-Xylene	95-47-6	<0.02	0.02
1,1,2,2-Tetrachloroethane	79-34-5	<0.02	0.02
1,3,5-Trimethylbenzene	108-67-8	<0.02	0.02
1,2,4-Trimethylbenzene	95-63-6	<0.02	0.02
1,3-Dichlorobenzene	541-73-1	<0.02	0.02
1,4-Dichlorobenzene	106-46-7	<0.02	0.02
1,2-Dichlorobenzene	95-50-1	<0.02	0.02
Undecane	1120-21-4	<0.05	0.05
Naphthalene	91-20-3	<0.05	0.05
Tridecane	629-50-5	<0.05	0.05
2-Methylnaphthalene	91-57-6	<0.05	0.05
Acenaphthylene	208-96-8	<0.05	0.05
Pentadecane	629-62-9	<0.05	0.05
Acenaphthene	83-32-9	<0.05	0.05
Fluorene	86-73-7	<0.05	0.05
TPH		**0.99**	**0.50**

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
+1 410 392 7600 ENVIRONMENTAL@WLGORE.COM

PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714179 FIELD_SAMPLE
Dilution Factor: 1 Field ID: SG01
Installation Date: 5/14/2013 11:45:00AM
Retrieval Date: 5/17/2013 7:46:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/21/2013 4:31:00PM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
BTEX		0.03	0.02

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
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PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714180 FIELD_SAMPLE
Dilution Factor: 1 Field ID: SG02
Installation Date: 5/14/2013 11:35:00AM
Retrieval Date: 5/17/2013 7:45:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/21/2013 5:28:00PM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
Methyl tert-butyl ether	1634-04-4	<0.02	0.02
trans-1,2-Dichloroethene	156-60-5	<0.02	0.02
1,1-Dichloroethane	75-34-3	<0.02	0.02
cis-1,2-Dichloroethene	156-59-2	<0.02	0.02
Chloroform	67-66-3	<0.02	0.02
1,1,1-Trichloroethane	71-55-6	<0.02	0.02
1,2-Dichloroethane	107-06-2	<0.02	0.02
Benzene	71-43-2	<0.02	0.02
Carbon Tetrachloride	56-23-5	<0.02	0.02
Trichloroethene	79-01-6	<0.02	0.02
1,1,2-Trichloroethane	79-00-5	<0.02	0.02
Toluene	108-88-3	<0.02	0.02
Octane	111-65-9	<0.02	0.02
Tetrachloroethene	127-18-4	<0.02	0.02
Chlorobenzene	108-90-7	<0.02	0.02
1,1,1,2-Tetrachloroethane	630-20-6	<0.02	0.02
Ethylbenzene	100-41-4	<0.02	0.02
m,p-Xylene	108-38-3/106-42-3	<0.02	0.02
o-Xylene	95-47-6	<0.02	0.02
1,1,2,2-Tetrachloroethane	79-34-5	<0.02	0.02
1,3,5-Trimethylbenzene	108-67-8	<0.02	0.02
1,2,4-Trimethylbenzene	95-63-6	<0.02	0.02
1,3-Dichlorobenzene	541-73-1	<0.02	0.02
1,4-Dichlorobenzene	106-46-7	<0.02	0.02
1,2-Dichlorobenzene	95-50-1	<0.02	0.02
Undecane	1120-21-4	<0.05	0.05
Naphthalene	91-20-3	<0.05	0.05
Tridecane	629-50-5	<0.05	0.05
2-Methylnaphthalene	91-57-6	<0.05	0.05
Acenaphthylene	208-96-8	<0.05	0.05
Pentadecane	629-62-9	<0.05	0.05
Acenaphthene	83-32-9	<0.05	0.05
Fluorene	86-73-7	<0.05	0.05
TPH		**0.68**	**0.50**

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
+1 410 392 7600 ENVIRONMENTAL@WLGORE.COM

PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714180 FIELD_SAMPLE
Dilution Factor: 1 Field ID: SG02
Installation Date: 5/14/2013 11:35:00AM
Retrieval Date: 5/17/2013 7:45:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/21/2013 5:28:00PM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
BTEX		<0.02	0.02

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
+1 410 392 7600 ENVIRONMENTAL@WLGORE.COM

PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714181DL FIELD_SAMPLE
Dilution Factor: 13 Field ID: SG04
Installation Date: 5/14/2013 10:30:00AM
Retrieval Date: 5/17/2013 7:41:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/22/2013 1:05:00AM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
Methyl tert-butyl ether	1634-04-4	<0.26	0.26
trans-1,2-Dichloroethene	156-60-5	<0.26	0.26
1,1-Dichloroethane	75-34-3	<0.26	0.26
cis-1,2-Dichloroethene	156-59-2	<0.26	0.26
Chloroform	67-66-3	<0.26	0.26
1,1,1-Trichloroethane	71-55-6	<0.26	0.26
1,2-Dichloroethane	107-06-2	<0.26	0.26
Benzene	**71-43-2**	**0.48**	**0.26**
Carbon Tetrachloride	56-23-5	<0.26	0.26
Trichloroethene	79-01-6	<0.26	0.26
1,1,2-Trichloroethane	79-00-5	<0.26	0.26
Toluene	108-88-3	<0.26	0.26
Octane	**111-65-9**	**0.68**	**0.26**
Tetrachloroethene	127-18-4	<0.26	0.26
Chlorobenzene	108-90-7	<0.26	0.26
1,1,1,2-Tetrachloroethane	630-20-6	<0.26	0.26
Ethylbenzene	**100-41-4**	**6.78**	**0.26**
m,p-Xylene	**108-38-3/106-42-3**	**1.53**	**0.26**
o-Xylene	95-47-6	<0.26	0.26
1,1,2,2-Tetrachloroethane	79-34-5	<0.26	0.26
1,3,5-Trimethylbenzene	**108-67-8**	**0.37**	**0.26**
1,2,4-Trimethylbenzene	**95-63-6**	**0.73**	**0.26**
1,3-Dichlorobenzene	541-73-1	<0.26	0.26
1,4-Dichlorobenzene	106-46-7	<0.26	0.26
1,2-Dichlorobenzene	95-50-1	<0.26	0.26
Undecane	1120-21-4	<0.65	0.65
Naphthalene	91-20-3	<0.65	0.65
Tridecane	629-50-5	<0.65	0.65
2-Methylnaphthalene	91-57-6	<0.65	0.65
Acenaphthylene	208-96-8	<0.65	0.65
Pentadecane	629-62-9	<0.65	0.65
Acenaphthene	83-32-9	<0.65	0.65
Fluorene	86-73-7	<0.65	0.65
TPH		**417.58**	**6.50**

GORE SURVEY PRODUCTS GROUP
100 CHESAPEAKE BOULEVARD ELKTON MARYLAND USA
+1 410 392 7600 ENVIRONMENTAL@WLGORE.COM

PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714181DL FIELD_SAMPLE
Dilution Factor: 13 Field ID: SG04
Installation Date: 5/14/2013 10:30:00AM
Retrieval Date: 5/17/2013 7:41:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/22/2013 1:05:00AM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
BTEX		8.79	0.26

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PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714182 FIELD_SAMPLE
Dilution Factor: 1 Field ID: SG03
Installation Date: 5/14/2013 11:25:00AM
Retrieval Date: 5/17/2013 7:43:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/21/2013 5:00:00PM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
Methyl tert-butyl ether	1634-04-4	<0.02	0.02
trans-1,2-Dichloroethene	156-60-5	<0.02	0.02
1,1-Dichloroethane	75-34-3	<0.02	0.02
cis-1,2-Dichloroethene	156-59-2	<0.02	0.02
Chloroform	67-66-3	<0.02	0.02
1,1,1-Trichloroethane	71-55-6	<0.02	0.02
1,2-Dichloroethane	107-06-2	<0.02	0.02
Benzene	71-43-2	<0.02	0.02
Carbon Tetrachloride	56-23-5	<0.02	0.02
Trichloroethene	79-01-6	<0.02	0.02
1,1,2-Trichloroethane	79-00-5	<0.02	0.02
Toluene	108-88-3	<0.02	0.02
Octane	111-65-9	<0.02	0.02
Tetrachloroethene	127-18-4	<0.02	0.02
Chlorobenzene	108-90-7	<0.02	0.02
1,1,1,2-Tetrachloroethane	630-20-6	<0.02	0.02
Ethylbenzene	100-41-4	<0.02	0.02
m,p-Xylene	108-38-3/106-42-3	<0.02	0.02
o-Xylene	95-47-6	<0.02	0.02
1,1,2,2-Tetrachloroethane	79-34-5	<0.02	0.02
1,3,5-Trimethylbenzene	108-67-8	<0.02	0.02
1,2,4-Trimethylbenzene	95-63-6	<0.02	0.02
1,3-Dichlorobenzene	541-73-1	<0.02	0.02
1,4-Dichlorobenzene	106-46-7	<0.02	0.02
1,2-Dichlorobenzene	95-50-1	<0.02	0.02
Undecane	1120-21-4	<0.05	0.05
Naphthalene	91-20-3	<0.05	0.05
Tridecane	629-50-5	<0.05	0.05
2-Methylnaphthalene	91-57-6	<0.05	0.05
Acenaphthylene	208-96-8	<0.05	0.05
Pentadecane	629-62-9	<0.05	0.05
Acenaphthene	83-32-9	<0.05	0.05
Fluorene	86-73-7	<0.05	0.05
TPH		**0.65**	**0.50**

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PROJECT NUMBER: ENV 22212579
SITE NAME: Shell Harbor Island Terminal
SITE ADDRESS: Seattle WA

FOR: URS CORPORATION

AUSTIN, TX 78720
USA

MODULE ID: 00714182 FIELD_SAMPLE
Dilution Factor: 1 Field ID: SG03
Installation Date: 5/14/2013 11:25:00AM
Retrieval Date: 5/17/2013 7:43:00AM
Analyst: Kelly J Stringham **Method: SPG-WI-0292**
Reviewer: Jasmine R. Smith

Matrix: SOIL GAS Product: SPG0008
Porosity: 0.38 Water Filled Voids: 0.14
Date Analyzed: 5/21/2013 5:00:00PM
Batch: ENV-130521-1

Compound	CAS #	Result (ug)	RL (ug)
BTEX		<0.02	0.02

AMPLIFIED GEOCHEMICAL IMAGING LLC
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STANDARD TARGET VOCs/SVOCs
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SHELL HARBOR ISLAND TERMINAL, SEATTLE, WA
PRODUCTION ORDER # 22212579

DATE ANALYZED	SAMPLE NAME	TPH, ug/m^3	BTEX, ug/m^3	BENZ, ug/m^3	TOL, ug/m^3	ETBENZ, ug/m^3	mpXYL, ug/m^3
	RL=	16.39		14.62	1.86	0.94	0.86
5/21/13	714166	447.13	nd	nd	nd	nd	nd
5/21/13	714167	420.17	nd	nd	nd	nd	nd
5/21/13	714168	363.65	nd	nd	nd	nd	nd
5/21/13	714169	430.50	nd	nd	nd	nd	nd
5/21/13	714173	>3559.37	3.39	nd	3.39	nd	bdl
5/22/13	714174	>174189.37	152.65	30.33	5.65	85.20	28.77
5/21/13	714176	>20188.71	nd	nd	nd	nd	nd
5/21/13	714177	436.36	2.37	nd	2.37	nd	nd
5/21/13	714179	369.29	2.28	nd	2.28	nd	nd
5/21/13	714180	256.09	nd	nd	nd	nd	nd
5/21/13	714182	244.13	nd	nd	nd	nd	nd
Dilution Samples*	RL(DL)=	213.08		190.03	24.21	12.22	11.13
5/22/13	714161DL	>14796.26	427.62	257.33	bdl	88.06	82.23
5/22/13	714162DL	>26654.98	>4537.32	bdl	46.81	1474.03	>2999.78
5/22/13	714163DL	>7579.25	nd	nd	nd	nd	nd
5/22/13	714170DL	>3629.31	>13131.40	>10488.81	177.47	>2294.26	145.42
5/22/13	714171DL	>62827.45	324.04	228.39	30.08	31.33	34.25
5/22/13	714172DL	>20503.24	390.22	bdl	bdl	153.77	236.45
5/22/13	714175DL	>23878.14	>5789.01	2162.42	96.05	>2839.55	672.11
5/22/13	714178DL	>18186.54	89.64	bdl	bdl	55.45	34.19
5/22/13	714181DL	>10319.37	320.21	bdl	bdl	259.51	60.70
*Samples were diluted approximately 13X							
5/21/13	714164	nd	nd	nd	nd	nd	nd
5/21/13	714165	nd	nd	nd	nd	nd	nd
5/21/13	method blank	bdl	nd	nd	nd	nd	nd

No RL (Reporting Limit) is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

AMPLIFIED GEOCHEMICAL IMAGING LLC
ANALYTICAL RESULTS
URS CORPORATION, PORTLAND, OR
STANDARD TARGET VOCs/SVOCs
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PRODUCTION ORDER # 22212579

SAMPLE NAME	oXYL, ug/m^3	C11, C13, &C15, ug/m^3	UNDEC, ug/m^3	TRIDEC, ug/m^3	PENTADEC, ug/m^3	TMBs, ug/m^3
RL=	1.16		1.79	1.79	1.79	
714166	nd	bdl	nd	bdl	nd	nd
714167	nd	nd	nd	nd	nd	nd
714168	nd	nd	nd	nd	nd	nd
714169	nd	bdl	nd	bdl	nd	nd
714173	nd	bdl	bdl	bdl	nd	nd
714174	2.71	56.96	56.96	nd	nd	13.30
714176	nd	nd	nd	nd	nd	nd
714177	nd	nd	nd	nd	nd	nd
714179	nd	nd	nd	nd	nd	nd
714180	nd	nd	nd	nd	nd	nd
714182	nd	nd	nd	nd	nd	nd
RL(DL)=	15.11		23.26	23.26	23.26	
714161DL	nd	bdl	bdl	nd	nd	bdl
714162DL	16.71	148.59	63.45	85.14	nd	>3956.57
714163DL	nd	nd	nd	nd	nd	nd
714170DL	25.44	nd	nd	nd	nd	225.51
714171DL	bdl	104.82	104.82	nd	nd	bdl
714172DL	bdl	bdl	bdl	nd	nd	55.26
714175DL	18.87	46.65	46.65	nd	nd	460.40
714178DL	nd	bdl	bdl	bdl	nd	bdl
714181DL	nd	bdl	bdl	nd	nd	47.79
approximately 13X						
714164	nd	nd	nd	nd	nd	nd
714165	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd

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AMPLIFIED GEOCHEMICAL IMAGING LLC
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PRODUCTION ORDER # 22212579

SAMPLE NAME	124TMB, ug/m^3	135TMB, ug/m^3	ct12DCE, ug/m^3	t12DCE, ug/m^3	c12DCE, ug/m^3	NAPH&2-MN, ug/m^3
RL=	0.95	1.24		146.98	51.35	
714166	nd	nd	nd	nd	nd	nd
714167	nd	nd	nd	nd	nd	nd
714168	nd	nd	nd	nd	nd	nd
714169	nd	nd	nd	nd	nd	nd
714173	nd	nd	nd	nd	nd	nd
714174	9.30	4.00	nd	nd	nd	nd
714176	nd	nd	nd	nd	nd	nd
714177	nd	nd	nd	nd	nd	nd
714179	nd	nd	nd	nd	nd	nd
714180	nd	nd	nd	nd	nd	nd
714182	nd	nd	nd	nd	nd	nd
RL(DL)=	12.35	16.14		1910.68	667.55	
714161DL	bdl	bdl	nd	nd	nd	nd
714162DL	>3073.34	883.23	nd	nd	nd	1255.91
714163DL	nd	nd	nd	nd	nd	nd
714170DL	77.80	147.71	nd	nd	nd	59.02
714171DL	bdl	bdl	nd	nd	nd	nd
714172DL	31.85	23.42	nd	nd	nd	nd
714175DL	193.43	266.97	nd	nd	nd	587.45
714178DL	bdl	bdl	nd	nd	nd	nd
714181DL	29.30	18.49	nd	nd	nd	nd
approximately 13X						
714164	nd	nd	nd	nd	nd	nd
714165	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd

No RL (Reporting Limit) is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

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ANALYTICAL RESULTS
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PRODUCTION ORDER # 22212579

SAMPLE NAME	NAPH, ug/m^3	2MeNAPH, ug/m^3	MTBE, ug/m^3	11DCA, ug/m^3	CHCl3, ug/m^3	111TCA, ug/m^3	12DCA, ug/m^3
RL=	1.79	1.79	76.49	53.71	28.76	18.83	14.65
714166	nd	nd	nd	nd	nd	nd	nd
714167	nd	nd	nd	nd	nd	nd	nd
714168	nd	nd	nd	nd	nd	nd	nd
714169	nd	nd	nd	nd	nd	nd	nd
714173	nd	nd	nd	nd	nd	nd	nd
714174	nd	nd	nd	nd	nd	nd	nd
714176	nd	nd	nd	nd	nd	nd	nd
714177	nd	nd	nd	nd	nd	nd	nd
714179	nd	nd	nd	nd	nd	nd	nd
714180	nd	nd	nd	nd	nd	nd	nd
714182	nd	nd	nd	nd	nd	nd	nd
RL(DL)=	23.26	23.26	994.35	698.23	373.86	244.79	190.48
714161DL	nd	nd	nd	nd	nd	nd	nd
714162DL	582.88	673.03	nd	nd	nd	nd	nd
714163DL	nd	nd	nd	nd	nd	nd	nd
714170DL	59.02	bdl	nd	nd	nd	nd	nd
714171DL	nd	nd	nd	nd	nd	nd	nd
714172DL	nd	nd	nd	nd	nd	nd	nd
714175DL	420.22	167.23	nd	nd	nd	nd	nd
714178DL	nd	nd	nd	nd	nd	nd	nd
714181DL	nd	nd	nd	nd	nd	nd	nd
approximately 13X							
714164	nd	nd	nd	nd	nd	nd	nd
714165	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd

No RL (Reporting Limit) is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

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ANALYTICAL RESULTS
URS CORPORATION, PORTLAND, OR
STANDARD TARGET VOCs/SVOCs
ESTIMATED SOIL GAS CONCENTRATIONS
SHELL HARBOR ISLAND TERMINAL, SEATTLE, WA
PRODUCTION ORDER # 22212579

SAMPLE NAME	TCE, ug/m^3	OCT, ug/m^3	PCE, ug/m^3	14DCB, ug/m^3	Acenaphthene, ug/m^3	Acenaphthylene, ug/m^3	Fluorene, ug/m^3
RL=	6.66	1.93	1.45	0.77	1.79	1.79	1.79
714166	nd	nd	nd	nd	nd	nd	nd
714167	nd	nd	nd	nd	nd	nd	nd
714168	nd	nd	nd	nd	nd	nd	nd
714169	nd	bdl	nd	nd	nd	nd	nd
714173	nd	nd	nd	nd	nd	nd	nd
714174	nd	565.05	nd	nd	nd	nd	bdl
714176	nd	nd	nd	nd	nd	nd	nd
714177	nd	nd	nd	nd	nd	nd	nd
714179	nd	nd	nd	nd	nd	nd	nd
714180	nd	nd	nd	nd	nd	nd	nd
714182	nd	nd	nd	nd	nd	nd	nd
RL(DL)=	86.54	25.08	18.89	10.07	23.26	23.26	23.26
714161DL	nd	498.88	nd	nd	nd	nd	nd
714162DL	nd	187.48	nd	nd	bdl	nd	bdl
714163DL	nd	nd	nd	nd	nd	nd	nd
714170DL	nd	32.21	nd	nd	nd	nd	nd
714171DL	nd	bdl	nd	nd	bdl	nd	bdl
714172DL	nd	1196.00	nd	nd	nd	nd	nd
714175DL	nd	310.93	nd	nd	bdl	nd	nd
714178DL	nd	415.01	nd	nd	nd	nd	nd
714181DL	nd	53.32	nd	nd	nd	nd	nd
approximately 13X							
714164	nd	nd	nd	nd	nd	nd	nd
714165	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd

No RL (Reporting Limit) is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

AMPLIFIED GEOCHEMICAL IMAGING LLC
ANALYTICAL RESULTS
URS CORPORATION, PORTLAND, OR
STANDARD TARGET VOCs/SVOCs
ESTIMATED SOIL GAS CONCENTRATIONS
SHELL HARBOR ISLAND TERMINAL, SEATTLE, WA
PRODUCTION ORDER # 22212579

SAMPLE NAME	CCl4, ug/m^3	112TCA, ug/m^3	ClBENZ, ug/m^3	1112TetCA, ug/m^3	1122TetCA, ug/m^3	13DCB, ug/m^3	12DCB, ug/m^3
RL=	16.93	1.31	0.97	0.74	0.74	0.77	0.74
714166	nd	nd	nd	nd	nd	nd	nd
714167	nd	nd	nd	nd	nd	nd	nd
714168	nd	nd	nd	nd	nd	nd	nd
714169	nd	nd	nd	nd	nd	nd	nd
714173	nd	nd	nd	nd	nd	nd	nd
714174	nd	nd	nd	nd	nd	nd	nd
714176	nd	nd	nd	nd	nd	nd	nd
714177	nd	nd	nd	nd	nd	nd	nd
714179	nd	nd	nd	nd	nd	nd	nd
714180	nd	nd	nd	nd	nd	nd	nd
714182	nd	nd	nd	nd	nd	nd	nd
RL(DL)=	220.05	17.05	12.55	9.65	9.65	10.00	9.63
714161DL	nd	nd	nd	nd	nd	nd	nd
714162DL	nd	nd	nd	nd	nd	nd	nd
714163DL	nd	nd	nd	nd	nd	nd	nd
714170DL	nd	nd	nd	nd	nd	nd	nd
714171DL	nd	nd	nd	nd	nd	nd	nd
714172DL	nd	nd	nd	nd	nd	nd	nd
714175DL	nd	nd	nd	nd	nd	nd	nd
714178DL	nd	nd	nd	nd	nd	nd	nd
714181DL	nd	nd	nd	nd	nd	nd	nd
approximately 13X							
714164	nd	nd	nd	nd	nd	nd	nd
714165	nd	nd	nd	nd	nd	nd	nd
method blank	nd	nd	nd	nd	nd	nd	nd

No RL (Reporting Limit) is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

In environmental analysis obtaining a contaminate concentration value allows for quantifiable risk assessment. The following procedure outlines the method used to determine accurate concentration values from the GORE® Module in soil gas and air sampling:

DERIVATION OF CONCENTRATION EQUATION

When a fresh module (which, by definition and verification, has a contaminate concentration of zero) is inserted into a locally homogenous contaminated media (with a non-zero contaminant concentration), a concentration gradient is created between the module and the media. Due to the concentration gradient, contaminant will diffuse from the media across the permeable membrane to the enclosed adsorbents as described by Fick's first law of diffusion[1], often expressed in differential form as:

$$F = -D\left(\frac{dC}{dx}\right) \text{ or in the integral form as: } \quad \frac{dm}{dt} = -D\left(\frac{A}{L}\right)(C_X - C_0) \qquad (1)$$

where m = mass, t = time, D = diffusion coefficient, (A/L) = geometric parameter describing shape of sampler, C_X = concentration of analyte in the module at time, $t = x$, C_0 = concentration at time, $t = 0$.

As we ultimately want to measure the concentration of the analyte, we rearrange equation (1) to solve for C_X:

$$C_X = -\left[\left(\frac{1}{D}\right)\left(\frac{L}{A}\right)\left(\frac{dm}{dt}\right)\right] + C_0 \qquad (2)$$

By using a fresh module, the initial concentration (C_0) in the module is zero. We combine the quantity $D\frac{A}{L}$, which is referred to as the sampling rate[2] (S) of the module, measured in units of vol/time for the analyte of interest. This yields:

$$C_X = -\left[\left(\frac{1}{S}\right)\left(\frac{dm}{dt}\right)\right] \qquad (3)$$

Thus, concentration (C_x) can be calculated by using the mass (m) of the analyte adsorbed to the module after a given exposure time (t) and the sampling rate (S) for the analyte of interest. Two of these values are straightforward – the mass is measured using our standard thermal desorption GC/MS procedure, the time is documented by the field installation team. The third, sampling rate (S), is measured through a series of controlled chamber experiments for each analyte. Using these three values, an accurate contaminate concentration value can be calculated using the GORE® Module. The process for determining S for the GORE® Module is described briefly in the next section.

DETERMINING the *S* PARAMETER – GORE® Module Sampling Rate

To determine *S* for the GORE® Module we have exposed modules for different times (*t*) at various concentrations (*C*). We then plot mass (*m*) vs. time (*t*) and divide the slope by concentration to gain a value for *S* for that compound as shown in equation (4) which is rearranged from equation (3).

$$S = -\left[\left(\frac{1}{C}\right)\left(\frac{dm}{dt}\right)\right] \qquad (4)$$

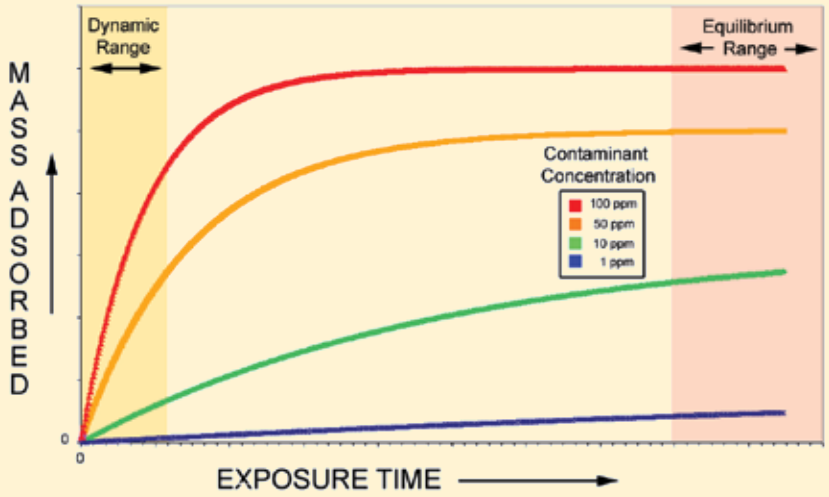

Figure 1 shows typical adsorption curves for a GORE® Module exposed to a compound at various concentration levels. Notice that in the dynamic range that slopes vary in proportion to concentration.

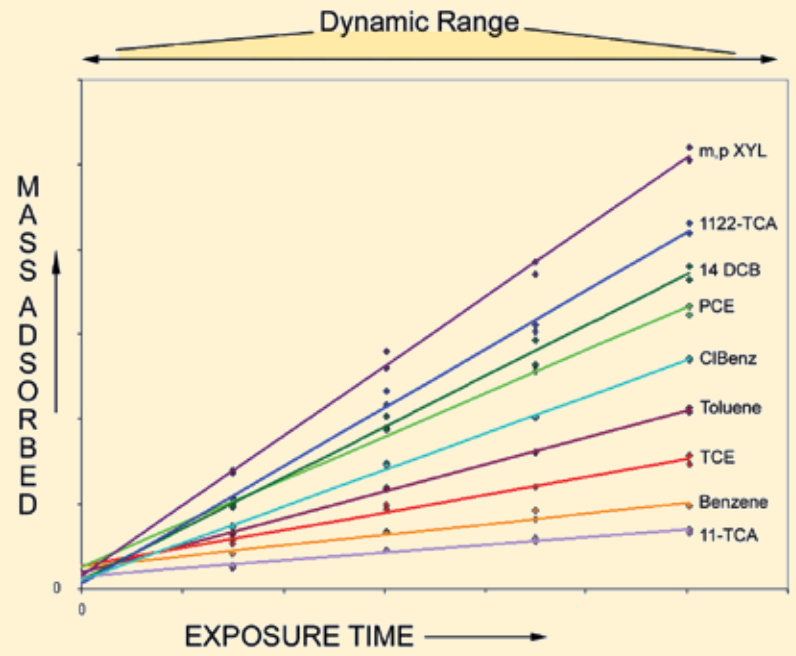

Figure 2 shows the uptake rate for various compounds typical of environmental investigations in the linear dynamic range.

When measuring *S*, we tested each compound at varying temperature (10 to 40°C), relative humidity (0 to 80%), flow rate (0.5 to 15cm/s) and vapor concentrations (0.1ppb to 100ppm).

Under typical sampling conditions, none of these variables were found to significantly impact the sampling rate.

ADJUSTMENTS FOR DIFFUSION RESISTANCE IN SOIL

When measuring gas concentration values in soils we must adjust the sampling rate (S_{air}) values to account for the increased tortuosity due to the presence of soil and moisture.

We previously defined the sampling rate of the module for the analyte of interest as:

$$S_{air} = D_{air}\,(A/L) \qquad (5)$$

In soil, the effective diffusion coefficient (D_{air}) is reduced due to the increased tortuosity, and can be described as:

$$D_{soil} = E(D_{air}) \qquad (6)$$

resulting in (when combined with (5))

$$S_{soil} = E(S_{air}) \qquad (7)$$

where E is the "Soil Effectiveness Factor."

As Millington & Quirk[3] showed, E is governed by the total soil porosity (θ, total volume of pores/total volume) and volumetric air content (Φ, volume of air/total volume) of the media and relates as:

$$E = \frac{(\Phi)^{10/3}}{(\theta)^{2}} \qquad (8)$$

Expressing E as a function of total soil porosity (θ) and water filled porosity (Φ, volume of water/volume of pores), this relation can be rearranged as:

$$E = \theta^{(4/3)}(1-\varepsilon)^{(10/3)}$$: as Φ, θ and ε have the following relationship: (9)

$$\Phi = \theta\,(1-\varepsilon\Phi$$

Once we've solved for E, we can solve for D_{soil} using equation (5) and S_{soil} using equation (7).

Thus, with measurements for two of these three site-specific soil parameters (θ, ε or Φ), soil gas concentration values can be calculated for modules installed in soil.

REFERENCES

[1] Cussler, E. L., 1997, *Diffusion, Mass Transfer in Fluid Systems*, 2nd ed., Cambridge Univ., Press, 570p.

[2] James D. Mulik and Robert G. Lewis Advances in Air Sampling, AICHG (1990), ISN 0-87371-115-7, Chapter 9, "Recent Developments in Passive Sampling Devices."

[3] Millington, R.J., and J. M. Quirk, "Permeability of Porous Solids", Trans.Faraday Soc., 57, (1961), 1200-1207.

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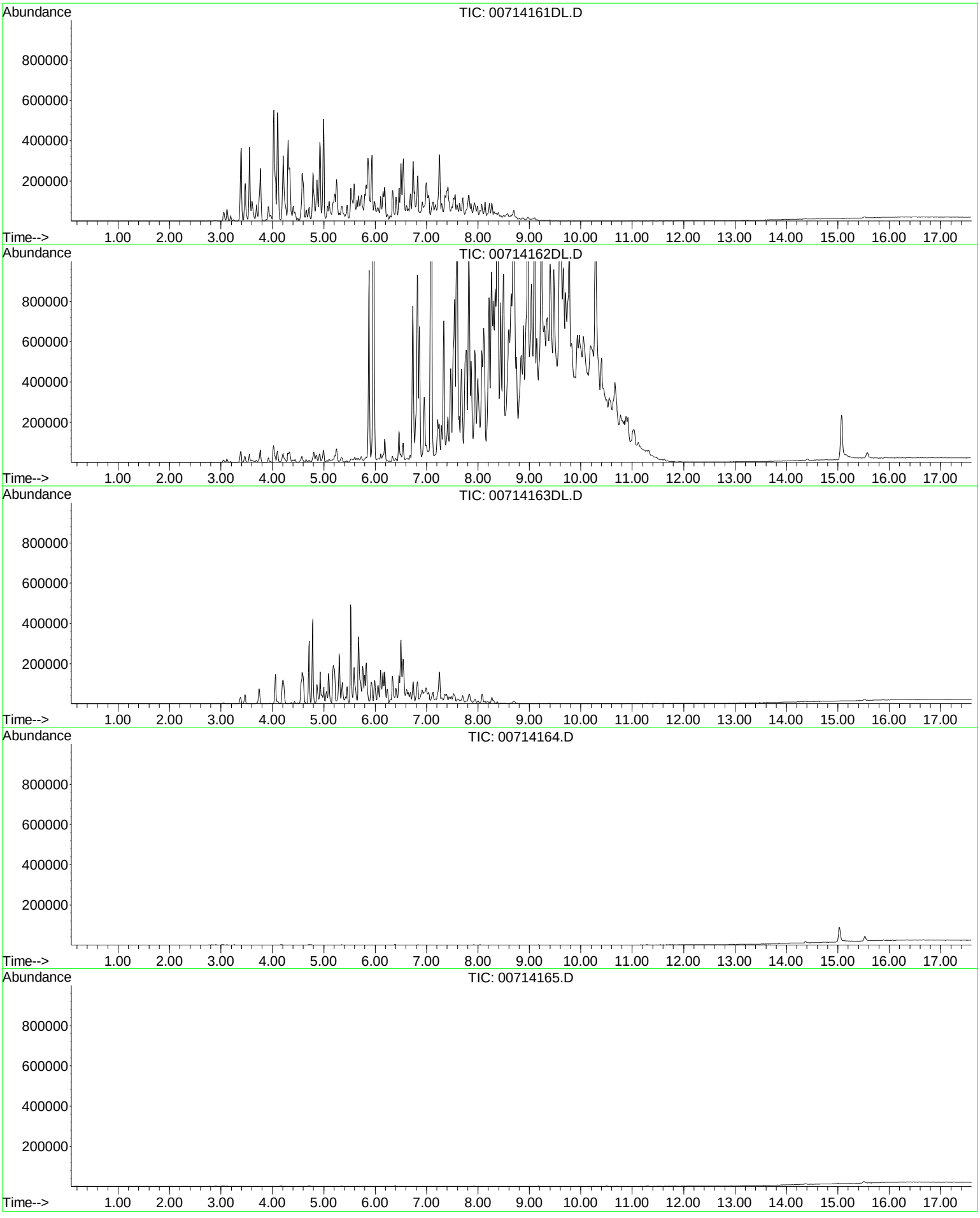
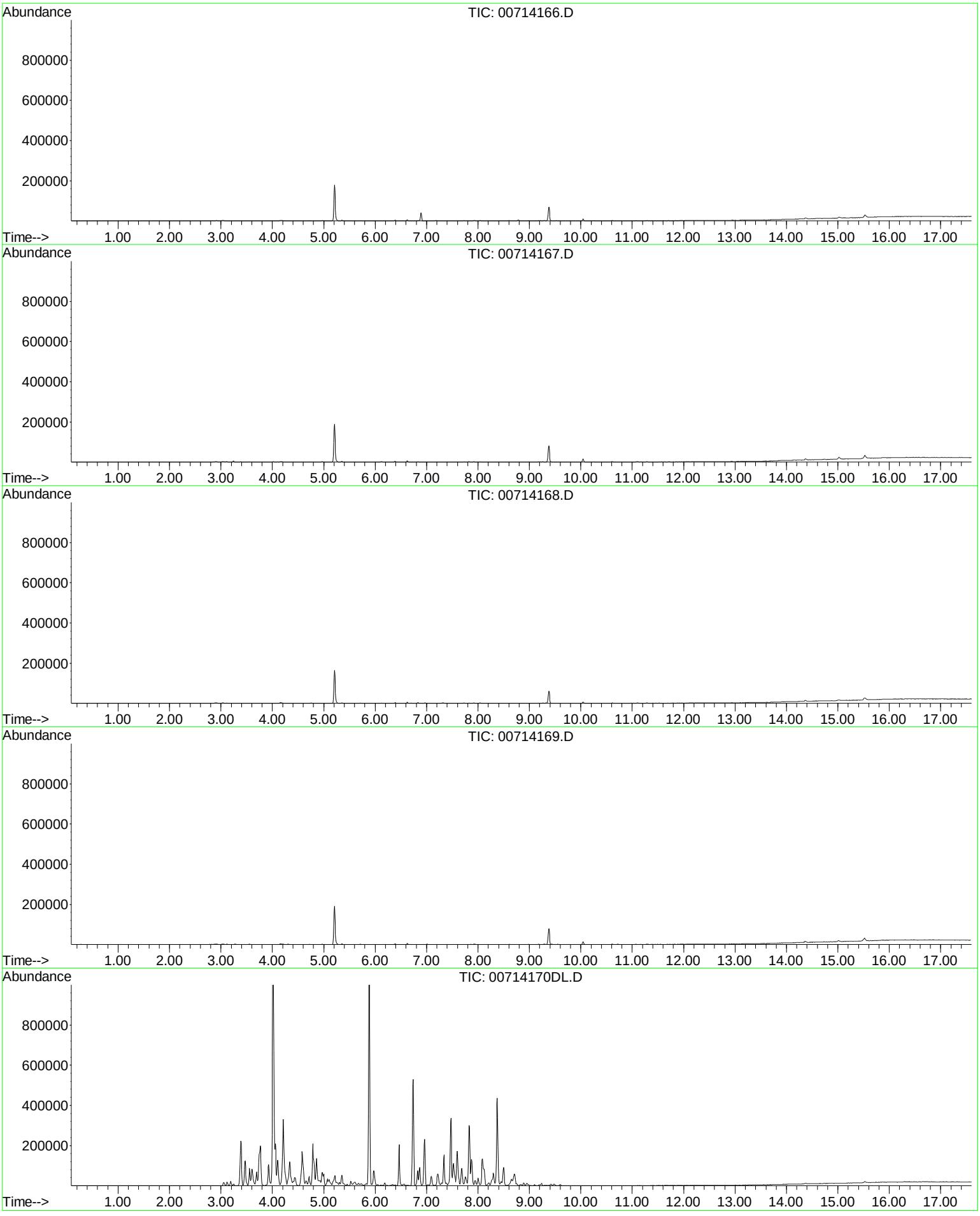
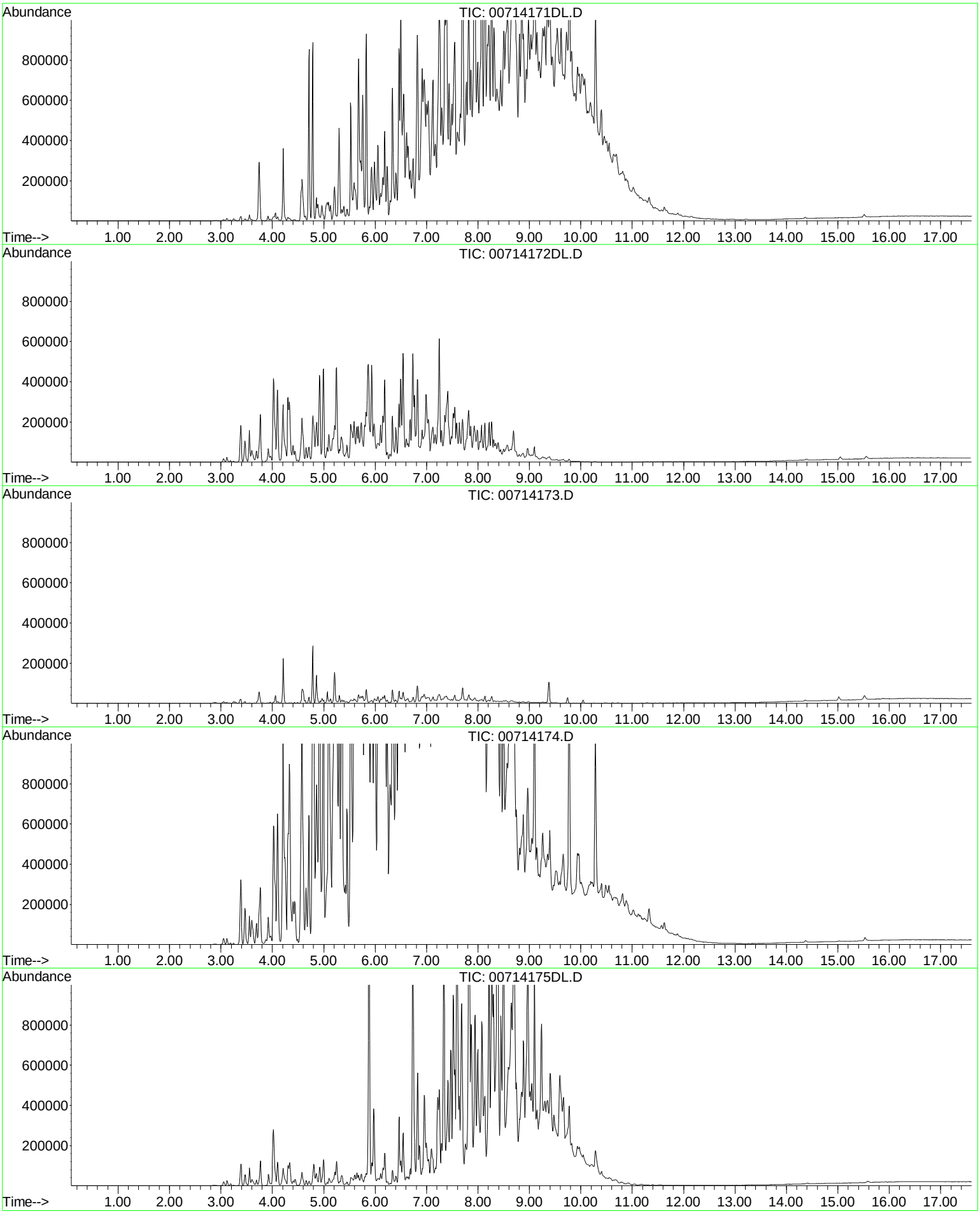
TICS - 22212579
In Numerical Order



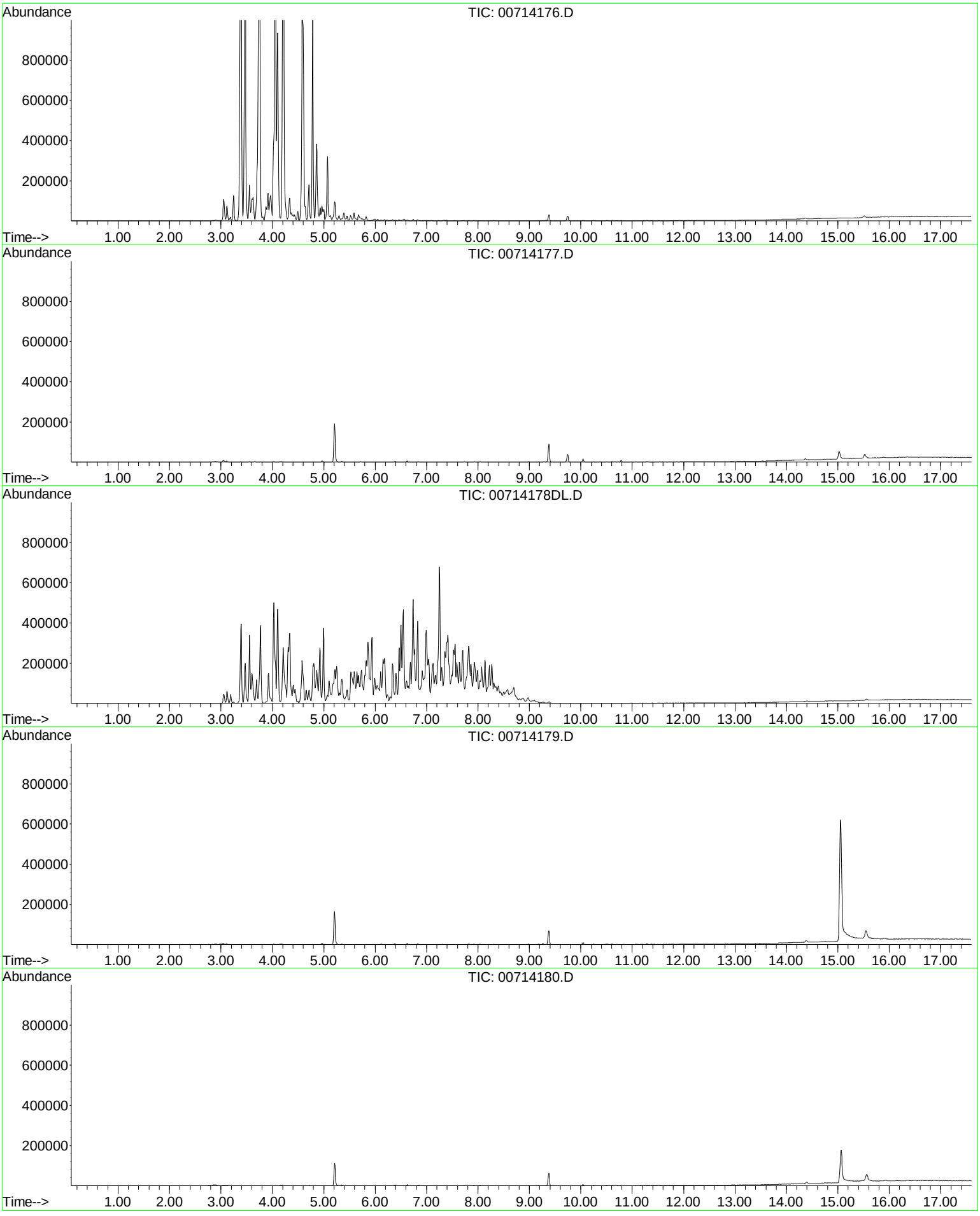
TICS - 22212579
In Numerical Order



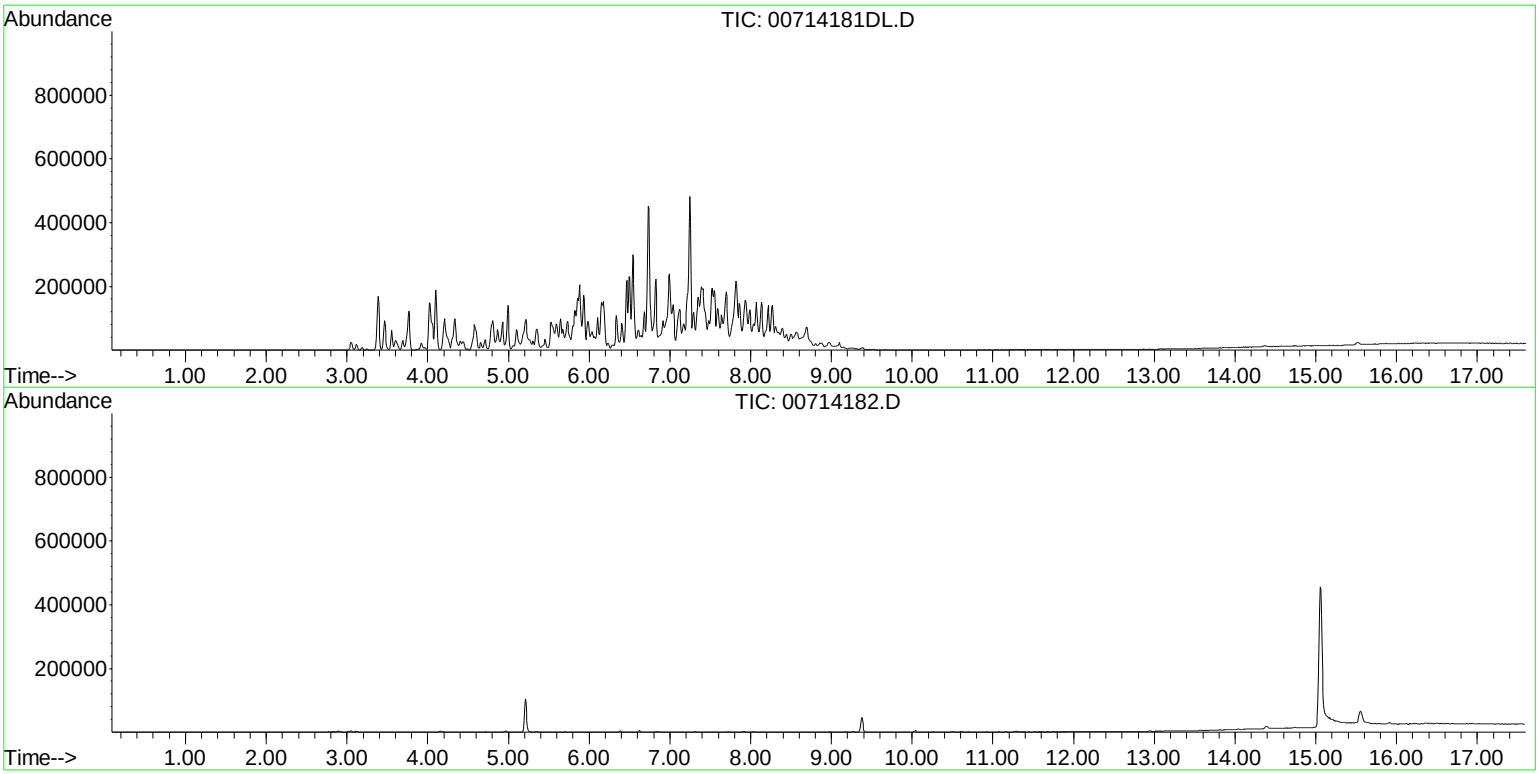
TICS - 22212579
In Numerical Order



TICS - 22212579
In Numerical Order



TICS - 22212579
In Numerical Order



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LIT 139.0 08/14/07

Final Data Review

The data quality review of the six primary groundwater samples, one groundwater field duplicate, one primary soil sample and one trip blank collected September 5th, 2013 at the Harbor Island site in Seattle, Washington has been completed. Samples were submitted to Accutest Laboratories (Accutest) of San Jose, California. The samples submitted were analyzed for one or more of the following: benzene, toluene, ethylbenzene, and total xylene (BTEX; EPA Method 8260B); TPH gasoline (NWTPH-Gx); chemical oxygen demand (COD; SM19 5220C and HACH 8000); percent moisture (SM18 2540G); total organic carbon (TOC; EPA 9060A and SM18 5310C); and dissolved iron and manganese (EPA 6010B). The COD and TOC analysis on the primary soil was subcontracted to Accutest of Orlando, Florida.

The review included the analytical data presented in Accutest report C29590. The data were reviewed based on *United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines (NFGs) for Organic Data Review*, June 2008, *USEPA CLP NFGs for Inorganic Superfund Data Review*, January 2010, and laboratory quality control criteria. Items reviewed included: chain-of-custody (COC) records, hold times, surrogate recoveries, matrix spike and matrix spike duplicate results, field duplicates, laboratory control and laboratory control duplicate results, laboratory duplicate results, method blank results and trip blank results. Qualifiers assigned as a result of this review are included in Table 1.

The following criteria were evaluated during the review:

- COC Records – Acceptable with the following exceptions:

  Samples ASW-1-0913 (C29590-2 and C29590-2F), TW-01-0913 (C29590-3 and C29590-3F), and ASW-1-0913-DUP (C29590-9) were collected on September 6th, 2013 according to the COC and confirmed on the field logs. The laboratory logged in the collection as date as September 5th, 2013 during sample receipt. Since data results are not affected, no action was taken to correct the laboratory error.

- Temperature – Acceptable
- Preservation – Acceptable
- Hold Times – Acceptable
- Trip Blanks – Acceptable
- Method Blanks – Acceptable
- Surrogates – Acceptable with the following exceptions:

  TPH Gasoline by NWTPH-Gx – The aaa-trifluorotoluene and 4-bromofluorobenzene surrogates for soil sample TW-01-7.5 (C29590-1) and the

laboratory duplicate performed on TW-01-7.5 (C29590-1) exceeded the upper laboratory control limit of 150% due to matrix interference at 209%/1645% and 220%/1761%, respectively. The out of control surrogate recoveries on the primary sample were confirmed by reanalysis at 215% and 1776%, respectively. The TPH gasoline result was qualified on the primary samples, TW-01-7.5 (C29590-1), as estimated and flagged 'J' due to a potential high bias.

- Laboratory Control Samples (LCS/LCSD) – Acceptable
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) – Acceptable with the following exceptions:

  BTEX by EPA Method 8260 – The MS recovery of toluene was exceeded the upper laboratory control limit of 122% at 138% in the analytical batch VU521. The LCS/LCSD recovery results were in control indicating the analytical batch was in control; therefore, only the parent sample, MW-307-0913 (C29590-6) was qualified as estimated and flagged 'J' due to a potential high bias.

  COD by SM5220C – The MS recovery of COD was below the lower laboratory control limit of 82% at 65.1% in the analytical batch GP22478. The LCS recovery was in control indicating the analytical batch was in control; therefore, only the parent sample, TW-01-7.5 (C29590-1), was qualified as estimated and flagged 'J' due to a potential low bias.

  TOC by EPA Method 9060A - The MS recovery of TOC exceeded the upper laboratory control limit of 114% at 119% in the analytical batch GP22503. The LCS was in control indicating the analytical batch was in control; therefore, only the parent sample, TW-01-7.5 (C29590-1), was qualified as estimated and flagged 'J' due to a potential high bias.

- Laboratory Duplicates – Acceptable
- Field Duplicates - Sample ASW-1-0913-DUP (C29590-9) was submitted as a field duplicate of primary sample ASW-1-0913 (C29590-2) for TPH gasoline. Relative percent difference (RPD) calculations are performed on the field duplicate sample pair results when the sample results are greater than five times the method reporting limit (MRL). All calculated RPD for the duplicate pairs were within the historical project control limit of 20%.
- Reporting Limits – The laboratory reported all detections between the method detection limit (MDL) and MRL (when applicable) as estimated and flagged the results 'J'.

Overall Assessment of Data

The completeness of the analytical reports for this groundwater monitoring event is 100%. The usefulness of the data is based on the USEPA guidance documents referenced in the introduction of this report. Upon consideration of the information presented above, the data are considered usable. Data qualified as estimated, 'J', during this review process are included in Table 1.

References

USEPA, 2008. U.S. Environmental Protection Agency Contract Laboratory Program National Functional Guidelines for Organic Data Review. June 2008.

USEPA, 2010. U.S. Environmental Protection Agency (USEPA) Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review. January 2010.

Table 1 Sample Qualification Summary

Sample Number	Laboratory ID	Analyte	Data Qualifier	Reason for Qualification
TW-01-7.5	C29590-1	TPH Gasoline	J	Surrogate recovery
		COD		Matrix spike recovery
		TOC		
MW-307-0913	C29590-6	Toluene	J	Matrix spike recovery

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9/24/2013
Mr. Clifford Pearson
URS Corporation
111 SW Columbia Street
Suite 1500
Portland OR 97201

Project Name:
Project #: 46194348
Workorder #: 1309145A

Dear Mr. Clifford Pearson

The following report includes the data for the above referenced project for sample(s) received on 9/10/2013 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 (5&20 ppbv) are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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WORK ORDER #: 1309145A

Work Order Summary

CLIENT:	Mr. Clifford Pearson URS Corporation 111 SW Columbia Street Suite 1500 Portland, OR 97201	**BILL TO:**	Accounts Payable Austin URS Corporation P.O. BOX 203970 Austin, TX 78720-1088
PHONE:	503-222-7200	**P.O. #**	
FAX:		**PROJECT #**	46194348
DATE RECEIVED:	09/10/2013	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	09/24/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	PSV-1	Modified TO-15 (5&20 ppbv)	0.8 "Hg	15.2 psi
02A	PSV-2	Modified TO-15 (5&20 ppbv)	2.4 "Hg	15.3 psi
03A	SVE-1	Modified TO-15 (5&20 ppbv)	2.4 "Hg	15.2 psi
04A	Lab Blank	Modified TO-15 (5&20 ppbv)	NA	NA
05A	CCV	Modified TO-15 (5&20 ppbv)	NA	NA
06A	LCS	Modified TO-15 (5&20 ppbv)	NA	NA
06AA	LCSD	Modified TO-15 (5&20 ppbv)	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 09/24/13

Technical Director

Certification numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-12-5, UT NELAP CA009332012-3, VA NELAP - 460197, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2012, Expiration date: 10/17/2013.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 956
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
EPA Method TO-15
URS Corporation
Workorder# 1309145A

Three 1 Liter Summa Canister samples were received on September 10, 2013. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

The year for date of collection for all of the samples was missing on the Chain-of-Custody (COC) form but noted on the sample tags. The information on the sample tags was used to process and report the samples.

Analytical Notes

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

Dilution was performed on all of the samples due to the presence of high level target and non-target species.

The recovery of surrogate 1,2-Dichloroethane-d4 in all of the samples was outside laboratory control limits due to high level hydrocarbon matrix interference. The surrogate recovery is flagged.

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS

Client Sample ID: PSV-1

Lab ID#: 1309145A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1000	1200000 E	3700	4100000 E
Cyclohexane	1000	260000	3600	900000
2,2,4-Trimethylpentane	1000	350000	4900	1600000
Benzene	1000	110000	3300	360000
Heptane	1000	210000	4300	860000
Toluene	1000	3700	3900	14000
Ethyl Benzene	1000	53000	4500	230000
m,p-Xylene	1000	49000	4500	210000
Cumene	1000	2600	5100	13000
Propylbenzene	1000	5100	5100	25000
4-Ethyltoluene	1000	5200	5100	26000
1,3,5-Trimethylbenzene	1000	2900	5100	14000
1,2,4-Trimethylbenzene	1000	8700	5100	43000
TPH ref. to Gasoline (MW=100)	21000	16000000	85000	66000000

Client Sample ID: PSV-2

Lab ID#: 1309145A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1100	1200000 E	3900	4200000 E
Cyclohexane	1100	270000	3800	920000
2,2,4-Trimethylpentane	1100	440000	5200	2100000
Benzene	1100	29000	3500	91000
Heptane	1100	160000	4500	670000
Toluene	1100	3200	4200	12000
m,p-Xylene	1100	2400	4800	11000
TPH ref. to Gasoline (MW=100)	22000	20000000	91000	82000000

Client Sample ID: SVE-1

Lab ID#: 1309145A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1100	1200000 E	3900	4400000 E

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS

Client Sample ID: SVE-1

Lab ID#: 1309145A-03A

Cyclohexane	1100	280000	3800	950000
2,2,4-Trimethylpentane	1100	370000	5200	1700000
Benzene	1100	120000	3500	400000
Heptane	1100	230000	4500	950000
Toluene	1100	4400	4200	16000
Ethyl Benzene	1100	66000	4800	290000
m,p-Xylene	1100	67000	4800	290000
Cumene	1100	2800	5400	14000
Propylbenzene	1100	5500	5400	27000
4-Ethyltoluene	1100	6500	5400	32000
1,3,5-Trimethylbenzene	1100	3800	5400	19000
1,2,4-Trimethylbenzene	1100	9900	5400	49000
TPH ref. to Gasoline (MW=100)	22000	17000000	90000	70000000

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Client Sample ID: PSV-1

Lab ID#: 1309145A-01A

EPA METHOD TO-15 GC/MS

File Name:	**14091723**	**Date of Collection:**	**9/5/13 2:40:00 PM**
Dil. Factor:	**209**	**Date of Analysis:**	**9/18/13 09:19 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1000	Not Detected	5200	Not Detected
Freon 114	1000	Not Detected	7300	Not Detected
Chloromethane	4200	Not Detected	8600	Not Detected
Vinyl Chloride	1000	Not Detected	2700	Not Detected
1,3-Butadiene	1000	Not Detected	2300	Not Detected
Bromomethane	1000	Not Detected	4000	Not Detected
Chloroethane	4200	Not Detected	11000	Not Detected
Freon 11	1000	Not Detected	5900	Not Detected
Ethanol	4200	Not Detected	7900	Not Detected
Freon 113	1000	Not Detected	8000	Not Detected
1,1-Dichloroethene	1000	Not Detected	4100	Not Detected
Acetone	4200	Not Detected	9900	Not Detected
2-Propanol	4200	Not Detected	10000	Not Detected
Carbon Disulfide	1000	Not Detected	3200	Not Detected
3-Chloropropene	4200	Not Detected	13000	Not Detected
Methylene Chloride	1000	Not Detected	3600	Not Detected
Methyl tert-butyl ether	1000	Not Detected	3800	Not Detected
trans-1,2-Dichloroethene	1000	Not Detected	4100	Not Detected
Hexane	1000	1200000 E	3700	4100000 E
1,1-Dichloroethane	1000	Not Detected	4200	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4200	Not Detected	12000	Not Detected
cis-1,2-Dichloroethene	1000	Not Detected	4100	Not Detected
Tetrahydrofuran	1000	Not Detected	3100	Not Detected
Chloroform	1000	Not Detected	5100	Not Detected
1,1,1-Trichloroethane	1000	Not Detected	5700	Not Detected
Cyclohexane	1000	260000	3600	900000
Carbon Tetrachloride	1000	Not Detected	6600	Not Detected
2,2,4-Trimethylpentane	1000	350000	4900	1600000
Benzene	1000	110000	3300	360000
1,2-Dichloroethane	1000	Not Detected	4200	Not Detected
Heptane	1000	210000	4300	860000
Trichloroethene	1000	Not Detected	5600	Not Detected
1,2-Dichloropropane	1000	Not Detected	4800	Not Detected
1,4-Dioxane	4200	Not Detected	15000	Not Detected
Bromodichloromethane	1000	Not Detected	7000	Not Detected
cis-1,3-Dichloropropene	1000	Not Detected	4700	Not Detected
4-Methyl-2-pentanone	1000	Not Detected	4300	Not Detected
Toluene	1000	3700	3900	14000
trans-1,3-Dichloropropene	1000	Not Detected	4700	Not Detected
1,1,2-Trichloroethane	1000	Not Detected	5700	Not Detected
Tetrachloroethene	1000	Not Detected	7100	Not Detected
2-Hexanone	4200	Not Detected	17000	Not Detected

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Client Sample ID: PSV-1

Lab ID#: 1309145A-01A

EPA METHOD TO-15 GC/MS

File Name:	**14091723**	**Date of Collection: 9/5/13 2:40:00 PM**	
Dil. Factor:	**209**	**Date of Analysis: 9/18/13 09:19 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1000	Not Detected	8900	Not Detected
1,2-Dibromoethane (EDB)	1000	Not Detected	8000	Not Detected
Chlorobenzene	1000	Not Detected	4800	Not Detected
Ethyl Benzene	1000	53000	4500	230000
m,p-Xylene	1000	49000	4500	210000
o-Xylene	1000	Not Detected	4500	Not Detected
Styrene	1000	Not Detected	4400	Not Detected
Bromoform	1000	Not Detected	11000	Not Detected
Cumene	1000	2600	5100	13000
1,1,2,2-Tetrachloroethane	1000	Not Detected	7200	Not Detected
Propylbenzene	1000	5100	5100	25000
4-Ethyltoluene	1000	5200	5100	26000
1,3,5-Trimethylbenzene	1000	2900	5100	14000
1,2,4-Trimethylbenzene	1000	8700	5100	43000
1,3-Dichlorobenzene	1000	Not Detected	6300	Not Detected
1,4-Dichlorobenzene	1000	Not Detected	6300	Not Detected
alpha-Chlorotoluene	1000	Not Detected	5400	Not Detected
1,2-Dichlorobenzene	1000	Not Detected	6300	Not Detected
1,2,4-Trichlorobenzene	4200	Not Detected	31000	Not Detected
Hexachlorobutadiene	4200	Not Detected	44000	Not Detected
TPH ref. to Gasoline (MW=100)	21000	16000000	85000	66000000

E = Exceeds instrument calibration range.
Q = Exceeds Quality Control limits of 70% to 130%, due to matrix effects.
Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	132 Q	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	94	70-130

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Client Sample ID: PSV-2

Lab ID#: 1309145A-02A

EPA METHOD TO-15 GC/MS

File Name:	**14091722**	**Date of Collection: 9/5/13 2:21:00 PM**	
Dil. Factor:	**222**	**Date of Analysis: 9/18/13 08:47 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1100	Not Detected	5500	Not Detected
Freon 114	1100	Not Detected	7800	Not Detected
Chloromethane	4400	Not Detected	9200	Not Detected
Vinyl Chloride	1100	Not Detected	2800	Not Detected
1,3-Butadiene	1100	Not Detected	2400	Not Detected
Bromomethane	1100	Not Detected	4300	Not Detected
Chloroethane	4400	Not Detected	12000	Not Detected
Freon 11	1100	Not Detected	6200	Not Detected
Ethanol	4400	Not Detected	8400	Not Detected
Freon 113	1100	Not Detected	8500	Not Detected
1,1-Dichloroethene	1100	Not Detected	4400	Not Detected
Acetone	4400	Not Detected	10000	Not Detected
2-Propanol	4400	Not Detected	11000	Not Detected
Carbon Disulfide	1100	Not Detected	3400	Not Detected
3-Chloropropene	4400	Not Detected	14000	Not Detected
Methylene Chloride	1100	Not Detected	3800	Not Detected
Methyl tert-butyl ether	1100	Not Detected	4000	Not Detected
trans-1,2-Dichloroethene	1100	Not Detected	4400	Not Detected
Hexane	1100	1200000 E	3900	4200000 E
1,1-Dichloroethane	1100	Not Detected	4500	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4400	Not Detected	13000	Not Detected
cis-1,2-Dichloroethene	1100	Not Detected	4400	Not Detected
Tetrahydrofuran	1100	Not Detected	3300	Not Detected
Chloroform	1100	Not Detected	5400	Not Detected
1,1,1-Trichloroethane	1100	Not Detected	6000	Not Detected
Cyclohexane	1100	270000	3800	920000
Carbon Tetrachloride	1100	Not Detected	7000	Not Detected
2,2,4-Trimethylpentane	1100	440000	5200	2100000
Benzene	1100	29000	3500	91000
1,2-Dichloroethane	1100	Not Detected	4500	Not Detected
Heptane	1100	160000	4500	670000
Trichloroethene	1100	Not Detected	6000	Not Detected
1,2-Dichloropropane	1100	Not Detected	5100	Not Detected
1,4-Dioxane	4400	Not Detected	16000	Not Detected
Bromodichloromethane	1100	Not Detected	7400	Not Detected
cis-1,3-Dichloropropene	1100	Not Detected	5000	Not Detected
4-Methyl-2-pentanone	1100	Not Detected	4500	Not Detected
Toluene	1100	3200	4200	12000
trans-1,3-Dichloropropene	1100	Not Detected	5000	Not Detected
1,1,2-Trichloroethane	1100	Not Detected	6000	Not Detected
Tetrachloroethene	1100	Not Detected	7500	Not Detected
2-Hexanone	4400	Not Detected	18000	Not Detected

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Client Sample ID: PSV-2

Lab ID#: 1309145A-02A

EPA METHOD TO-15 GC/MS

File Name:	**14091722**	**Date of Collection: 9/5/13 2:21:00 PM**	
Dil. Factor:	**222**	**Date of Analysis: 9/18/13 08:47 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1100	Not Detected	9400	Not Detected
1,2-Dibromoethane (EDB)	1100	Not Detected	8500	Not Detected
Chlorobenzene	1100	Not Detected	5100	Not Detected
Ethyl Benzene	1100	Not Detected	4800	Not Detected
m,p-Xylene	1100	2400	4800	11000
o-Xylene	1100	Not Detected	4800	Not Detected
Styrene	1100	Not Detected	4700	Not Detected
Bromoform	1100	Not Detected	11000	Not Detected
Cumene	1100	Not Detected	5400	Not Detected
1,1,2,2-Tetrachloroethane	1100	Not Detected	7600	Not Detected
Propylbenzene	1100	Not Detected	5400	Not Detected
4-Ethyltoluene	1100	Not Detected	5400	Not Detected
1,3,5-Trimethylbenzene	1100	Not Detected	5400	Not Detected
1,2,4-Trimethylbenzene	1100	Not Detected	5400	Not Detected
1,3-Dichlorobenzene	1100	Not Detected	6700	Not Detected
1,4-Dichlorobenzene	1100	Not Detected	6700	Not Detected
alpha-Chlorotoluene	1100	Not Detected	5700	Not Detected
1,2-Dichlorobenzene	1100	Not Detected	6700	Not Detected
1,2,4-Trichlorobenzene	4400	Not Detected	33000	Not Detected
Hexachlorobutadiene	4400	Not Detected	47000	Not Detected
TPH ref. to Gasoline (MW=100)	22000	20000000	91000	82000000

E = Exceeds instrument calibration range.
Q = Exceeds Quality Control limits of 70% to 130%, due to matrix effects.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	135 Q	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	92	70-130

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Client Sample ID: SVE-1

Lab ID#: 1309145A-03A

EPA METHOD TO-15 GC/MS

File Name:	**14091724**	**Date of Collection:**	**9/5/13 1:49:00 PM**
Dil. Factor:	**221**	**Date of Analysis:**	**9/18/13 10:06 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1100	Not Detected	5500	Not Detected
Freon 114	1100	Not Detected	7700	Not Detected
Chloromethane	4400	Not Detected	9100	Not Detected
Vinyl Chloride	1100	Not Detected	2800	Not Detected
1,3-Butadiene	1100	Not Detected	2400	Not Detected
Bromomethane	1100	Not Detected	4300	Not Detected
Chloroethane	4400	Not Detected	12000	Not Detected
Freon 11	1100	Not Detected	6200	Not Detected
Ethanol	4400	Not Detected	8300	Not Detected
Freon 113	1100	Not Detected	8500	Not Detected
1,1-Dichloroethene	1100	Not Detected	4400	Not Detected
Acetone	4400	Not Detected	10000	Not Detected
2-Propanol	4400	Not Detected	11000	Not Detected
Carbon Disulfide	1100	Not Detected	3400	Not Detected
3-Chloropropene	4400	Not Detected	14000	Not Detected
Methylene Chloride	1100	Not Detected	3800	Not Detected
Methyl tert-butyl ether	1100	Not Detected	4000	Not Detected
trans-1,2-Dichloroethene	1100	Not Detected	4400	Not Detected
Hexane	1100	1200000 E	3900	4400000 E
1,1-Dichloroethane	1100	Not Detected	4500	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4400	Not Detected	13000	Not Detected
cis-1,2-Dichloroethene	1100	Not Detected	4400	Not Detected
Tetrahydrofuran	1100	Not Detected	3200	Not Detected
Chloroform	1100	Not Detected	5400	Not Detected
1,1,1-Trichloroethane	1100	Not Detected	6000	Not Detected
Cyclohexane	1100	280000	3800	950000
Carbon Tetrachloride	1100	Not Detected	7000	Not Detected
2,2,4-Trimethylpentane	1100	370000	5200	1700000
Benzene	1100	120000	3500	400000
1,2-Dichloroethane	1100	Not Detected	4500	Not Detected
Heptane	1100	230000	4500	950000
Trichloroethene	1100	Not Detected	5900	Not Detected
1,2-Dichloropropane	1100	Not Detected	5100	Not Detected
1,4-Dioxane	4400	Not Detected	16000	Not Detected
Bromodichloromethane	1100	Not Detected	7400	Not Detected
cis-1,3-Dichloropropene	1100	Not Detected	5000	Not Detected
4-Methyl-2-pentanone	1100	Not Detected	4500	Not Detected
Toluene	1100	4400	4200	16000
trans-1,3-Dichloropropene	1100	Not Detected	5000	Not Detected
1,1,2-Trichloroethane	1100	Not Detected	6000	Not Detected
Tetrachloroethene	1100	Not Detected	7500	Not Detected
2-Hexanone	4400	Not Detected	18000	Not Detected

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Client Sample ID: SVE-1

Lab ID#: 1309145A-03A

EPA METHOD TO-15 GC/MS

File Name:	**14091724**	**Date of Collection: 9/5/13 1:49:00 PM**	
Dil. Factor:	**221**	**Date of Analysis: 9/18/13 10:06 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1100	Not Detected	9400	Not Detected
1,2-Dibromoethane (EDB)	1100	Not Detected	8500	Not Detected
Chlorobenzene	1100	Not Detected	5100	Not Detected
Ethyl Benzene	1100	66000	4800	290000
m,p-Xylene	1100	67000	4800	290000
o-Xylene	1100	Not Detected	4800	Not Detected
Styrene	1100	Not Detected	4700	Not Detected
Bromoform	1100	Not Detected	11000	Not Detected
Cumene	1100	2800	5400	14000
1,1,2,2-Tetrachloroethane	1100	Not Detected	7600	Not Detected
Propylbenzene	1100	5500	5400	27000
4-Ethyltoluene	1100	6500	5400	32000
1,3,5-Trimethylbenzene	1100	3800	5400	19000
1,2,4-Trimethylbenzene	1100	9900	5400	49000
1,3-Dichlorobenzene	1100	Not Detected	6600	Not Detected
1,4-Dichlorobenzene	1100	Not Detected	6600	Not Detected
alpha-Chlorotoluene	1100	Not Detected	5700	Not Detected
1,2-Dichlorobenzene	1100	Not Detected	6600	Not Detected
1,2,4-Trichlorobenzene	4400	Not Detected	33000	Not Detected
Hexachlorobutadiene	4400	Not Detected	47000	Not Detected
TPH ref. to Gasoline (MW=100)	22000	17000000	90000	70000000

E = Exceeds instrument calibration range.
Q = Exceeds Quality Control limits of 70% to 130%, due to matrix effects.
Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	133 Q	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	95	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1309145A-04A

EPA METHOD TO-15 GC/MS

File Name:	**14091709**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/17/13 05:31 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	5.0	Not Detected	25	Not Detected
Freon 114	5.0	Not Detected	35	Not Detected
Chloromethane	20	Not Detected	41	Not Detected
Vinyl Chloride	5.0	Not Detected	13	Not Detected
1,3-Butadiene	5.0	Not Detected	11	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	20	Not Detected	53	Not Detected
Freon 11	5.0	Not Detected	28	Not Detected
Ethanol	20	Not Detected	38	Not Detected
Freon 113	5.0	Not Detected	38	Not Detected
1,1-Dichloroethene	5.0	Not Detected	20	Not Detected
Acetone	20	Not Detected	48	Not Detected
2-Propanol	20	Not Detected	49	Not Detected
Carbon Disulfide	5.0	Not Detected	16	Not Detected
3-Chloropropene	20	Not Detected	63	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	5.0	Not Detected	18	Not Detected
trans-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Hexane	5.0	Not Detected	18	Not Detected
1,1-Dichloroethane	5.0	Not Detected	20	Not Detected
2-Butanone (Methyl Ethyl Ketone)	20	Not Detected	59	Not Detected
cis-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Tetrahydrofuran	5.0	Not Detected	15	Not Detected
Chloroform	5.0	Not Detected	24	Not Detected
1,1,1-Trichloroethane	5.0	Not Detected	27	Not Detected
Cyclohexane	5.0	Not Detected	17	Not Detected
Carbon Tetrachloride	5.0	Not Detected	31	Not Detected
2,2,4-Trimethylpentane	5.0	Not Detected	23	Not Detected
Benzene	5.0	Not Detected	16	Not Detected
1,2-Dichloroethane	5.0	Not Detected	20	Not Detected
Heptane	5.0	Not Detected	20	Not Detected
Trichloroethene	5.0	Not Detected	27	Not Detected
1,2-Dichloropropane	5.0	Not Detected	23	Not Detected
1,4-Dioxane	20	Not Detected	72	Not Detected
Bromodichloromethane	5.0	Not Detected	34	Not Detected
cis-1,3-Dichloropropene	5.0	Not Detected	23	Not Detected
4-Methyl-2-pentanone	5.0	Not Detected	20	Not Detected
Toluene	5.0	Not Detected	19	Not Detected
trans-1,3-Dichloropropene	5.0	Not Detected	23	Not Detected
1,1,2-Trichloroethane	5.0	Not Detected	27	Not Detected
Tetrachloroethene	5.0	Not Detected	34	Not Detected
2-Hexanone	20	Not Detected	82	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 1309145A-04A

EPA METHOD TO-15 GC/MS

File Name:	**14091709**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/17/13 05:31 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	5.0	Not Detected	42	Not Detected
1,2-Dibromoethane (EDB)	5.0	Not Detected	38	Not Detected
Chlorobenzene	5.0	Not Detected	23	Not Detected
Ethyl Benzene	5.0	Not Detected	22	Not Detected
m,p-Xylene	5.0	Not Detected	22	Not Detected
o-Xylene	5.0	Not Detected	22	Not Detected
Styrene	5.0	Not Detected	21	Not Detected
Bromoform	5.0	Not Detected	52	Not Detected
Cumene	5.0	Not Detected	24	Not Detected
1,1,2,2-Tetrachloroethane	5.0	Not Detected	34	Not Detected
Propylbenzene	5.0	Not Detected	24	Not Detected
4-Ethyltoluene	5.0	Not Detected	24	Not Detected
1,3,5-Trimethylbenzene	5.0	Not Detected	24	Not Detected
1,2,4-Trimethylbenzene	5.0	Not Detected	24	Not Detected
1,3-Dichlorobenzene	5.0	Not Detected	30	Not Detected
1,4-Dichlorobenzene	5.0	Not Detected	30	Not Detected
alpha-Chlorotoluene	5.0	Not Detected	26	Not Detected
1,2-Dichlorobenzene	5.0	Not Detected	30	Not Detected
1,2,4-Trichlorobenzene	20	Not Detected	150	Not Detected
Hexachlorobutadiene	20	Not Detected	210	Not Detected
TPH ref. to Gasoline (MW=100)	100	Not Detected	410	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	94	70-130

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Client Sample ID: CCV

Lab ID#: 1309145A-05A

EPA METHOD TO-15 GC/MS

File Name:	**14091705**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/17/13 03:18 PM**	

Compound	%Recovery
Freon 12	104
Freon 114	101
Chloromethane	111
Vinyl Chloride	122
1,3-Butadiene	123
Bromomethane	102
Chloroethane	100
Freon 11	103
Ethanol	107
Freon 113	94
1,1-Dichloroethene	99
Acetone	97
2-Propanol	92
Carbon Disulfide	84
3-Chloropropene	93
Methylene Chloride	102
Methyl tert-butyl ether	97
trans-1,2-Dichloroethene	100
Hexane	100
1,1-Dichloroethane	105
2-Butanone (Methyl Ethyl Ketone)	104
cis-1,2-Dichloroethene	99
Tetrahydrofuran	99
Chloroform	103
1,1,1-Trichloroethane	100
Cyclohexane	103
Carbon Tetrachloride	101
2,2,4-Trimethylpentane	102
Benzene	104
1,2-Dichloroethane	109
Heptane	104
Trichloroethene	102
1,2-Dichloropropane	101
1,4-Dioxane	96
Bromodichloromethane	102
cis-1,3-Dichloropropene	97
4-Methyl-2-pentanone	100
Toluene	102
trans-1,3-Dichloropropene	95
1,1,2-Trichloroethane	100
Tetrachloroethene	98
2-Hexanone	91

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Client Sample ID: CCV

Lab ID#: 1309145A-05A

EPA METHOD TO-15 GC/MS

File Name:	**14091705**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/17/13 03:18 PM**	

Compound	%Recovery
Dibromochloromethane	99
1,2-Dibromoethane (EDB)	104
Chlorobenzene	99
Ethyl Benzene	99
m,p-Xylene	95
o-Xylene	101
Styrene	104
Bromoform	97
Cumene	108
1,1,2,2-Tetrachloroethane	103
Propylbenzene	109
4-Ethyltoluene	111
1,3,5-Trimethylbenzene	108
1,2,4-Trimethylbenzene	106
1,3-Dichlorobenzene	101
1,4-Dichlorobenzene	101
alpha-Chlorotoluene	108
1,2-Dichlorobenzene	102
1,2,4-Trichlorobenzene	127
Hexachlorobutadiene	130
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: LCS

Lab ID#: 1309145A-06A

EPA METHOD TO-15 GC/MS

File Name:	**14091706**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/17/13 04:13 PM**	

Compound	%Recovery	Method Limits
Freon 12	105	70-130
Freon 114	100	70-130
Chloromethane	117	70-130
Vinyl Chloride	123	70-130
1,3-Butadiene	120	70-130
Bromomethane	99	70-130
Chloroethane	95	70-130
Freon 11	101	70-130
Ethanol	90	70-130
Freon 113	89	70-130
1,1-Dichloroethene	107	70-130
Acetone	99	70-130
2-Propanol	88	70-130
Carbon Disulfide	103	70-130
3-Chloropropene	96	70-130
Methylene Chloride	101	70-130
Methyl tert-butyl ether	92	70-130
trans-1,2-Dichloroethene	111	70-130
Hexane	95	70-130
1,1-Dichloroethane	101	70-130
2-Butanone (Methyl Ethyl Ketone)	96	70-130
cis-1,2-Dichloroethene	96	70-130
Tetrahydrofuran	89	70-130
Chloroform	103	70-130
1,1,1-Trichloroethane	99	70-130
Cyclohexane	96	70-130
Carbon Tetrachloride	96	70-130
2,2,4-Trimethylpentane	94	70-130
Benzene	103	70-130
1,2-Dichloroethane	108	70-130
Heptane	95	70-130
Trichloroethene	99	70-130
1,2-Dichloropropane	103	70-130
1,4-Dioxane	88	70-130
Bromodichloromethane	96	70-130
cis-1,3-Dichloropropene	87	70-130
4-Methyl-2-pentanone	85	70-130
Toluene	98	70-130
trans-1,3-Dichloropropene	84	70-130
1,1,2-Trichloroethane	98	70-130
Tetrachloroethene	97	70-130
2-Hexanone	73	70-130

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Client Sample ID: LCS

Lab ID#: 1309145A-06A

EPA METHOD TO-15 GC/MS

File Name:	**14091706**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/17/13 04:13 PM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	89	70-130
1,2-Dibromoethane (EDB)	98	70-130
Chlorobenzene	100	70-130
Ethyl Benzene	90	70-130
m,p-Xylene	89	70-130
o-Xylene	90	70-130
Styrene	86	70-130
Bromoform	83	70-130
Cumene	100	70-130
1,1,2,2-Tetrachloroethane	100	70-130
Propylbenzene	102	70-130
4-Ethyltoluene	98	70-130
1,3,5-Trimethylbenzene	100	70-130
1,2,4-Trimethylbenzene	93	70-130
1,3-Dichlorobenzene	98	70-130
1,4-Dichlorobenzene	95	70-130
alpha-Chlorotoluene	78	70-130
1,2-Dichlorobenzene	100	70-130
1,2,4-Trichlorobenzene	117	70-130
Hexachlorobutadiene	122	70-130
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: LCSD

Lab ID#: 1309145A-06AA

EPA METHOD TO-15 GC/MS

File Name:	**14091707**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/17/13 04:40 PM**	

Compound	%Recovery	Method Limits
Freon 12	110	70-130
Freon 114	104	70-130
Chloromethane	121	70-130
Vinyl Chloride	132 Q	70-130
1,3-Butadiene	130	70-130
Bromomethane	103	70-130
Chloroethane	103	70-130
Freon 11	106	70-130
Ethanol	91	70-130
Freon 113	98	70-130
1,1-Dichloroethene	111	70-130
Acetone	105	70-130
2-Propanol	94	70-130
Carbon Disulfide	109	70-130
3-Chloropropene	106	70-130
Methylene Chloride	103	70-130
Methyl tert-butyl ether	95	70-130
trans-1,2-Dichloroethene	114	70-130
Hexane	101	70-130
1,1-Dichloroethane	106	70-130
2-Butanone (Methyl Ethyl Ketone)	98	70-130
cis-1,2-Dichloroethene	100	70-130
Tetrahydrofuran	91	70-130
Chloroform	106	70-130
1,1,1-Trichloroethane	102	70-130
Cyclohexane	100	70-130
Carbon Tetrachloride	101	70-130
2,2,4-Trimethylpentane	98	70-130
Benzene	107	70-130
1,2-Dichloroethane	110	70-130
Heptane	98	70-130
Trichloroethene	106	70-130
1,2-Dichloropropane	105	70-130
1,4-Dioxane	90	70-130
Bromodichloromethane	100	70-130
cis-1,3-Dichloropropene	90	70-130
4-Methyl-2-pentanone	87	70-130
Toluene	100	70-130
trans-1,3-Dichloropropene	86	70-130
1,1,2-Trichloroethane	104	70-130
Tetrachloroethene	99	70-130
2-Hexanone	77	70-130

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Client Sample ID: LCSD

Lab ID#: 1309145A-06AA

EPA METHOD TO-15 GC/MS

File Name:	**14091707**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/17/13 04:40 PM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	93	70-130
1,2-Dibromoethane (EDB)	102	70-130
Chlorobenzene	102	70-130
Ethyl Benzene	93	70-130
m,p-Xylene	92	70-130
o-Xylene	95	70-130
Styrene	92	70-130
Bromoform	83	70-130
Cumene	103	70-130
1,1,2,2-Tetrachloroethane	104	70-130
Propylbenzene	106	70-130
4-Ethyltoluene	102	70-130
1,3,5-Trimethylbenzene	103	70-130
1,2,4-Trimethylbenzene	97	70-130
1,3-Dichlorobenzene	102	70-130
1,4-Dichlorobenzene	97	70-130
alpha-Chlorotoluene	80	70-130
1,2-Dichlorobenzene	102	70-130
1,2,4-Trichlorobenzene	119	70-130
Hexachlorobutadiene	124	70-130
TPH ref. to Gasoline (MW=100)	Not Spiked	

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	101	70-130

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9/24/2013
Mr. Clifford Pearson
URS Corporation
111 SW Columbia Street
Suite 1500
Portland OR 97201

Project Name:
Project #: 46194348
Workorder #: 1309145B

Dear Mr. Clifford Pearson

The following report includes the data for the above referenced project for sample(s) received on 9/10/2013 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1946 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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WORK ORDER #: 1309145B

Work Order Summary

CLIENT:	Mr. Clifford Pearson URS Corporation 111 SW Columbia Street Suite 1500 Portland, OR 97201	**BILL TO:**	Accounts Payable Austin URS Corporation P.O. BOX 203970 Austin, TX 78720-1088
PHONE:	503-222-7200	**P.O. #**	
FAX:		**PROJECT #**	46194348
DATE RECEIVED:	09/10/2013	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	09/24/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	PSV-1	Modified ASTM D-1946	0.8 "Hg	15.2 psi
02A	PSV-2	Modified ASTM D-1946	2.4 "Hg	15.3 psi
03A	SVE-1	Modified ASTM D-1946	2.4 "Hg	15.2 psi
04A	Lab Blank	Modified ASTM D-1946	NA	NA
05A	LCS	Modified ASTM D-1946	NA	NA
05AA	LCSD	Modified ASTM D-1946	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 09/24/13

Technical Director

Certification numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-12-5, UT NELAP CA009332012-3, VA NELAP - 460197, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2012, Expiration date: 10/17/2013.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 956
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified ASTM D-1946
URS Corporation
Workorder# 1309145B

Three 1 Liter Summa Canister samples were received on September 10, 2013. The laboratory performed analysis via Modified ASTM Method D-1946 for Methane and fixed gases in air using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

On the analytical column employed for this analysis, Oxygen coelutes with Argon. The corresponding peak is quantitated as Oxygen.

Since Nitrogen is used to pressurize samples, the reported Nitrogen values are calculated by adding all the sample components and subtracting from 100%.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***ASTM D-1946***	***ATL Modifications***
Calibration	A single point calibration is performed using a reference standard closely matching the composition of the unknown.	A 3-point calibration curve is performed. Quantitation is based on a daily calibration standard which may or may not resemble the composition of the associated samples.
Reference Standard	The composition of any reference standard must be known to within 0.01 mol % for any component.	The standards used by ATL are blended to a >/= 95% accuracy.
Sample Injection Volume	Components whose concentrations are in excess of 5 % should not be analyzed by using sample volumes greater than 0.5 mL.	The sample container is connected directly to a fixed volume sample loop of 1.0 mL on the GC. Linear range is defined by the calibration curve. Bags are loaded by vacuum.
Normalization	Normalize the mole percent values by multiplying each value by 100 and dividing by the sum of the original values. The sum of the original values should not differ from 100% by more than 1.0%.	Results are not normalized. The sum of the reported values can differ from 100% by as much as 15%, either due to analytical variability or an unusual sample matrix.
Precision	Precision requirements established at each concentration level.	Duplicates should agree within 25% RPD for detections > 5 X's the RL.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The reporting limit for Nitrogen was raised from 0.10% to 0.50%.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:
B - Compound present in laboratory blank greater than reporting limit.
J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the detection limit.
M - Reported value may be biased due to apparent matrix interferences.
File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: PSV-1

Lab ID#: 1309145B-01A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.21	1.5
Nitrogen	1.0	54
Methane	0.00021	31

Client Sample ID: PSV-2

Lab ID#: 1309145B-02A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	1.3
Nitrogen	1.1	59
Methane	0.00022	30

Client Sample ID: SVE-1

Lab ID#: 1309145B-03A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	1.8
Nitrogen	1.1	54
Methane	0.00022	31

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Client Sample ID: PSV-1

Lab ID#: 1309145B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10091917**	**Date of Collection: 9/5/13 2:40:00 PM**	
Dil. Factor:	**2.09**	**Date of Analysis: 9/19/13 06:22 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.21	1.5
Nitrogen	1.0	54
Methane	0.00021	31

Container Type: 1 Liter Summa Canister

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Client Sample ID: PSV-2

Lab ID#: 1309145B-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10091918**	**Date of Collection: 9/5/13 2:21:00 PM**	
Dil. Factor:	**2.22**	**Date of Analysis: 9/19/13 06:45 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.22	1.3
Nitrogen	1.1	59
Methane	0.00022	30

Container Type: 1 Liter Summa Canister

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Client Sample ID: SVE-1

Lab ID#: 1309145B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10091919**	**Date of Collection:**	**9/5/13 1:49:00 PM**
Dil. Factor:	**2.21**	**Date of Analysis:**	**9/19/13 07:11 PM**

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.22	1.8
Nitrogen	1.1	54
Methane	0.00022	31

Container Type: 1 Liter Summa Canister

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Client Sample ID: Lab Blank

Lab ID#: 1309145B-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10091904**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/19/13 09:29 AM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.10	Not Detected
Nitrogen	0.50	Not Detected
Methane	0.00010	Not Detected

Container Type: NA - Not Applicable

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Client Sample ID: LCS

Lab ID#: 1309145B-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10091902**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/19/13 08:16 AM**	

Compound	%Recovery	Method Limits
Oxygen	102	85-115
Nitrogen	100	85-115
Methane	101	85-115

Container Type: NA - Not Applicable

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Client Sample ID: LCSD

Lab ID#: 1309145B-05AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10091924**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/19/13 09:58 PM**	

Compound	%Recovery	Method Limits
Oxygen	100	85-115
Nitrogen	100	85-115
Methane	100	85-115

Container Type: NA - Not Applicable

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10/2/2013
Mr. Clifford Pearson
URS Corporation
111 SW Columbia Street
Suite 1500
Portland OR 97201

Project Name: Harbor Island Pilot Test
Project #: 46194348
Workorder #: 1309319A

Dear Mr. Clifford Pearson

The following report includes the data for the above referenced project for sample(s) received on 9/18/2013 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 (5&20 ppbv) are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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WORK ORDER #: 1309319A

Work Order Summary

CLIENT:	Mr. Clifford Pearson URS Corporation 111 SW Columbia Street Suite 1500 Portland, OR 97201	**BILL TO:**	Accounts Payable Austin URS Corporation P.O. BOX 203970 Austin, TX 78720-1088
PHONE:	503-222-7200	**P.O. #**	
FAX:		**PROJECT #**	46194348 Harbor Island Pilot Test
DATE RECEIVED:	09/18/2013	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	10/02/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	SVE-1-2 Hour-090913	Modified TO-15 (5&20 ppbv)	2.4 "Hg	15.5 psi
02A	SVE-1-2 Hour-091013	Modified TO-15 (5&20 ppbv)	4.5 "Hg	15.2 psi
03A	SVE-1-4 Hour-091013	Modified TO-15 (5&20 ppbv)	4.1 "Hg	15.1 psi
04A	Lab Blank	Modified TO-15 (5&20 ppbv)	NA	NA
05A	CCV	Modified TO-15 (5&20 ppbv)	NA	NA
06A	LCS	Modified TO-15 (5&20 ppbv)	NA	NA
06AA	LCSD	Modified TO-15 (5&20 ppbv)	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 10/02/13

Technical Director

Certification numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-12-5, UT NELAP CA009332012-3, VA NELAP - 460197, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2012, Expiration date: 10/17/2013.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 956
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
EPA Method TO-15 Soil Gas
URS Corporation
Workorder# 1309319A

Three 1 Liter Summa Canister samples were received on September 18, 2013. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode. The method involves concentrating up to 50 mLs of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

Dilution was performed on samples SVE-1-2 Hour-090913 and SVE-1-4 Hour-091013 due to the presence of high level target and non-target species.

The recovery of surrogate 1,2-Dichloroethane-d4 in sample SVE-1-2 Hour-091013 was outside laboratory control limits due to high level hydrocarbon matrix interference. The surrogate recovery is flagged.

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates

as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS

Client Sample ID: SVE-1-2 Hour-090913

Lab ID#: 1309319A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1100	1100000	3900	4000000
Cyclohexane	1100	260000	3800	910000
2,2,4-Trimethylpentane	1100	350000	5200	1600000
Benzene	1100	120000	3600	380000
Heptane	1100	220000	4600	900000
Toluene	1100	3400	4200	13000
Ethyl Benzene	1100	69000	4900	300000
m,p-Xylene	1100	64000	4900	280000
Cumene	1100	3300	5500	16000
Propylbenzene	1100	7900	5500	39000
4-Ethyltoluene	1100	8700	5500	43000
1,3,5-Trimethylbenzene	1100	4600	5500	22000
1,2,4-Trimethylbenzene	1100	19000	5500	93000
TPH ref. to Gasoline (MW=100)	22000	15000000	92000	60000000

Client Sample ID: SVE-1-2 Hour-091013

Lab ID#: 1309319A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	29	110000 E	100	380000 E
Cyclohexane	29	26000	99	90000
2,2,4-Trimethylpentane	29	36000 E	130	170000 E
Benzene	29	11000	92	34000
Heptane	29	20000	120	82000
Toluene	29	260	110	1000
Ethyl Benzene	29	3800	120	16000
m,p-Xylene	29	3000	120	13000
Cumene	29	160	140	800
Propylbenzene	29	300	140	1500
4-Ethyltoluene	29	280	140	1400
1,3,5-Trimethylbenzene	29	140	140	690
1,2,4-Trimethylbenzene	29	510	140	2500
TPH ref. to Gasoline (MW=100)	580	1400000	2400	5700000

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS

Client Sample ID: SVE-1-4 Hour-091013

Lab ID#: 1309319A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	200	180000	690	630000
Cyclohexane	200	41000	670	140000
2,2,4-Trimethylpentane	200	59000	920	280000
Benzene	200	17000	630	55000
Heptane	200	34000	800	140000
Toluene	200	480	740	1800
Ethyl Benzene	200	8600	850	38000
m,p-Xylene	200	6900	850	30000
Cumene	200	410	960	2000
Propylbenzene	200	770	960	3800
4-Ethyltoluene	200	660	960	3300
1,3,5-Trimethylbenzene	200	360	960	1800
1,2,4-Trimethylbenzene	200	1200	960	6000
TPH ref. to Gasoline (MW=100)	3900	2200000	16000	9100000

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Client Sample ID: SVE-1-2 Hour-090913

Lab ID#: 1309319A-01A

EPA METHOD TO-15 GC/MS

File Name:	**14092727**	**Date of Collection: 9/9/13 12:34:00 PM**	
Dil. Factor:	**224**	**Date of Analysis: 9/28/13 11:03 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1100	Not Detected	5500	Not Detected
Freon 114	1100	Not Detected	7800	Not Detected
Chloromethane	4500	Not Detected	9200	Not Detected
Vinyl Chloride	1100	Not Detected	2900	Not Detected
1,3-Butadiene	1100	Not Detected	2500	Not Detected
Bromomethane	1100	Not Detected	4300	Not Detected
Chloroethane	4500	Not Detected	12000	Not Detected
Freon 11	1100	Not Detected	6300	Not Detected
Ethanol	4500	Not Detected	8400	Not Detected
Freon 113	1100	Not Detected	8600	Not Detected
1,1-Dichloroethene	1100	Not Detected	4400	Not Detected
Acetone	4500	Not Detected	11000	Not Detected
2-Propanol	4500	Not Detected	11000	Not Detected
Carbon Disulfide	1100	Not Detected	3500	Not Detected
3-Chloropropene	4500	Not Detected	14000	Not Detected
Methylene Chloride	1100	Not Detected	3900	Not Detected
Methyl tert-butyl ether	1100	Not Detected	4000	Not Detected
trans-1,2-Dichloroethene	1100	Not Detected	4400	Not Detected
Hexane	1100	1100000	3900	4000000
1,1-Dichloroethane	1100	Not Detected	4500	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4500	Not Detected	13000	Not Detected
cis-1,2-Dichloroethene	1100	Not Detected	4400	Not Detected
Tetrahydrofuran	1100	Not Detected	3300	Not Detected
Chloroform	1100	Not Detected	5500	Not Detected
1,1,1-Trichloroethane	1100	Not Detected	6100	Not Detected
Cyclohexane	1100	260000	3800	910000
Carbon Tetrachloride	1100	Not Detected	7000	Not Detected
2,2,4-Trimethylpentane	1100	350000	5200	1600000
Benzene	1100	120000	3600	380000
1,2-Dichloroethane	1100	Not Detected	4500	Not Detected
Heptane	1100	220000	4600	900000
Trichloroethene	1100	Not Detected	6000	Not Detected
1,2-Dichloropropane	1100	Not Detected	5200	Not Detected
1,4-Dioxane	4500	Not Detected	16000	Not Detected
Bromodichloromethane	1100	Not Detected	7500	Not Detected
cis-1,3-Dichloropropene	1100	Not Detected	5100	Not Detected
4-Methyl-2-pentanone	1100	Not Detected	4600	Not Detected
Toluene	1100	3400	4200	13000
trans-1,3-Dichloropropene	1100	Not Detected	5100	Not Detected
1,1,2-Trichloroethane	1100	Not Detected	6100	Not Detected
Tetrachloroethene	1100	Not Detected	7600	Not Detected
2-Hexanone	4500	Not Detected	18000	Not Detected

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Client Sample ID: SVE-1-2 Hour-090913

Lab ID#: 1309319A-01A

EPA METHOD TO-15 GC/MS

File Name:	**14092727**	**Date of Collection: 9/9/13 12:34:00 PM**	
Dil. Factor:	**224**	**Date of Analysis: 9/28/13 11:03 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1100	Not Detected	9500	Not Detected
1,2-Dibromoethane (EDB)	1100	Not Detected	8600	Not Detected
Chlorobenzene	1100	Not Detected	5200	Not Detected
Ethyl Benzene	1100	69000	4900	300000
m,p-Xylene	1100	64000	4900	280000
o-Xylene	1100	Not Detected	4900	Not Detected
Styrene	1100	Not Detected	4800	Not Detected
Bromoform	1100	Not Detected	12000	Not Detected
Cumene	1100	3300	5500	16000
1,1,2,2-Tetrachloroethane	1100	Not Detected	7700	Not Detected
Propylbenzene	1100	7900	5500	39000
4-Ethyltoluene	1100	8700	5500	43000
1,3,5-Trimethylbenzene	1100	4600	5500	22000
1,2,4-Trimethylbenzene	1100	19000	5500	93000
1,3-Dichlorobenzene	1100	Not Detected	6700	Not Detected
1,4-Dichlorobenzene	1100	Not Detected	6700	Not Detected
alpha-Chlorotoluene	1100	Not Detected	5800	Not Detected
1,2-Dichlorobenzene	1100	Not Detected	6700	Not Detected
1,2,4-Trichlorobenzene	4500	Not Detected	33000	Not Detected
Hexachlorobutadiene	4500	Not Detected	48000	Not Detected
TPH ref. to Gasoline (MW=100)	22000	15000000	92000	60000000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	127	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	93	70-130

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Client Sample ID: SVE-1-2 Hour-091013

Lab ID#: 1309319A-02A

EPA METHOD TO-15 GC/MS

File Name:	**14092725**	**Date of Collection:**	**9/10/13 11:05:00 AM**
Dil. Factor:	**5.76**	**Date of Analysis:**	**9/28/13 10:14 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	29	Not Detected	140	Not Detected
Freon 114	29	Not Detected	200	Not Detected
Chloromethane	120	Not Detected	240	Not Detected
Vinyl Chloride	29	Not Detected	74	Not Detected
1,3-Butadiene	29	Not Detected	64	Not Detected
Bromomethane	29	Not Detected	110	Not Detected
Chloroethane	120	Not Detected	300	Not Detected
Freon 11	29	Not Detected	160	Not Detected
Ethanol	120	Not Detected	220	Not Detected
Freon 113	29	Not Detected	220	Not Detected
1,1-Dichloroethene	29	Not Detected	110	Not Detected
Acetone	120	Not Detected	270	Not Detected
2-Propanol	120	Not Detected	280	Not Detected
Carbon Disulfide	29	Not Detected	90	Not Detected
3-Chloropropene	120	Not Detected	360	Not Detected
Methylene Chloride	29	Not Detected	100	Not Detected
Methyl tert-butyl ether	29	Not Detected	100	Not Detected
trans-1,2-Dichloroethene	29	Not Detected	110	Not Detected
Hexane	29	110000 E	100	380000 E
1,1-Dichloroethane	29	Not Detected	120	Not Detected
2-Butanone (Methyl Ethyl Ketone)	120	Not Detected	340	Not Detected
cis-1,2-Dichloroethene	29	Not Detected	110	Not Detected
Tetrahydrofuran	29	Not Detected	85	Not Detected
Chloroform	29	Not Detected	140	Not Detected
1,1,1-Trichloroethane	29	Not Detected	160	Not Detected
Cyclohexane	29	26000	99	90000
Carbon Tetrachloride	29	Not Detected	180	Not Detected
2,2,4-Trimethylpentane	29	36000 E	130	170000 E
Benzene	29	11000	92	34000
1,2-Dichloroethane	29	Not Detected	120	Not Detected
Heptane	29	20000	120	82000
Trichloroethene	29	Not Detected	150	Not Detected
1,2-Dichloropropane	29	Not Detected	130	Not Detected
1,4-Dioxane	120	Not Detected	420	Not Detected
Bromodichloromethane	29	Not Detected	190	Not Detected
cis-1,3-Dichloropropene	29	Not Detected	130	Not Detected
4-Methyl-2-pentanone	29	Not Detected	120	Not Detected
Toluene	29	260	110	1000
trans-1,3-Dichloropropene	29	Not Detected	130	Not Detected
1,1,2-Trichloroethane	29	Not Detected	160	Not Detected
Tetrachloroethene	29	Not Detected	200	Not Detected
2-Hexanone	120	Not Detected	470	Not Detected

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Client Sample ID: SVE-1-2 Hour-091013

Lab ID#: 1309319A-02A

EPA METHOD TO-15 GC/MS

File Name:	**14092725**	**Date of Collection: 9/10/13 11:05:00 AM**	
Dil. Factor:	**5.76**	**Date of Analysis: 9/28/13 10:14 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	29	Not Detected	240	Not Detected
1,2-Dibromoethane (EDB)	29	Not Detected	220	Not Detected
Chlorobenzene	29	Not Detected	130	Not Detected
Ethyl Benzene	29	3800	120	16000
m,p-Xylene	29	3000	120	13000
o-Xylene	29	Not Detected	120	Not Detected
Styrene	29	Not Detected	120	Not Detected
Bromoform	29	Not Detected	300	Not Detected
Cumene	29	160	140	800
1,1,2,2-Tetrachloroethane	29	Not Detected	200	Not Detected
Propylbenzene	29	300	140	1500
4-Ethyltoluene	29	280	140	1400
1,3,5-Trimethylbenzene	29	140	140	690
1,2,4-Trimethylbenzene	29	510	140	2500
1,3-Dichlorobenzene	29	Not Detected	170	Not Detected
1,4-Dichlorobenzene	29	Not Detected	170	Not Detected
alpha-Chlorotoluene	29	Not Detected	150	Not Detected
1,2-Dichlorobenzene	29	Not Detected	170	Not Detected
1,2,4-Trichlorobenzene	120	Not Detected	850	Not Detected
Hexachlorobutadiene	120	Not Detected	1200	Not Detected
TPH ref. to Gasoline (MW=100)	580	1400000	2400	5700000

E = Exceeds instrument calibration range.
Q = Exceeds Quality Control limits of 70% to 130%, due to matrix effects.
Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	174 Q	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	93	70-130

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Client Sample ID: SVE-1-4 Hour-091013

Lab ID#: 1309319A-03A

EPA METHOD TO-15 GC/MS

File Name:	**14092726**	**Date of Collection: 9/10/13 1:45:00 PM**	
Dil. Factor:	**39.2**	**Date of Analysis: 9/28/13 10:40 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	200	Not Detected	970	Not Detected
Freon 114	200	Not Detected	1400	Not Detected
Chloromethane	780	Not Detected	1600	Not Detected
Vinyl Chloride	200	Not Detected	500	Not Detected
1,3-Butadiene	200	Not Detected	430	Not Detected
Bromomethane	200	Not Detected	760	Not Detected
Chloroethane	780	Not Detected	2100	Not Detected
Freon 11	200	Not Detected	1100	Not Detected
Ethanol	780	Not Detected	1500	Not Detected
Freon 113	200	Not Detected	1500	Not Detected
1,1-Dichloroethene	200	Not Detected	780	Not Detected
Acetone	780	Not Detected	1900	Not Detected
2-Propanol	780	Not Detected	1900	Not Detected
Carbon Disulfide	200	Not Detected	610	Not Detected
3-Chloropropene	780	Not Detected	2400	Not Detected
Methylene Chloride	200	Not Detected	680	Not Detected
Methyl tert-butyl ether	200	Not Detected	710	Not Detected
trans-1,2-Dichloroethene	200	Not Detected	780	Not Detected
Hexane	200	180000	690	630000
1,1-Dichloroethane	200	Not Detected	790	Not Detected
2-Butanone (Methyl Ethyl Ketone)	780	Not Detected	2300	Not Detected
cis-1,2-Dichloroethene	200	Not Detected	780	Not Detected
Tetrahydrofuran	200	Not Detected	580	Not Detected
Chloroform	200	Not Detected	960	Not Detected
1,1,1-Trichloroethane	200	Not Detected	1100	Not Detected
Cyclohexane	200	41000	670	140000
Carbon Tetrachloride	200	Not Detected	1200	Not Detected
2,2,4-Trimethylpentane	200	59000	920	280000
Benzene	200	17000	630	55000
1,2-Dichloroethane	200	Not Detected	790	Not Detected
Heptane	200	34000	800	140000
Trichloroethene	200	Not Detected	1000	Not Detected
1,2-Dichloropropane	200	Not Detected	900	Not Detected
1,4-Dioxane	780	Not Detected	2800	Not Detected
Bromodichloromethane	200	Not Detected	1300	Not Detected
cis-1,3-Dichloropropene	200	Not Detected	890	Not Detected
4-Methyl-2-pentanone	200	Not Detected	800	Not Detected
Toluene	200	480	740	1800
trans-1,3-Dichloropropene	200	Not Detected	890	Not Detected
1,1,2-Trichloroethane	200	Not Detected	1100	Not Detected
Tetrachloroethene	200	Not Detected	1300	Not Detected
2-Hexanone	780	Not Detected	3200	Not Detected

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Client Sample ID: SVE-1-4 Hour-091013

Lab ID#: 1309319A-03A

EPA METHOD TO-15 GC/MS

File Name:	**14092726**	**Date of Collection: 9/10/13 1:45:00 PM**	
Dil. Factor:	**39.2**	**Date of Analysis: 9/28/13 10:40 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	200	Not Detected	1700	Not Detected
1,2-Dibromoethane (EDB)	200	Not Detected	1500	Not Detected
Chlorobenzene	200	Not Detected	900	Not Detected
Ethyl Benzene	200	8600	850	38000
m,p-Xylene	200	6900	850	30000
o-Xylene	200	Not Detected	850	Not Detected
Styrene	200	Not Detected	830	Not Detected
Bromoform	200	Not Detected	2000	Not Detected
Cumene	200	410	960	2000
1,1,2,2-Tetrachloroethane	200	Not Detected	1300	Not Detected
Propylbenzene	200	770	960	3800
4-Ethyltoluene	200	660	960	3300
1,3,5-Trimethylbenzene	200	360	960	1800
1,2,4-Trimethylbenzene	200	1200	960	6000
1,3-Dichlorobenzene	200	Not Detected	1200	Not Detected
1,4-Dichlorobenzene	200	Not Detected	1200	Not Detected
alpha-Chlorotoluene	200	Not Detected	1000	Not Detected
1,2-Dichlorobenzene	200	Not Detected	1200	Not Detected
1,2,4-Trichlorobenzene	780	Not Detected	5800	Not Detected
Hexachlorobutadiene	780	Not Detected	8400	Not Detected
TPH ref. to Gasoline (MW=100)	3900	2200000	16000	9100000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	128	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	92	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1309319A-04A

EPA METHOD TO-15 GC/MS

File Name:	**14092706**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/27/13 03:46 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	5.0	Not Detected	25	Not Detected
Freon 114	5.0	Not Detected	35	Not Detected
Chloromethane	20	Not Detected	41	Not Detected
Vinyl Chloride	5.0	Not Detected	13	Not Detected
1,3-Butadiene	5.0	Not Detected	11	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	20	Not Detected	53	Not Detected
Freon 11	5.0	Not Detected	28	Not Detected
Ethanol	20	Not Detected	38	Not Detected
Freon 113	5.0	Not Detected	38	Not Detected
1,1-Dichloroethene	5.0	Not Detected	20	Not Detected
Acetone	20	Not Detected	48	Not Detected
2-Propanol	20	Not Detected	49	Not Detected
Carbon Disulfide	5.0	Not Detected	16	Not Detected
3-Chloropropene	20	Not Detected	63	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	5.0	Not Detected	18	Not Detected
trans-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Hexane	5.0	Not Detected	18	Not Detected
1,1-Dichloroethane	5.0	Not Detected	20	Not Detected
2-Butanone (Methyl Ethyl Ketone)	20	Not Detected	59	Not Detected
cis-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Tetrahydrofuran	5.0	Not Detected	15	Not Detected
Chloroform	5.0	Not Detected	24	Not Detected
1,1,1-Trichloroethane	5.0	Not Detected	27	Not Detected
Cyclohexane	5.0	Not Detected	17	Not Detected
Carbon Tetrachloride	5.0	Not Detected	31	Not Detected
2,2,4-Trimethylpentane	5.0	Not Detected	23	Not Detected
Benzene	5.0	Not Detected	16	Not Detected
1,2-Dichloroethane	5.0	Not Detected	20	Not Detected
Heptane	5.0	Not Detected	20	Not Detected
Trichloroethene	5.0	Not Detected	27	Not Detected
1,2-Dichloropropane	5.0	Not Detected	23	Not Detected
1,4-Dioxane	20	Not Detected	72	Not Detected
Bromodichloromethane	5.0	Not Detected	34	Not Detected
cis-1,3-Dichloropropene	5.0	Not Detected	23	Not Detected
4-Methyl-2-pentanone	5.0	Not Detected	20	Not Detected
Toluene	5.0	Not Detected	19	Not Detected
trans-1,3-Dichloropropene	5.0	Not Detected	23	Not Detected
1,1,2-Trichloroethane	5.0	Not Detected	27	Not Detected
Tetrachloroethene	5.0	Not Detected	34	Not Detected
2-Hexanone	20	Not Detected	82	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 1309319A-04A

EPA METHOD TO-15 GC/MS

File Name:	**14092706**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/27/13 03:46 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	5.0	Not Detected	42	Not Detected
1,2-Dibromoethane (EDB)	5.0	Not Detected	38	Not Detected
Chlorobenzene	5.0	Not Detected	23	Not Detected
Ethyl Benzene	5.0	Not Detected	22	Not Detected
m,p-Xylene	5.0	Not Detected	22	Not Detected
o-Xylene	5.0	Not Detected	22	Not Detected
Styrene	5.0	Not Detected	21	Not Detected
Bromoform	5.0	Not Detected	52	Not Detected
Cumene	5.0	Not Detected	24	Not Detected
1,1,2,2-Tetrachloroethane	5.0	Not Detected	34	Not Detected
Propylbenzene	5.0	Not Detected	24	Not Detected
4-Ethyltoluene	5.0	Not Detected	24	Not Detected
1,3,5-Trimethylbenzene	5.0	Not Detected	24	Not Detected
1,2,4-Trimethylbenzene	5.0	Not Detected	24	Not Detected
1,3-Dichlorobenzene	5.0	Not Detected	30	Not Detected
1,4-Dichlorobenzene	5.0	Not Detected	30	Not Detected
alpha-Chlorotoluene	5.0	Not Detected	26	Not Detected
1,2-Dichlorobenzene	5.0	Not Detected	30	Not Detected
1,2,4-Trichlorobenzene	20	Not Detected	150	Not Detected
Hexachlorobutadiene	20	Not Detected	210	Not Detected
TPH ref. to Gasoline (MW=100)	100	Not Detected	410	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	92	70-130

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Client Sample ID: CCV

Lab ID#: 1309319A-05A

EPA METHOD TO-15 GC/MS

File Name:	**14092702**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 9/27/13 01:53 PM**

Compound	%Recovery
Freon 12	101
Freon 114	94
Chloromethane	104
Vinyl Chloride	103
1,3-Butadiene	103
Bromomethane	98
Chloroethane	102
Freon 11	102
Ethanol	94
Freon 113	85
1,1-Dichloroethene	97
Acetone	99
2-Propanol	97
Carbon Disulfide	79
3-Chloropropene	95
Methylene Chloride	98
Methyl tert-butyl ether	102
trans-1,2-Dichloroethene	99
Hexane	105
1,1-Dichloroethane	104
2-Butanone (Methyl Ethyl Ketone)	105
cis-1,2-Dichloroethene	101
Tetrahydrofuran	100
Chloroform	104
1,1,1-Trichloroethane	104
Cyclohexane	103
Carbon Tetrachloride	102
2,2,4-Trimethylpentane	105
Benzene	99
1,2-Dichloroethane	106
Heptane	104
Trichloroethene	97
1,2-Dichloropropane	100
1,4-Dioxane	96
Bromodichloromethane	96
cis-1,3-Dichloropropene	98
4-Methyl-2-pentanone	100
Toluene	98
trans-1,3-Dichloropropene	98
1,1,2-Trichloroethane	95
Tetrachloroethene	91
2-Hexanone	92

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Client Sample ID: CCV

Lab ID#: 1309319A-05A

EPA METHOD TO-15 GC/MS

File Name:	**14092702**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/27/13 01:53 PM**	

Compound	%Recovery
Dibromochloromethane	92
1,2-Dibromoethane (EDB)	98
Chlorobenzene	94
Ethyl Benzene	92
m,p-Xylene	92
o-Xylene	96
Styrene	98
Bromoform	86
Cumene	104
1,1,2,2-Tetrachloroethane	96
Propylbenzene	105
4-Ethyltoluene	106
1,3,5-Trimethylbenzene	105
1,2,4-Trimethylbenzene	103
1,3-Dichlorobenzene	94
1,4-Dichlorobenzene	93
alpha-Chlorotoluene	107
1,2-Dichlorobenzene	92
1,2,4-Trichlorobenzene	112
Hexachlorobutadiene	116
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: LCS

Lab ID#: 1309319A-06A

EPA METHOD TO-15 GC/MS

File Name:	**14092703**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/27/13 02:30 PM**	

Compound	%Recovery	Method Limits
Freon 12	99	70-130
Freon 114	92	70-130
Chloromethane	108	70-130
Vinyl Chloride	101	70-130
1,3-Butadiene	102	70-130
Bromomethane	88	70-130
Chloroethane	91	70-130
Freon 11	98	70-130
Ethanol	90	70-130
Freon 113	82	70-130
1,1-Dichloroethene	102	70-130
Acetone	96	70-130
2-Propanol	87	70-130
Carbon Disulfide	97	70-130
3-Chloropropene	95	70-130
Methylene Chloride	96	70-130
Methyl tert-butyl ether	95	70-130
trans-1,2-Dichloroethene	104	70-130
Hexane	96	70-130
1,1-Dichloroethane	100	70-130
2-Butanone (Methyl Ethyl Ketone)	97	70-130
cis-1,2-Dichloroethene	95	70-130
Tetrahydrofuran	88	70-130
Chloroform	102	70-130
1,1,1-Trichloroethane	98	70-130
Cyclohexane	96	70-130
Carbon Tetrachloride	94	70-130
2,2,4-Trimethylpentane	96	70-130
Benzene	94	70-130
1,2-Dichloroethane	101	70-130
Heptane	94	70-130
Trichloroethene	94	70-130
1,2-Dichloropropane	94	70-130
1,4-Dioxane	82	70-130
Bromodichloromethane	89	70-130
cis-1,3-Dichloropropene	86	70-130
4-Methyl-2-pentanone	81	70-130
Toluene	91	70-130
trans-1,3-Dichloropropene	85	70-130
1,1,2-Trichloroethane	89	70-130
Tetrachloroethene	85	70-130
2-Hexanone	66 Q	70-130

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Client Sample ID: LCS

Lab ID#: 1309319A-06A

EPA METHOD TO-15 GC/MS

File Name:	**14092703**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/27/13 02:30 PM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	79	70-130
1,2-Dibromoethane (EDB)	91	70-130
Chlorobenzene	90	70-130
Ethyl Benzene	86	70-130
m,p-Xylene	84	70-130
o-Xylene	87	70-130
Styrene	78	70-130
Bromoform	72	70-130
Cumene	95	70-130
1,1,2,2-Tetrachloroethane	90	70-130
Propylbenzene	96	70-130
4-Ethyltoluene	92	70-130
1,3,5-Trimethylbenzene	94	70-130
1,2,4-Trimethylbenzene	90	70-130
1,3-Dichlorobenzene	90	70-130
1,4-Dichlorobenzene	87	70-130
alpha-Chlorotoluene	76	70-130
1,2-Dichlorobenzene	90	70-130
1,2,4-Trichlorobenzene	114	70-130
Hexachlorobutadiene	121	70-130
TPH ref. to Gasoline (MW=100)	Not Spiked	

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	95	70-130

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Client Sample ID: LCSD

Lab ID#: 1309319A-06AA

EPA METHOD TO-15 GC/MS

File Name:	**14092704**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/27/13 02:57 PM**	

Compound	%Recovery	Method Limits
Freon 12	97	70-130
Freon 114	89	70-130
Chloromethane	107	70-130
Vinyl Chloride	107	70-130
1,3-Butadiene	104	70-130
Bromomethane	90	70-130
Chloroethane	89	70-130
Freon 11	97	70-130
Ethanol	80	70-130
Freon 113	83	70-130
1,1-Dichloroethene	100	70-130
Acetone	92	70-130
2-Propanol	86	70-130
Carbon Disulfide	96	70-130
3-Chloropropene	100	70-130
Methylene Chloride	94	70-130
Methyl tert-butyl ether	91	70-130
trans-1,2-Dichloroethene	103	70-130
Hexane	95	70-130
1,1-Dichloroethane	96	70-130
2-Butanone (Methyl Ethyl Ketone)	94	70-130
cis-1,2-Dichloroethene	94	70-130
Tetrahydrofuran	88	70-130
Chloroform	100	70-130
1,1,1-Trichloroethane	97	70-130
Cyclohexane	95	70-130
Carbon Tetrachloride	95	70-130
2,2,4-Trimethylpentane	93	70-130
Benzene	94	70-130
1,2-Dichloroethane	101	70-130
Heptane	92	70-130
Trichloroethene	92	70-130
1,2-Dichloropropane	92	70-130
1,4-Dioxane	80	70-130
Bromodichloromethane	89	70-130
cis-1,3-Dichloropropene	86	70-130
4-Methyl-2-pentanone	79	70-130
Toluene	90	70-130
trans-1,3-Dichloropropene	85	70-130
1,1,2-Trichloroethane	86	70-130
Tetrachloroethene	84	70-130
2-Hexanone	68 Q	70-130

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Client Sample ID: LCSD

Lab ID#: 1309319A-06AA

EPA METHOD TO-15 GC/MS

File Name:	**14092704**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/27/13 02:57 PM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	78	70-130
1,2-Dibromoethane (EDB)	90	70-130
Chlorobenzene	89	70-130
Ethyl Benzene	86	70-130
m,p-Xylene	83	70-130
o-Xylene	85	70-130
Styrene	78	70-130
Bromoform	71	70-130
Cumene	92	70-130
1,1,2,2-Tetrachloroethane	92	70-130
Propylbenzene	96	70-130
4-Ethyltoluene	91	70-130
1,3,5-Trimethylbenzene	93	70-130
1,2,4-Trimethylbenzene	90	70-130
1,3-Dichlorobenzene	87	70-130
1,4-Dichlorobenzene	86	70-130
alpha-Chlorotoluene	77	70-130
1,2-Dichlorobenzene	90	70-130
1,2,4-Trichlorobenzene	118	70-130
Hexachlorobutadiene	120	70-130
TPH ref. to Gasoline (MW=100)	Not Spiked	

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	96	70-130

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Monday, September 16, 2013

Brian Pletcher
URS - Portland
111 SW Columbia STE 1500
Portland, OR 97201-5850

RE: Shell Seattle / [none]

Enclosed are the results of analyses for work order A3I0252, which was received by the laboratory on 9/12/2013 at 4:41:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: dthomas@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

Darwin Thomas, Business Development Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/16/13 14:51

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
1-SS	A3I0252-01	Soil	09/12/13 15:00	09/12/13 16:41
2-SS	A3I0252-02	Soil	09/12/13 15:10	09/12/13 16:41
3-SS	A3I0252-03	Soil	09/12/13 15:20	09/12/13 16:41
4-SS	A3I0252-04	Soil	09/12/13 15:25	09/12/13 16:41
5-SS	A3I0252-05	Soil	09/12/13 16:10	09/12/13 16:41
6-SS	A3I0252-06	Soil	09/12/13 16:25	09/12/13 16:41
7-SS	A3I0252-07	Soil	09/12/13 16:30	09/12/13 16:41

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Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/16/13 14:51

ANALYTICAL SAMPLE RESULTS

Diesel and Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
1-SS (A3I0252-01)			**Matrix: Soil**		**Batch: 3090288**			
Diesel	**1620**	---	25.0	mg/kg dry	1	09/13/13 12:20	NWTPH-Dx	
Oil	ND	---	50.0	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 87 %*	*Limits: 50-150 %*	"	"	"	
2-SS (A3I0252-02)			**Matrix: Soil**		**Batch: 3090288**			
Diesel	**5790**	---	218	mg/kg dry	10	09/13/13 11:43	NWTPH-Dx	
Oil	ND	---	436	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 111 %*	*Limits: 50-150 %*	"	"	"	*S-05*
3-SS (A3I0252-03RE1)			**Matrix: Soil**		**Batch: 3090288**			
Diesel	**4780**	---	196	mg/kg dry	10	09/13/13 13:33	NWTPH-Dx	
Oil	ND	---	392	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 108 %*	*Limits: 50-150 %*	"	"	"	*S-05*
4-SS (A3I0252-04)			**Matrix: Soil**		**Batch: 3090288**			
Diesel	**25700**	---	863	mg/kg dry	40	09/13/13 12:38	NWTPH-Dx	
Oil	ND	---	1730	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: %*	*Limits: 50-150 %*	"	"	"	*S-01*
5-SS (A3I0252-05)			**Matrix: Soil**		**Batch: 3090288**			
Diesel	ND	---	97.5	mg/kg dry	5	09/13/13 13:15	NWTPH-Dx	
Oil	**281**	---	195	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 91 %*	*Limits: 50-150 %*	"	"	"	*S-05*
6-SS (A3I0252-06RE1)			**Matrix: Soil**		**Batch: 3090288**			
Diesel	**4920**	---	197	mg/kg dry	10	09/13/13 13:33	NWTPH-Dx	
Oil	ND	---	394	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 80 %*	*Limits: 50-150 %*	"	"	"	*S-05*
7-SS (A3I0252-07)			**Matrix: Soil**		**Batch: 3090288**			
Diesel	ND	---	199	mg/kg dry	10	09/13/13 12:20	NWTPH-Dx	
Oil	**656**	---	397	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 103 %*	*Limits: 50-150 %*	"	"	"	*S-05*

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/16/13 14:51

ANALYTICAL SAMPLE RESULTS

BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
1-SS (A3I0252-01)			**Matrix: Soil**		**Batch: 3090280**			**V-15**
Benzene	ND	---	0.0120	mg/kg dry	50	09/13/13 11:36	5035/8260B	
Toluene	**0.154**	---	0.0480	"	"	"	"	
Ethylbenzene	**0.313**	---	0.0240	"	"	"	"	
Xylenes, total	**2.02**	---	0.0720	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 93 %*	*Limits: 70-130 %*	1	"	"	
1,4-Difluorobenzene (Surr)			*102 %*	*Limits: 70-130 %*	"	"	"	
Toluene-d8 (Surr)			*97 %*	*Limits: 70-130 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*91 %*	*Limits: 70-130 %*	"	"	"	
2-SS (A3I0252-02)			**Matrix: Soil**		**Batch: 3090280**			**V-15**
Benzene	**0.0453**	---	0.0129	mg/kg dry	50	09/13/13 11:11	5035/8260B	
Toluene	**0.895**	---	0.0514	"	"	"	"	
Ethylbenzene	**1.05**	---	0.0257	"	"	"	"	
Xylenes, total	**6.23**	---	0.0772	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 98 %*	*Limits: 70-130 %*	1	"	"	
1,4-Difluorobenzene (Surr)			*106 %*	*Limits: 70-130 %*	"	"	"	
Toluene-d8 (Surr)			*95 %*	*Limits: 70-130 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*87 %*	*Limits: 70-130 %*	"	"	"	
3-SS (A3I0252-03)			**Matrix: Soil**		**Batch: 3090280**			**V-15**
Benzene	**0.0170**	---	0.0125	mg/kg dry	50	09/13/13 12:28	5035/8260B	
Toluene	**1.07**	---	0.0500	"	"	"	"	
Ethylbenzene	**1.49**	---	0.0250	"	"	"	"	
Xylenes, total	**10.6**	---	0.0750	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 91 %*	*Limits: 70-130 %*	1	"	"	
1,4-Difluorobenzene (Surr)			*101 %*	*Limits: 70-130 %*	"	"	"	
Toluene-d8 (Surr)			*95 %*	*Limits: 70-130 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*92 %*	*Limits: 70-130 %*	"	"	"	
4-SS (A3I0252-04)			**Matrix: Soil**		**Batch: 3090277**			**V-15**
Benzene	**0.911**	---	0.0499	mg/kg dry	200	09/13/13 12:24	5035/8260B	
Toluene	**16.3**	---	0.199	"	"	"	"	
Ethylbenzene	**12.9**	---	0.0997	"	"	"	"	
Xylenes, total	**73.3**	---	0.299	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 111 %*	*Limits: 70-130 %*	1	"	"	
1,4-Difluorobenzene (Surr)			*109 %*	*Limits: 70-130 %*	"	"	"	
Toluene-d8 (Surr)			*111 %*	*Limits: 70-130 %*	"	"	"	

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URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/16/13 14:51

ANALYTICAL SAMPLE RESULTS

BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
4-SS (A3I0252-04)			**Matrix: Soil**		**Batch: 3090277**			**V-15**
Surrogate: 4-Bromofluorobenzene (Surr)			*Recovery: 97 %*	*Limits: 70-130 %*	1	"	5035/8260B	
5-SS (A3I0252-05)			**Matrix: Soil**		**Batch: 3090277**			**V-15**
Benzene	ND	---	0.0132	mg/kg dry	50	09/13/13 10:38	5035/8260B	
Toluene	**0.0737**	---	0.0530	"	"	"	"	
Ethylbenzene	**0.0350**	---	0.0265	"	"	"	"	
Xylenes, total	**0.159**	---	0.0795	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 104 %*	*Limits: 70-130 %*	1	"	"	
1,4-Difluorobenzene (Surr)			*101 %*	*Limits: 70-130 %*	"	"	"	
Toluene-d8 (Surr)			*106 %*	*Limits: 70-130 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*100 %*	*Limits: 70-130 %*	"	"	"	
6-SS (A3I0252-06)			**Matrix: Soil**		**Batch: 3090277**			**V-15**
Benzene	ND	---	0.0103	mg/kg dry	50	09/13/13 11:04	5035/8260B	
Toluene	**0.268**	---	0.0410	"	"	"	"	
Ethylbenzene	**0.596**	---	0.0205	"	"	"	"	
Xylenes, total	**4.10**	---	0.0615	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 106 %*	*Limits: 70-130 %*	1	"	"	
1,4-Difluorobenzene (Surr)			*102 %*	*Limits: 70-130 %*	"	"	"	
Toluene-d8 (Surr)			*107 %*	*Limits: 70-130 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*97 %*	*Limits: 70-130 %*	"	"	"	
7-SS (A3I0252-07)			**Matrix: Soil**		**Batch: 3090277**			**V-15**
Benzene	ND	---	0.0120	mg/kg dry	50	09/13/13 11:32	5035/8260B	
Toluene	ND	---	0.0480	"	"	"	"	
Ethylbenzene	ND	---	0.0240	"	"	"	"	
Xylenes, total	ND	---	0.0720	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 107 %*	*Limits: 70-130 %*	1	"	"	
1,4-Difluorobenzene (Surr)			*105 %*	*Limits: 70-130 %*	"	"	"	
Toluene-d8 (Surr)			*106 %*	*Limits: 70-130 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*96 %*	*Limits: 70-130 %*	"	"	"	

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URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/16/13 14:51

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
1-SS (A3I0252-01)			**Matrix: Soil**		**Batch: 3090289**			
% Solids	**97.0**	---	1.00	% by Weight	1	09/13/13 12:49	Apex SOP	
2-SS (A3I0252-02)			**Matrix: Soil**		**Batch: 3090289**			
% Solids	**90.0**	---	1.00	% by Weight	1	09/13/13 12:49	Apex SOP	
3-SS (A3I0252-03)			**Matrix: Soil**		**Batch: 3090289**			
% Solids	**93.8**	---	1.00	% by Weight	1	09/13/13 12:49	Apex SOP	
4-SS (A3I0252-04)			**Matrix: Soil**		**Batch: 3090289**			
% Solids	**90.3**	---	1.00	% by Weight	1	09/13/13 12:49	Apex SOP	
5-SS (A3I0252-05)			**Matrix: Soil**		**Batch: 3090289**			
% Solids	**89.6**	---	1.00	% by Weight	1	09/13/13 12:49	Apex SOP	
6-SS (A3I0252-06)			**Matrix: Soil**		**Batch: 3090289**			
% Solids	**97.7**	---	1.00	% by Weight	1	09/13/13 12:49	Apex SOP	
7-SS (A3I0252-07)			**Matrix: Soil**		**Batch: 3090289**			
% Solids	**94.9**	---	1.00	% by Weight	1	09/13/13 12:49	Apex SOP	

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URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/16/13 14:51

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3090288 - EPA 3546 (Fuels)							**Soil**					
Blank (3090288-BLK1)					Prepared: 09/13/13 09:45 Analyzed: 09/13/13 11:43							
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	50.0	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 93 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (3090288-BS1)					Prepared: 09/13/13 09:45 Analyzed: 09/13/13 12:01							
NWTPH-Dx												
Diesel	115	---	25.0	mg/kg wet	1	125	---	92	76-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 93 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (3090288-DUP1)					Prepared: 09/13/13 09:45 Analyzed: 09/13/13 12:56							
QC Source Sample: 7-SS (A3I0252-07)												
NWTPH-Dx												
Diesel	ND	---	204	mg/kg dry	10	---	ND	---	---	---	30%	
Oil	**809**	---	408	"	"	---	656	---	---	21	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 104 %*	*Limits: 50-150 %*			*Dilution: 10x*					*S-05*

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URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/16/13 14:51

QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3090277 - EPA 5035A							**Soil**					
Blank (3090277-BLK1)					Prepared: 09/13/13 08:00 Analyzed: 09/13/13 09:46							
5035/8260B												
Benzene	ND	---	0.00833	mg/kg wet	50	---	---	---	---	---	---	
Toluene	ND	---	0.0333	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.0167	"	"	---	---	---	---	---	---	
Xylenes, total	ND	---	0.0500	"	"	---	---	---	---	---	---	
Surr: Dibromofluoromethane (Surr)			*Recovery: 105 %*		*Limits: 70-130 %*		*Dilution: 1x*					
1,4-Difluorobenzene (Surr)			*101 %*		*70-130 %*		*"*					
Toluene-d8 (Surr)			*102 %*		*70-130 %*		*"*					
4-Bromofluorobenzene (Surr)			*101 %*		*70-130 %*		*"*					
LCS (3090277-BS1)					Prepared: 09/13/13 08:00 Analyzed: 09/13/13 08:55							
5035/8260B												
Benzene	1.13	---	0.0125	mg/kg wet	50	1.00	---	113	65-135%	---	---	
Toluene	1.04	---	0.0500	"	"	"	---	104	"	---	---	
Ethylbenzene	1.07	---	0.0250	"	"	"	---	107	"	---	---	
Xylenes, total	3.11	---	0.0750	"	"	3.00	---	104	"	---	---	
Surr: Dibromofluoromethane (Surr)			*Recovery: 107 %*		*Limits: 70-130 %*		*Dilution: 1x*					
1,4-Difluorobenzene (Surr)			*104 %*		*70-130 %*		*"*					
Toluene-d8 (Surr)			*104 %*		*70-130 %*		*"*					
4-Bromofluorobenzene (Surr)			*100 %*		*70-130 %*		*"*					
Duplicate (3090277-DUP1)					Prepared: 09/13/13 09:30 Analyzed: 09/13/13 11:58							
QC Source Sample: 7-SS (A3I0252-07)												
5035/8260B												
Benzene	ND	---	0.0108	mg/kg dry	50	---	ND	---	---	---	30%	
Toluene	ND	---	0.0433	"	"	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	0.0216	"	"	---	ND	---	---	---	30%	
Xylenes, total	ND	---	0.0649	"	"	---	ND	---	---	---	30%	
Surr: Dibromofluoromethane (Surr)			*Recovery: 107 %*		*Limits: 70-130 %*		*Dilution: 1x*					
1,4-Difluorobenzene (Surr)			*107 %*		*70-130 %*		*"*					
Toluene-d8 (Surr)			*105 %*		*70-130 %*		*"*					
4-Bromofluorobenzene (Surr)			*100 %*		*70-130 %*		*"*					

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URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/16/13 14:51

QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3090280 - EPA 5035A							**Soil**					
Blank (3090280-BLK1)					Prepared: 09/13/13 08:00 Analyzed: 09/13/13 10:46							
5035/8260B												
Benzene	ND	---	0.00833	mg/kg wet	50	---	---	---	---	---	---	
Toluene	ND	---	0.0333	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.0167	"	"	---	---	---	---	---	---	
Xylenes, total	ND	---	0.0500	"	"	---	---	---	---	---	---	
Surr: Dibromofluoromethane (Surr)			*Recovery: 100 %*		*Limits: 70-130 %*		*Dilution: 1x*					
1,4-Difluorobenzene (Surr)			*105 %*		*70-130 %*		*"*					
Toluene-d8 (Surr)			*101 %*		*70-130 %*		*"*					
4-Bromofluorobenzene (Surr)			*92 %*		*70-130 %*		*"*					
LCS (3090280-BS1)					Prepared: 09/13/13 08:00 Analyzed: 09/13/13 09:29							
5035/8260B												
Benzene	1.04	---	0.0125	mg/kg wet	50	1.00	---	104	65-135%	---	---	
Toluene	0.990	---	0.0500	"	"	"	---	99	"	---	---	
Ethylbenzene	1.05	---	0.0250	"	"	"	---	105	"	---	---	
Xylenes, total	3.24	---	0.0750	"	"	3.00	---	108	"	---	---	
Surr: Dibromofluoromethane (Surr)			*Recovery: 103 %*		*Limits: 70-130 %*		*Dilution: 1x*					
1,4-Difluorobenzene (Surr)			*104 %*		*70-130 %*		*"*					
Toluene-d8 (Surr)			*99 %*		*70-130 %*		*"*					
4-Bromofluorobenzene (Surr)			*88 %*		*70-130 %*		*"*					
Duplicate (3090280-DUP1)					Prepared: 09/13/13 09:30 Analyzed: 09/13/13 12:02							
QC Source Sample: 1-SS (A3I0252-01)												
5035/8260B												
Benzene	ND	---	0.0121	mg/kg dry	50	---	ND	---	---	---	30%	
Toluene	**0.140**	---	0.0483	"	"	---	0.154	---	---	9	30%	
Ethylbenzene	**0.285**	---	0.0242	"	"	---	0.313	---	---	9	30%	
Xylenes, total	**1.91**	---	0.0725	"	"	---	2.02	---	---	6	30%	
Surr: Dibromofluoromethane (Surr)			*Recovery: 92 %*		*Limits: 70-130 %*		*Dilution: 1x*					
1,4-Difluorobenzene (Surr)			*101 %*		*70-130 %*		*"*					
Toluene-d8 (Surr)			*96 %*		*70-130 %*		*"*					
4-Bromofluorobenzene (Surr)			*92 %*		*70-130 %*		*"*					
Matrix Spike (3090280-MS1)					Prepared: 09/13/13 09:30 Analyzed: 09/13/13 12:53							

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URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/16/13 14:51

QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3090280 - EPA 5035A							**Soil**					
Matrix Spike (3090280-MS1)					Prepared: 09/13/13 09:30 Analyzed: 09/13/13 12:53							
QC Source Sample: 3-SS (A3I0252-03)												
5035/8260B												
Benzene	0.954	---	0.0125	mg/kg dry	50	0.999	0.0170	94	65-135%	---	---	
Toluene	2.02	---	0.0500	"	"	"	1.07	95	"	---	---	
Ethylbenzene	2.49	---	0.0250	"	"	"	1.49	100	"	---	---	
Xylenes, total	13.9	---	0.0750	"	"	3.00	10.6	109	"	---	---	

Surr: Dibromofluoromethane (Surr)	*Recovery: 94 %*	*Limits: 70-130 %*	*Dilution: 1x*
1,4-Difluorobenzene (Surr)	*101 %*	*70-130 %*	*"*
Toluene-d8 (Surr)	*98 %*	*70-130 %*	*"*
4-Bromofluorobenzene (Surr)	*91 %*	*70-130 %*	*"*

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URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/16/13 14:51

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3090289 - Total Solids (Dry Weight)									**Soil**			
Duplicate (3090289-DUP1)					Prepared: 09/13/13 10:08 Analyzed: 09/13/13 12:49							
QC Source Sample: 7-SS (A3I0252-07)												
Apex SOP												
% Solids	**94.1**	---	1.00	% by Weight	1	---	94.9	---	---	0.8	20%	

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URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/16/13 14:51

SAMPLE PREPARATION INFORMATION

Diesel and Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 3090288							
A3I0252-01	Soil	NWTPH-Dx	09/12/13 15:00	09/13/13 09:45	10.27g/5mL	10g/5mL	0.97
A3I0252-02	Soil	NWTPH-Dx	09/12/13 15:10	09/13/13 09:45	10.19g/5mL	10g/5mL	0.98
A3I0252-03RE1	Soil	NWTPH-Dx	09/12/13 15:20	09/13/13 09:45	10.87g/5mL	10g/5mL	0.92
A3I0252-04	Soil	NWTPH-Dx	09/12/13 15:25	09/13/13 09:45	10.27g/5mL	10g/5mL	0.97
A3I0252-05	Soil	NWTPH-Dx	09/12/13 16:10	09/13/13 09:45	11.45g/5mL	10g/5mL	0.87
A3I0252-06RE1	Soil	NWTPH-Dx	09/12/13 16:25	09/13/13 09:45	10.39g/5mL	10g/5mL	0.96
A3I0252-07	Soil	NWTPH-Dx	09/12/13 16:30	09/13/13 09:45	10.61g/5mL	10g/5mL	0.94

BTEX Compounds by EPA 8260B

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 3090277							
A3I0252-04	Soil	5035/8260B	09/12/13 15:25	09/13/13 09:30	12.448g/10mL	10g/10mL	0.80
A3I0252-05	Soil	5035/8260B	09/12/13 16:10	09/13/13 09:30	11.824g/10mL	10g/10mL	0.85
A3I0252-06	Soil	5035/8260B	09/12/13 16:25	09/13/13 09:30	12.847g/10mL	10g/10mL	0.78
A3I0252-07	Soil	5035/8260B	09/12/13 16:30	09/13/13 09:30	11.632g/10mL	10g/10mL	0.86
Batch: 3090280							
A3I0252-01	Soil	5035/8260B	09/12/13 15:00	09/13/13 09:30	11.096g/10mL	10g/10mL	0.90
A3I0252-02	Soil	5035/8260B	09/12/13 15:10	09/13/13 09:30	12.108g/10mL	10g/10mL	0.83
A3I0252-03	Soil	5035/8260B	09/12/13 15:20	09/13/13 09:30	11.417g/10mL	10g/10mL	0.88

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URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/16/13 14:51

Notes and Definitions

Qualifiers:

S-01	Surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference.
S-05	Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.
V-15	Sample aliquot was subsampled from the sample container. The subsampled aliquot was preserved in the laboratory within 48 hours of sampling.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepency with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

Darwin Thomas, Business Development Director

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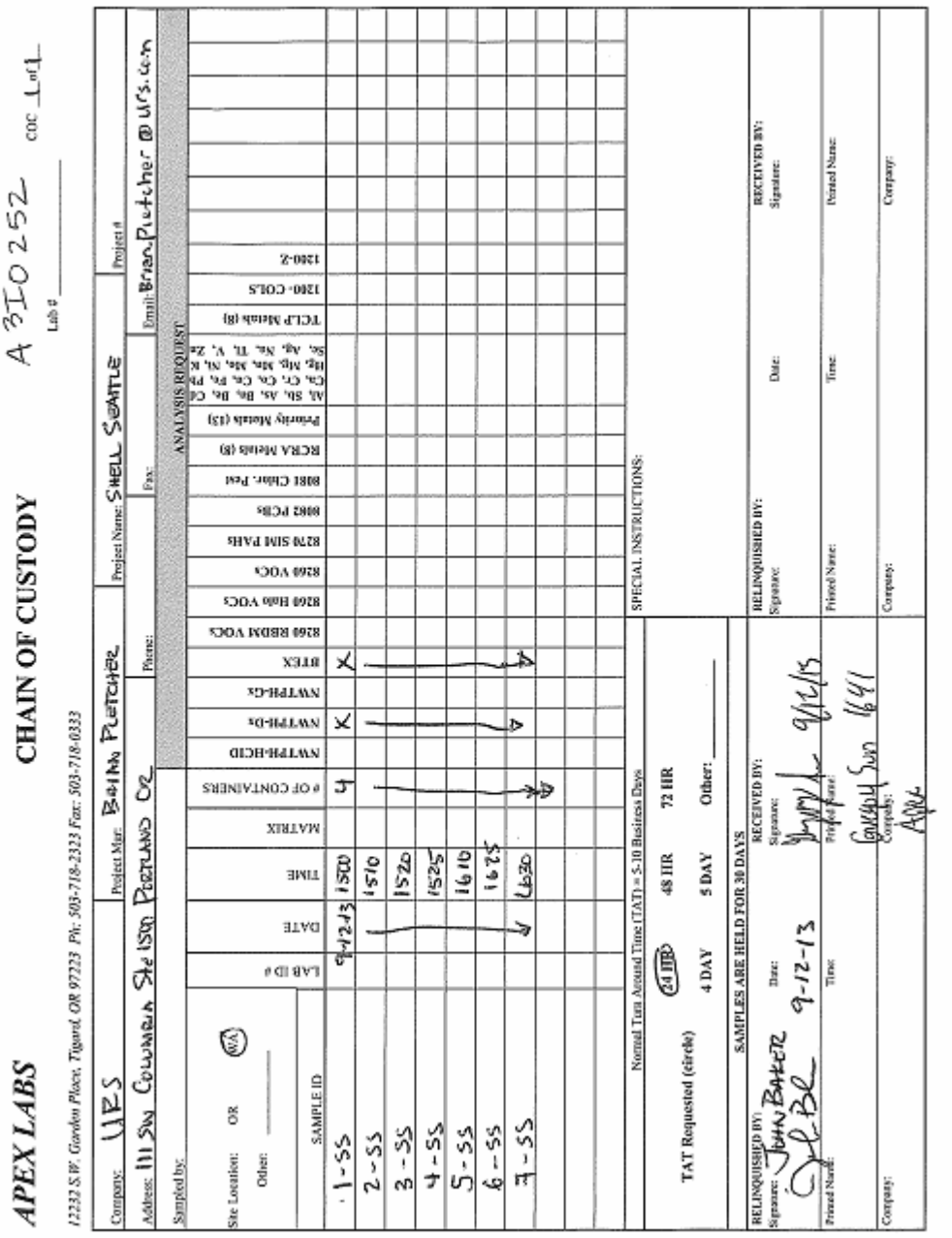
Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/16/13 14:51



APEX LABS

12232 S.W. Garden Place, Tigard, OR 97223 PH: 503-718-2323 Fax: 503-718-0333

CHAIN OF CUSTODY

A3T0252 COC 1 of 1

Lab #: _____

Company: URS | Project Mgr: Brian Pletcher | Project Name: SHELL SEATTLE | Project #

Address: 111 SW Columbia Ste 1500 Portland OR | Phone: | Fax: | Email: Brian.Pletcher@URS.com

Sampled by:

Site Location: OR WA Other: _____

ANALYSIS REQUEST

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	BTEX	8260 BRDM VOCs	8260 Halo VOCs	8260 VOCs	8270 SIM PAHs	8082 PCBs	8081 Chlor. Pest	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn	TCLP Metals (8)	1200-COLS	1200-Z
1-SS	9-12-13	1500		4			X		X												
2-SS		1510																			
3-SS		1520																			
4-SS		1525																			
5-SS		1610																			
6-SS		1625																			
7-SS		1630																			

Normal Turn Around Time (TAT) = 5-10 Business Days

SPECIAL INSTRUCTIONS:

TAT Requested (circle): 24 HR 48 HR 72 HR 4 DAY 5 DAY Other: _____

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: John Baker	Signature:	Signature:	Signature:
Date: 9-12-13	Date:	Date:	Date:
Time:	Time:	Time:	Time:
Printed Name:	Printed Name:	Printed Name:	Printed Name:
Company:	Company:	Company:	Company:

Apex Laboratories

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URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/16/13 14:51

APEX LABS COOLER RECEIPT FORM

Client: URS Element WO#: A3 I0252

Project/Project #: Shell Seattle

Delivery info:

Date/Time Received: 9-12-13 @ 16:41 By: Greg

Delivered by: Apex Courier X Client ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Inspected by: Kendra : 9-13-13 @ 8:00

Chain of Custody Included? Yes ___ No ___

Signed/Dated by Client? Yes ___ No ___

Signed/Dated by Apex? Yes ___ No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	4.3						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)							
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/(N)) Possible reason why: ___

If some coolers are in temp and some out, were green dot applied to out of temperature samples Yes/No/(NA)

Samples Inspection: Inspected by: Kendra : 9-13-13 @ 8:20

All Samples Intact? Yes X No ___ Comments: ___

Bottle Labels/COCs agree? Yes X No (Y) Comments: no time on 1/2 LL VOAs 5-55. + on all 7-55 containers reads 1635

Containers Appropriate for Analysis? Yes X No ___ Comments: ___

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA X

Comments ___

Water Samples: pH Checked and Appropriate (except VOAs): Yes ___ No ___ NA X

Comments: ___

Additional Information: ___

Labeled by: See Project Contact Form: Y

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Tuesday, September 24, 2013

Brian Pletcher
URS - Portland
111 SW Columbia STE 1500
Portland, OR 97201-5850

RE: Shell Seattle / 2555 13th Ave SW Seattle

Enclosed are the results of analyses for work order A3I0312, which was received by the laboratory on 9/16/2013 at 1:43:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: dthomas@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

Darwin Thomas, Business Development Director

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URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: 2555 13th Ave SW Seattle	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/24/13 16:03

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TWO1-Step1	A3I0312-01	Water	09/12/13 14:45	09/16/13 13:43
TWO1-Step2	A3I0312-02	Water	09/12/13 16:45	09/16/13 13:43
TWO1-Step3	A3I0312-03	Water	09/12/13 17:45	09/16/13 13:43
TWO1-CR5 Hour	A3I0312-04	Water	09/13/13 14:38	09/16/13 13:43

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URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: 2555 13th Ave SW Seattle	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/24/13 16:03

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
TWO1-CR5 Hour (A3I0312-04)			**Matrix: Water**		**Batch: 3090372**			
Gasoline Range Organics	**4.74**	---	1.00	mg/L	10	09/17/13 15:38	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 92 %*	*Limits: 50-150 %*	1	"	"	
1,4-Difluorobenzene (Sur)			*97 %*	*Limits: 50-150 %*	"	"	"	

Apex Laboratories

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URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: 2555 13th Ave SW Seattle	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/24/13 16:03

ANALYTICAL SAMPLE RESULTS

BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
TWO1-Step1 (A3I0312-01)			**Matrix: Water**		**Batch: 3090372**			
Benzene	**0.384**	---	0.00250	mg/L	10	09/17/13 14:20	EPA 8260B	
Toluene	**0.0285**	---	0.0100	"	"	"	"	
Ethylbenzene	**0.263**	---	0.00500	"	"	"	"	
Xylenes, total	**0.191**	---	0.0150	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 93 %*	*Limits: 80-120 %*	1	"	"	
1,4-Difluorobenzene (Surr)			*100 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*96 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*100 %*	*Limits: 80-120 %*	"	"	"	
TWO1-Step2 (A3I0312-02)			**Matrix: Water**		**Batch: 3090372**			
Benzene	**0.429**	---	0.00250	mg/L	10	09/17/13 14:46	EPA 8260B	
Toluene	**0.0274**	---	0.0100	"	"	"	"	
Ethylbenzene	**0.232**	---	0.00500	"	"	"	"	
Xylenes, total	**0.132**	---	0.0150	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 93 %*	*Limits: 80-120 %*	1	"	"	
1,4-Difluorobenzene (Surr)			*99 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*95 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*98 %*	*Limits: 80-120 %*	"	"	"	
TWO1-Step3 (A3I0312-03)			**Matrix: Water**		**Batch: 3090372**			
Benzene	**0.341**	---	0.00250	mg/L	10	09/17/13 15:12	EPA 8260B	
Toluene	**0.0220**	---	0.0100	"	"	"	"	
Ethylbenzene	**0.123**	---	0.00500	"	"	"	"	
Xylenes, total	**0.0835**	---	0.0150	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 97 %*	*Limits: 80-120 %*	1	"	"	
1,4-Difluorobenzene (Surr)			*102 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*95 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*98 %*	*Limits: 80-120 %*	"	"	"	
TWO1-CR5 Hour (A3I0312-04)			**Matrix: Water**		**Batch: 3090372**			
Benzene	**0.502**	---	0.00250	mg/L	10	09/17/13 15:38	EPA 8260B	
Toluene	**0.0259**	---	0.0100	"	"	"	"	
Ethylbenzene	**0.185**	---	0.00500	"	"	"	"	
Xylenes, total	**0.0909**	---	0.0150	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 96 %*	*Limits: 80-120 %*	1	"	"	
1,4-Difluorobenzene (Surr)			*100 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*95 %*	*Limits: 80-120 %*	"	"	"	

Apex Laboratories

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Darwin Thomas, Business Development Director

Apex Labs

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: 2555 13th Ave SW Seattle	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/24/13 16:03

ANALYTICAL SAMPLE RESULTS

BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
TWO1-CR5 Hour (A3I0312-04)			**Matrix: Water**		**Batch: 3090372**			
Surrogate: 4-Bromofluorobenzene (Surr)			*Recovery: 97 %*	*Limits: 80-120 %*	1	"	EPA 8260B	

Apex Laboratories

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503-718-0333 Fax

URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: 2555 13th Ave SW Seattle	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/24/13 16:03

QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3090372 - EPA 5030B									Water			
Blank (3090372-BLK1)					Prepared: 09/17/13 09:00 Analyzed: 09/17/13 13:03							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 87 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*			*"*					
LCS (3090372-BS2)					Prepared: 09/17/13 09:00 Analyzed: 09/17/13 12:37							
NWTPH-Gx (MS)												
Gasoline Range Organics	0.484	---	0.100	mg/L	1	0.500	---	97	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 88 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*96 %*	*50-150 %*			*"*					

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URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: 2555 13th Ave SW Seattle	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/24/13 16:03

QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3090372 - EPA 5030B									**Water**			
Blank (3090372-BLK1)					Prepared: 09/17/13 09:00 Analyzed: 09/17/13 13:03							
EPA 8260B												
Benzene	ND	---	0.000250	mg/L	1	---	---	---	---	---	---	
Toluene	ND	---	0.00100	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.000500	"	"	---	---	---	---	---	---	
Xylenes, total	ND	---	0.00150	"	"	---	---	---	---	---	---	
Surr: Dibromofluoromethane (Surr)			*Recovery: 92 %*		*Limits: 80-120 %*				*Dilution: 1x*			
1,4-Difluorobenzene (Surr)			*100 %*		*80-120 %*				*"*			
Toluene-d8 (Surr)			*93 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*98 %*		*80-120 %*				*"*			
LCS (3090372-BS1)					Prepared: 09/17/13 09:00 Analyzed: 09/17/13 12:11							
EPA 8260B												
Benzene	0.0221	---	0.000250	mg/L	1	0.0200	---	110	70-130%	---	---	
Toluene	0.0225	---	0.00100	"	"	"	---	113	"	---	---	
Ethylbenzene	0.0232	---	0.000500	"	"	"	---	116	"	---	---	
Xylenes, total	0.0703	---	0.00150	"	"	0.0600	---	117	"	---	---	
Surr: Dibromofluoromethane (Surr)			*Recovery: 90 %*		*Limits: 80-120 %*				*Dilution: 1x*			
1,4-Difluorobenzene (Surr)			*98 %*		*80-120 %*				*"*			
Toluene-d8 (Surr)			*93 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*95 %*		*80-120 %*				*"*			
Matrix Spike (3090372-MS1)					Prepared: 09/17/13 12:36 Analyzed: 09/17/13 16:03							
QC Source Sample: TWO1-CR5 Hour (A3I0312-04)												
EPA 8260B												
Benzene	0.682	---	0.00250	mg/L	10	0.200	0.502	90	70-130%	---	---	
Toluene	0.239	---	0.0100	"	"	"	0.0259	106	"	---	---	
Ethylbenzene	0.403	---	0.00500	"	"	"	0.185	109	"	---	---	
Xylenes, total	0.770	---	0.0150	"	"	0.600	0.0909	113	"	---	---	
Surr: Dibromofluoromethane (Surr)			*Recovery: 92 %*		*Limits: 80-120 %*				*Dilution: 1x*			
1,4-Difluorobenzene (Surr)			*99 %*		*80-120 %*				*"*			
Toluene-d8 (Surr)			*94 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*95 %*		*80-120 %*				*"*			

Apex Laboratories

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Darwin Thomas, Business Development Director

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503-718-2323 Phone
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URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: 2555 13th Ave SW Seattle	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/24/13 16:03

SAMPLE PREPARATION INFORMATION

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 3090372							
A3I0312-04	Water	NWTPH-Gx (MS)	09/13/13 14:38	09/17/13 12:36	5mL/5mL	5mL/5mL	1.00

BTEX Compounds by EPA 8260B

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 3090372							
A3I0312-01	Water	EPA 8260B	09/12/13 14:45	09/17/13 12:36	5mL/5mL	5mL/5mL	1.00
A3I0312-02	Water	EPA 8260B	09/12/13 16:45	09/17/13 12:36	5mL/5mL	5mL/5mL	1.00
A3I0312-03	Water	EPA 8260B	09/12/13 17:45	09/17/13 12:36	5mL/5mL	5mL/5mL	1.00
A3I0312-04	Water	EPA 8260B	09/13/13 14:38	09/17/13 12:36	5mL/5mL	5mL/5mL	1.00

Apex Laboratories

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URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: 2555 13th Ave SW Seattle	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/24/13 16:03

Notes and Definitions

Qualifiers:

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
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---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepency with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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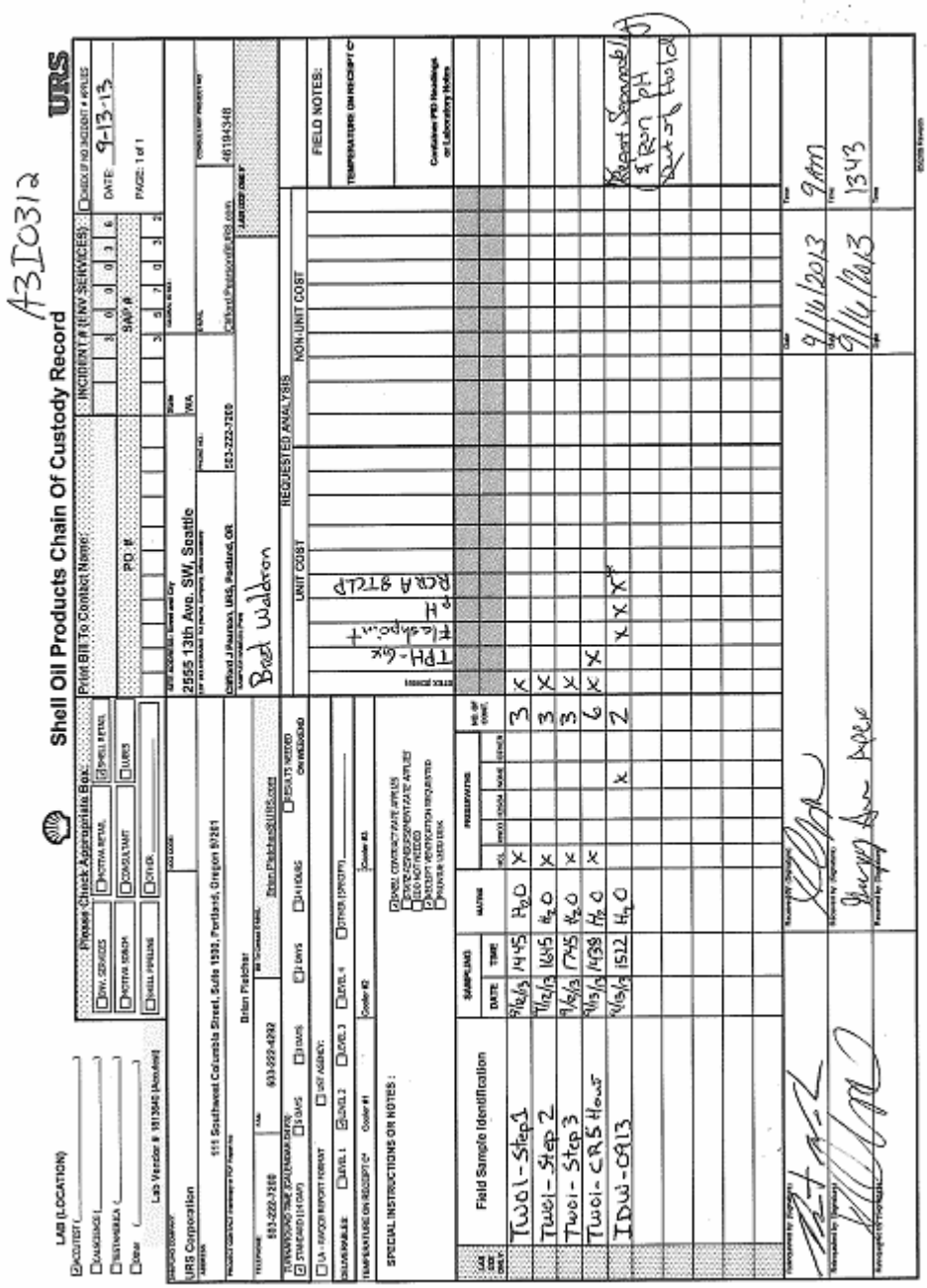
111 SW Columbia STE 1500	Project Number: 2555 13th Ave SW Seattle	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/24/13 16:03



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URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: 2555 13th Ave SW Seattle	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/24/13 16:03

APEX LABS COOLER RECEIPT FORM

Client: URS Element WO#: A3 I0312

Project/Project #: 2555 13th Ave SW Seattle

Delivery info:

Date/Time Received: 9/6/13 @ 1343 By: GS

Delivered by: Apex Courier X Client ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Inspected by: GS : 9/16/13 @ 1405

Chain of Custody Included? Yes Y No ___

Signed/Dated by Client? Yes Y No ___

Signed/Dated by Apex? Yes Y No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	2.3						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)							
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why: ___

If some coolers are in temp and some out, were green dot applied to out of temperature samples Yes/No/NA

Samples Inspection: Inspected by: KF : 9-16-13 @ 16:45

All Samples Intact? Yes X No ___ Comments: ___

Bottle Labels/COCs agree? Yes X No ___ Comments: ~~labels on ID#W-0913 missing dash~~ KF 9-16-13

Containers Appropriate for Analysis? Yes X No ___ Comments: ___

Do VOA Vials have Visible Headspace? Yes ___ No X NA ___

Comments ___

Water Samples: pH Checked and Appropriate (except VOAs): Yes ___ No ___ NA X

Comments: ___

Additional Information: ___

Labeled by: ES See Project Contact Form: Y

Apex Laboratories

Darwin Thomas, Business Development Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Thursday, September 19, 2013

Brian Pletcher
URS - Portland
111 SW Columbia STE 1500
Portland, OR 97201-5850

RE: Shell Seattle / [none]

Enclosed are the results of analyses for work order A3I0321, which was received by the laboratory on 9/17/2013 at 7:17:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: dthomas@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

Darwin Thomas, Business Development Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/19/13 14:51

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
4B-SS	A3I0321-01	Soil	09/16/13 13:20	09/17/13 07:17

Apex Laboratories

Darwin Thomas, Business Development Director

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503-718-0333 Fax

URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/19/13 14:51

ANALYTICAL SAMPLE RESULTS

Diesel and Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
4B-SS (A3I0321-01RE1)			**Matrix: Soil**		**Batch: 3090394**			
Diesel	**187**	---	156	mg/kg dry	10	09/18/13 02:38	NWTPH-Dx	F-13, S-01
Oil	**551**	---	311	"	"	"	"	Q-42
Surrogate: o-Terphenyl (Surr)			*Recovery: 107 %*	*Limits: 50-150 %*	"	"	"	

Apex Laboratories

Darwin Thomas, Business Development Director

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Apex Labs

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503-718-2323 Phone
503-718-0333 Fax

URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/19/13 14:51

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
4B-SS (A3I0321-01)			**Matrix: Soil**		**Batch: 3090367**			**V-15**
Gasoline Range Organics	ND	---	5.81	mg/kg dry	50	09/17/13 11:36	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 106 %*	*Limits: 50-150 %*	1	"	"	
1,4-Difluorobenzene (Sur)			*107 %*	*Limits: 50-150 %*	"	"	"	

Apex Laboratories

Darwin Thomas, Business Development Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/19/13 14:51

ANALYTICAL SAMPLE RESULTS

BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
4B-SS (A3I0321-01)			**Matrix: Soil**		**Batch: 3090367**			**V-15**
Benzene	ND	---	0.0145	mg/kg dry	50	09/17/13 11:36	5035/8260B	
Toluene	ND	---	0.0581	"	"	"	"	
Ethylbenzene	ND	---	0.0291	"	"	"	"	
Xylenes, total	ND	---	0.0872	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 111 %*	*Limits: 70-130 %*	1	"	"	
1,4-Difluorobenzene (Surr)			*108 %*	*Limits: 70-130 %*	"	"	"	
Toluene-d8 (Surr)			*98 %*	*Limits: 70-130 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*95 %*	*Limits: 70-130 %*	"	"	"	

Apex Laboratories

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/19/13 14:51

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
4B-SS (A3I0321-01)			**Matrix: Soil**		**Batch: 3090378**			
% Solids	**87.4**	---	1.00	% by Weight	1	09/17/13 12:38	Apex SOP	

Apex Laboratories

Darwin Thomas, Business Development Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/19/13 14:51

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3090394 - EPA 3546 (Fuels)							**Soil**					
Blank (3090394-BLK1)					Prepared: 09/17/13 18:32 Analyzed: 09/17/13 22:17							
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	50.0	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 99 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (3090394-BS1)					Prepared: 09/17/13 18:32 Analyzed: 09/17/13 22:40							
NWTPH-Dx												
Diesel	130	---	25.0	mg/kg wet	1	125	---	104	76-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 105 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (3090394-DUP5)					Prepared: 09/17/13 18:32 Analyzed: 09/18/13 11:22							
QC Source Sample: 4B-SS (A3I0321-01RE1)												
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg dry	1	---	187	---	---	***	30%	Q-04
Oil	ND	---	50.0	"	"	---	551	---	---	***	30%	Q-04
Surr: o-Terphenyl (Surr)			*Recovery: 106 %*	*Limits: 50-150 %*			*Dilution: 1x*					

Apex Laboratories

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Darwin Thomas, Business Development Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/19/13 14:51

QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3090367 - EPA 5035A							**Soil**					
Blank (3090367-BLK1)					Prepared: 09/17/13 09:00 Analyzed: 09/17/13 11:11							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 117 %*		*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)		*108 %*		*50-150 %*			*"*					
LCS (3090367-BS2)					Prepared: 09/17/13 09:00 Analyzed: 09/17/13 10:45							
NWTPH-Gx (MS)												
Gasoline Range Organics	25.5	---	5.00	mg/kg wet	50	25.0	---	102	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 108 %*		*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)		*109 %*		*50-150 %*			*"*					

Apex Laboratories

Darwin Thomas, Business Development Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/19/13 14:51

QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3090367 - EPA 5035A							**Soil**					
Blank (3090367-BLK1)					Prepared: 09/17/13 09:00 Analyzed: 09/17/13 11:11							
5035/8260B												
Benzene	ND	---	0.00833	mg/kg wet	50	---	---	---	---	---	---	
Toluene	ND	---	0.0333	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.0167	"	"	---	---	---	---	---	---	
Xylenes, total	ND	---	0.0500	"	"	---	---	---	---	---	---	
Surr: Dibromofluoromethane (Surr)			*Recovery: 116 %*		*Limits: 70-130 %*		*Dilution: 1x*					
1,4-Difluorobenzene (Surr)			*112 %*		*70-130 %*		*"*					
Toluene-d8 (Surr)			*98 %*		*70-130 %*		*"*					
4-Bromofluorobenzene (Surr)			*99 %*		*70-130 %*		*"*					
LCS (3090367-BS1)					Prepared: 09/17/13 09:00 Analyzed: 09/17/13 10:19							
5035/8260B												
Benzene	1.22	---	0.0125	mg/kg wet	50	1.00	---	122	65-135%	---	---	
Toluene	1.01	---	0.0500	"	"	"	---	101	"	---	---	
Ethylbenzene	1.06	---	0.0250	"	"	"	---	106	"	---	---	
Xylenes, total	3.15	---	0.0750	"	"	3.00	---	105	"	---	---	
Surr: Dibromofluoromethane (Surr)			*Recovery: 108 %*		*Limits: 70-130 %*		*Dilution: 1x*					
1,4-Difluorobenzene (Surr)			*110 %*		*70-130 %*		*"*					
Toluene-d8 (Surr)			*97 %*		*70-130 %*		*"*					
4-Bromofluorobenzene (Surr)			*96 %*		*70-130 %*		*"*					
Matrix Spike (3090367-MS1)					Prepared: 09/17/13 09:50 Analyzed: 09/17/13 12:02							
QC Source Sample: 4B-SS (A3I0321-01)												
5035/8260B												
Benzene	1.57	---	0.0145	mg/kg dry	50	1.16	ND	135	65-135%	---	---	
Toluene	1.20	---	0.0581	"	"	"	ND	103	"	---	---	
Ethylbenzene	1.26	---	0.0291	"	"	"	ND	109	"	---	---	
Xylenes, total	3.73	---	0.0872	"	"	3.49	ND	107	"	---	---	
Surr: Dibromofluoromethane (Surr)			*Recovery: 116 %*		*Limits: 70-130 %*		*Dilution: 1x*					
1,4-Difluorobenzene (Surr)			*109 %*		*70-130 %*		*"*					
Toluene-d8 (Surr)			*96 %*		*70-130 %*		*"*					
4-Bromofluorobenzene (Surr)			*97 %*		*70-130 %*		*"*					

Apex Laboratories

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Darwin Thomas, Business Development Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/19/13 14:51

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3090378 - Total Solids (Dry Weight)									**Soil**			
Duplicate (3090378-DUP1)					Prepared: 09/17/13 11:49 Analyzed: 09/17/13 12:38							
QC Source Sample: 4B-SS (A3I0321-01)												
Apex SOP												
% Solids	**88.2**	---	1.00	% by Weight	1	---	87.4	---	---	0.9	20%	

Apex Laboratories

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503-718-2323 Phone
503-718-0333 Fax

URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/19/13 14:51

SAMPLE PREPARATION INFORMATION

Diesel and Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 3090394							
A3I0321-01RE1	Soil	NWTPH-Dx	09/16/13 13:20	09/17/13 18:32	14.7g/5mL	10g/5mL	0.68

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 3090367							
A3I0321-01	Soil	NWTPH-Gx (MS)	09/16/13 13:20	09/17/13 09:50	11.234g/10mL	10g/10mL	0.89

BTEX Compounds by EPA 8260B

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 3090367							
A3I0321-01	Soil	5035/8260B	09/16/13 13:20	09/17/13 09:50	11.234g/10mL	10g/10mL	0.89

Apex Laboratories

Darwin Thomas, Business Development Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/19/13 14:51

Notes and Definitions

Qualifiers:

F-13	The chromatographic pattern does not resemble the fuel standard used for quantitation
Q-04	Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
S-01	Surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference.
V-15	Sample aliquot was subsampled from the sample container. The subsampled aliquot was preserved in the laboratory within 48 hours of sampling.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepency with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

Darwin Thomas, Business Development Director

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URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/19/13 14:51

APEX LABS — **CHAIN OF CUSTODY** — Lab # A3I0321 — COC ___ of ___

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Company: URS | Project Mgr: BRIAN PLETCHER | Project Name: SHELL SEATTLE | Project #:

Address: 111 SW COLUMBIA, PORTLAND, OR 97210 | Phone: 503 222-7200 | Fax: | Email: Brian.Pletcher@URS.com

Sampled by: JOHN BAKER

Site Location: OR (WA circled) Other: ________

ANALYSIS REQUEST

	SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOC	8260 RBDM VOCs	8260 BTEX	8270 SVOC	8270 SIM PAHs	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS TCLP	1200-COLS	1200-Z
1	4B-SS		9-16-13	1326	SOIL	4			X			X									
2	B TANK 20130916		9-16-13	1400	WATER	4			X			X									
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Normal Turn Around Time (TAT) = 7-10 Business Days YES NO

TAT Requested (circle): 1 Day 2 Day 3 Day 4 DAY 5 DAY Other: SEE SPECIAL INSTRUCTIONS

SPECIAL INSTRUCTIONS:
RUSH-SAMPLE 4B-SS
5 DAY-SAMPLE B TANK 20130916

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature] Date: 9-17-13	Signature: [signature] Date: 9/17/13	Signature: Date:	Signature: Date:
Printed Name: JOHN BAKER Time: 0717	Printed Name: Kimya Ighani Time: 717	Printed Name: Time:	Printed Name: Time:
Company: URS	Company: APEX	Company:	Company:

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

URS - Portland	Project: **Shell Seattle**	
111 SW Columbia STE 1500	Project Number: [none]	**Reported:**
Portland, OR 97201-5850	Project Manager: Brian Pletcher	09/19/13 14:51

APEX LABS COOLER RECEIPT FORM

Client: URS Element WO#: A3 I0321

Project/Project #: Shell Seattle

Delivery info:

Date/Time Received: 9/17/13 @ 717 By: VI

Delivered by: Apex Courier__ Client X FedEx__ UPS__ Swift____ Senvoy__ SDS__ Other____

Cooler Inspection Inspected by: 9/17/13 : VI @ 719

Chain of Custody Included? Yes Y No __

Signed/Dated by Client? Yes Y No __

Signed/Dated by Apex? Yes Y No __

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	11.6						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)							
Ice Type: (Gel/Real/Other)	NA						
Condition:	↓						

Cooler out of temp? (Y/N) Possible reason why: No ice

If some coolers are in temp and some out, were green dot applied to out of temperature samples Yes/No/NA

Samples Inspection: Inspected by: VI : 9/17/13 @ 905

All Samples Intact? Yes Y No __ Comments: _____

Bottle Labels/COCs agree? Yes Y No __ Comments: _____

Containers Appropriate for Analysis? Yes Y No __ Comments: _____

Do VOA Vials have Visible Headspace? Yes __ No Y NA __

Comments _____

Water Samples: pH Checked and Appropriate (except VOAs): Yes X No __ NA ____

Comments: _____

Additional Information: _____

Labeled by: VI See Project Contact Form: Y

Northern California ACCUTEST LABORATORIES

09/23/13

Technical Report for

Shell Oil Company

URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

46194348

Accutest Job Number: C29590

Sampling Date: 09/05/13

Report to:

URS Corporation
111 SW Columbia, Suite 1500
Portland, OR 97201-5850
brian.pletcher@urs.com

ATTN: Brian Pletcher

Total number of pages in report: **76**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

James J. Rhudy
Lab Director

Client Service contact: Nutan Kabir 408-588-0200

Certifications: CA (08258CA) AZ (AZ0762) DoD/ISO/IEC 17025:2005 (L2242)

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Sample Summary

Shell Oil Company

Job No: C29590

URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Project No: 46194348

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
C29590-1	09/05/13	10:10	CPMT	09/07/13	SO	Soil	TW-01-7.5
C29590-2	09/05/13	11:30	CPMT	09/07/13	AQ	Ground Water	ASW-1-0913
C29590-2F	09/05/13	11:30	CPMT	09/07/13	AQ	Groundwater Filtered	ASW-1-0913
C29590-3	09/05/13	10:29	CPMT	09/07/13	AQ	Ground Water	TW-01-0913
C29590-3F	09/05/13	10:29	CPMT	09/07/13	AQ	Groundwater Filtered	TW-01-0913
C29590-4	09/05/13	11:20	CPMT	09/07/13	AQ	Ground Water	MW-302-0913
C29590-4F	09/05/13	11:20	CPMT	09/07/13	AQ	Groundwater Filtered	MW-302-0913
C29590-5	09/05/13	15:25	CPMT	09/07/13	AQ	Ground Water	MW-304-0913
C29590-5F	09/05/13	15:25	CPMT	09/07/13	AQ	Groundwater Filtered	MW-304-0913
C29590-6	09/05/13	09:05	CPMT	09/07/13	AQ	Ground Water	MW-307-0913
C29590-6F	09/05/13	09:05	CPMT	09/07/13	AQ	Groundwater Filtered	MW-307-0913
C29590-7	09/05/13	17:04	CPMT	09/07/13	AQ	Ground Water	MW-310-0913
C29590-7F	09/05/13	17:04	CPMT	09/07/13	AQ	Ground Water	MW-310-0913

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary
(continued)

Shell Oil Company

Job No: C29590

URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Project No: 46194348

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
C29590-8	09/05/13	00:00	CPMT	09/07/13	AQ	Trip Blank Water	TRIP BLANK
C29590-9	09/05/13	11:15	CPMT	09/07/13	AQ	Ground Water	ASW-1-0913-DUP

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Summary of Hits

Job Number: C29590
Account: Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Collected: 09/05/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
C29590-1	**TW-01-7.5**					
Benzene		2370 J	8600	860	ug/kg	SW846 8260B
Ethylbenzene		34300	8600	860	ug/kg	SW846 8260B
Xylene (total)		35000	17000	1700	ug/kg	SW846 8260B
TPH (Gasoline)		2860	310	160	mg/kg	NWTPH-GX
Chemical Oxygen Demand [a]		9900	900		mg/kg	SM19 5220C M
C29590-2	**ASW-1-0913**					
Benzene		315	4.0	0.80	ug/l	SW846 8260B
Toluene		8.6	4.0	0.80	ug/l	SW846 8260B
Ethylbenzene		21.8	4.0	0.80	ug/l	SW846 8260B
Xylene (total)		30.8	8.0	1.8	ug/l	SW846 8260B
TPH (Gasoline)		1.32	0.80	0.20	mg/l	NWTPH-GX
Chemical Oxygen Demand		15.7	10		mg/l	HACH 8000
Total Organic Carbon		3.3	1.0		mg/l	SM18 5310C
C29590-2F	**ASW-1-0913**					
Manganese		186	15		ug/l	SW846 6010B
C29590-3	**TW-01-0913**					
Benzene		521	10	2.0	ug/l	SW846 8260B
Toluene		28.1	10	2.0	ug/l	SW846 8260B
Ethylbenzene		359	10	2.0	ug/l	SW846 8260B
Xylene (total)		197	20	4.6	ug/l	SW846 8260B
TPH (Gasoline)		5.47	2.0	0.50	mg/l	NWTPH-GX
C29590-3F	**TW-01-0913**					
Iron		358	200		ug/l	SW846 6010B
Manganese		428	15		ug/l	SW846 6010B
C29590-4	**MW-302-0913**					
Benzene		783	20	4.0	ug/l	SW846 8260B
Toluene		18.9	10	2.0	ug/l	SW846 8260B
Ethylbenzene		162	10	2.0	ug/l	SW846 8260B
Xylene (total)		74.6	20	4.6	ug/l	SW846 8260B
TPH (Gasoline)		3.70	2.0	0.50	mg/l	NWTPH-GX

Summary of Hits

Job Number: C29590
Account: Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Collected: 09/05/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
C29590-4F	**MW-302-0913**					
Iron		2410	200		ug/l	SW846 6010B
Manganese		410	15		ug/l	SW846 6010B
C29590-5	**MW-304-0913**					
Benzene		862	10	2.0	ug/l	SW846 8260B
Toluene		18.8	10	2.0	ug/l	SW846 8260B
Ethylbenzene		84.9	10	2.0	ug/l	SW846 8260B
Xylene (total)		61.6	20	4.6	ug/l	SW846 8260B
TPH (Gasoline)		3.09	2.0	0.50	mg/l	NWTPH-GX
C29590-5F	**MW-304-0913**					
Iron		1630	200		ug/l	SW846 6010B
Manganese		333	15		ug/l	SW846 6010B
C29590-6	**MW-307-0913**					
Benzene		643	10	2.0	ug/l	SW846 8260B
Toluene		64.5	10	2.0	ug/l	SW846 8260B
Ethylbenzene		154	10	2.0	ug/l	SW846 8260B
Xylene (total)		131	20	4.6	ug/l	SW846 8260B
TPH (Gasoline)		5.30	2.0	0.50	mg/l	NWTPH-GX
C29590-6F	**MW-307-0913**					
Iron		3010	200		ug/l	SW846 6010B
Manganese		313	15		ug/l	SW846 6010B
C29590-7	**MW-310-0913**					
Benzene		960	20	4.0	ug/l	SW846 8260B
Toluene		59.8	20	4.0	ug/l	SW846 8260B
Ethylbenzene		310	20	4.0	ug/l	SW846 8260B
Xylene (total)		110	40	9.2	ug/l	SW846 8260B
TPH (Gasoline)		5.51	2.0	0.50	mg/l	NWTPH-GX
C29590-7F	**MW-310-0913**					
Iron		4940	200		ug/l	SW846 6010B
Manganese		568	15		ug/l	SW846 6010B

Summary of Hits

Job Number: C29590
Account: Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Collected: 09/05/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
C29590-8	**TRIP BLANK**					
No hits reported in this sample.						
C29590-9	**ASW-1-0913-DUP**					
TPH (Gasoline)		1.28	0.80	0.20	mg/l	NWTPH-GX

(a) Analysis performed at Accutest Laboratories, Orlando FL.

Northern California ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	TW-01-7.5		
Lab Sample ID:	C29590-1	**Date Sampled:**	09/05/13
Matrix:	SO - Soil	**Date Received:**	09/07/13
Method:	SW846 8260B	**Percent Solids:**	89.0
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M41730.D	1	09/10/13	XB	n/a	n/a	VM1260
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	4.50 g	5.0 ml	4.0 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	2370	8600	860	ug/kg	J
108-88-3	Toluene	ND	8600	860	ug/kg	
100-41-4	Ethylbenzene	34300	8600	860	ug/kg	
1330-20-7	Xylene (total)	35000	17000	1700	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		70-130%
2037-26-5	Toluene-D8	102%		70-130%
460-00-4	4-Bromofluorobenzene	98%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-01-7.5		
Lab Sample ID:	C29590-1	**Date Sampled:**	09/05/13
Matrix:	SO - Soil	**Date Received:**	09/07/13
Method:	NWTPH-GX	**Percent Solids:**	89.0
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK39152.D	1	09/13/13	PH	n/a	n/a	GJK1576
Run #2 [a]	JK39160.D	1	09/13/13	PH	n/a	n/a	GJK1576

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	4.50 g	5.0 ml	2.0 ul
Run #2	4.50 g	5.0 ml	2.0 ul

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	2860	310	160	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	209% [b]	215% [b]	50-150%
460-00-4	4-Bromofluorobenzene	1645% [b]	1776% [b]	50-150%

(a) Confirmation run for surrogate recoveries.
(b) Outside control limits due to matrix interference. Confirmed by reanalysis.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-01-7.5		
Lab Sample ID:	C29590-1	**Date Sampled:**	09/05/13
Matrix:	SO - Soil	**Date Received:**	09/07/13
		Percent Solids:	89.0
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chemical Oxygen Demand [a]	9900	900	mg/kg	1	09/16/13 17:00	AFL	SM19 5220C M
Moisture, Percent	11		%	1	09/10/13 15:30	AC	SM18 2540G
Total Organic Carbon [a]	< 1100	1100	mg/kg	1	09/18/13 15:58	AFL	SW846 9060A MOD

(a) Analysis performed at Accutest Laboratories, Orlando FL.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	ASW-1-0913		
Lab Sample ID:	C29590-2	**Date Sampled:**	09/05/13
Matrix:	AQ - Ground Water	**Date Received:**	09/07/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U13435.D	4	09/12/13	TF	n/a	n/a	VU521
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	315	4.0	0.80	ug/l	
108-88-3	Toluene	8.6	4.0	0.80	ug/l	
100-41-4	Ethylbenzene	21.8	4.0	0.80	ug/l	
1330-20-7	Xylene (total)	30.8	8.0	1.8	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		70-130%
2037-26-5	Toluene-D8	113%		70-130%
460-00-4	4-Bromofluorobenzene	106%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	ASW-1-0913		
Lab Sample ID:	C29590-2	**Date Sampled:**	09/05/13
Matrix:	AQ - Ground Water	**Date Received:**	09/07/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK39221.D	4	09/17/13	PH	n/a	n/a	GJK1579
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	1.32	0.80	0.20	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	104%		50-150%
460-00-4	4-Bromofluorobenzene	104%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	ASW-1-0913		
Lab Sample ID:	C29590-2	**Date Sampled:**	09/05/13
Matrix:	AQ - Ground Water	**Date Received:**	09/07/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chemical Oxygen Demand	15.7	10	mg/l	1	09/11/13	EB	HACH 8000
Total Organic Carbon	3.3	1.0	mg/l	1	09/12/13 10:49	RL	SM18 5310C

RL = Reporting Limit

Report of Analysis

Client Sample ID:	ASW-1-0913		
Lab Sample ID:	C29590-2F	**Date Sampled:**	09/05/13
Matrix:	AQ - Groundwater Filtered	**Date Received:**	09/07/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	< 200	200	ug/l	1	09/13/13	09/13/13	RS	SW846 6010B [1]	SW3010A [2]
Manganese	186	15	ug/l	1	09/13/13	09/13/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3442
(2) Prep QC Batch: MP6695

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TW-01-0913		
Lab Sample ID:	C29590-3	**Date Sampled:**	09/05/13
Matrix:	AQ - Ground Water	**Date Received:**	09/07/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U13436.D	10	09/12/13	TF	n/a	n/a	VU521
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	521	10	2.0	ug/l	
108-88-3	Toluene	28.1	10	2.0	ug/l	
100-41-4	Ethylbenzene	359	10	2.0	ug/l	
1330-20-7	Xylene (total)	197	20	4.6	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		70-130%
2037-26-5	Toluene-D8	95%		70-130%
460-00-4	4-Bromofluorobenzene	105%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-01-0913		
Lab Sample ID:	C29590-3	**Date Sampled:**	09/05/13
Matrix:	AQ - Ground Water	**Date Received:**	09/07/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK39222.D	10	09/17/13	PH	n/a	n/a	GJK1579
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	5.47	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	110%		50-150%
460-00-4	4-Bromofluorobenzene	113%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TW-01-0913
Lab Sample ID: C29590-3F
Matrix: AQ - Groundwater Filtered
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Date Sampled: 09/05/13
Date Received: 09/07/13
Percent Solids: n/a

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	358	200	ug/l	1	09/13/13	09/13/13	RS	SW846 6010B [1]	SW3010A [2]
Manganese	428	15	ug/l	1	09/13/13	09/13/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3442
(2) Prep QC Batch: MP6695

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-302-0913		
Lab Sample ID:	C29590-4	**Date Sampled:**	09/05/13
Matrix:	AQ - Ground Water	**Date Received:**	09/07/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U13437.D	10	09/12/13	TF	n/a	n/a	VU521
Run #2	U13541.D	20	09/18/13	TF	n/a	n/a	VU524

	Purge Volume
Run #1	10.0 ml
Run #2	10.0 ml

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	783 [a]	20	4.0	ug/l	
108-88-3	Toluene	18.9	10	2.0	ug/l	
100-41-4	Ethylbenzene	162	10	2.0	ug/l	
1330-20-7	Xylene (total)	74.6	20	4.6	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%	102%	70-130%
2037-26-5	Toluene-D8	106%	108%	70-130%
460-00-4	4-Bromofluorobenzene	99%	108%	70-130%

(a) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-302-0913		
Lab Sample ID:	C29590-4	**Date Sampled:**	09/05/13
Matrix:	AQ - Ground Water	**Date Received:**	09/07/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK39223.D	10	09/17/13	PH	n/a	n/a	GJK1579
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	3.70	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	106%		50-150%
460-00-4	4-Bromofluorobenzene	107%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-302-0913
Lab Sample ID: C29590-4F
Matrix: AQ - Groundwater Filtered
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Date Sampled: 09/05/13
Date Received: 09/07/13
Percent Solids: n/a

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	2410	200	ug/l	1	09/13/13	09/13/13	RS	SW846 6010B [1]	SW3010A [2]
Manganese	410	15	ug/l	1	09/13/13	09/13/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3442
(2) Prep QC Batch: MP6695

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-304-0913		
Lab Sample ID:	C29590-5	**Date Sampled:**	09/05/13
Matrix:	AQ - Ground Water	**Date Received:**	09/07/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U13438.D	10	09/12/13	TF	n/a	n/a	VU521
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	862	10	2.0	ug/l	
108-88-3	Toluene	18.8	10	2.0	ug/l	
100-41-4	Ethylbenzene	84.9	10	2.0	ug/l	
1330-20-7	Xylene (total)	61.6	20	4.6	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		70-130%
2037-26-5	Toluene-D8	117%		70-130%
460-00-4	4-Bromofluorobenzene	100%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-304-0913		
Lab Sample ID:	C29590-5	**Date Sampled:**	09/05/13
Matrix:	AQ - Ground Water	**Date Received:**	09/07/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK39224.D	10	09/17/13	PH	n/a	n/a	GJK1579
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	3.09	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	105%		50-150%
460-00-4	4-Bromofluorobenzene	103%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-304-0913		
Lab Sample ID:	C29590-5F	**Date Sampled:**	09/05/13
Matrix:	AQ - Groundwater Filtered	**Date Received:**	09/07/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	1630	200	ug/l	1	09/13/13	09/13/13	RS	SW846 6010B [1]	SW3010A [2]
Manganese	333	15	ug/l	1	09/13/13	09/13/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3442
(2) Prep QC Batch: MP6695

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-307-0913		
Lab Sample ID:	C29590-6	**Date Sampled:**	09/05/13
Matrix:	AQ - Ground Water	**Date Received:**	09/07/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U13439.D	10	09/12/13	TF	n/a	n/a	VU521
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	643	10	2.0	ug/l	
108-88-3	Toluene	64.5	10	2.0	ug/l	
100-41-4	Ethylbenzene	154	10	2.0	ug/l	
1330-20-7	Xylene (total)	131	20	4.6	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		70-130%
2037-26-5	Toluene-D8	110%		70-130%
460-00-4	4-Bromofluorobenzene	85%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-307-0913		
Lab Sample ID:	C29590-6	**Date Sampled:**	09/05/13
Matrix:	AQ - Ground Water	**Date Received:**	09/07/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK39225.D	10	09/17/13	PH	n/a	n/a	GJK1579
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	5.30	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	106%		50-150%
460-00-4	4-Bromofluorobenzene	108%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-307-0913		
Lab Sample ID:	C29590-6F	**Date Sampled:**	09/05/13
Matrix:	AQ - Groundwater Filtered	**Date Received:**	09/07/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	3010	200	ug/l	1	09/13/13	09/13/13	RS	SW846 6010B [1]	SW3010A [2]
Manganese	313	15	ug/l	1	09/13/13	09/13/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3442
(2) Prep QC Batch: MP6695

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-310-0913		
Lab Sample ID:	C29590-7	**Date Sampled:**	09/05/13
Matrix:	AQ - Ground Water	**Date Received:**	09/07/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U13440.D	20	09/12/13	TF	n/a	n/a	VU521
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	960	20	4.0	ug/l	
108-88-3	Toluene	59.8	20	4.0	ug/l	
100-41-4	Ethylbenzene	310	20	4.0	ug/l	
1330-20-7	Xylene (total)	110	40	9.2	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		70-130%
2037-26-5	Toluene-D8	101%		70-130%
460-00-4	4-Bromofluorobenzene	102%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-310-0913		
Lab Sample ID:	C29590-7	**Date Sampled:**	09/05/13
Matrix:	AQ - Ground Water	**Date Received:**	09/07/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK39226.D	10	09/17/13	PH	n/a	n/a	GJK1579
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	5.51	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	109%		50-150%
460-00-4	4-Bromofluorobenzene	112%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-310-0913		
Lab Sample ID:	C29590-7F	**Date Sampled:**	09/05/13
Matrix:	AQ - Ground Water	**Date Received:**	09/07/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	4940	200	ug/l	1	09/13/13	09/13/13	RS	SW846 6010B [1]	SW3010A [2]
Manganese	568	15	ug/l	1	09/13/13	09/13/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3442
(2) Prep QC Batch: MP6695

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	C29590-8	**Date Sampled:**	09/05/13
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/07/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U13434.D	1	09/12/13	TF	n/a	n/a	VU521
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		70-130%
2037-26-5	Toluene-D8	107%		70-130%
460-00-4	4-Bromofluorobenzene	95%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	ASW-1-0913-DUP		
Lab Sample ID:	C29590-9	**Date Sampled:**	09/05/13
Matrix:	AQ - Ground Water	**Date Received:**	09/07/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK39228.D	4	09/17/13	PH	n/a	n/a	GJK1579
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	1.28	0.80	0.20	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	103%		50-150%
460-00-4	4-Bromofluorobenzene	104%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Northern California ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

LAB (LOCATION)	
☑ ACCUTEST (SAN JOSE, CA)	
☐ CALSCIENCE ( )	
☐ TESTAMERICA ( )	
☐ Other ( )	
Lab Vendor # 1813840 (Accutest)	

Shell Oil Products Chain Of Custody Record

URS

Please Check Appropriate Box: ☐ ENV. SERVICES ☐ MOTIVA RETAIL ☑ SHELL RETAIL ☐ MOTIVA SD&CM ☐ CONSULTANT ☐ LUBES ☐ SHELL PIPELINE ☐ OTHER

Print Bill To Contact Name:

INCIDENT # (ENV SERVICES): 3 0 0 0 3 6

☐ CHECK IF NO INCIDENT # APPLIES

DATE: 9/6/13

PO #:

SAP #: 3 5 7 0 3 2

PAGE: 1 of 1

SAMPLING COMPANY: URS Corporation	LOG CODE:
ADDRESS: 111 Southwest Columbia Street, Suite 1500, Portland, Oregon 97201	
PROJECT CONTACT (Hardcopy or PDF Report to): Brian Pletcher	
TELEPHONE: 503-222-7200	FAX: 503-222-4292
Bill To Contact E-MAIL: Brian.Pletcher@URS.com	
SITE ADDRESS: Street and City: 2555 13th Ave. SW, Seattle	State: WA
GLOBAL ID NO.:	
EDF DELIVERABLE TO (Name, Company, Office Location): Clifford J Pearson, URS, Portland, OR	PHONE NO.: 503-222-7200
E-MAIL: Clifford.Pearson@URS.com	CONSULTANT PROJECT NO.: 46194348
SAMPLER NAME(S) (Print): Clifford J. Pearson, Mark Tauscher	LAB USE ONLY: C29590

TURNAROUND TIME (CALENDAR DAYS): ☑ STANDARD (14 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:

DELIVERABLES: ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL 3 ☐ LEVEL 4 ☐ OTHER (SPECIFY)

TEMPERATURE ON RECEIPT C° Cooler #1 Cooler #2 Cooler #3

SPECIAL INSTRUCTIONS OR NOTES: * PLEASE FILTER IN LAB

☑ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☑ RECEIPT VERIFICATION REQUESTED
☐ PROVIDE LEDD DISK

REQUESTED ANALYSIS — UNIT COST / NON-UNIT COST

FIELD NOTES:

TEMPERATURE ON RECEIPT C°: 4.6°C

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	NWTPH-Gx	BTEX (8260B)	TOC (SM5310B)	TOC (9060)	BOD (SM5210B)	COD (410.4)	COD (SM5220D)	Dissolved Fe + Mn	Container PID Readings or Laboratory Notes
1	TW-01-7.5	9/5	1010	S				X	X	10	X	X	X		X	X			2-5035, 2-262 / 1-402, 1-40.2
2	ASW-1-0913	9/6	1030	W	X		X	X		12	X	X		X	X		X	X	
3	TW-01-0913	9/6	1029	W	X			X		7	X	X		X				X	
4	MW-302-0917	9/5	1620	W	X			X		7	X	X		X				X	
5	MW-304-0913	9/5	1525	W	X			X		7	X	X		X				X	
6	MW-307-0913	9/5	905	W	X			X		7	X	X		X				X	
7	MW-310-0913	9/5	1704	W	X			X		7	X	X		X				X	
8	TRIP BLANK	–	–	W	X					3				9/6					– 6 vials.
9	ASW-1-0913-DUP	9/6	1115	W	X					3	X			8					

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Clifford J P URS	FED EX	9/6/13	1300
FedEx	[signature]	09-07-13	11:29

05/2/06 Revision

C29590: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: C29590 **Client:** SHELL OIL **Project:** 2555 13TH AVE. SW, SEATTLE, WA

Date / Time Received: 9/7/2013 **Delivery Method:** FedEx **Airbill #'s:** 802008296946

Cooler Temps (Initial/Adjusted): #1: (4.6/4.6); 0

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR1 Plastic;		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Accutest Laboratories
V:408.588.0200
2105 Lundy Avenue
F: 408.588.0201
San Jose, CA 95131
www/accutest.com

C29590: Chain of Custody
Page 2 of 2

Northern California ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: C29590
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM1260-MB	M41725.D	1	09/10/13	XB	n/a	n/a	VM1260

The QC reported here applies to the following samples: **Method:** SW846 8260B

C29590-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	5.0	0.50	ug/kg	
100-41-4	Ethylbenzene	ND	5.0	0.50	ug/kg	
108-88-3	Toluene	ND	5.0	0.50	ug/kg	
1330-20-7	Xylene (total)	ND	10	1.0	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	105%	70-130%
2037-26-5	Toluene-D8	107%	70-130%
460-00-4	4-Bromofluorobenzene	101%	70-130%

Method Blank Summary

Job Number: C29590
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VU521-MB	U13430.D	1	09/12/13	TF	n/a	n/a	VU521

The QC reported here applies to the following samples: **Method:** SW846 8260B

C29590-2, C29590-3, C29590-4, C29590-5, C29590-6, C29590-7, C29590-8

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	102%	70-130%
2037-26-5	Toluene-D8	108%	70-130%
460-00-4	4-Bromofluorobenzene	96%	70-130%

Method Blank Summary

Job Number: C29590
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VU524-MB	U13539.D	1	09/18/13	TF	n/a	n/a	VU524

The QC reported here applies to the following samples: **Method:** SW846 8260B

C29590-4

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	105%	70-130%
2037-26-5	Toluene-D8	108%	70-130%
460-00-4	4-Bromofluorobenzene	100%	70-130%

Blank Spike/Blank Spike Duplicate Summary

Job Number: C29590
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM1260-BS	M41722.D	1	09/10/13	XB	n/a	n/a	VM1260
VM1260-BSD	M41723.D	1	09/10/13	XB	n/a	n/a	VM1260

The QC reported here applies to the following samples: **Method:** SW846 8260B

C29590-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	40	38.7	97	38.4	96	1	81-119/20
100-41-4	Ethylbenzene	40	39.6	99	39.4	99	1	80-119/21
108-88-3	Toluene	40	38.9	97	38.3	96	2	80-117/21
1330-20-7	Xylene (total)	120	116	97	115	96	1	81-122/22

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	106%	105%	70-130%
2037-26-5	Toluene-D8	103%	102%	70-130%
460-00-4	4-Bromofluorobenzene	104%	104%	70-130%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: C29590
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VU521-BS	U13426.D	1	09/12/13	TF	n/a	n/a	VU521
VU521-BSD	U13427.D	1	09/12/13	TF	n/a	n/a	VU521

The QC reported here applies to the following samples: **Method:** SW846 8260B

C29590-2, C29590-3, C29590-4, C29590-5, C29590-6, C29590-7, C29590-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	20	19.8	99	18.5	93	7	77-122/25
100-41-4	Ethylbenzene	20	20.0	100	19.2	96	4	76-126/17
108-88-3	Toluene	20	20.3	102	19.5	98	4	75-122/17
1330-20-7	Xylene (total)	60	58.6	98	56.3	94	4	77-125/17

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	102%	98%	70-130%
2037-26-5	Toluene-D8	119%	107%	70-130%
460-00-4	4-Bromofluorobenzene	103%	102%	70-130%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: C29590
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VU524-BS	U13536.D	1	09/18/13	TF	n/a	n/a	VU524
VU524-BSD	U13555.D	1	09/19/13	TF	n/a	n/a	VU524

The QC reported here applies to the following samples: **Method:** SW846 8260B

C29590-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	20	19.1	96	18.4	92	4	77-122/25

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	96%	98%	70-130%
2037-26-5	Toluene-D8	108%	107%	70-130%
460-00-4	4-Bromofluorobenzene	107%	109%	70-130%

* = Outside of Control Limits.

Laboratory Control Sample Summary

Job Number: C29590
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM1260-LCS	M41724.D	1	09/10/13	XB	n/a	n/a	VM1260

The QC reported here applies to the following samples: **Method:** SW846 8260B

C29590-1

CAS No.	Compound	Spike ug/kg	LCS ug/kg	LCS %	Limits

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	70-130%
2037-26-5	Toluene-D8	106%	70-130%
460-00-4	4-Bromofluorobenzene	103%	70-130%

* = Outside of Control Limits.

Laboratory Control Sample Summary

Job Number: C29590
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VU524-LCS	U13537.D	1	09/18/13	TF	n/a	n/a	VU524

The QC reported here applies to the following samples: **Method:** SW846 8260B

C29590-4

CAS No.	Compound	Spike ug/l	LCS ug/l	LCS %	Limits

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	70-130%
2037-26-5	Toluene-D8	109%	70-130%
460-00-4	4-Bromofluorobenzene	104%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C29590
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C29608-2MS	M41732.D	1	09/10/13	XB	n/a	n/a	VM1260
C29608-2MSD	M41733.D	1	09/10/13	XB	n/a	n/a	VM1260
C29608-2	M41727.D	1	09/10/13	XB	n/a	n/a	VM1260

The QC reported here applies to the following samples: **Method:** SW846 8260B

C29590-1

CAS No.	Compound	C29608-2 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		39.6	35.2	89	35.3	89	0	81-119/20
100-41-4	Ethylbenzene	ND		39.6	35.1	89	35.1	88	0	80-119/21
108-88-3	Toluene	ND		39.6	35.7	90	35.5	89	1	80-117/21
1330-20-7	Xylene (total)	ND		119	105	88	105	88	0	81-122/22

CAS No.	Surrogate Recoveries	MS	MSD	C29608-2	Limits
1868-53-7	Dibromofluoromethane	97%	98%	109%	70-130%
2037-26-5	Toluene-D8	101%	101%	107%	70-130%
460-00-4	4-Bromofluorobenzene	97%	96%	103%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C29590
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C29590-6MS	U13446.D	10	09/13/13	TF	n/a	n/a	VU521
C29590-6MSD	U13447.D	10	09/13/13	TF	n/a	n/a	VU521
C29590-6	U13439.D	10	09/12/13	TF	n/a	n/a	VU521

The QC reported here applies to the following samples: **Method:** SW846 8260B

C29590-2, C29590-3, C29590-4, C29590-5, C29590-6, C29590-7, C29590-8

CAS No.	Compound	C29590-6 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	643		200	1010	184* [a]	1030	194* [a]	2	77-122/16
100-41-4	Ethylbenzene	154		200	384	115	387	117	1	76-126/17
108-88-3	Toluene	64.5		200	340	138* [b]	290	113	16	75-122/17
1330-20-7	Xylene (total)	131		600	769	106	780	108	1	77-125/17

CAS No.	Surrogate Recoveries	MS	MSD	C29590-6	Limits
1868-53-7	Dibromofluoromethane	110%	115%	105%	70-130%
2037-26-5	Toluene-D8	122%	104%	110%	70-130%
460-00-4	4-Bromofluorobenzene	104%	110%	85%	70-130%

(a) Outside control limits due to high level in sample relative to spike amount.
(b) Outside control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C29590
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C29623-3MS	U13556.D	1	09/19/13	TF	n/a	n/a	VU524
C29623-3MSD	U13557.D	1	09/19/13	TF	n/a	n/a	VU524
C29623-3	U13548.D	1	09/18/13	TF	n/a	n/a	VU524

The QC reported here applies to the following samples: **Method:** SW846 8260B

C29590-4

CAS No.	Compound	C29623-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	0.32	J	20	19.1	94	19.2	94	1	77-122/16

CAS No.	Surrogate Recoveries	MS	MSD	C29623-3	Limits
1868-53-7	Dibromofluoromethane	94%	94%	110%	70-130%
2037-26-5	Toluene-D8	107%	106%	104%	70-130%
460-00-4	4-Bromofluorobenzene	107%	107%	105%	70-130%

* = Outside of Control Limits.

Northern California ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: C29590
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GJK1576-MB	JK39149.D	1	09/13/13	PH	n/a	n/a	GJK1576

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C29590-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	ND	5.0	2.5	mg/kg	

CAS No.	Surrogate Recoveries		Limits
98-08-8	aaa-Trifluorotoluene	122%	50-150%
460-00-4	4-Bromofluorobenzene	111%	50-150%

Method Blank Summary

Job Number: C29590
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GJK1579-MB	JK39218.D	1	09/17/13	PH	n/a	n/a	GJK1579

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C29590-2, C29590-3, C29590-4, C29590-5, C29590-6, C29590-7, C29590-9

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	ND	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries		Limits
98-08-8	aaa-Trifluorotoluene	103%	50-150%
460-00-4	4-Bromofluorobenzene	96%	50-150%

Blank Spike/Blank Spike Duplicate Summary

Job Number: C29590
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GJK1576-BS	JK39150.D	1	09/13/13	PH	n/a	n/a	GJK1576
GJK1576-BSD	JK39154.D	1	09/13/13	PH	n/a	n/a	GJK1576

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C29590-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	BSD mg/kg	BSD %	RPD	Limits Rec/RPD
	TPH (Gasoline)	20	21.1	106	24.1	121	13	60-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
98-08-8	aaa-Trifluorotoluene	106%	105%	50-150%
460-00-4	4-Bromofluorobenzene	102%	96%	50-150%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: C29590
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GJK1579-BS	JK39219.D	1	09/17/13	PH	n/a	n/a	GJK1579
GJK1579-BSD	JK39220.D	1	09/17/13	PH	n/a	n/a	GJK1579

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C29590-2, C29590-3, C29590-4, C29590-5, C29590-6, C29590-7, C29590-9

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	BSD mg/l	BSD %	RPD	Limits Rec/RPD
	TPH (Gasoline)	0.4	0.401	100	0.399	100	1	60-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
98-08-8	aaa-Trifluorotoluene	101%	104%	50-150%
460-00-4	4-Bromofluorobenzene	97%	97%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C29590
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C29591-1MS	JK39157.D	1	09/13/13	PH	n/a	n/a	GJK1576
C29591-1MSD	JK39158.D	1	09/13/13	PH	n/a	n/a	GJK1576
C29591-1	JK39155.D	1	09/13/13	PH	n/a	n/a	GJK1576

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C29590-1

CAS No.	Compound	C29591-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH (Gasoline)	35.2		18.9	55.7	108	51.2	82	8	60-140/30

CAS No.	Surrogate Recoveries	MS	MSD	C29591-1	Limits
98-08-8	aaa-Trifluorotoluene	113%	111%	129%	50-150%
460-00-4	4-Bromofluorobenzene	118%	117%	133%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C29590
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C29590-9MS	JK39230.D	4	09/17/13	PH	n/a	n/a	GJK1579
C29590-9MSD	JK39231.D	4	09/17/13	PH	n/a	n/a	GJK1579
C29590-9	JK39228.D	4	09/17/13	PH	n/a	n/a	GJK1579

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C29590-2, C29590-3, C29590-4, C29590-5, C29590-6, C29590-7, C29590-9

CAS No.	Compound	C29590-9 mg/l	Q	Spike mg/l	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH (Gasoline)	1.28		1.6	2.68	88	2.62	84	2	60-140/20

CAS No.	Surrogate Recoveries	MS	MSD	C29590-9	Limits
98-08-8	aaa-Trifluorotoluene	97%	97%	103%	50-150%
460-00-4	4-Bromofluorobenzene	102%	100%	104%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: C29590
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C29590-1DUP	JK39153.D	1	09/13/13	PH	n/a	n/a	GJK1576
C29590-1	JK39152.D	1	09/13/13	PH	n/a	n/a	GJK1576
C29590-1 [a]	JK39160.D	1	09/13/13	PH	n/a	n/a	GJK1576

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C29590-1

CAS No.	Compound	C29590-1 mg/kg	Q	DUP mg/kg	Q	RPD	Limits
	TPH (Gasoline)	2860		3280		14	30

CAS No.	Surrogate Recoveries	DUP	C29590-1	C29590-1	Limits
98-08-8	aaa-Trifluorotoluene	220%* [b]	209%* [b]	215%* [b]	50-150%
460-00-4	4-Bromofluorobenzene	1761%* [b]	1645%* [b]	1776%* [b]	50-150%

(a) Confirmation run for surrogate recoveries.
(b) Outside control limits due to matrix interference. Confirmed by reanalysis.

* = Outside of Control Limits.

Duplicate Summary

Job Number: C29590
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C29590-7DUP	JK39227.D	10	09/17/13	PH	n/a	n/a	GJK1579
C29590-7	JK39226.D	10	09/17/13	PH	n/a	n/a	GJK1579

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C29590-2, C29590-3, C29590-4, C29590-5, C29590-6, C29590-7, C29590-9

CAS No.	Compound	C29590-7 mg/l	Q	DUP mg/l	Q	RPD	Limits
	TPH (Gasoline)	5.51		5.15		7	20

CAS No.	Surrogate Recoveries	DUP	C29590-7	Limits
98-08-8	aaa-Trifluorotoluene	108%	109%	50-150%
460-00-4	4-Bromofluorobenzene	112%	112%	50-150%

* = Outside of Control Limits.

Northern California ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: C29590
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP6695
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 09/13/13

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	13	8.5		
Antimony	6.0	.7	.51		
Arsenic	10	.7	.65		
Barium	200	.4	.35		
Beryllium	5.0	.2	.4		
Bismuth	20		2.9		
Boron	100	.9	.64		
Cadmium	2.0	.2	.15		
Calcium	5000	7.1	12		
Chromium	10	.3	.41		
Cobalt	5.0	.2	.3		
Copper	10	1.2	3		
Iron	200	6.4	12	2.1	<200
Lead	10	.7	.85		
Lithium	50		2		
Magnesium	5000	27	36		
Manganese	15	.1	1.3	0.10	<15
Molybdenum	20	.2	.22		
Nickel	5.0	.2	.12		
Potassium	10000	18	44		
Selenium	10	1.8	2.2		
Silicon	100	1.2	6.9		
Silver	5.0	.3	.47		
Sodium	10000	15	13		
Strontium	10	.2	.24		
Thallium	10	.5	.54		
Tin	50	.2	.7		
Titanium	10	.4	.34		
Vanadium	10	.3	.3		
Zinc	20	.3	4.2		

Associated samples MP6695: C29590-2F, C29590-3F, C29590-4F, C29590-5F, C29590-6F, C29590-7F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C29590
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP6695
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 09/13/13

Metal	C29590-2F Original MS		Spikelot MPIR4A	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Bismuth					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron	12.0	564	500	110.4	70-130
Lead					
Lithium					
Magnesium					
Manganese	186	758	500	114.4	70-130
Molybdenum					
Nickel					
Potassium					
Selenium					
Silicon					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Vanadium					
Zinc					

Associated samples MP6695: C29590-2F, C29590-3F, C29590-4F, C29590-5F, C29590-6F, C29590-7F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C29590
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP6695
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 09/13/13

Metal	C29590-2F Original	MSD	Spikelot MPIR4A	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Bismuth						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron	12.0	561	500	109.8	0.5	20
Lead						
Lithium						
Magnesium						
Manganese	186	746	500	112.0	1.6	20
Molybdenum						
Nickel						
Potassium						
Selenium						
Silicon						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP6695: C29590-2F, C29590-3F, C29590-4F, C29590-5F, C29590-6F, C29590-7F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: C29590
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP6695
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 09/13/13

Metal	BSP Result	Spikelot MPIR4A	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Bismuth				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron	543	500	108.6	85-115
Lead				
Lithium				
Magnesium				
Manganese	555	500	111.0	85-115
Molybdenum				
Nickel				
Potassium				
Selenium				
Silicon				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP6695: C29590-2F, C29590-3F, C29590-4F, C29590-5F, C29590-6F, C29590-7F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: C29590
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP6695
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 09/13/13

Metal	C29590-2F Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Bismuth				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron	12.0	0.00	100.0(a)	0-10
Lead				
Lithium				
Magnesium				
Manganese	186	200	7.1	0-10
Molybdenum				
Nickel				
Potassium				
Selenium				
Silicon				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP6695: C29590-2F, C29590-3F, C29590-4F, C29590-5F, C29590-6F, C29590-7F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Northern California ACCUTEST LABORATORIES

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C29590
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chemical Oxygen Demand	GP5500/GN11731	10	0.0	mg/l	50	48.1	96.2	90-110%
Moisture, Percent	GN11724		0	%				
Total Organic Carbon	GP5508/GN11753	1.0	0.0	mg/l	25.0	24.2	97.0	75-125%

Associated Samples:
Batch GP5500: C29590-2
Batch GP5508: C29590-2
Batch GN11724: C29590-1
(*) Outside of QC limits

BLANK SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C29590
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
Chemical Oxygen Demand	GP5500/GN11731	mg/l	50	46.1	4.3	25%
Total Organic Carbon	GP5508/GN11753	mg/l	25.0	25.0	3.2	

Associated Samples:
Batch GP5500: C29590-2
Batch GP5508: C29590-2
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C29590
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Moisture, Percent	GN11724	C29606-1	%	9.8	10	2.0	0-25%

Associated Samples:
Batch GN11724: C29590-1
(*) Outside of QC limits

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MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C29590
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chemical Oxygen Demand	GP5500/GN11731	C29582-1	mg/l	5.6	50	50.1	89.2(a)	90-110%
Total Organic Carbon	GP5508/GN11753	C29573-14	mg/l	4.1	25.0	28.1	96.0	75-125%

Associated Samples:
Batch GP5500: C29590-2
Batch GP5508: C29590-2
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(a) Within 75-125% criteria for method COD HACH 8000.

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C29590
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chemical Oxygen Demand	GP5500/GN11731	C29582-1	mg/l	5.6	50	48.1	4.1	25%
Total Organic Carbon	GP5508/GN11753	C29573-14	mg/l	4.1	25.0	29.4	4.5	

Associated Samples:
Batch GP5500: C29590-2
Batch GP5508: C29590-2
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

Northern California ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

(Accutest Laboratories Southeast, Inc.)

Includes the following where applicable:

- Chain of Custody

ACCUTEST LABORATORIES

Accutest ID and PO#: C29590

2105 Lundy Avenue, San Jose, CA 95131 Phone: (408)588-0200 Fax: (408)588-0201

Subcontract Chain of Custody

Subcontract Lab: Accutest Laboratories Southeast
Date Sent: 09/09/13
Date Due: 09/23/13

Project Name: SHELLWIC3660
Project Location:

Accutest Lab Number	Customer Sample Name/Field Point ID	Matrix	Method	Collect Date	Collect Time
C29590-1		SO	*TOC *COD		

Comments: 1 x 4oz Glass Jar

Relinquished By: Elvink	Received By: FedEx	Date: 09/09/13	Time: 15:00
Relinquished By: FedEx	Received By: J. Corre (ALSE)	Date: 9-10-13	Time: 10:00
Relinquished By:	Received By:	Date:	Time:

2.6

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Send the Report to: nutank@accutest.com

C29590: Chain of Custody
Page 1 of 2
Accutest Laboratories Southeast, Inc.

ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: C 29590 CLIENT: AL NC PROJECT: SHELLWIC 3660

DATE/TIME RECEIVED: 9-10-13 ~~00:00~~ {MM/DD/YY 24:00} NUMBER OF COOLERS RECEIVED: 1

METHOD OF DELIVERY: (FEDEX) UPS ACCUTEST COURIER GREYHOUND DELIVERY OTHER

AIRBILL NUMBERS: 7966 4641 7375

COOLER INFORMATION

- [ ] CUSTODY SEAL NOT PRESENT OR NOT INTACT
- [ ] CHAIN OF CUSTODY NOT RECEIVED (COC)
- [ ] ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- [ ] SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- [ ] TEMPERATURE CRITERIA NOT MET
- [ ] WET ICE PRESENT

TRIP BLANK INFORMATION

- [ ] TRIP BLANK PROVIDED
- [X] TRIP BLANK NOT PROVIDED
- [X] TRIP BLANK NOT ON COC
- [ ] TRIP BLANK INTACT
- [ ] TRIP BLANK NOT INTACT
- [ ] RECEIVED WATER TRIP BLANK
- [ ] RECEIVED SOIL TRIP BLANK

MISC. INFORMATION

NUMBER OF ENCORES ? 25-GRAM_____ 5-GRAM_____

NUMBER OF 5035 FIELD KITS ? _____

NUMBER OF LAB FILTERED METALS ? _____

TEMPERATURE INFORMATION

- [ ] IR THERM ID 1 CORR. FACTOR +0.4
- [ ] OBSERVED TEMPS: 2.2
- [ ] CORRECTED TEMPS: 2.6

SAMPLE INFORMATION

- [ ] SAMPLE LABELS PRESENT ON ALL BOTTLES
- [ ] INCORRECT NUMBER OF CONTAINERS USED
- [ ] SAMPLE RECEIVED IMPROPERLY PRESERVED
- [ ] INSUFFICIENT VOLUME FOR ANALYSIS
- [ ] DATES/TIMES ON COC DO NOT MATCH SAMPLE LABEL
- [ ] ID'S ON COC DO NOT MATCH LABEL
- [ ] VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- [ ] BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- [ ] NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- [ ] UNCLEAR FILTERING OR COMPOSITING INSTRUCTIONS
- [ ] SAMPLE CONTAINER(S) RECEIVED BROKEN
- [ ] % SOLIDS JAR NOT RECEIVED
- [ ] 5035 FIELD KIT FROZEN WITHIN 48 HOUR'S
- [ ] RESIDUAL CHLORINE PRESENT

{APPICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS}

SUMMARY OF COMMENTS:

TECHNICIAN SIGNATURE/DATE [signature] 9-11-13 REVIEWER SIGNATURE/DATE [signature] 09/11/13

NF 12/10

receipt confirmation 122910.xls

9.1

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C29590: Chain of Custody

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Northern California ACCUTEST LABORATORIES

General Chemistry

QC Data Summaries

(Accutest Laboratories Southeast, Inc.)

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C29590
Account: ALNCA - Accutest Northern California, Inc.
Project: SHELLWIC: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chemical Oxygen Demand	GP22478/GN57725	200	0.0	mg/kg	3750	3490	92.3	82-127%
Total Organic Carbon	GP22503/GN57779	1000	0.0	mg/kg	20000	20900	104.5	88-114%

Associated Samples:
Batch GP22478: C29590-1
Batch GP22503: C29590-1
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C29590
Account: ALNCA - Accutest Northern California, Inc.
Project: SHELLWIC: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chemical Oxygen Demand	GP22478/GN57725	C29590-1	mg/kg	9900	15300	19900	65.1*(a)	82-127%
Total Organic Carbon	GP22503/GN57779	C29590-1	mg/kg	763	22500	27500	119.0N(a)	88-114%

Associated Samples:
Batch GP22478: C29590-1
Batch GP22503: C29590-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(a) Spike recovery indicates possible matrix interference and/or sample non-homogeneity.

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C29590
Account: ALNCA - Accutest Northern California, Inc.
Project: SHELLWIC: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chemical Oxygen Demand	GP22478/GN57725	C29590-1	mg/kg	9900	16900	21400	7.6	26%
Total Organic Carbon	GP22503/GN57779	C29590-1	mg/kg	763	22500	28000	1.8	36%

Associated Samples:
Batch GP22478: C29590-1
Batch GP22503: C29590-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

Northern California ACCUTEST LABORATORIES

11/23/13

Technical Report for

Shell Oil Company

URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

46194384

Accutest Job Number: C30786

Sampling Dates: 11/04/13 - 11/06/13

Report to:

URS Corporation
111 SW Columbia, Suite 1500
Portland, OR 97201-5850
brian.pletcher@urs.com

ATTN: Brian Pletcher

Total number of pages in report: **163**

NELAP ACCREDITED TNI LABORATORY

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

James J. Rhudy
Lab Director

Client Service contact: Nutan Kabir 408-588-0200

Certifications: CA (08258CA) AZ (AZ0762) DoD ELAP (L-A-B L2242)

Sections: 1 2 3 4 5 6 7 8 9 10

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Sections: 1 2 3 4 5 6 7 8 9 10

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Sample Summary

Shell Oil Company

Job No: C30786

URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Project No: 46194384

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
C30786-1	11/04/13	13:00	MT	11/08/13	AQ	Ground Water	SH-04-1113
C30786-2	11/04/13	13:05	MT	11/08/13	AQ	Ground Water	MW-112A-1113
C30786-3	11/04/13	14:55	MT	11/08/13	AQ	Ground Water	TX-04-1113
C30786-4	11/04/13	15:45	MT	11/08/13	AQ	Ground Water	MW-301-1113
C30786-5	11/04/13	16:30	MT	11/08/13	AQ	Ground Water	MW-303-1113
C30786-6	11/05/13	10:00	MT	11/08/13	AQ	Ground Water	MW-304-1113
C30786-6F	11/05/13	10:00	MT	11/08/13	AQ	Groundwater Filtered	MW-304-1113
C30786-7	11/05/13	10:55	MT	11/08/13	AQ	Ground Water	MW-213-1113
C30786-8	11/05/13	11:30	MT	11/08/13	AQ	Ground Water	MW-302-1113
C30786-8F	11/05/13	11:30	MT	11/08/13	AQ	Groundwater Filtered	MW-302-1113
C30786-9	11/05/13	13:05	MT	11/08/13	AQ	Ground Water	MW-310-1113
C30786-9F	11/05/13	13:05	MT	11/08/13	AQ	Groundwater Filtered	MW-310-1113
C30786-10	11/05/13	14:00	MT	11/08/13	AQ	Ground Water	MW-208-1113

Sample Summary
(continued)

Shell Oil Company

Job No: C30786

URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Project No: 46194384

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
C30786-11	11/06/13	15:20	MT	11/08/13	AQ	Ground Water	MW-206A-1113
C30786-12	11/06/13	16:00	MT	11/08/13	AQ	Ground Water	MW-309-1113
C30786-13	11/06/13	16:55	MT	11/08/13	AQ	Ground Water	MW-203-1113
C30786-13F	11/06/13	16:55	MT	11/08/13	AQ	Groundwater Filtered	MW-2013-1113
C30786-14	11/05/13	14:25	MT	11/08/13	AQ	Ground Water	TX-03A-1113
C30786-14F	11/05/13	14:25	MT	11/08/13	AQ	Groundwater Filtered	TX-03A-1113
C30786-15	11/05/13	16:00	MT	11/08/13	AQ	Ground Water	MW-211-1113
C30786-16	11/05/13	16:35	MT	11/08/13	AQ	Ground Water	MW-214-1113
C30786-17	11/06/13	09:00	MT	11/08/13	AQ	Ground Water	MW-101-1113
C30786-18	11/06/13	09:10	MT	11/08/13	AQ	Ground Water	TES-MW-1-1113
C30786-19	11/06/13	10:25	MT	11/08/13	AQ	Ground Water	MW-308-1113
C30786-20	11/06/13	10:35	MT	11/08/13	AQ	Ground Water	MW-307-1113
C30786-20F	11/06/13	10:35	MT	11/08/13	AQ	Groundwater Filtered	MW-307-1113

Sample Summary
(continued)

Shell Oil Company

Job No: C30786

URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Project No: 46194384

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
C30786-21	11/06/13	12:50	MT	11/08/13	AQ	Ground Water	MW-202-1113
C30786-21F	11/06/13	12:50	MT	11/08/13	AQ	Groundwater Filtered	MW-202-1113
C30786-22	11/06/13	13:30	MT	11/08/13	AQ	Ground Water	MW-201-1113
C30786-23	11/06/13	14:15	MT	11/08/13	AQ	Ground Water	MW-204-1113

Summary of Hits

Job Number: C30786
Account: Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Collected: 11/04/13 thru 11/06/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
C30786-1	**SH-04-1113**					
Benzene		3.2	1.0	0.20	ug/l	SW846 8260B
Toluene		0.43 J	1.0	0.20	ug/l	SW846 8260B
Ethylbenzene		7.1	1.0	0.20	ug/l	SW846 8260B
Xylene (total)		5.0	2.0	0.46	ug/l	SW846 8260B
TPH (Gasoline)		1.05	0.80	0.20	mg/l	NWTPH-GX
TPH (Diesel)		0.134	0.094	0.047	mg/l	NWTPH-DX
C30786-2	**MW-112A-1113**					
Benzene		23.8	1.0	0.20	ug/l	SW846 8260B
Toluene		0.68 J	1.0	0.20	ug/l	SW846 8260B
Ethylbenzene		37.6	1.0	0.20	ug/l	SW846 8260B
Xylene (total)		1.2 J	2.0	0.46	ug/l	SW846 8260B
TPH (Gasoline)		0.909	0.50	0.13	mg/l	NWTPH-GX
TPH (Diesel)		1.72	0.19	0.094	mg/l	NWTPH-DX
C30786-3	**TX-04-1113**					
TPH (Diesel)		0.0492 J	0.095	0.048	mg/l	NWTPH-DX
C30786-4	**MW-301-1113**					
Benzene		160	2.0	0.40	ug/l	SW846 8260B
Toluene		9.7	2.0	0.40	ug/l	SW846 8260B
Ethylbenzene		16.4	2.0	0.40	ug/l	SW846 8260B
Xylene (total)		10.9	4.0	0.92	ug/l	SW846 8260B
TPH (Gasoline)		2.29	1.0	0.25	mg/l	NWTPH-GX
C30786-5	**MW-303-1113**					
Benzene		884	20	4.0	ug/l	SW846 8260B
Toluene		27.8	20	4.0	ug/l	SW846 8260B
Ethylbenzene		219	20	4.0	ug/l	SW846 8260B
Xylene (total)		54.4	40	9.2	ug/l	SW846 8260B
TPH (Gasoline)		6.11	2.0	0.50	mg/l	NWTPH-GX
C30786-6	**MW-304-1113**					
Benzene		695	10	2.0	ug/l	SW846 8260B
Toluene		16.3	10	2.0	ug/l	SW846 8260B
Ethylbenzene		62.9	10	2.0	ug/l	SW846 8260B
Xylene (total)		54.0	20	4.6	ug/l	SW846 8260B
TPH (Gasoline)		2.67	1.0	0.25	mg/l	NWTPH-GX

Summary of Hits

Job Number: C30786
Account: Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Collected: 11/04/13 thru 11/06/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Methane		7650	25	13	ug/l	RSK-175
Carbon Dioxide		12700	5000	400	ug/l	RSK-175
Calcium		17000	5000		ug/l	SW846 6010B
Iron		35500	200		ug/l	SW846 6010B
Magnesium		11200	5000		ug/l	SW846 6010B
Alkalinity, Total as CaCO3		128	5.0		mg/l	SM18 2320B
Hardness, Total as CaCO3 [a]		88.6	33		mg/l	SW846 6010B/SM 2340B
C30786-6F	**MW-304-1113**					
Iron		345	200		ug/l	SW846 6010B
Manganese		273	15		ug/l	SW846 6010B
C30786-7	**MW-213-1113**					
TPH (Diesel)		0.0625 J	0.095	0.048	mg/l	NWTPH-DX
C30786-8	**MW-302-1113**					
Benzene		607	10	2.0	ug/l	SW846 8260B
Toluene		11.2	10	2.0	ug/l	SW846 8260B
Ethylbenzene		97.7	10	2.0	ug/l	SW846 8260B
Xylene (total)		52.9	20	4.6	ug/l	SW846 8260B
TPH (Gasoline)		2.69	1.0	0.25	mg/l	NWTPH-GX
Methane		3410	13	6.3	ug/l	RSK-175
Carbon Dioxide		15700	2500	200	ug/l	RSK-175
Calcium		18300	5000		ug/l	SW846 6010B
Iron		21100	200		ug/l	SW846 6010B
Magnesium		9370	5000		ug/l	SW846 6010B
Alkalinity, Total as CaCO3		102	5.0		mg/l	SM18 2320B
Hardness, Total as CaCO3 [a]		84.3	33		mg/l	SW846 6010B/SM 2340B
Sulfate		13.2	0.50		mg/l	EPA 300/SW846 9056A
C30786-8F	**MW-302-1113**					
Manganese		349	15		ug/l	SW846 6010B
C30786-9	**MW-310-1113**					
Benzene		772	10	2.0	ug/l	SW846 8260B
Toluene		40.9	10	2.0	ug/l	SW846 8260B
Ethylbenzene		226	10	2.0	ug/l	SW846 8260B
Xylene (total)		84.6	20	4.6	ug/l	SW846 8260B
TPH (Gasoline)		4.92	2.0	0.50	mg/l	NWTPH-GX
Methane		4520	25	13	ug/l	RSK-175

Summary of Hits

Job Number: C30786
Account: Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Collected: 11/04/13 thru 11/06/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Carbon Dioxide		11300	5000	400	ug/l	RSK-175
Calcium		29600	5000		ug/l	SW846 6010B
Iron		34600	200		ug/l	SW846 6010B
Magnesium		9720	5000		ug/l	SW846 6010B
Alkalinity, Total as CaCO3		134	5.0		mg/l	SM18 2320B
Hardness, Total as CaCO3 [a]		114	33		mg/l	SW846 6010B/SM 2340B
C30786-9F	**MW-310-1113**					
Iron		982	200		ug/l	SW846 6010B
Manganese		528	15		ug/l	SW846 6010B
C30786-10	**MW-208-1113**					
Ethylbenzene		0.63 J	1.0	0.20	ug/l	SW846 8260B
Xylene (total)		5.6	2.0	0.46	ug/l	SW846 8260B
Acenaphthene		0.11 J	0.47	0.047	ug/l	SW846 8270C BY SIM
Naphthalene		0.17 J	0.47	0.094	ug/l	SW846 8270C BY SIM
TPH (Gasoline)		0.151 J	0.20	0.050	mg/l	NWTPH-GX
TPH (Diesel)		0.443	0.095	0.048	mg/l	NWTPH-DX
C30786-11	**MW-206A-1113**					
No hits reported in this sample.						
C30786-12	**MW-309-1113**					
No hits reported in this sample.						
C30786-13	**MW-203-1113**					
TPH (Gasoline)		0.680	0.20	0.050	mg/l	NWTPH-GX
Methane		800	25	13	ug/l	RSK-175
Carbon Dioxide		20100	5000	400	ug/l	RSK-175
Calcium		53300	5000		ug/l	SW846 6010B
Iron		21900	200		ug/l	SW846 6010B
Magnesium		6670	5000		ug/l	SW846 6010B
Alkalinity, Total as CaCO3		190	5.0		mg/l	SM18 2320B
Hardness, Total as CaCO3 [a]		161	33		mg/l	SW846 6010B/SM 2340B
C30786-13F	**MW-2013-1113**					
Iron		3680	200		ug/l	SW846 6010B
Manganese		178	15		ug/l	SW846 6010B

Summary of Hits

Job Number: C30786
Account: Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Collected: 11/04/13 thru 11/06/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
C30786-14	**TX-03A-1113**					
Benzene		2720	50	10	ug/l	SW846 8260B
Toluene		34.3 J	50	10	ug/l	SW846 8260B
Ethylbenzene		36.4 J	50	10	ug/l	SW846 8260B
Xylene (total)		41.1 J	100	23	ug/l	SW846 8260B
TPH (Gasoline)		6.01	2.0	0.50	mg/l	NWTPH-GX
Methane		6270	25	13	ug/l	RSK-175
Carbon Dioxide		16400	5000	400	ug/l	RSK-175
Calcium		28800	5000		ug/l	SW846 6010B
Iron		44900	200		ug/l	SW846 6010B
Magnesium		19500	5000		ug/l	SW846 6010B
Alkalinity, Total as CaCO3		188	5.0		mg/l	SM18 2320B
Hardness, Total as CaCO3 [a]		152	33		mg/l	SW846 6010B/SM 2340B
C30786-14F	**TX-03A-1113**					
Manganese		470	15		ug/l	SW846 6010B
C30786-15	**MW-211-1113**					
Benzene		0.32 J	1.0	0.20	ug/l	SW846 8260B
Toluene		0.21 J	1.0	0.20	ug/l	SW846 8260B
Ethylbenzene		0.57 J	1.0	0.20	ug/l	SW846 8260B
Acenaphthene		0.20 J	0.48	0.048	ug/l	SW846 8270C BY SIM
Fluoranthene		0.081 J	0.48	0.048	ug/l	SW846 8270C BY SIM
Fluorene		0.29 J	0.48	0.048	ug/l	SW846 8270C BY SIM
1-Methylnaphthalene		0.19 J	0.48	0.095	ug/l	SW846 8270C BY SIM
Pyrene		0.070 J	0.48	0.048	ug/l	SW846 8270C BY SIM
TPH (Gasoline)		0.470	0.20	0.050	mg/l	NWTPH-GX
TPH (Diesel)		0.173	0.094	0.047	mg/l	NWTPH-DX
C30786-16	**MW-214-1113**					
TPH (Diesel)		0.0552 J	0.094	0.047	mg/l	NWTPH-DX
C30786-17	**MW-101-1113**					
TPH (Gasoline)		0.118 J	0.20	0.050	mg/l	NWTPH-GX
C30786-18	**TES-MW-1-1113**					

No hits reported in this sample.

Summary of Hits

Job Number: C30786
Account: Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Collected: 11/04/13 thru 11/06/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
C30786-19	**MW-308-1113**					
Benzene		237	5.0	1.0	ug/l	SW846 8260B
Toluene		3.3 J	5.0	1.0	ug/l	SW846 8260B
Ethylbenzene		5.6	5.0	1.0	ug/l	SW846 8260B
Xylene (total)		2.6 J	10	2.3	ug/l	SW846 8260B
TPH (Gasoline)		1.65	0.80	0.20	mg/l	NWTPH-GX
C30786-20	**MW-307-1113**					
Benzene		568	10	2.0	ug/l	SW846 8260B
Toluene		44.8	10	2.0	ug/l	SW846 8260B
Ethylbenzene		104	10	2.0	ug/l	SW846 8260B
Xylene (total)		91.2	20	4.6	ug/l	SW846 8260B
TPH (Gasoline)		4.39	2.0	0.50	mg/l	NWTPH-GX
Methane		7270	25	13	ug/l	RSK-175
Carbon Dioxide		8440	5000	400	ug/l	RSK-175
Calcium		10900	5000		ug/l	SW846 6010B
Iron		27000	200		ug/l	SW846 6010B
Alkalinity, Total as CaCO3		60.0	5.0		mg/l	SM18 2320B
Hardness, Total as CaCO3 [a]		45.4	33		mg/l	SW846 6010B/SM 2340B
C30786-20F	**MW-307-1113**					
Manganese		217	15		ug/l	SW846 6010B
C30786-21	**MW-202-1113**					
Toluene		2.7	1.0	0.20	ug/l	SW846 8260B
Ethylbenzene		33.5	1.0	0.20	ug/l	SW846 8260B
Xylene (total)		1.2 J	2.0	0.46	ug/l	SW846 8260B
TPH (Gasoline)		4.68	2.0	0.50	mg/l	NWTPH-GX
Methane		3570	25	13	ug/l	RSK-175
Carbon Dioxide		22100	5000	400	ug/l	RSK-175
TPH (Diesel)		1.29	0.095	0.048	mg/l	NWTPH-DX
Calcium		11100	5000		ug/l	SW846 6010B
Iron		37900	200		ug/l	SW846 6010B
Magnesium		10700	5000		ug/l	SW846 6010B
Alkalinity, Total as CaCO3		80.0	5.0		mg/l	SM18 2320B
Hardness, Total as CaCO3 [a]		71.8	33		mg/l	SW846 6010B/SM 2340B
Sulfate		0.76	0.50		mg/l	EPA 300/SW846 9056A
C30786-21F	**MW-202-1113**					
Manganese		439	15		ug/l	SW846 6010B

Summary of Hits

Job Number: C30786
Account: Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Collected: 11/04/13 thru 11/06/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
C30786-22	**MW-201-1113**					
TPH (Gasoline)		0.0964 J	0.20	0.050	mg/l	NWTPH-GX
TPH (Diesel)		0.520	0.094	0.047	mg/l	NWTPH-DX
C30786-23	**MW-204-1113**					
Benzene		0.57 J	1.0	0.20	ug/l	SW846 8260B
TPH (Gasoline)		0.0762 J	0.20	0.050	mg/l	NWTPH-GX
TPH (Diesel)		0.280	0.096	0.048	mg/l	NWTPH-DX
TPH (Motor Oil)		0.0976 J	0.19	0.096	mg/l	NWTPH-DX

(a) Calculated as: (Calcium * 2.497) + (Magnesium * 4.118)

Northern California ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SH-04-1113		
Lab Sample ID:	C30786-1	**Date Sampled:**	11/04/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W43104.D	1	11/13/13	BD	n/a	n/a	VW1530
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	3.2	1.0	0.20	ug/l	
108-88-3	Toluene	0.43	1.0	0.20	ug/l	J
100-41-4	Ethylbenzene	7.1	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	5.0	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		70-130%
2037-26-5	Toluene-D8	107%		70-130%
460-00-4	4-Bromofluorobenzene	94%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SH-04-1113		
Lab Sample ID:	C30786-1	**Date Sampled:**	11/04/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40587.D	4	11/15/13	TT	n/a	n/a	GJK1637
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	1.05	0.80	0.20	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	95%		50-150%
460-00-4	4-Bromofluorobenzene	101%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SH-04-1113		
Lab Sample ID:	C30786-1	**Date Sampled:**	11/04/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-DX SW846 3510C	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG48568.D	1	11/11/13	NN	11/09/13	OP9019	GGG1335
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	0.134	0.094	0.047	mg/l	
	TPH (Motor Oil)	ND	0.19	0.094	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	85%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-112A-1113		
Lab Sample ID:	C30786-2	**Date Sampled:**	11/04/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W43105.D	1	11/13/13	BD	n/a	n/a	VW1530
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	23.8	1.0	0.20	ug/l	
108-88-3	Toluene	0.68	1.0	0.20	ug/l	J
100-41-4	Ethylbenzene	37.6	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	1.2	2.0	0.46	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		70-130%
2037-26-5	Toluene-D8	105%		70-130%
460-00-4	4-Bromofluorobenzene	99%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-112A-1113		
Lab Sample ID:	C30786-2	**Date Sampled:**	11/04/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40588.D	2.5	11/15/13	TT	n/a	n/a	GJK1637
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	0.909	0.50	0.13	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	100%		50-150%
460-00-4	4-Bromofluorobenzene	121%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-112A-1113		
Lab Sample ID:	C30786-2	**Date Sampled:**	11/04/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-DX SW846 3510C	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG48569.D	2	11/11/13	NN	11/09/13	OP9019	GGG1335
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	1.72	0.19	0.094	mg/l	
	TPH (Motor Oil)	ND	0.38	0.19	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	81%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TX-04-1113		
Lab Sample ID:	C30786-3	**Date Sampled:**	11/04/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W43106.D	1	11/13/13	BD	n/a	n/a	VW1530
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		70-130%
2037-26-5	Toluene-D8	106%		70-130%
460-00-4	4-Bromofluorobenzene	93%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TX-04-1113		
Lab Sample ID:	C30786-3	**Date Sampled:**	11/04/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40589.D	1	11/15/13	TT	n/a	n/a	GJK1637
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	ND	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	96%		50-150%
460-00-4	4-Bromofluorobenzene	101%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TX-04-1113		
Lab Sample ID:	C30786-3	**Date Sampled:**	11/04/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-DX SW846 3510C	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG48570.D	1	11/11/13	NN	11/09/13	OP9019	GGG1335
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	0.0492	0.095	0.048	mg/l	J
	TPH (Motor Oil)	ND	0.19	0.095	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	91%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-301-1113		
Lab Sample ID:	C30786-4	**Date Sampled:**	11/04/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W43108.D	2	11/13/13	BD	n/a	n/a	VW1530
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	160	2.0	0.40	ug/l	
108-88-3	Toluene	9.7	2.0	0.40	ug/l	
100-41-4	Ethylbenzene	16.4	2.0	0.40	ug/l	
1330-20-7	Xylene (total)	10.9	4.0	0.92	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		70-130%
2037-26-5	Toluene-D8	104%		70-130%
460-00-4	4-Bromofluorobenzene	97%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-301-1113		
Lab Sample ID:	C30786-4	**Date Sampled:**	11/04/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40591.D	5	11/15/13	TT	n/a	n/a	GJK1637
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	2.29	1.0	0.25	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	103%		50-150%
460-00-4	4-Bromofluorobenzene	132%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-303-1113		
Lab Sample ID:	C30786-5	**Date Sampled:**	11/04/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W43109.D	20	11/13/13	BD	n/a	n/a	VW1530
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	884	20	4.0	ug/l	
108-88-3	Toluene	27.8	20	4.0	ug/l	
100-41-4	Ethylbenzene	219	20	4.0	ug/l	
1330-20-7	Xylene (total)	54.4	40	9.2	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		70-130%
2037-26-5	Toluene-D8	103%		70-130%
460-00-4	4-Bromofluorobenzene	95%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-303-1113		
Lab Sample ID:	C30786-5	**Date Sampled:**	11/04/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40646.D	10	11/18/13	TT	n/a	n/a	GJK1639
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	6.11	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	94%		50-150%
460-00-4	4-Bromofluorobenzene	110%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-304-1113		
Lab Sample ID:	C30786-6	**Date Sampled:**	11/05/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W43110.D	10	11/13/13	BD	n/a	n/a	VW1530
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	695	10	2.0	ug/l	
108-88-3	Toluene	16.3	10	2.0	ug/l	
100-41-4	Ethylbenzene	62.9	10	2.0	ug/l	
1330-20-7	Xylene (total)	54.0	20	4.6	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		70-130%
2037-26-5	Toluene-D8	104%		70-130%
460-00-4	4-Bromofluorobenzene	96%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-304-1113
Lab Sample ID: C30786-6
Matrix: AQ - Ground Water
Method: RSK-175
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Date Sampled: 11/05/13
Date Received: 11/08/13
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA004484.D	1	11/11/13	TT	n/a	n/a	GAA208
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	10.0 ul	22 Deg. C
Run #2				

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	7650	25	13	ug/l	
124-38-9	Carbon Dioxide	12700	5000	400	ug/l	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-304-1113		
Lab Sample ID:	C30786-6	**Date Sampled:**	11/05/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40593.D	5	11/15/13	TT	n/a	n/a	GJK1637
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	2.67	1.0	0.25	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	109%		50-150%
460-00-4	4-Bromofluorobenzene	122%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-304-1113		
Lab Sample ID:	C30786-6	**Date Sampled:**	11/05/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	17000	5000	ug/l	1	11/12/13	11/12/13	RS	SW846 6010B [1]	SW3010A [2]
Iron	35500	200	ug/l	1	11/12/13	11/12/13	RS	SW846 6010B [1]	SW3010A [2]
Magnesium	11200	5000	ug/l	1	11/12/13	11/12/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3576
(2) Prep QC Batch: MP6984

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-304-1113		
Lab Sample ID:	C30786-6	**Date Sampled:**	11/05/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	128	5.0	mg/l	1	11/14/13 12:00	AC	SM18 2320B
Hardness, Total as CaCO3 [a]	88.6	33	mg/l	1	11/12/13 18:42	RS	SW846 6010B/SM 2340B
Sulfate	< 0.50	0.50	mg/l	1	11/14/13 18:54	RL	EPA 300/SW846 9056A

(a) Calculated as: (Calcium * 2.497) + (Magnesium * 4.118)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-304-1113		
Lab Sample ID:	C30786-6F	**Date Sampled:**	11/05/13
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/08/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	345	200	ug/l	1	11/18/13	11/18/13	RS	SW846 6010B [1]	SW3010A [2]
Manganese	273	15	ug/l	1	11/18/13	11/18/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3584
(2) Prep QC Batch: MP7009

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-213-1113		
Lab Sample ID:	C30786-7	**Date Sampled:**	11/05/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W43107.D	1	11/13/13	BD	n/a	n/a	VW1530
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		70-130%
2037-26-5	Toluene-D8	106%		70-130%
460-00-4	4-Bromofluorobenzene	93%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-213-1113
Lab Sample ID: C30786-7 **Date Sampled:** 11/05/13
Matrix: AQ - Ground Water **Date Received:** 11/08/13
Method: SW846 8270C BY SIM SW846 3510C **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T11421.D	1	11/11/13	LW	11/11/13	OP9024	ET518
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.48	0.048	ug/l	
208-96-8	Acenaphthylene	ND	0.48	0.048	ug/l	
120-12-7	Anthracene	ND	0.48	0.048	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.095	0.050	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.095	0.039	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.095	0.033	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.095	0.034	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.095	0.037	ug/l	
218-01-9	Chrysene	ND	0.095	0.043	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.095	0.033	ug/l	
206-44-0	Fluoranthene	ND	0.48	0.048	ug/l	
86-73-7	Fluorene	ND	0.48	0.048	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.095	0.033	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.48	0.095	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.48	0.095	ug/l	
91-20-3	Naphthalene	ND	0.48	0.095	ug/l	
85-01-8	Phenanthrene	ND	0.48	0.048	ug/l	
129-00-0	Pyrene	ND	0.48	0.048	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	80%		31-128%
321-60-8	2-Fluorobiphenyl	67%		34-123%
1718-51-0	Terphenyl-d14	67%		43-136%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-213-1113		
Lab Sample ID:	C30786-7	**Date Sampled:**	11/05/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40595.D	1	11/15/13	TT	n/a	n/a	GJK1637
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline) [a]	ND	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	112%		50-150%
460-00-4	4-Bromofluorobenzene	109%		50-150%

(a) CCV outside of control limits (biased high); not detected in sample.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-213-1113		
Lab Sample ID:	C30786-7	**Date Sampled:**	11/05/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-DX SW846 3510C	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG48571.D	1	11/11/13	NN	11/09/13	OP9019	GGG1335
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	0.0625	0.095	0.048	mg/l	J
	TPH (Motor Oil)	ND	0.19	0.095	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	84%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-302-1113
Lab Sample ID: C30786-8 **Date Sampled:** 11/05/13
Matrix: AQ - Ground Water **Date Received:** 11/08/13
Method: SW846 8260B **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W43111.D	10	11/13/13	BD	n/a	n/a	VW1530
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	607	10	2.0	ug/l	
108-88-3	Toluene	11.2	10	2.0	ug/l	
100-41-4	Ethylbenzene	97.7	10	2.0	ug/l	
1330-20-7	Xylene (total)	52.9	20	4.6	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	111%		70-130%
2037-26-5	Toluene-D8	103%		70-130%
460-00-4	4-Bromofluorobenzene	96%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-302-1113
Lab Sample ID: C30786-8
Matrix: AQ - Ground Water
Method: RSK-175
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Date Sampled: 11/05/13
Date Received: 11/08/13
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA004487.D	1	11/11/13	TT	n/a	n/a	GAA208
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	20.0 ul	22 Deg. C
Run #2				

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	3410	13	6.3	ug/l	
124-38-9	Carbon Dioxide	15700	2500	200	ug/l	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-302-1113		
Lab Sample ID:	C30786-8	**Date Sampled:**	11/05/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40647.D	5	11/18/13	TT	n/a	n/a	GJK1639
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	2.69	1.0	0.25	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	95%		50-150%
460-00-4	4-Bromofluorobenzene	117%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-302-1113		
Lab Sample ID:	C30786-8	**Date Sampled:**	11/05/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	18300	5000	ug/l	1	11/12/13	11/13/13	RS	SW846 6010B [1]	SW3010A [2]
Iron	21100	200	ug/l	1	11/12/13	11/13/13	RS	SW846 6010B [1]	SW3010A [2]
Magnesium	9370	5000	ug/l	1	11/12/13	11/13/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3576
(2) Prep QC Batch: MP6984

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-302-1113		
Lab Sample ID:	C30786-8	**Date Sampled:**	11/05/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	102	5.0	mg/l	1	11/14/13 12:00	AC	SM18 2320B
Hardness, Total as CaCO3 [a]	84.3	33	mg/l	1	11/13/13 08:13	RS	SW846 6010B/SM 2340B
Sulfate	13.2	0.50	mg/l	1	11/14/13 19:11	RL	EPA 300/SW846 9056A

(a) Calculated as: (Calcium * 2.497) + (Magnesium * 4.118)

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-302-1113		
Lab Sample ID:	C30786-8F	**Date Sampled:**	11/05/13
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/08/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	< 200	200	ug/l	1	11/18/13	11/18/13	RS	SW846 6010B [1]	SW3010A [2]
Manganese	349	15	ug/l	1	11/18/13	11/18/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3584
(2) Prep QC Batch: MP7009

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-310-1113		
Lab Sample ID:	C30786-9	**Date Sampled:**	11/05/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W43127.D	10	11/13/13	BD	n/a	n/a	VW1531
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	772	10	2.0	ug/l	
108-88-3	Toluene	40.9	10	2.0	ug/l	
100-41-4	Ethylbenzene	226	10	2.0	ug/l	
1330-20-7	Xylene (total)	84.6	20	4.6	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		70-130%
2037-26-5	Toluene-D8	101%		70-130%
460-00-4	4-Bromofluorobenzene	93%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-310-1113
Lab Sample ID: C30786-9
Matrix: AQ - Ground Water
Method: RSK-175
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Date Sampled: 11/05/13
Date Received: 11/08/13
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA004489.D	1	11/11/13	TT	n/a	n/a	GAA208
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	10.0 ul	22 Deg. C
Run #2				

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	4520	25	13	ug/l	
124-38-9	Carbon Dioxide	11300	5000	400	ug/l	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-310-1113		
Lab Sample ID:	C30786-9	**Date Sampled:**	11/05/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40648.D	10	11/18/13	TT	n/a	n/a	GJK1639
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	4.92	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	94%		50-150%
460-00-4	4-Bromofluorobenzene	115%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-310-1113
Lab Sample ID: C30786-9
Matrix: AQ - Ground Water
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Date Sampled: 11/05/13
Date Received: 11/08/13
Percent Solids: n/a

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	29600	5000	ug/l	1	11/12/13	11/12/13	RS	SW846 6010B [1]	SW3010A [2]
Iron	34600	200	ug/l	1	11/12/13	11/12/13	RS	SW846 6010B [1]	SW3010A [2]
Magnesium	9720	5000	ug/l	1	11/12/13	11/12/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3576
(2) Prep QC Batch: MP6984

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-310-1113		
Lab Sample ID:	C30786-9	**Date Sampled:**	11/05/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	134	5.0	mg/l	1	11/14/13 12:00	AC	SM18 2320B
Hardness, Total as CaCO3 [a]	114	33	mg/l	1	11/12/13 19:18	RS	SW846 6010B/SM 2340B
Sulfate	< 0.50	0.50	mg/l	1	11/14/13 20:03	RL	EPA 300/SW846 9056A

(a) Calculated as: (Calcium * 2.497) + (Magnesium * 4.118)

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-310-1113		
Lab Sample ID:	C30786-9F	**Date Sampled:**	11/05/13
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/08/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	982	200	ug/l	1	11/18/13	11/18/13	RS	SW846 6010B [1]	SW3010A [2]
Manganese	528	15	ug/l	1	11/18/13	11/18/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3584
(2) Prep QC Batch: MP7009

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-208-1113		
Lab Sample ID:	C30786-10	**Date Sampled:**	11/05/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W43126.D	1	11/13/13	BD	n/a	n/a	VW1531
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	0.63	1.0	0.20	ug/l	J
1330-20-7	Xylene (total)	5.6	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		70-130%
2037-26-5	Toluene-D8	104%		70-130%
460-00-4	4-Bromofluorobenzene	98%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-208-1113
Lab Sample ID: C30786-10 **Date Sampled:** 11/05/13
Matrix: AQ - Ground Water **Date Received:** 11/08/13
Method: SW846 8270C BY SIM SW846 3510C **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T11422.D	1	11/11/13	LW	11/11/13	OP9024	ET518
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.11	0.47	0.047	ug/l	J
208-96-8	Acenaphthylene	ND	0.47	0.047	ug/l	
120-12-7	Anthracene	ND	0.47	0.047	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.094	0.050	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.094	0.039	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.094	0.033	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.094	0.034	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.094	0.037	ug/l	
218-01-9	Chrysene	ND	0.094	0.042	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.094	0.033	ug/l	
206-44-0	Fluoranthene	ND	0.47	0.047	ug/l	
86-73-7	Fluorene	ND	0.47	0.047	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.094	0.033	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.47	0.094	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.47	0.094	ug/l	
91-20-3	Naphthalene	0.17	0.47	0.094	ug/l	J
85-01-8	Phenanthrene	ND	0.47	0.047	ug/l	
129-00-0	Pyrene	ND	0.47	0.047	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	71%		31-128%
321-60-8	2-Fluorobiphenyl	60%		34-123%
1718-51-0	Terphenyl-d14	52%		43-136%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-208-1113		
Lab Sample ID:	C30786-10	**Date Sampled:**	11/05/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40649.D	1	11/18/13	TT	n/a	n/a	GJK1639
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	0.151	0.20	0.050	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	94%		50-150%
460-00-4	4-Bromofluorobenzene	115%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-208-1113
Lab Sample ID: C30786-10 **Date Sampled:** 11/05/13
Matrix: AQ - Ground Water **Date Received:** 11/08/13
Method: NWTPH-DX SW846 3510C **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG48572.D	1	11/11/13	NN	11/09/13	OP9019	GGG1335
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	0.443	0.095	0.048	mg/l	
	TPH (Motor Oil)	ND	0.19	0.095	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	80%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-206A-1113		
Lab Sample ID:	C30786-11	**Date Sampled:**	11/06/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W43176.D	1	11/14/13	BD	n/a	n/a	VW1532
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		70-130%
2037-26-5	Toluene-D8	109%		70-130%
460-00-4	4-Bromofluorobenzene	95%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-206A-1113		
Lab Sample ID:	C30786-11	**Date Sampled:**	11/06/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40599.D	1	11/15/13	TT	n/a	n/a	GJK1637
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline) [a]	ND	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	109%		50-150%
460-00-4	4-Bromofluorobenzene	112%		50-150%

(a) CCV outside of control limits (biased high); not detected in sample.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-206A-1113
Lab Sample ID: C30786-11 **Date Sampled:** 11/06/13
Matrix: AQ - Ground Water **Date Received:** 11/08/13
Method: NWTPH-DX SW846 3510C **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG48573.D	1	11/11/13	NN	11/09/13	OP9019	GGG1335
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	ND	0.094	0.047	mg/l	
	TPH (Motor Oil)	ND	0.19	0.094	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	75%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-309-1113		
Lab Sample ID:	C30786-12	**Date Sampled:**	11/06/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W43177.D	1	11/14/13	BD	n/a	n/a	VW1532
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		70-130%
2037-26-5	Toluene-D8	109%		70-130%
460-00-4	4-Bromofluorobenzene	96%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-309-1113		
Lab Sample ID:	C30786-12	**Date Sampled:**	11/06/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40651.D	1	11/18/13	TT	n/a	n/a	GJK1639
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	ND	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	89%		50-150%
460-00-4	4-Bromofluorobenzene	98%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-203-1113
Lab Sample ID: C30786-13
Matrix: AQ - Ground Water
Method: RSK-175
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Date Sampled: 11/06/13
Date Received: 11/08/13
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA004502.D	1	11/12/13	TT	n/a	n/a	GAA209
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	10.0 ul	22 Deg. C
Run #2				

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	800	25	13	ug/l	
124-38-9	Carbon Dioxide	20100	5000	400	ug/l	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-203-1113		
Lab Sample ID:	C30786-13	**Date Sampled:**	11/06/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40652.D	1	11/18/13	TT	n/a	n/a	GJK1639
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	0.680	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	92%		50-150%
460-00-4	4-Bromofluorobenzene	105%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-203-1113
Lab Sample ID: C30786-13 **Date Sampled:** 11/06/13
Matrix: AQ - Ground Water **Date Received:** 11/08/13
Method: NWTPH-DX SW846 3510C **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG48574.D	1	11/11/13	NN	11/09/13	OP9019	GGG1335
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	ND	0.094	0.047	mg/l	
	TPH (Motor Oil)	ND	0.19	0.094	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	70%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-203-1113		
Lab Sample ID:	C30786-13	**Date Sampled:**	11/06/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	53300	5000	ug/l	1	11/12/13	11/12/13	RS	SW846 6010B [1]	SW3010A [2]
Iron	21900	200	ug/l	1	11/12/13	11/12/13	RS	SW846 6010B [1]	SW3010A [2]
Magnesium	6670	5000	ug/l	1	11/12/13	11/12/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3576
(2) Prep QC Batch: MP6984

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-203-1113		
Lab Sample ID:	C30786-13	**Date Sampled:**	11/06/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	190	5.0	mg/l	1	11/14/13 12:00	AC	SM18 2320B
Hardness, Total as CaCO3 [a]	161	33	mg/l	1	11/12/13 19:26	RS	SW846 6010B/SM 2340B
Sulfate	< 0.50	0.50	mg/l	1	11/14/13 20:21	RL	EPA 300/SW846 9056A

(a) Calculated as: (Calcium * 2.497) + (Magnesium * 4.118)

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-2013-1113		
Lab Sample ID:	C30786-13F	**Date Sampled:**	11/06/13
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/08/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	3680	200	ug/l	1	11/18/13	11/18/13	RS	SW846 6010B [1]	SW3010A [2]
Manganese	178	15	ug/l	1	11/18/13	11/18/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3584
(2) Prep QC Batch: MP7009

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TX-03A-1113		
Lab Sample ID:	C30786-14	**Date Sampled:**	11/05/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W43178.D	50	11/14/13	BD	n/a	n/a	VW1532
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	2720	50	10	ug/l	
108-88-3	Toluene	34.3	50	10	ug/l	J
100-41-4	Ethylbenzene	36.4	50	10	ug/l	J
1330-20-7	Xylene (total)	41.1	100	23	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	111%		70-130%
2037-26-5	Toluene-D8	107%		70-130%
460-00-4	4-Bromofluorobenzene	96%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TX-03A-1113
Lab Sample ID: C30786-14 **Date Sampled:** 11/05/13
Matrix: AQ - Ground Water **Date Received:** 11/08/13
Method: RSK-175 **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA004490.D	1	11/11/13	TT	n/a	n/a	GAA208
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	10.0 ul	22 Deg. C
Run #2				

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	6270	25	13	ug/l	
124-38-9	Carbon Dioxide	16400	5000	400	ug/l	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TX-03A-1113		
Lab Sample ID:	C30786-14	**Date Sampled:**	11/05/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40653.D	10	11/18/13	TT	n/a	n/a	GJK1639
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	6.01	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	99%		50-150%
460-00-4	4-Bromofluorobenzene	110%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TX-03A-1113
Lab Sample ID: C30786-14
Matrix: AQ - Ground Water
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Date Sampled: 11/05/13
Date Received: 11/08/13
Percent Solids: n/a

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	28800	5000	ug/l	1	11/12/13	11/12/13	RS	SW846 6010B [1]	SW3010A [2]
Iron	44900	200	ug/l	1	11/12/13	11/12/13	RS	SW846 6010B [1]	SW3010A [2]
Magnesium	19500	5000	ug/l	1	11/12/13	11/12/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3576
(2) Prep QC Batch: MP6984

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TX-03A-1113		
Lab Sample ID:	C30786-14	**Date Sampled:**	11/05/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	188	5.0	mg/l	1	11/14/13 12:00	AC	SM18 2320B
Hardness, Total as CaCO3 [a]	152	33	mg/l	1	11/12/13 19:48	RS	SW846 6010B/SM 2340B
Sulfate	< 0.50	0.50	mg/l	1	11/14/13 20:38	RL	EPA 300/SW846 9056A

(a) Calculated as: (Calcium * 2.497) + (Magnesium * 4.118)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TX-03A-1113		
Lab Sample ID:	C30786-14F	**Date Sampled:**	11/05/13
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/08/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	< 200	200	ug/l	1	11/18/13	11/18/13	RS	SW846 6010B [1]	SW3010A [2]
Manganese	470	15	ug/l	1	11/18/13	11/18/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3584
(2) Prep QC Batch: MP7009

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-211-1113		
Lab Sample ID:	C30786-15	**Date Sampled:**	11/05/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W43179.D	1	11/14/13	BD	n/a	n/a	VW1532
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.32	1.0	0.20	ug/l	J
108-88-3	Toluene	0.21	1.0	0.20	ug/l	J
100-41-4	Ethylbenzene	0.57	1.0	0.20	ug/l	J
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		70-130%
2037-26-5	Toluene-D8	109%		70-130%
460-00-4	4-Bromofluorobenzene	100%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-211-1113
Lab Sample ID: C30786-15 **Date Sampled:** 11/05/13
Matrix: AQ - Ground Water **Date Received:** 11/08/13
Method: SW846 8270C BY SIM SW846 3510C **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T11423.D	1	11/11/13	LW	11/11/13	OP9024	ET518
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.20	0.48	0.048	ug/l	J
208-96-8	Acenaphthylene	ND	0.48	0.048	ug/l	
120-12-7	Anthracene	ND	0.48	0.048	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.095	0.050	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.095	0.039	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.095	0.033	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.095	0.034	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.095	0.037	ug/l	
218-01-9	Chrysene	ND	0.095	0.043	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.095	0.033	ug/l	
206-44-0	Fluoranthene	0.081	0.48	0.048	ug/l	J
86-73-7	Fluorene	0.29	0.48	0.048	ug/l	J
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.095	0.033	ug/l	
90-12-0	1-Methylnaphthalene	0.19	0.48	0.095	ug/l	J
91-57-6	2-Methylnaphthalene	ND	0.48	0.095	ug/l	
91-20-3	Naphthalene	ND	0.48	0.095	ug/l	
85-01-8	Phenanthrene	ND	0.48	0.048	ug/l	
129-00-0	Pyrene	0.070	0.48	0.048	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	66%		31-128%
321-60-8	2-Fluorobiphenyl	53%		34-123%
1718-51-0	Terphenyl-d14	47%		43-136%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-211-1113		
Lab Sample ID:	C30786-15	**Date Sampled:**	11/05/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40654.D	1	11/18/13	TT	n/a	n/a	GJK1639
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	0.470	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	101%		50-150%
460-00-4	4-Bromofluorobenzene	130%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-211-1113
Lab Sample ID: C30786-15 **Date Sampled:** 11/05/13
Matrix: AQ - Ground Water **Date Received:** 11/08/13
Method: NWTPH-DX SW846 3510C **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG48575.D	1	11/11/13	NN	11/09/13	OP9019	GGG1335
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	0.173	0.094	0.047	mg/l	
	TPH (Motor Oil)	ND	0.19	0.094	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	55%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-214-1113		
Lab Sample ID:	C30786-16	**Date Sampled:**	11/05/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W43180.D	1	11/14/13	BD	n/a	n/a	VW1532
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		70-130%
2037-26-5	Toluene-D8	109%		70-130%
460-00-4	4-Bromofluorobenzene	96%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID: MW-214-1113
Lab Sample ID: C30786-16 **Date Sampled:** 11/05/13
Matrix: AQ - Ground Water **Date Received:** 11/08/13
Method: SW846 8270C BY SIM SW846 3510C **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T11424.D	1	11/11/13	LW	11/11/13	OP9024	ET518
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.47	0.047	ug/l	
208-96-8	Acenaphthylene	ND	0.47	0.047	ug/l	
120-12-7	Anthracene	ND	0.47	0.047	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.094	0.050	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.094	0.039	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.094	0.033	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.094	0.034	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.094	0.037	ug/l	
218-01-9	Chrysene	ND	0.094	0.042	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.094	0.033	ug/l	
206-44-0	Fluoranthene	ND	0.47	0.047	ug/l	
86-73-7	Fluorene	ND	0.47	0.047	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.094	0.033	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.47	0.094	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.47	0.094	ug/l	
91-20-3	Naphthalene	ND	0.47	0.094	ug/l	
85-01-8	Phenanthrene	ND	0.47	0.047	ug/l	
129-00-0	Pyrene	ND	0.47	0.047	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	81%		31-128%
321-60-8	2-Fluorobiphenyl	70%		34-123%
1718-51-0	Terphenyl-d14	69%		43-136%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-214-1113		
Lab Sample ID:	C30786-16	**Date Sampled:**	11/05/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40606.D	1	11/16/13	TT	n/a	n/a	GJK1637
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline) [a]	ND	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	109%		50-150%
460-00-4	4-Bromofluorobenzene	98%		50-150%

(a) CCV outside of control limits (biased high); not detected in sample.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-214-1113
Lab Sample ID: C30786-16 **Date Sampled:** 11/05/13
Matrix: AQ - Ground Water **Date Received:** 11/08/13
Method: NWTPH-DX SW846 3510C **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG48580.D	1	11/11/13	NN	11/09/13	OP9019	GGG1335
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	0.0552	0.094	0.047	mg/l	J
	TPH (Motor Oil)	ND	0.19	0.094	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	69%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-101-1113		
Lab Sample ID:	C30786-17	**Date Sampled:**	11/06/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W43181.D	1	11/14/13	BD	n/a	n/a	VW1532
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		70-130%
2037-26-5	Toluene-D8	109%		70-130%
460-00-4	4-Bromofluorobenzene	98%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-101-1113		
Lab Sample ID:	C30786-17	**Date Sampled:**	11/06/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40655.D	1	11/18/13	TT	n/a	n/a	GJK1639
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	0.118	0.20	0.050	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	107%		50-150%
460-00-4	4-Bromofluorobenzene	117%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-101-1113		
Lab Sample ID:	C30786-17	**Date Sampled:**	11/06/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-DX SW846 3510C	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG48581.D	1	11/11/13	NN	11/09/13	OP9019	GGG1335
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	ND	0.095	0.048	mg/l	
	TPH (Motor Oil)	ND	0.19	0.095	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	71%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TES-MW-1-1113
Lab Sample ID: C30786-18 **Date Sampled:** 11/06/13
Matrix: AQ - Ground Water **Date Received:** 11/08/13
Method: SW846 8260B **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W43182.D	1	11/14/13	BD	n/a	n/a	VW1532
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		70-130%
2037-26-5	Toluene-D8	109%		70-130%
460-00-4	4-Bromofluorobenzene	95%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TES-MW-1-1113		
Lab Sample ID:	C30786-18	**Date Sampled:**	11/06/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40608.D	1	11/16/13	TT	n/a	n/a	GJK1637
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline) [a]	ND	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	111%		50-150%
460-00-4	4-Bromofluorobenzene	100%		50-150%

(a) CCV outside of control limits (biased high); not detected in sample.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TES-MW-1-1113		
Lab Sample ID:	C30786-18	**Date Sampled:**	11/06/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-DX SW846 3510C	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG48582.D	1	11/11/13	NN	11/09/13	OP9019	GGG1335
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	ND	0.095	0.048	mg/l	
	TPH (Motor Oil)	ND	0.19	0.095	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	85%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-308-1113		
Lab Sample ID:	C30786-19	**Date Sampled:**	11/06/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W43186.D	5	11/14/13	BD	n/a	n/a	VW1532
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	237	5.0	1.0	ug/l	
108-88-3	Toluene	3.3	5.0	1.0	ug/l	J
100-41-4	Ethylbenzene	5.6	5.0	1.0	ug/l	
1330-20-7	Xylene (total)	2.6	10	2.3	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		70-130%
2037-26-5	Toluene-D8	106%		70-130%
460-00-4	4-Bromofluorobenzene	99%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-308-1113		
Lab Sample ID:	C30786-19	**Date Sampled:**	11/06/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40657.D	4	11/18/13	TT	n/a	n/a	GJK1639
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	1.65	0.80	0.20	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	102%		50-150%
460-00-4	4-Bromofluorobenzene	117%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-307-1113		
Lab Sample ID:	C30786-20	**Date Sampled:**	11/06/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W43187.D	10	11/14/13	BD	n/a	n/a	VW1532
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	568	10	2.0	ug/l	
108-88-3	Toluene	44.8	10	2.0	ug/l	
100-41-4	Ethylbenzene	104	10	2.0	ug/l	
1330-20-7	Xylene (total)	91.2	20	4.6	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		70-130%
2037-26-5	Toluene-D8	107%		70-130%
460-00-4	4-Bromofluorobenzene	98%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-307-1113
Lab Sample ID: C30786-20
Matrix: AQ - Ground Water
Method: RSK-175
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Date Sampled: 11/06/13
Date Received: 11/08/13
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA004504.D	1	11/12/13	TT	n/a	n/a	GAA209
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	10.0 ul	22 Deg. C
Run #2				

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	7270	25	13	ug/l	
124-38-9	Carbon Dioxide	8440	5000	400	ug/l	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-307-1113		
Lab Sample ID:	C30786-20	**Date Sampled:**	11/06/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40658.D	10	11/18/13	TT	n/a	n/a	GJK1639
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	4.39	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	103%		50-150%
460-00-4	4-Bromofluorobenzene	113%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID: MW-307-1113
Lab Sample ID: C30786-20
Matrix: AQ - Ground Water
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Date Sampled: 11/06/13
Date Received: 11/08/13
Percent Solids: n/a

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	10900	5000	ug/l	1	11/12/13	11/12/13	RS	SW846 6010B [1]	SW3010A [2]
Iron	27000	200	ug/l	1	11/12/13	11/12/13	RS	SW846 6010B [1]	SW3010A [2]
Magnesium	< 5000	5000	ug/l	1	11/12/13	11/12/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3576
(2) Prep QC Batch: MP6984

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-307-1113		
Lab Sample ID:	C30786-20	**Date Sampled:**	11/06/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	60.0	5.0	mg/l	1	11/14/13 12:00	AC	SM18 2320B
Hardness, Total as CaCO3 [a]	45.4	33	mg/l	1	11/12/13 19:55	RS	SW846 6010B/SM 2340B
Sulfate	< 0.50	0.50	mg/l	1	11/14/13 20:55	RL	EPA 300/SW846 9056A

(a) Calculated as: (Calcium * 2.497) + (Magnesium * 4.118)

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-307-1113		
Lab Sample ID:	C30786-20F	**Date Sampled:**	11/06/13
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/08/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	< 200	200	ug/l	1	11/18/13	11/18/13	RS	SW846 6010B [1]	SW3010A [2]
Manganese	217	15	ug/l	1	11/18/13	11/18/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3584
(2) Prep QC Batch: MP7009

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-202-1113		
Lab Sample ID:	C30786-21	**Date Sampled:**	11/06/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W43183.D	1	11/14/13	BD	n/a	n/a	VW1532
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	2.7	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	33.5	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	1.2	2.0	0.46	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		70-130%
2037-26-5	Toluene-D8	109%		70-130%
460-00-4	4-Bromofluorobenzene	105%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-202-1113
Lab Sample ID: C30786-21
Matrix: AQ - Ground Water
Method: RSK-175
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Date Sampled: 11/06/13
Date Received: 11/08/13
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA004509.D	1	11/12/13	TT	n/a	n/a	GAA209
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	10.0 ul	22 Deg. C
Run #2				

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	3570	25	13	ug/l	
124-38-9	Carbon Dioxide	22100	5000	400	ug/l	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-202-1113		
Lab Sample ID:	C30786-21	**Date Sampled:**	11/06/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40659.D	10	11/18/13	TT	n/a	n/a	GJK1639
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	4.68	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	104%		50-150%
460-00-4	4-Bromofluorobenzene	106%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-202-1113
Lab Sample ID: C30786-21 **Date Sampled:** 11/06/13
Matrix: AQ - Ground Water **Date Received:** 11/08/13
Method: NWTPH-DX SW846 3510C **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG48583.D	1	11/11/13	NN	11/09/13	OP9019	GGG1335
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	1.29	0.095	0.048	mg/l	
	TPH (Motor Oil)	ND	0.19	0.095	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	67%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-202-1113
Lab Sample ID: C30786-21
Matrix: AQ - Ground Water
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Date Sampled: 11/06/13
Date Received: 11/08/13
Percent Solids: n/a

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	11100	5000	ug/l	1	11/12/13	11/12/13	RS	SW846 6010B [1]	SW3010A [2]
Iron	37900	200	ug/l	1	11/12/13	11/12/13	RS	SW846 6010B [1]	SW3010A [2]
Magnesium	10700	5000	ug/l	1	11/12/13	11/12/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3576
(2) Prep QC Batch: MP6984

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-202-1113		
Lab Sample ID:	C30786-21	**Date Sampled:**	11/06/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	80.0	5.0	mg/l	1	11/14/13 12:00	AC	SM18 2320B
Hardness, Total as CaCO3 [a]	71.8	33	mg/l	1	11/12/13 20:03	RS	SW846 6010B/SM 2340B
Sulfate	0.76	0.50	mg/l	1	11/14/13 21:13	RL	EPA 300/SW846 9056A

(a) Calculated as: (Calcium * 2.497) + (Magnesium * 4.118)

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	MW-202-1113		
Lab Sample ID:	C30786-21F	**Date Sampled:**	11/06/13
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/08/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	< 200	200	ug/l	1	11/18/13	11/18/13	RS	SW846 6010B [1]	SW3010A [2]
Manganese	439	15	ug/l	1	11/18/13	11/18/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3584
(2) Prep QC Batch: MP7009

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-201-1113		
Lab Sample ID:	C30786-22	**Date Sampled:**	11/06/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W43184.D	1	11/14/13	BD	n/a	n/a	VW1532
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		70-130%
2037-26-5	Toluene-D8	109%		70-130%
460-00-4	4-Bromofluorobenzene	99%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-201-1113		
Lab Sample ID:	C30786-22	**Date Sampled:**	11/06/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40660.D	1	11/18/13	TT	n/a	n/a	GJK1639
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	0.0964	0.20	0.050	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	102%		50-150%
460-00-4	4-Bromofluorobenzene	108%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-201-1113
Lab Sample ID: C30786-22 **Date Sampled:** 11/06/13
Matrix: AQ - Ground Water **Date Received:** 11/08/13
Method: NWTPH-DX SW846 3510C **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG48584.D	1	11/11/13	NN	11/09/13	OP9019	GGG1335
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	0.520	0.094	0.047	mg/l	
	TPH (Motor Oil)	ND	0.19	0.094	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	79%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-204-1113
Lab Sample ID: C30786-23
Matrix: AQ - Ground Water
Method: SW846 8260B
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Date Sampled: 11/06/13
Date Received: 11/08/13
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W43185.D	1	11/14/13	BD	n/a	n/a	VW1532
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.57	1.0	0.20	ug/l	J
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		70-130%
2037-26-5	Toluene-D8	110%		70-130%
460-00-4	4-Bromofluorobenzene	96%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-204-1113		
Lab Sample ID:	C30786-23	**Date Sampled:**	11/06/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40662.D	1	11/19/13	TT	n/a	n/a	GJK1639
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	0.0762	0.20	0.050	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	108%		50-150%
460-00-4	4-Bromofluorobenzene	112%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-204-1113		
Lab Sample ID:	C30786-23	**Date Sampled:**	11/06/13
Matrix:	AQ - Ground Water	**Date Received:**	11/08/13
Method:	NWTPH-DX SW846 3510C	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GG48585.D	1	11/11/13	NN	11/09/13	OP9019	GGG1335
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	0.280	0.096	0.048	mg/l	
	TPH (Motor Oil)	0.0976	0.19	0.096	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	85%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Northern California ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

FEDEX # 8031-6345-0015

Shell Oil Products Chain Of Custody Record

SHELLWIC3660 — URS

LAB (LOCATION)
- ☑ ACCUTEST ( )
- ☐ CALSCIENCE ( )
- ☐ TESTAMERICA ( )
- ☐ Other ( )

Lab Vendor # 1813640 (Accutest)

Please Check Appropriate Box:
☐ ENV. SERVICES ☐ MOTIVA RETAIL ☑ SHELL RETAIL ☐ MOTIVA SD&CM ☐ CONSULTANT ☐ LUBES ☐ SHELL PIPELINE ☐ OTHER

Print Bill To Contact Name:

INCIDENT # (ENV SERVICES): 3 0 0 0 3 6 ☐ CHECK IF NO INCIDENT # APPLIES

PO #:

SAP #: 3 5 7 0 3 2

DATE: 11/7/13

PAGE: 1 of 3

SAMPLING COMPANY: URS Corporation
LOG CODE:
ADDRESS: 111 Southwest Columbia Street, Suite 1500, Portland, Oregon 97201
PROJECT CONTACT (Hardcopy or PDF Report to): Brian Pletcher
TELEPHONE: 503-222-7200 FAX: 503-222-4292 Bill To Contact E-MAIL: Brian.Pletcher@URS.com

SITE ADDRESS: Street and City: 2555 13th Ave. SW, Seattle State: WA GLOBAL ID NO.:
EDF DELIVERABLE TO (Name, Company, Office Location): Clifford J Pearson, URS, Portland, OR PHONE NO.: 503-222-7200 E-MAIL: Clifford.Pearson@URS.com CONSULTANT PROJECT NO.: 46194348
SAMPLER NAME(S) (Print): MARK TAUSCHER / MATT DOBBS
LAB USE ONLY: C30786

TURNAROUND TIME (CALENDAR DAYS): ☑ STANDARD (14 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND
☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:
DELIVERABLES: ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL 3 ☐ LEVEL 4 ☐ OTHER (SPECIFY)
TEMPERATURE ON RECEIPT C° Cooler #1 Cooler #2 Cooler #3

SPECIAL INSTRUCTIONS OR NOTES:
- ☑ SHELL CONTRACT RATE APPLIES
- ☐ STATE REIMBURSEMENT RATE APPLIES
- ☐ EDD NOT NEEDED
- ☑ RECEIPT VERIFICATION REQUESTED
- ☐ PROVIDE LEDD DISK

REQUESTED ANALYSIS — UNIT COST / NON-UNIT COST

FIELD NOTES:
TEMPERATURE ON RECEIPT C° 5.6 − 1.5 = 4.1°C

LAB USE ONLY	Field Sample Identification	Date	Time	Matrix	HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	TPH-Gx	TPH-Dx	BTEX	PAHs (8270 SIM)	Alkalinity	Sulfate	Carbon Dioxide	Total Iron	Total Lead	Hardness	Sulfate	Dissolved Manganese	Dissolved Iron	Methane	Alkalinity	Container PID Readings or Laboratory Notes
																										2.6 − .5 = 2.1°C
																										3.6 − .5 = 3.1°C
1	SH-04-1113	11/4	1300	W	X			X		8	X	X	X													1.7 − .5 = 1.2°C
2	MW-112A-1113	11/4	1305	W	X			X		8	X	X	X													4.9 − .5 = 4.4°C
3	TX-04-1113	11/4	1455	W	X			X		8	X	X	X													
4	MW-301-1113	11/4	1545	W	X					6	X		X													
5	MW-303-1113	11/4	1630	W	X					6	X		X													
6	MW-304-1113	11/5	1000	W	X	X		X		12	X		X				X	X		X	X	X	X	X	X	
7	MW-213-1113	11/5	1055	W						10	X	X	X	X												
8	MW-302-1113	11/5	1130	W	X	X		X		12	X		X				X	X		X	X	X	X	X	X	
9	MW-310-1113	11/5	1305	W	X	X		X		12	X		X				X	X		X	X	X	X	X	X	
10	MW-208-1113	11/5	1400	W	X			X		8	X	X	X	X												~2L broken

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
[signature]	FED EX	11/7/13	1000
FEDEX	[signature] D. LUNA	11/8/13	1045

05/2/06 Revision

4.1

4

C30786: Chain of Custody
Page 1 of 4

FEDEX 8031-6345-0015

LAB (LOCATION)
☑ ACCUTEST (_____)
☐ CALSCIENCE (_____)
☐ TESTAMERICA (_____)
☐ Other (_____)
Lab Vendor # 1813640 (Accutest)

Shell Oil Products Chain Of Custody Record

URS

Please Check Appropriate Box:
☐ ENV. SERVICES ☐ MOTIVA RETAIL ☑ SHELL RETAIL
☐ MOTIVA SD&CM ☐ CONSULTANT ☐ LUBES
☐ SHELL PIPELINE ☐ OTHER _____

Print Bill To Contact Name:
PO #:
INCIDENT # (ENV SERVICES): 3 0 0 0 3 6
SAP #: 3 5 7 0 3 2
☐ CHECK IF NO INCIDENT # APPLIES
DATE: 11/7/13
PAGE: 2 of 3

SAMPLING COMPANY: URS Corporation
LOG CODE:
ADDRESS: 111 Southwest Columbia Street, Suite 1500, Portland, Oregon 97201
PROJECT CONTACT (For Hardcopy or PDF Report to): Brian Pletcher
TELEPHONE: 503-222-7200
FAX: 503-222-4292
Bill To Contact E-MAIL: Brian.Pletcher@URS.com

SITE ADDRESS: Street and City: 2555 13th Ave. SW, Seattle
State: WA
GLOBAL ID NO.:
EDF DELIVERABLE TO (Name, Company, Office Location): Clifford J Pearson, URS, Portland, OR
PHONE NO.: 503-222-7200
E-MAIL: Clifford.Pearson@URS.com
CONSULTANT PROJECT NO.: 46194348
SAMPLER NAME(S) (Print): MARK TAUSCHER / MATT DOBBS
LAB USE ONLY: C30786

TURNAROUND TIME (CALENDAR DAYS):
☑ STANDARD (14 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND
☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:
DELIVERABLES: ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL 3 ☐ LEVEL 4 ☐ OTHER (SPECIFY) _____
TEMPERATURE ON RECEIPT C°: Cooler #1 | Cooler #2 | Cooler #3

SPECIAL INSTRUCTIONS OR NOTES :
☑ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☑ RECEIPT VERIFICATION REQUESTED
☐ PROVIDE LEDD DISK

REQUESTED ANALYSIS
UNIT COST: TPH-Dx | TPH-Dx | BTEX | PAHs (8270 SIM) | Alkalinity | Sulfide
NON-UNIT COST: Carbon Dioxide | Total Iron | Total Lead | Hardness | Methane | Dissolved Manganese | Dissolved Iron

FIELD NOTES:
TEMPERATURE ON RECEIPT C°: 5.6 - 1.5 = 4.1 °C
Container PID Readings or Laboratory Notes

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	TPH-Dx	TPH-Dx	BTEX	PAHs (8270 SIM)	Alkalinity	Sulfide	Carbon Dioxide	Total Iron	Total Lead	Hardness	Methane	Dissolved Manganese	Dissolved Iron
11	MW-206A-1113	11/6	1520	W	X			X		8	X	X	X										
12	MW-309-1113	11/6	1600	W	X					6	X		X										
13	MW-203-1113	11/6	1655	W	X	X		X		10	X	X			X	X		X	X	X	X	X	X

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Mark Tauscher	FED EX	11/7/13	1000
FEDEX	DLHNL	11/8/13	1045

05/06 Revision

C30786: Chain of Custody
Page 2 of 4

FEDEX # 8031 6345 0015

Shell Oil Products Chain Of Custody Record

URS

LAB (LOCATION)
☑ ACCUTEST (_____)
☐ CALSCIENCE (_____)
☐ TESTAMERICA (_____)
☐ Other (_____)
Lab Vendor # 1813640 (Accutest)

Please Check Appropriate Box:
☐ ENV. SERVICES ☐ MOTIVA RETAIL ☑ SHELL RETAIL
☐ MOTIVA SD&CM ☐ CONSULTANT ☐ LUBES
☐ SHELL PIPELINE ☐ OTHER _____

Print Bill To Contact Name:

INCIDENT # (ENV SERVICES): 3 0 0 0 3 6 ☐ CHECK IF NO INCIDENT # APPLIES
DATE: 11/7/13
PAGE: 1 of 3
PO #:
SAP #: 3 5 7 0 3 2

SAMPLING COMPANY: URS Corporation
LOG CODE:
ADDRESS: 111 Southwest Columbia Street, Suite 1500, Portland, Oregon 97201
PROJECT CONTACT (Hardcopy or PDF Report to): Brian Pletcher
TELEPHONE: 503-222-7200
FAX: 503-222-4292
Bill To Contact E-MAIL: Brian.Pletcher@URS.com

SITE ADDRESS: Street and City: 2555 13th Ave. SW, Seattle
State: WA
GLOBAL ID NO.:
EDF DELIVERABLE TO (Name, Company, Office Location): Clifford J Pearson, URS, Portland, OR
PHONE NO.: 503-222-7200
E-MAIL: Clifford.Pearson@URS.com
CONSULTANT PROJECT NO.: 46194348
SAMPLER NAME(S) (Print): MARK TAUSCHER / MATT DOBBS
LAB USE ONLY: C30786

TURNAROUND TIME (CALENDAR DAYS):
☑ STANDARD (14 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND
☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:
DELIVERABLES: ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL 3 ☐ LEVEL 4 ☐ OTHER (SPECIFY) _____
TEMPERATURE ON RECEIPT C°: Cooler #1 | Cooler #2 | Cooler #3

SPECIAL INSTRUCTIONS OR NOTES:
☑ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☑ RECEIPT VERIFICATION REQUESTED
☐ PROVIDE LEDD DISK

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	UNIT COST: TPH-Dx	TPH-Dx	BTEX	PAHs (8270 SIM)	Alkalinity	Sulfate	NON-UNIT COST: Carbon Dioxide	Total Iron	Total Lead	Hardness	Methane	Dissolved Manganese	Dissolved Iron	FIELD NOTES / Container PID Readings or Laboratory Notes
4	TX-03A-1113	11/5	1425	W	X	X				12	X		X		X	X		X	X		X	X	X	
5	MW-211-1113	11/5	1600	W	X			X		10	X	X	X	X										1L broken
6	MW-214-1113	11/5	1635	W	X			X		10	X	X	X	X										
7	MW-101-1113	11/6	0900	W	X			X		8	X	X	X											
8	TES-MW-1-1113	11/6	0910	W	X			X		8	X	X	X											
14	MW-308-1113	11/6	1025	W	X					6	X		X											
20	MW-307-1113	11/6	1035	W	X	X		X		12	X		X		X	X		X	X		X	X	X	X	
21	MW-202-1113	11/6	1250	W	X	X		X		14	X	X	X		X	X		X	X		X	X	X	X	
22	MW-201-1113	11/6	1330	W	X			X		8	X	X	X											1L broken
23	MW-204-1113	11/6	1415	W	X			X		8	X	X	X											

FIELD NOTES:
TEMPERATURE ON RECEIPT C°: 5.6 - 1.5 = 4.1°C

Relinquished by (Signature)	Received by (Signature)	Date	Time
	FED EX	11/7/13	1000
FEDEX	D. LUNA	11/8/13	1045

05/2/06 Revision

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: C30786 **Client:** SHELL OIL **Project:** 2555 13TH AVE., SW, SEATTLE, WA

Date / Time Received: 11/8/2013 **Delivery Method:** FedEx **Airbill #'s:** 803163450015

Cooler Temps (Initial/Adjusted): #1: (5.6/4.1); #2: (2.6/2.1); #3: (3.6/3.1); #4: (1.7/1.2); #5: (4.9/4.4); 0

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR1 Glass; IR1 Plastic;		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	5		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Broken / Leaking		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments
MW-208-1113 (2 x 1L Ambers received broken in FedEx Shipment)
MW-211-1113 (1 x 1L Ambers received broken in FedEx Shipment)
MW-201-1113 (1 x 1L Ambers received broken in FedEx Shipment)

Accutest Laboratories
V:408.588.0200
2105 Lundy Avenue
F: 408.588.0201
San Jose, CA 95131
www/accutest.com

C30786: Chain of Custody
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Northern California ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VW1530-MB	W43096.D	1	11/13/13	BD	n/a	n/a	VW1530

The QC reported here applies to the following samples: **Method:** SW846 8260B

C30786-1, C30786-2, C30786-3, C30786-4, C30786-5, C30786-6, C30786-7, C30786-8

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	102%	70-130%
2037-26-5	Toluene-D8	106%	70-130%
460-00-4	4-Bromofluorobenzene	93%	70-130%

Method Blank Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VW1531-MB	W43123.D	1	11/13/13	BD	n/a	n/a	VW1531

The QC reported here applies to the following samples: **Method:** SW846 8260B

C30786-9, C30786-10

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	93%	70-130%
2037-26-5	Toluene-D8	103%	70-130%
460-00-4	4-Bromofluorobenzene	91%	70-130%

Method Blank Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VW1532-MB	W43170.D	1	11/14/13	BD	n/a	n/a	VW1532

The QC reported here applies to the following samples: **Method:** SW846 8260B

C30786-11, C30786-12, C30786-14, C30786-15, C30786-16, C30786-17, C30786-18, C30786-19, C30786-20, C30786-21, C30786-22, C30786-23

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	97%	70-130%
2037-26-5	Toluene-D8	109%	70-130%
460-00-4	4-Bromofluorobenzene	96%	70-130%

Blank Spike/Blank Spike Duplicate Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VW1530-BS	W43093.D	1	11/12/13	BD	n/a	n/a	VW1530
VW1530-BSD	W43094.D	1	11/13/13	BD	n/a	n/a	VW1530

The QC reported here applies to the following samples: **Method:** SW846 8260B

C30786-1, C30786-2, C30786-3, C30786-4, C30786-5, C30786-6, C30786-7, C30786-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	20	19.7	99	19.7	99	0	77-122/25
100-41-4	Ethylbenzene	20	19.4	97	19.3	97	1	76-126/17
108-88-3	Toluene	20	20.0	100	19.7	99	2	75-122/17
1330-20-7	Xylene (total)	60	60.8	101	59.8	100	2	77-125/17

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	118% [a]	117% [a]	70-130%
2037-26-5	Toluene-D8	103%	102%	70-130%
460-00-4	4-Bromofluorobenzene	96%	96%	70-130%

(a) Outside DOD-QSM4 control limits and laboratory control limits.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VW1531-BS	W43117.D	1	11/13/13	BD	n/a	n/a	VW1531
VW1531-BSD	W43118.D	1	11/13/13	BD	n/a	n/a	VW1531

The QC reported here applies to the following samples: **Method:** SW846 8260B

C30786-9, C30786-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	20	19.7	99	19.8	99	1	77-122/25
100-41-4	Ethylbenzene	20	19.4	97	19.3	97	1	76-126/17
108-88-3	Toluene	20	19.8	99	19.7	99	1	75-122/17
1330-20-7	Xylene (total)	60	60.3	101	59.9	100	1	77-125/17

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	108%	109%	70-130%
2037-26-5	Toluene-D8	99%	99%	70-130%
460-00-4	4-Bromofluorobenzene	93%	93%	70-130%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VW1532-BS	W43167.D	1	11/14/13	BD	n/a	n/a	VW1532
VW1532-BSD	W43168.D	1	11/14/13	BD	n/a	n/a	VW1532

The QC reported here applies to the following samples: **Method:** SW846 8260B

C30786-11, C30786-12, C30786-14, C30786-15, C30786-16, C30786-17, C30786-18, C30786-19, C30786-20, C30786-21, C30786-22, C30786-23

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	20	19.5	98	19.5	98	0	77-122/25
100-41-4	Ethylbenzene	20	19.7	99	19.5	98	1	76-126/17
108-88-3	Toluene	20	20.0	100	20.0	100	0	75-122/17
1330-20-7	Xylene (total)	60	61.2	102	61.2	102	0	77-125/17

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	109%	109%	70-130%
2037-26-5	Toluene-D8	105%	104%	70-130%
460-00-4	4-Bromofluorobenzene	97%	98%	70-130%

* = Outside of Control Limits.

Laboratory Control Sample Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VW1530-LCS	W43095.D	1	11/13/13	BD	n/a	n/a	VW1530

The QC reported here applies to the following samples: **Method:** SW846 8260B

C30786-1, C30786-2, C30786-3, C30786-4, C30786-5, C30786-6, C30786-7, C30786-8

CAS No.	Compound	Spike ug/l	LCS ug/l	LCS %	Limits

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	107%	70-130%
2037-26-5	Toluene-D8	104%	70-130%
460-00-4	4-Bromofluorobenzene	94%	70-130%

* = Outside of Control Limits.

Laboratory Control Sample Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VW1531-LCS	W43122.D	1	11/13/13	BD	n/a	n/a	VW1531

The QC reported here applies to the following samples: **Method:** SW846 8260B

C30786-9, C30786-10

CAS No.	Compound	Spike ug/l	LCS ug/l	LCS %	Limits

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	104%	70-130%
2037-26-5	Toluene-D8	101%	70-130%
460-00-4	4-Bromofluorobenzene	93%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C30786-6MS	W43113.D	10	11/13/13	BD	n/a	n/a	VW1530
C30786-6MSD	W43114.D	10	11/13/13	BD	n/a	n/a	VW1530
C30786-6	W43110.D	10	11/13/13	BD	n/a	n/a	VW1530

The QC reported here applies to the following samples: **Method:** SW846 8260B

C30786-1, C30786-2, C30786-3, C30786-4, C30786-5, C30786-6, C30786-7, C30786-8

CAS No.	Compound	C30786-6 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	695		200	767	36* [a]	796	51* [a]	4	77-122/16
100-41-4	Ethylbenzene	62.9		200	243	90	243	90	0	76-126/17
108-88-3	Toluene	16.3		200	204	94	203	93	0	75-122/17
1330-20-7	Xylene (total)	54.0		600	629	96	626	95	0	77-125/17

CAS No.	Surrogate Recoveries	MS	MSD	C30786-6	Limits
1868-53-7	Dibromofluoromethane	114% [c]	118% [b]	107%	70-130%
2037-26-5	Toluene-D8	102%	102%	104%	70-130%
460-00-4	4-Bromofluorobenzene	96%	96%	96%	70-130%

(a) Outside control limits due to high level in sample relative to spike amount.
(b) Outside DOD-QSM4 control limits and laboratory control limits.
(c) Outside DOD-QSM4 contol limits; within laboratory control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C30855-1MS	W43138.D	10	11/13/13	BD	n/a	n/a	VW1531
C30855-1MSD	W43139.D	10	11/13/13	BD	n/a	n/a	VW1531
C30855-1	W43125.D	10	11/13/13	BD	n/a	n/a	VW1531

The QC reported here applies to the following samples: **Method:** SW846 8260B

C30786-9, C30786-10

CAS No.	Compound	C30855-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		200	195	98	193	97	1	77-122/16
100-41-4	Ethylbenzene	ND		200	195	98	194	97	1	76-126/17
108-88-3	Toluene	ND		200	196	98	196	98	0	75-122/17
1330-20-7	Xylene (total)	ND		600	599	100	599	100	0	77-125/17

CAS No.	Surrogate Recoveries	MS	MSD	C30855-1	Limits
1868-53-7	Dibromofluoromethane	109%	109%	123%	70-130%
2037-26-5	Toluene-D8	102%	102%	97%	70-130%
460-00-4	4-Bromofluorobenzene	94%	94%	94%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C30786-14MS	W43188.D	50	11/14/13	BD	n/a	n/a	VW1532
C30786-14MSD	W43189.D	50	11/14/13	BD	n/a	n/a	VW1532
C30786-14	W43178.D	50	11/14/13	BD	n/a	n/a	VW1532

The QC reported here applies to the following samples: **Method:** SW846 8260B

C30786-11, C30786-12, C30786-14, C30786-15, C30786-16, C30786-17, C30786-18, C30786-19, C30786-20, C30786-21, C30786-22, C30786-23

CAS No.	Compound	C30786-14 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	2720		1000	2600	-12* [a]	2610	-11* [a]	0	77-122/16
100-41-4	Ethylbenzene	36.4	J	1000	988	95	981	94	1	76-126/17
108-88-3	Toluene	34.3	J	1000	1000	97	1000	97	0	75-122/17
1330-20-7	Xylene (total)	41.1	J	3000	3010	99	2990	98	1	77-125/17

CAS No.	Surrogate Recoveries	MS	MSD	C30786-14	Limits
1868-53-7	Dibromofluoromethane	118%	118%	111%	70-130%
2037-26-5	Toluene-D8	105%	104%	107%	70-130%
460-00-4	4-Bromofluorobenzene	98%	96%	96%	70-130%

(a) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

Northern California ACCUTEST LABORATORIES

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9024-MB	T11462.D	1	11/13/13	LW	11/11/13	OP9024	ET519

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

C30786-7, C30786-10, C30786-15, C30786-16

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.50	0.050	ug/l	
208-96-8	Acenaphthylene	ND	0.50	0.050	ug/l	
120-12-7	Anthracene	ND	0.50	0.050	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.10	0.053	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.041	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.10	0.035	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.036	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.039	ug/l	
218-01-9	Chrysene	ND	0.10	0.045	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.035	ug/l	
206-44-0	Fluoranthene	ND	0.50	0.050	ug/l	
86-73-7	Fluorene	ND	0.50	0.050	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.035	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.50	0.10	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.50	0.10	ug/l	
91-20-3	Naphthalene	ND	0.50	0.10	ug/l	
85-01-8	Phenanthrene	ND	0.50	0.050	ug/l	
129-00-0	Pyrene	ND	0.50	0.050	ug/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	77%	31-128%
321-60-8	2-Fluorobiphenyl	74%	34-123%
1718-51-0	Terphenyl-d14	75%	43-136%

Blank Spike/Blank Spike Duplicate Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9024-BS	T11463.D	1	11/13/13	LW	11/11/13	OP9024	ET519
OP9024-BSD	T11464.D	1	11/13/13	LW	11/11/13	OP9024	ET519

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

C30786-7, C30786-10, C30786-15, C30786-16

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	5	2.9	58	2.3	46* [a]	23	57-113/24
208-96-8	Acenaphthylene	5	2.7	54* [a]	2.1	42* [a]	25	58-117/25
120-12-7	Anthracene	5	3.4	68	2.8	56* [a]	19	65-121/23
56-55-3	Benzo(a)anthracene	5	3.2	64	3.2	64	0	62-121/21
50-32-8	Benzo(a)pyrene	5	3.3	66	3.2	64* [a]	3	65-125/20
205-99-2	Benzo(b)fluoranthene	5	3.4	68	3.4	68	0	62-126/22
191-24-2	Benzo(g,h,i)perylene	5	3.4	68	3.3	66	3	45-133/22
207-08-9	Benzo(k)fluoranthene	5	4.0	80	3.8	76	5	61-122/20
218-01-9	Chrysene	5	3.6	72	3.8	76	5	62-118/20
53-70-3	Dibenzo(a,h)anthracene	5	3.7	74	3.4	68	8	45-135/25
206-44-0	Fluoranthene	5	3.4	68	3.0	60* [a]	13	63-118/21
86-73-7	Fluorene	5	3.1	62	2.4	48* [a]	25* [b]	59-115/24
193-39-5	Indeno(1,2,3-cd)pyrene	5	3.2	64	3.0	60	6	51-130/26
90-12-0	1-Methylnaphthalene	5	2.8	56	2.2	44* [a]	24	53-107/25
91-57-6	2-Methylnaphthalene	5	3.2	64	2.5	50* [a]	25	56-115/26
91-20-3	Naphthalene	5	3.0	60	2.3	46* [a]	26* [b]	54-110/23
85-01-8	Phenanthrene	5	3.2	64	2.7	54* [a]	17	60-114/26
129-00-0	Pyrene	5	3.0	60	3.1	62	3	58-124/21

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
4165-60-0	Nitrobenzene-d5	53%	52%	31-128%
321-60-8	2-Fluorobiphenyl	52%	55%	34-123%
1718-51-0	Terphenyl-d14	61%	73%	43-136%

(a) Outside of in-house control limits; but within the method control limits. AZ:L2
(b) Outside laboratory control limits. AZ:R9

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9024-MS	T11419.D	1	11/11/13	LW	11/11/13	OP9024	ET518
OP9024-MSD	T11420.D	1	11/11/13	LW	11/11/13	OP9024	ET518
C30808-6	T11418.D	1	11/11/13	LW	11/11/13	OP9024	ET518

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

C30786-7, C30786-10, C30786-15, C30786-16

CAS No.	Compound	C30808-6 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		4.81	3.0	62	3.1	64	3	57-113/24
208-96-8	Acenaphthylene	ND		4.81	3.3	69	3.0	62	10	58-117/25
120-12-7	Anthracene	ND		4.81	3.8	79	2.9	60* a	27* b	65-121/23
56-55-3	Benzo(a)anthracene	ND		4.81	3.2	67	2.2	46* c	37* b	62-121/21
50-32-8	Benzo(a)pyrene	ND		4.81	3.2	67	2.1	44* a	42* b	65-125/20
205-99-2	Benzo(b)fluoranthene	ND		4.81	3.3	69	2.1	44* c	44* b	62-126/22
191-24-2	Benzo(g,h,i)perylene	ND		4.81	3.4	71	2.1	44* c	47* b	45-133/22
207-08-9	Benzo(k)fluoranthene	ND		4.81	3.5	73	2.2	46* c	46* b	61-122/20
218-01-9	Chrysene	ND		4.81	3.3	69	2.3	48* c	36* b	62-118/20
53-70-3	Dibenzo(a,h)anthracene	ND		4.81	3.5	73	2.2	46	46* b	45-135/25
206-44-0	Fluoranthene	ND		4.81	3.7	77	2.8	58* a	28* b	63-118/21
86-73-7	Fluorene	ND		4.81	3.5	73	2.9	60	19	59-115/24
193-39-5	Indeno(1,2,3-cd)pyrene	ND		4.81	3.4	71	2.1	44* c	47* b	51-130/26
90-12-0	1-Methylnaphthalene	ND		4.81	3.4	71	3.1	64	9	53-107/25
91-57-6	2-Methylnaphthalene	ND		4.81	3.7	77	3.5	73	6	56-115/26
91-20-3	Naphthalene	ND		4.81	3.6	75	3.5	73	3	54-110/23
85-01-8	Phenanthrene	ND		4.81	3.6	75	3.0	62	18	60-114/26
129-00-0	Pyrene	ND		4.81	3.2	67	2.4	50* c	29* b	58-124/21

CAS No.	Surrogate Recoveries	MS	MSD	C30808-6	Limits
4165-60-0	Nitrobenzene-d5	85%	86%	74%	31-128%
321-60-8	2-Fluorobiphenyl	68%	66%	62%	34-123%
1718-51-0	Terphenyl-d14	62%	49%	55%	43-136%

(a) Outside laboratory control limits. AZ:L2
(b) Outside laboratory control limits. AZ:R9
(c) Outside laboratory control limits. AZ:M2

* = Outside of Control Limits.

Northern California ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GJK1637-MB	JK40584.D	1	11/15/13	TT	n/a	n/a	GJK1637

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C30786-1, C30786-2, C30786-3, C30786-4, C30786-6, C30786-7, C30786-11, C30786-16, C30786-18

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	ND	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries		Limits
98-08-8	aaa-Trifluorotoluene	103%	50-150%
460-00-4	4-Bromofluorobenzene	105%	50-150%

Method Blank Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GJK1639-MB	JK40643.D	1	11/18/13	TT	n/a	n/a	GJK1639

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C30786-5, C30786-8, C30786-9, C30786-10, C30786-12, C30786-13, C30786-14, C30786-15, C30786-17, C30786-19, C30786-20, C30786-21, C30786-22, C30786-23

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	ND	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries		Limits
98-08-8	aaa-Trifluorotoluene	99%	50-150%
460-00-4	4-Bromofluorobenzene	105%	50-150%

Method Blank Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAA208-MB	AA004479.D	1	11/11/13	TT	n/a	n/a	GAA208

The QC reported here applies to the following samples: **Method:** RSK-175

C30786-6, C30786-8, C30786-9, C30786-14

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.25	ug/l	
124-38-9	Carbon Dioxide	29.1	100	7.9	ug/l	J

Method Blank Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAA209-MB	AA004497.D	1	11/12/13	TT	n/a	n/a	GAA209

The QC reported here applies to the following samples: **Method:** RSK-175

C30786-13, C30786-20, C30786-21

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	0.26	0.50	0.25	ug/l	J
124-38-9	Carbon Dioxide	30.9	100	7.9	ug/l	J

Blank Spike Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAA208-BS	AA004480.D	1	11/11/13	TT	n/a	n/a	GAA208

The QC reported here applies to the following samples: **Method:** RSK-175

C30786-6, C30786-8, C30786-9, C30786-14

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
74-82-8	Methane	21.5	18.4	86	70-130
124-38-9	Carbon Dioxide	77.1	75.8	98	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAA209-BS	AA004499.D	1	11/12/13	TT	n/a	n/a	GAA209

The QC reported here applies to the following samples: **Method:** RSK-175

C30786-13, C30786-20, C30786-21

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
74-82-8	Methane	21.5	17.9	83	70-130
124-38-9	Carbon Dioxide	77.1	71.7	93	70-130

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GJK1637-BS	JK40585.D	1	11/15/13	TT	n/a	n/a	GJK1637
GJK1637-BSD	JK40586.D	1	11/15/13	TT	n/a	n/a	GJK1637

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C30786-1, C30786-2, C30786-3, C30786-4, C30786-6, C30786-7, C30786-11, C30786-16, C30786-18

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	BSD mg/l	BSD %	RPD	Limits Rec/RPD
	TPH (Gasoline)	0.4	0.388	97	0.411	103	6	60-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
98-08-8	aaa-Trifluorotoluene	95%	97%	50-150%
460-00-4	4-Bromofluorobenzene	95%	98%	50-150%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GJK1639-BS	JK40644.D	1	11/18/13	TT	n/a	n/a	GJK1639
GJK1639-BSD	JK40645.D	1	11/18/13	TT	n/a	n/a	GJK1639

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C30786-5, C30786-8, C30786-9, C30786-10, C30786-12, C30786-13, C30786-14, C30786-15, C30786-17, C30786-19, C30786-20, C30786-21, C30786-22, C30786-23

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	BSD mg/l	BSD %	RPD	Limits Rec/RPD
	TPH (Gasoline)	0.4	0.388	97	0.396	99	2	60-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
98-08-8	aaa-Trifluorotoluene	95%	93%	50-150%
460-00-4	4-Bromofluorobenzene	99%	96%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C30786-7MS	JK40611.D	1	11/16/13	TT	n/a	n/a	GJK1637
C30786-7MSD	JK40612.D	1	11/16/13	TT	n/a	n/a	GJK1637
C30786-7	JK40595.D	1	11/15/13	TT	n/a	n/a	GJK1637

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C30786-1, C30786-2, C30786-3, C30786-4, C30786-6, C30786-7, C30786-11, C30786-16, C30786-18

CAS No.	Compound	C30786-7 mg/l	Q	Spike mg/l	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH (Gasoline)	ND		0.4	0.474	119	0.443	111	7	60-140/20

CAS No.	Surrogate Recoveries	MS	MSD	C30786-7	Limits
98-08-8	aaa-Trifluorotoluene	117%	117%	112%	50-150%
460-00-4	4-Bromofluorobenzene	117%	113%	109%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C30786-12MS	JK40664.D	1	11/19/13	TT	n/a	n/a	GJK1639
C30786-12MSD	JK40665.D	1	11/19/13	TT	n/a	n/a	GJK1639
C30786-12	JK40651.D	1	11/18/13	TT	n/a	n/a	GJK1639

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C30786-5, C30786-8, C30786-9, C30786-10, C30786-12, C30786-13, C30786-14, C30786-15, C30786-17, C30786-19, C30786-20, C30786-21, C30786-22, C30786-23

CAS No.	Compound	C30786-12 mg/l	Q	Spike mg/l	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH (Gasoline)	ND		0.4	0.481	120	0.476	119	1	60-140/20

CAS No.	Surrogate Recoveries	MS	MSD	C30786-12	Limits
98-08-8	aaa-Trifluorotoluene	106%	105%	89%	50-150%
460-00-4	4-Bromofluorobenzene	106%	102%	98%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C30786-3DUP	JK40590.D	1	11/15/13	TT	n/a	n/a	GJK1637
C30786-3	JK40589.D	1	11/15/13	TT	n/a	n/a	GJK1637

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C30786-3

CAS No.	Compound	C30786-3 mg/l	Q	DUP mg/l	Q	RPD	Limits
	TPH (Gasoline)	ND		ND		nc	20

CAS No.	Surrogate Recoveries	DUP	C30786-3	Limits
98-08-8	aaa-Trifluorotoluene	100%	96%	50-150%
460-00-4	4-Bromofluorobenzene	101%	101%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C30786-11DUP	JK40600.D	1	11/15/13	TT	n/a	n/a	GJK1637
C30786-11	JK40599.D	1	11/15/13	TT	n/a	n/a	GJK1637

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C30786-1, C30786-2, C30786-4, C30786-6, C30786-7, C30786-11, C30786-16, C30786-18

CAS No.	Compound	C30786-11 mg/l	Q	DUP mg/l	Q	RPD	Limits
	TPH (Gasoline)	ND		ND		nc	20

CAS No.	Surrogate Recoveries	DUP	C30786-11	Limits
98-08-8	aaa-Trifluorotoluene	104%	109%	50-150%
460-00-4	4-Bromofluorobenzene	98%	112%	50-150%

(a) CCV outside of control limits (biased high); not detected in sample.

* = Outside of Control Limits.

Duplicate Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C30786-17DUP	JK40656.D	1	11/18/13	TT	n/a	n/a	GJK1639
C30786-17	JK40655.D	1	11/18/13	TT	n/a	n/a	GJK1639

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C30786-5, C30786-8, C30786-9, C30786-10, C30786-12, C30786-13, C30786-14, C30786-15, C30786-17, C30786-19, C30786-20, C30786-21, C30786-22

CAS No.	Compound	C30786-17 mg/l	Q	DUP mg/l	Q	RPD	Limits
	TPH (Gasoline)	0.118	J	0.110	J	7	20

CAS No.	Surrogate Recoveries	DUP	C30786-17	Limits
98-08-8	aaa-Trifluorotoluene	105%	107%	50-150%
460-00-4	4-Bromofluorobenzene	113%	117%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C30786-23DUP	JK40663.D	1	11/19/13	TT	n/a	n/a	GJK1639
C30786-23	JK40662.D	1	11/19/13	TT	n/a	n/a	GJK1639

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C30786-23

CAS No.	Compound	C30786-23 mg/l	Q	DUP mg/l	Q	RPD	Limits
	TPH (Gasoline)	0.0762	J	0.0663	J	14	20

CAS No.	Surrogate Recoveries	DUP	C30786-23	Limits
98-08-8	aaa-Trifluorotoluene	96%	108%	50-150%
460-00-4	4-Bromofluorobenzene	96%	112%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C30762-2DUP	AA004514.D	1	11/12/13	TT	n/a	n/a	GAA209
C30762-2	AA004512.D	1	11/12/13	TT	n/a	n/a	GAA209
C30762-2	AA004513.D	1	11/12/13	TT	n/a	n/a	GAA209

The QC reported here applies to the following samples: **Method:** RSK-175

C30786-13, C30786-20, C30786-21

CAS No.	Compound	C30762-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
74-82-8	Methane	158 [a]		152		4	30
124-38-9	Carbon Dioxide	3470 [a]		3590		3	30

(a) Result is from Run #2.

* = Outside of Control Limits.

Northern California ACCUTEST LABORATORIES

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9019-MB	GG48579.D	1	11/11/13	NN	11/09/13	OP9019	GGG1335

The QC reported here applies to the following samples: **Method:** NWTPH-DX

C30786-1, C30786-2, C30786-3, C30786-7, C30786-10, C30786-11, C30786-13, C30786-15, C30786-16, C30786-17, C30786-18, C30786-21, C30786-22, C30786-23

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	ND	0.10	0.050	mg/l	
	TPH (Motor Oil)	ND	0.20	0.10	mg/l	

CAS No.	Surrogate Recoveries		Limits
630-01-3	Hexacosane	92%	50-150%

Blank Spike/Blank Spike Duplicate Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9019-BS	GG48576.D	1	11/11/13	NN	11/09/13	OP9019	GGG1335
OP9019-BSD	GG48577.D	1	11/11/13	NN	11/09/13	OP9019	GGG1335

The QC reported here applies to the following samples: **Method:** NWTPH-DX

C30786-1, C30786-2, C30786-3, C30786-7, C30786-10, C30786-11, C30786-13, C30786-15, C30786-16, C30786-17, C30786-18, C30786-21, C30786-22, C30786-23

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	BSD mg/l	BSD %	RPD	Limits Rec/RPD
	TPH (Diesel)	1	0.659	66	0.593	59	11	45-140/30
	TPH (Motor Oil)	1	0.776	78	0.732	73	6	45-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
630-01-3	Hexacosane	79%	77%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9019-MS	GG48587.D	1	11/11/13	NN	11/09/13	OP9019	GGG1335
OP9019-MSD	GG48588.D	1	11/11/13	NN	11/09/13	OP9019	GGG1335
C30786-23	GG48585.D	1	11/11/13	NN	11/09/13	OP9019	GGG1335

The QC reported here applies to the following samples: **Method:** NWTPH-DX

C30786-1, C30786-2, C30786-3, C30786-7, C30786-10, C30786-11, C30786-13, C30786-15, C30786-16, C30786-17, C30786-18, C30786-21, C30786-22, C30786-23

CAS No.	Compound	C30786-23 mg/l	Q	Spike mg/l	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH (Diesel)	0.280		1.89	1.76	78	1.72	76	2	45-140/25
	TPH (Motor Oil)	0.0976	J	1.89	1.74	87	1.80	90	3	45-140/25

CAS No.	Surrogate Recoveries	MS	MSD	C30786-23	Limits
630-01-3	Hexacosane	85%	87%	85%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: C30786
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9019-DUP1	GG48586.D	1	11/11/13	NN	11/09/13	OP9019	GGG1335
C30786-1	GG48568.D	1	11/11/13	NN	11/09/13	OP9019	GGG1335

The QC reported here applies to the following samples: **Method:** NWTPH-DX

C30786-1, C30786-2, C30786-3, C30786-7, C30786-10, C30786-11, C30786-13, C30786-15, C30786-16, C30786-17, C30786-18, C30786-21, C30786-22, C30786-23

CAS No.	Compound	C30786-1 mg/l	Q	DUP mg/l	Q	RPD	Limits
	TPH (Diesel)	0.134		0.149		11	25
	TPH (Motor Oil)	ND		ND		nc	25

CAS No.	Surrogate Recoveries	DUP	C30786-1	Limits
630-01-3	Hexacosane	87%	85%	50-150%

* = Outside of Control Limits.

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Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: C30786
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP6984
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/12/13

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	13	8.5		
Antimony	6.0	.7	.51		
Arsenic	10	.7	.65		
Barium	200	.4	.35		
Beryllium	5.0	.2	.4		
Boron	100	.9	.64		
Cadmium	2.0	.2	.15		
Calcium	5000	7.1	12	-11	<5000
Chromium	10	.3	.41		
Cobalt	5.0	.2	.3		
Copper	10	1.2	3		
Iron	200	6.4	12	-2.8	<200
Lead	10	.7	.85		
Lithium	50		2		
Magnesium	5000	27	36	17.9	<5000
Manganese	15	.1	1.3		
Molybdenum	20	.2	.22		
Nickel	5.0	.2	.12		
Potassium	10000	18	44		
Selenium	10	1.8	2.2		
Silicon	100	1.2	6.9		
Silver	5.0	.3	.47		
Sodium	10000	15	13		
Strontium	10	.2	.24		
Thallium	10	.5	.54		
Tin	50	.2	.7		
Titanium	10	.4	.34		
Vanadium	10	.3	.3		
Zinc	20	.3	4.2		

Associated samples MP6984: C30786-6, C30786-8, C30786-9, C30786-13, C30786-14, C30786-20, C30786-21

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C30786
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP6984
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/12/13

Metal	C30786-6 Original	MS	Spikelot MPIR4	% Rec	QC Limits
Aluminum					
Antimony	anr				
Arsenic	anr				
Barium					
Beryllium	anr				
Boron					
Cadmium	anr				
Calcium	17000	29500	12500	100.0	75-125
Chromium	anr				
Cobalt					
Copper	anr				
Iron	35500	35600	500	20.0 (a)	75-125
Lead	anr				
Lithium					
Magnesium	11200	24200	12500	104.0	75-125
Manganese					
Molybdenum					
Nickel	anr				
Potassium					
Selenium	anr				
Silicon					
Silver	anr				
Sodium	anr				
Strontium					
Thallium					
Tin					
Titanium					
Vanadium					
Zinc	anr				

Associated samples MP6984: C30786-6, C30786-8, C30786-9, C30786-13, C30786-14, C30786-20, C30786-21

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C30786
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP6984
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/12/13

Metal	C30786-6 Original	MSD	Spikelot MPIR4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony	anr					
Arsenic	anr					
Barium						
Beryllium	anr					
Boron						
Cadmium	anr					
Calcium	17000	29700	12500	101.6	0.7	20
Chromium	anr					
Cobalt						
Copper	anr					
Iron	35500	36000	500	100.0	1.1	20
Lead	anr					
Lithium						
Magnesium	11200	24300	12500	104.5	0.4	20
Manganese						
Molybdenum						
Nickel	anr					
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	anr					

Associated samples MP6984: C30786-6, C30786-8, C30786-9, C30786-13, C30786-14, C30786-20, C30786-21

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: C30786
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP6984
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:		11/12/13				11/12/13			
Metal	BSP Result	Spikelot MPIR4	% Rec	QC Limits	BSD Result	Spikelot MPIR4	% Rec	BSD RPD	QC Limit
Aluminum									
Antimony	anr								
Arsenic	anr								
Barium									
Beryllium	anr								
Boron									
Cadmium	anr								
Calcium	12800	12500	102.4	80-120	12700	12500	101.6	0.8	
Chromium	anr								
Cobalt									
Copper	anr								
Iron	510	500	102.0	80-120	515	500	103.0	1.0	
Lead	anr								
Lithium									
Magnesium	13000	12500	104.0	80-120	12800	12500	102.4	1.6	
Manganese									
Molybdenum									
Nickel	anr								
Potassium									
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	anr								

Associated samples MP6984: C30786-6, C30786-8, C30786-9, C30786-13, C30786-14, C30786-20, C30786-21

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: C30786
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP6984
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/12/13

Metal	C30786-6 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony	anr			
Arsenic	anr			
Barium				
Beryllium	anr			
Boron				
Cadmium	anr			
Calcium	17000	19900	17.4*(a)	0-10
Chromium	anr			
Cobalt				
Copper	anr			
Iron	35500	41800	17.6*(a)	0-10
Lead	anr			
Lithium				
Magnesium	11200	13200	18.2*(a)	0-10
Manganese				
Molybdenum				
Nickel	anr			
Potassium				
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	anr			

Associated samples MP6984: C30786-6, C30786-8, C30786-9, C30786-13, C30786-14, C30786-20, C30786-21

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: C30786
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP7009
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/18/13

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	13	8.5		
Antimony	6.0	.7	.51		
Arsenic	10	.7	.65		
Barium	200	.4	.35		
Beryllium	5.0	.2	.4		
Boron	100	.9	.64		
Cadmium	2.0	.2	.15		
Calcium	5000	7.1	12		
Chromium	10	.3	.41		
Cobalt	5.0	.2	.3		
Copper	10	1.2	3		
Iron	200	6.4	12	3.8	<200
Lead	10	.7	.85		
Lithium	50		2		
Magnesium	5000	27	36		
Manganese	15	.1	1.3	0.0	<15
Molybdenum	20	.2	.22		
Nickel	5.0	.2	.12		
Potassium	10000	18	44		
Selenium	10	1.8	2.2		
Silicon	100	1.2	6.9		
Silver	5.0	.3	.47		
Sodium	10000	15	13		
Strontium	10	.2	.24		
Thallium	10	.5	.54		
Tin	50	.2	.7		
Titanium	10	.4	.34		
Vanadium	10	.3	.3		
Zinc	20	.3	4.2		

Associated samples MP7009: C30786-6F, C30786-8F, C30786-9F, C30786-13F, C30786-14F, C30786-20F, C30786-21F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C30786
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP7009
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/18/13

Metal	C30786-6F Original	MS	Spikelot MPIR4A	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron	345	856	500	102.2	75-125
Lead					
Lithium					
Magnesium					
Manganese	273	797	500	104.8	75-125
Molybdenum					
Nickel					
Potassium					
Selenium					
Silicon					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Vanadium					
Zinc					

Associated samples MP7009: C30786-6F, C30786-8F, C30786-9F, C30786-13F, C30786-14F, C30786-20F, C30786-21F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C30786
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP7009
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/18/13

Metal	C30786-6F Original	MSD	Spikelot MPIR4A	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron	345	845	500	100.0	1.3	20
Lead						
Lithium						
Magnesium						
Manganese	273	789	500	103.2	1.0	20
Molybdenum						
Nickel						
Potassium						
Selenium						
Silicon						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP7009: C30786-6F, C30786-8F, C30786-9F, C30786-13F, C30786-14F, C30786-20F, C30786-21F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: C30786
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP7009
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/18/13

Metal	BSP Result	Spikelot MPIR4A	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron	502	500	100.4	80-120
Lead				
Lithium				
Magnesium				
Manganese	528	500	105.6	80-120
Molybdenum				
Nickel				
Potassium				
Selenium				
Silicon				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP7009: C30786-6F, C30786-8F, C30786-9F, C30786-13F, C30786-14F, C30786-20F, C30786-21F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: C30786
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP7009
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/18/13

Metal	C30786-6F Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron	345	365	5.7	0-10
Lead				
Lithium				
Magnesium				
Manganese	273	293	7.4	0-10
Molybdenum				
Nickel				
Potassium				
Selenium				
Silicon				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP7009: C30786-6F, C30786-8F, C30786-9F, C30786-13F, C30786-14F, C30786-20F, C30786-21F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

Northern California ACCUTEST LABORATORIES

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C30786
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Total as CaCO3	GN12281	5.0	0.0	mg/l	250	250	100.0	75-125%
Bromide	GP5789/GN12309	0.20	0.0	mg/l	5	4.83	96.6	90-110%
Sulfate	GP5789/GN12309	0.50	0.0	mg/l	5	4.96	99.2	90-110%

Associated Samples:
Batch GP5789: C30786-6, C30786-8, C30786-9, C30786-13, C30786-14, C30786-20, C30786-21
Batch GN12281: C30786-6, C30786-8, C30786-9, C30786-13, C30786-14, C30786-20, C30786-21
(*) Outside of QC limits

BLANK SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C30786
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
Alkalinity, Total as CaCO3	GN12281	mg/l	250	246	1.6	
Bromide	GP5789/GN12309	mg/l	5	4.73	2.1	25%
Sulfate	GP5789/GN12309	mg/l	5	4.80	3.3	25%

Associated Samples:
Batch GP5789: C30786-6, C30786-8, C30786-9, C30786-13, C30786-14, C30786-20, C30786-21
Batch GN12281: C30786-6, C30786-8, C30786-9, C30786-13, C30786-14, C30786-20, C30786-21
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C30786
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN12281	C30810-8	mg/l	80.0	80.0	0.0	0-25%

Associated Samples:
Batch GN12281: C30786-6, C30786-8, C30786-9, C30786-13, C30786-14, C30786-20, C30786-21
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C30786
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Bromide	GP5789/GN12309	C30714-1	mg/l	0.0	10	9.8	98.0	80-120%
Bromide	GP5789/GN12309	C30714-1	mg/l	0.0	10	9.8	98.0	80-120%
Sulfate	GP5789/GN12309	C30714-1	mg/l	22.6	10	32.0	94.0	80-120%

Associated Samples:
Batch GP5789: C30786-6, C30786-8, C30786-9, C30786-13, C30786-14, C30786-20, C30786-21
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C30786
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Bromide	GP5789/GN12309	C30714-1	mg/l	0.0	10	9.9	1.0	
Bromide	GP5789/GN12309	C30714-1	mg/l	0.0	10	9.9	1.0	
Sulfate	GP5789/GN12309	C30714-1	mg/l	22.6	10	32.0	0.0	

Associated Samples:
Batch GP5789: C30786-6, C30786-8, C30786-9, C30786-13, C30786-14, C30786-20, C30786-21
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

Northern California ACCUTEST LABORATORIES

11/25/13

Technical Report for

Shell Oil Company

URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

46194348

Accutest Job Number: C30810

Sampling Date: 11/07/13

Report to:

URS Corporation
111 SW Columbia, Suite 1500
Portland, OR 97201-5850
brian.pletcher@urs.com

ATTN: Brian Pletcher

Total number of pages in report: **71**

NELAP ACCREDITED TNI LABORATORY

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

James J. Rhudy
Lab Director

Client Service contact: Nutan Kabir 408-588-0200

Certifications: CA (08258CA) AZ (AZ0762) DoD ELAP (L-A-B L2242)

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Sample Summary

Shell Oil Company

Job No: C30810

URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Project No: 46194348

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
C30810-1	11/07/13	08:28	MTMD	11/09/13	AQ	Ground Water	MW-102-1113
C30810-2	11/07/13	10:08	MTMD	11/09/13	AQ	Ground Water	MW-111-1113
C30810-3	11/07/13	11:00	MTMD	11/09/13	AQ	Ground Water	MW-105-1113
C30810-4	11/07/13	12:05	MTMD	11/09/13	AQ	Ground Water	MW-05-1113
C30810-5	11/07/13	12:08	MTMD	11/09/13	AQ	Ground Water	MW-104-1113
C30810-6	11/07/13	13:20	MTMD	11/09/13	AQ	Ground Water	MW-306-1113
C30810-7	11/07/13	14:00	MTMD	11/09/13	AQ	Ground Water	MW-305-1113
C30810-8	11/07/13	14:45	MTMD	11/09/13	AQ	Ground Water	TW-01-1113
C30810-8F	11/07/13	14:45	MTMD	11/09/13	AQ	Groundwater Filtered	TW-01-1113
C30810-9	11/07/13	15:48	MTMD	11/09/13	AQ	Ground Water	TX-06A-1113

Summary of Hits

Job Number: C30810
Account: Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Collected: 11/07/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
C30810-1	**MW-102-1113**					
TPH (Motor Oil)		0.144 J	0.19	0.094	mg/l	NWTPH-DX
C30810-2	**MW-111-1113**					
Benzene		84.5	1.0	0.20	ug/l	SW846 8260B
Toluene		1.0	1.0	0.20	ug/l	SW846 8260B
Ethylbenzene		0.23 J	1.0	0.20	ug/l	SW846 8260B
Xylene (total)		0.69 J	2.0	0.46	ug/l	SW846 8260B
TPH (Gasoline)		0.208	0.20	0.050	mg/l	NWTPH-GX
TPH (Diesel)		0.174	0.095	0.048	mg/l	NWTPH-DX
C30810-3	**MW-105-1113**					
TPH (Diesel)		0.189	0.095	0.048	mg/l	NWTPH-DX
Lead		17.9	10		ug/l	SW846 6010B
C30810-4	**MW-05-1113**					
Toluene		0.83 J	1.0	0.20	ug/l	SW846 8260B
Xylene (total)		0.87 J	2.0	0.46	ug/l	SW846 8260B
TPH (Gasoline)		0.345	0.20	0.050	mg/l	NWTPH-GX
C30810-5	**MW-104-1113**					
TPH (Gasoline)		3.62	2.0	0.50	mg/l	NWTPH-GX
TPH (Diesel)		0.666	0.095	0.048	mg/l	NWTPH-DX
C30810-6	**MW-306-1113**					
Benzene		101	25	5.0	ug/l	SW846 8260B
Toluene		50.2	25	5.0	ug/l	SW846 8260B
Ethylbenzene		482	25	5.0	ug/l	SW846 8260B
Xylene (total)		2650	50	12	ug/l	SW846 8260B
TPH (Gasoline)		12.8	8.0	2.0	mg/l	NWTPH-GX
C30810-7	**MW-305-1113**					
Benzene		84.4	2.5	0.50	ug/l	SW846 8260B
Toluene		25.0	2.5	0.50	ug/l	SW846 8260B
Ethylbenzene		216	2.5	0.50	ug/l	SW846 8260B
Xylene (total)		91.9	5.0	1.2	ug/l	SW846 8260B
TPH (Gasoline)		3.59	2.0	0.50	mg/l	NWTPH-GX

Summary of Hits

Job Number: C30810
Account: Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA
Collected: 11/07/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
C30810-8	**TW-01-1113**					
Benzene		431	5.0	1.0	ug/l	SW846 8260B
Toluene		24.5	5.0	1.0	ug/l	SW846 8260B
Ethylbenzene		132	5.0	1.0	ug/l	SW846 8260B
Xylene (total)		72.4	10	2.3	ug/l	SW846 8260B
TPH (Gasoline)		3.24	2.0	0.50	mg/l	NWTPH-GX
Methane		5290	25	13	ug/l	RSK-175
Carbon Dioxide		9310	5000	400	ug/l	RSK-175
Calcium		13200	5000		ug/l	SW846 6010B
Iron		27000	200		ug/l	SW846 6010B
Magnesium		6090	5000		ug/l	SW846 6010B
Alkalinity, Total as CaCO3		80.0	5.0		mg/l	SM18 2320B
Hardness, Total as CaCO3 [a]		58.0	33		mg/l	SW846 6010B/SM 2340B
Sulfate		2.7	0.50		mg/l	EPA 300/SW846 9056A
C30810-8F	**TW-01-1113**					
Iron		4580	200		ug/l	SW846 6010B
Manganese		320	15		ug/l	SW846 6010B
C30810-9	**TX-06A-1113**					
TPH (Diesel)		0.358	0.095	0.048	mg/l	NWTPH-DX

(a) Calculated as: (Calcium * 2.497) + (Magnesium * 4.118)

Northern California ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: MW-102-1113
Lab Sample ID: C30810-1 **Date Sampled:** 11/07/13
Matrix: AQ - Ground Water **Date Received:** 11/09/13
Method: SW846 8260B **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V16457.D	1	11/15/13	RD	n/a	n/a	VV651
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		70-130%
2037-26-5	Toluene-D8	106%		70-130%
460-00-4	4-Bromofluorobenzene	105%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-102-1113		
Lab Sample ID:	C30810-1	**Date Sampled:**	11/07/13
Matrix:	AQ - Ground Water	**Date Received:**	11/09/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40674.D	1	11/19/13	TT	n/a	n/a	GJK1640
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	ND	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	103%		50-150%
460-00-4	4-Bromofluorobenzene	99%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-102-1113		
Lab Sample ID:	C30810-1	**Date Sampled:**	11/07/13
Matrix:	AQ - Ground Water	**Date Received:**	11/09/13
Method:	NWTPH-DX SW846 3510C	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH309292.D	1	11/12/13	AG	11/12/13	OP9036	GHH1130
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	ND	0.094	0.047	mg/l	
	TPH (Motor Oil)	0.144	0.19	0.094	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	72%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-111-1113		
Lab Sample ID:	C30810-2	**Date Sampled:**	11/07/13
Matrix:	AQ - Ground Water	**Date Received:**	11/09/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V16458.D	1	11/15/13	RD	n/a	n/a	VV651
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	84.5	1.0	0.20	ug/l	
108-88-3	Toluene	1.0	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	0.23	1.0	0.20	ug/l	J
1330-20-7	Xylene (total)	0.69	2.0	0.46	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		70-130%
2037-26-5	Toluene-D8	107%		70-130%
460-00-4	4-Bromofluorobenzene	104%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-111-1113		
Lab Sample ID:	C30810-2	**Date Sampled:**	11/07/13
Matrix:	AQ - Ground Water	**Date Received:**	11/09/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40675.D	1	11/19/13	TT	n/a	n/a	GJK1640
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	0.208	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	99%		50-150%
460-00-4	4-Bromofluorobenzene	98%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-111-1113
Lab Sample ID: C30810-2 **Date Sampled:** 11/07/13
Matrix: AQ - Ground Water **Date Received:** 11/09/13
Method: NWTPH-DX SW846 3510C **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH309293.D	1	11/12/13	AG	11/12/13	OP9036	GHH1130
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	0.174	0.095	0.048	mg/l	
	TPH (Motor Oil)	ND	0.19	0.095	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	63%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-105-1113		
Lab Sample ID:	C30810-3	**Date Sampled:**	11/07/13
Matrix:	AQ - Ground Water	**Date Received:**	11/09/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V16459.D	1	11/15/13	RD	n/a	n/a	VV651
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		70-130%
2037-26-5	Toluene-D8	106%		70-130%
460-00-4	4-Bromofluorobenzene	106%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-105-1113		
Lab Sample ID:	C30810-3	**Date Sampled:**	11/07/13
Matrix:	AQ - Ground Water	**Date Received:**	11/09/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40676.D	1	11/19/13	TT	n/a	n/a	GJK1640
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	ND	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	60%		50-150%
460-00-4	4-Bromofluorobenzene	66%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-105-1113
Lab Sample ID: C30810-3 **Date Sampled:** 11/07/13
Matrix: AQ - Ground Water **Date Received:** 11/09/13
Method: NWTPH-DX SW846 3510C **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH309294.D	1	11/12/13	AG	11/12/13	OP9036	GHH1130
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	0.189	0.095	0.048	mg/l	
	TPH (Motor Oil)	ND	0.19	0.095	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	76%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-105-1113		
Lab Sample ID:	C30810-3	**Date Sampled:**	11/07/13
Matrix:	AQ - Ground Water	**Date Received:**	11/09/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	17.9	10	ug/l	1	11/12/13	11/13/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3578
(2) Prep QC Batch: MP6984

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-05-1113		
Lab Sample ID:	C30810-4	**Date Sampled:**	11/07/13
Matrix:	AQ - Ground Water	**Date Received:**	11/09/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V16460.D	1	11/15/13	RD	n/a	n/a	VV651
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	0.83	1.0	0.20	ug/l	J
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	0.87	2.0	0.46	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		70-130%
2037-26-5	Toluene-D8	106%		70-130%
460-00-4	4-Bromofluorobenzene	105%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-05-1113		
Lab Sample ID:	C30810-4	**Date Sampled:**	11/07/13
Matrix:	AQ - Ground Water	**Date Received:**	11/09/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40678.D	1	11/19/13	TT	n/a	n/a	GJK1640
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	0.345	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	106%		50-150%
460-00-4	4-Bromofluorobenzene	147%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-05-1113		
Lab Sample ID:	C30810-4	**Date Sampled:**	11/07/13
Matrix:	AQ - Ground Water	**Date Received:**	11/09/13
Method:	NWTPH-DX SW846 3510C	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH309295.D	1	11/12/13	AG	11/12/13	OP9036	GHH1130
Run #2							

	Initial Volume	Final Volume
Run #1	1030 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	ND	0.097	0.049	mg/l	
	TPH (Motor Oil)	ND	0.19	0.097	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	68%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-104-1113		
Lab Sample ID:	C30810-5	**Date Sampled:**	11/07/13
Matrix:	AQ - Ground Water	**Date Received:**	11/09/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40679.D	10	11/19/13	TT	n/a	n/a	GJK1640
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	3.62	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	100%		50-150%
460-00-4	4-Bromofluorobenzene	128%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-104-1113		
Lab Sample ID:	C30810-5	**Date Sampled:**	11/07/13
Matrix:	AQ - Ground Water	**Date Received:**	11/09/13
Method:	NWTPH-DX SW846 3510C	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH309296.D	1	11/12/13	AG	11/12/13	OP9036	GHH1130
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	0.666	0.095	0.048	mg/l	
	TPH (Motor Oil)	ND	0.19	0.095	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	66%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-104-1113		
Lab Sample ID:	C30810-5	**Date Sampled:**	11/07/13
Matrix:	AQ - Ground Water	**Date Received:**	11/09/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 10	10	ug/l	1	11/12/13	11/12/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3576
(2) Prep QC Batch: MP6984

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-306-1113		
Lab Sample ID:	C30810-6	**Date Sampled:**	11/07/13
Matrix:	AQ - Ground Water	**Date Received:**	11/09/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V16461.D	25	11/15/13	RD	n/a	n/a	VV651
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	101	25	5.0	ug/l	
108-88-3	Toluene	50.2	25	5.0	ug/l	
100-41-4	Ethylbenzene	482	25	5.0	ug/l	
1330-20-7	Xylene (total)	2650	50	12	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	112%		70-130%
2037-26-5	Toluene-D8	105%		70-130%
460-00-4	4-Bromofluorobenzene	105%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-306-1113		
Lab Sample ID:	C30810-6	**Date Sampled:**	11/07/13
Matrix:	AQ - Ground Water	**Date Received:**	11/09/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40680.D	40	11/19/13	TT	n/a	n/a	GJK1640
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	12.8	8.0	2.0	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	97%		50-150%
460-00-4	4-Bromofluorobenzene	94%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-305-1113		
Lab Sample ID:	C30810-7	**Date Sampled:**	11/07/13
Matrix:	AQ - Ground Water	**Date Received:**	11/09/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V16462.D	2.5	11/15/13	RD	n/a	n/a	VV651
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	84.4	2.5	0.50	ug/l	
108-88-3	Toluene	25.0	2.5	0.50	ug/l	
100-41-4	Ethylbenzene	216	2.5	0.50	ug/l	
1330-20-7	Xylene (total)	91.9	5.0	1.2	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		70-130%
2037-26-5	Toluene-D8	104%		70-130%
460-00-4	4-Bromofluorobenzene	107%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-305-1113		
Lab Sample ID:	C30810-7	**Date Sampled:**	11/07/13
Matrix:	AQ - Ground Water	**Date Received:**	11/09/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40682.D	10	11/19/13	TT	n/a	n/a	GJK1640
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	3.59	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	102%		50-150%
460-00-4	4-Bromofluorobenzene	108%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-01-1113		
Lab Sample ID:	C30810-8	**Date Sampled:**	11/07/13
Matrix:	AQ - Ground Water	**Date Received:**	11/09/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V16463.D	5	11/15/13	RD	n/a	n/a	VV651
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	431	5.0	1.0	ug/l	
108-88-3	Toluene	24.5	5.0	1.0	ug/l	
100-41-4	Ethylbenzene	132	5.0	1.0	ug/l	
1330-20-7	Xylene (total)	72.4	10	2.3	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		70-130%
2037-26-5	Toluene-D8	103%		70-130%
460-00-4	4-Bromofluorobenzene	105%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TW-01-1113
Lab Sample ID: C30810-8 **Date Sampled:** 11/07/13
Matrix: AQ - Ground Water **Date Received:** 11/09/13
Method: RSK-175 **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA004516.D	1	11/12/13	TT	n/a	n/a	GAA209
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	10.0 ul	22 Deg. C
Run #2				

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	5290	25	13	ug/l	
124-38-9	Carbon Dioxide	9310	5000	400	ug/l	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-01-1113		
Lab Sample ID:	C30810-8	**Date Sampled:**	11/07/13
Matrix:	AQ - Ground Water	**Date Received:**	11/09/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40683.D	10	11/19/13	TT	n/a	n/a	GJK1640
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	3.24	2.0	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	105%		50-150%
460-00-4	4-Bromofluorobenzene	114%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-01-1113		
Lab Sample ID:	C30810-8	**Date Sampled:**	11/07/13
Matrix:	AQ - Ground Water	**Date Received:**	11/09/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	13200	5000	ug/l	1	11/12/13	11/12/13	RS	SW846 6010B [1]	SW3010A [2]
Iron	27000	200	ug/l	1	11/12/13	11/12/13	RS	SW846 6010B [1]	SW3010A [2]
Magnesium	6090	5000	ug/l	1	11/12/13	11/12/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3576
(2) Prep QC Batch: MP6984

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TW-01-1113		
Lab Sample ID:	C30810-8	**Date Sampled:**	11/07/13
Matrix:	AQ - Ground Water	**Date Received:**	11/09/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	80.0	5.0	mg/l	1	11/14/13 12:00	AC	SM18 2320B
Hardness, Total as CaCO3 [a]	58.0	33	mg/l	1	11/12/13 20:40	RS	SW846 6010B/SM 2340B
Sulfate	2.7	0.50	mg/l	1	11/15/13 12:30	RL	EPA 300/SW846 9056A

(a) Calculated as: (Calcium * 2.497) + (Magnesium * 4.118)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TW-01-1113		
Lab Sample ID:	C30810-8F	**Date Sampled:**	11/07/13
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/09/13
		Percent Solids:	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	4580	200	ug/l	1	11/18/13	11/18/13	RS	SW846 6010B [1]	SW3010A [2]
Manganese	320	15	ug/l	1	11/18/13	11/18/13	RS	SW846 6010B [1]	SW3010A [2]

(1) Instrument QC Batch: MA3584
(2) Prep QC Batch: MP7009

RL = Reporting Limit

Report of Analysis

Client Sample ID: TX-06A-1113
Lab Sample ID: C30810-9 **Date Sampled:** 11/07/13
Matrix: AQ - Ground Water **Date Received:** 11/09/13
Method: SW846 8260B **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V16464.D	1	11/15/13	RD	n/a	n/a	VV651
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		70-130%
2037-26-5	Toluene-D8	107%		70-130%
460-00-4	4-Bromofluorobenzene	105%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TX-06A-1113		
Lab Sample ID:	C30810-9	**Date Sampled:**	11/07/13
Matrix:	AQ - Ground Water	**Date Received:**	11/09/13
Method:	NWTPH-GX	**Percent Solids:**	n/a
Project:	URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JK40684.D	1	11/19/13	TT	n/a	n/a	GJK1640
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Northwest TPH-Gx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	ND	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	100%		50-150%
460-00-4	4-Bromofluorobenzene	98%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID: TX-06A-1113
Lab Sample ID: C30810-9 **Date Sampled:** 11/07/13
Matrix: AQ - Ground Water **Date Received:** 11/09/13
Method: NWTPH-DX SW846 3510C **Percent Solids:** n/a
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH309297.D	1	11/12/13	AG	11/12/13	OP9036	GHH1130
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

Northwest TPH-Dx

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	0.358	0.095	0.048	mg/l	
	TPH (Motor Oil)	ND	0.19	0.095	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
630-01-3	Hexacosane	69%		50-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Northern California ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

FEDEX TRK# 8037 0822 0886

LAB (LOCATION)
☑ ACCUTEST ( )
☐ CALSCIENCE ( )
☐ TESTAMERICA ( )
☐ Other ( )
Lab Vendor # 1813640 (Accutest)

Shell Oil Products Chain Of Custody Record

URS

Please Check Appropriate Box:
☐ ENV. SERVICES ☐ MOTIVA RETAIL ☑ SHELL RETAIL
☐ MOTIVA SD&CH ☐ CONSULTANT ☐ LUBES
☐ SHELL PIPELINE ☐ OTHER

Print Bill To Contact Name:

INCIDENT # (ENV SERVICES): 3 0 0 3 6
☐ CHECK IF NO INCIDENT # APPLIES
DATE: 11/08/13
PAGE: 1 of 1

PO #
SAP #: 3 5 7 0 3 2

SAMPLING COMPANY: URS Corporation
LOG CODE:
SITE ADDRESS: Street and City: 2555 13th Ave. SW, Seattle
State: WA
GLOBAL ID NO.:
ADDRESS: 111 Southwest Columbia Street, Suite 1500, Portland, Oregon 97201
EDF DELIVERABLE TO (Name, Company, Office Location): Clifford J Pearson, URS, Portland, OR
PHONE NO.: 503-222-7200
E-MAIL: Clifford.Pearson@URS.com
CONSULTANT PROJECT NO.: 46194348
PROJECT CONTACT (Hardcopy or PDF Report to): Brian Pletcher
TELEPHONE: 503-222-7200
FAX: 503-222-4292
Bill To Contact E-MAIL: Brian.Pletcher@URS.com
SAMPLER NAME(S) (Print): MARK TAUSCHER / MATT DOBBS
LAB USE ONLY: C30810

TURNAROUND TIME (CALENDAR DAYS): ☑ STANDARD (14 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND
☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:
DELIVERABLES: ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL 3 ☐ LEVEL 4 ☐ OTHER (SPECIFY)
TEMPERATURE ON RECEIPT C°: Cooler #1 | Cooler #2 | Cooler #3

SPECIAL INSTRUCTIONS OR NOTES:
☑ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☑ RECEIPT VERIFICATION REQUESTED
☐ PROVIDE LEDD DISK

REQUESTED ANALYSIS
UNIT COST: TPH-Gx, TPH-Dx, BTEX, PAHs (8270 SIM), Alkalinity, Sulfate
NON-UNIT COST: Carbon Dioxide, Total Iron, Total Lead, Hardness, Methane, Dissolved Manganese, Dissolved Iron

FIELD NOTES:
TEMPERATURE ON RECEIPT C°
4.5 - 1.5 = 3.0 °C
5.6 - 1.5 = 4.1 °C
Container PID Readings or Laboratory Notes

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	TPH-Gx	TPH-Dx	BTEX	PAHs (8270 SIM)	Alkalinity	Sulfate	Carbon Dioxide	Total Iron	Total Lead	Hardness	Methane	Dissolved Manganese	Dissolved Iron	Container PID Readings or Laboratory Notes
1	MW-102-1113	11/7	0828	W	X			X		8	X	X	X											1-Liter Broken
2	MW-111-1113	11/7	1008	W	X			X		8	X	X	X											1-Liter Broken
3	MW-105-1113	11/7	1100	W	X	X		X		9	X	X	X						X					
4	MW-05-1113	11/7	1205	W	X			X		8	X	X	X											1-Liter Broken
5	MW-104-1113	11/7	1208	W	X	X		X		6	X	X							X					
6	MW-306-1113	11/7	1320	W	X					6	X		X											
7	MW-305-1113	11/7	1400	W	X					6	X		X											
8	~~MW~~ TW-01-1113	11/7	1445	W						12	X		X		X	X		X	X	X	X	X	X	
	~~TW-01-1113~~ MS	~~11/7~~	~~1445~~	~~W~~																				
9	TX-064-1113	11/7	1548	W	X			X		8	X	X	X											

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
	FEDEX	11/08/13	1200
FEDEX		11/9/13	0904

05/2/06 Revision

C30810: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: C30810 **Client:** SHELL OIL **Project:** 2555 13TH AVE. SW, SEATTLE, WA

Date / Time Received: 11/9/2013 **Delivery Method:** FedEx **Airbill #'s:** 8037 0822 0888

Cooler Temps (Initial/Adjusted): #1: (4.5/3); #2: (5.6/4.1); 0

Cooler Security

	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature

	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR1 Plastic;		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	2		

Quality Control Preservation

	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation

	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition

	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Broken / Leaking		

Sample Integrity - Instructions

	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments
MW-102-1113 (1 Liter Amber N/P received broken in shipment)
MW-111-1113 (1 Liter Amber N/P received broken in shipment)
MW-05-1113 (1 Liter Amber N/P received broken in shipment)

Accutest Laboratories
V:408.588.0200
2105 Lundy Avenue
F: 408.588.0201
San Jose, CA 95131
www/accutest.com

C30810: Chain of Custody
Page 2 of 2

Northern California ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: C30810
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VV651-MB	V16449.D	1	11/15/13	RD	n/a	n/a	VV651

The QC reported here applies to the following samples: **Method:** SW846 8260B

C30810-1, C30810-2, C30810-3, C30810-4, C30810-6, C30810-7, C30810-8, C30810-9

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	101%	70-130%
2037-26-5	Toluene-D8	108%	70-130%
460-00-4	4-Bromofluorobenzene	105%	70-130%

Blank Spike/Blank Spike Duplicate Summary

Job Number: C30810
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VV651-BS	V16446.D	1	11/14/13	RD	n/a	n/a	VV651
VV651-BSD	V16447.D	1	11/14/13	RD	n/a	n/a	VV651

The QC reported here applies to the following samples: **Method:** SW846 8260B

C30810-1, C30810-2, C30810-3, C30810-4, C30810-6, C30810-7, C30810-8, C30810-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	20	20.1	101	20.2	101	0	77-122/25
100-41-4	Ethylbenzene	20	20.1	101	20.0	100	0	76-126/17
108-88-3	Toluene	20	20.0	100	19.7	99	2	75-122/17
1330-20-7	Xylene (total)	60	60.3	101	59.8	100	1	77-125/17

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	112%	107%	70-130%
2037-26-5	Toluene-D8	104%	103%	70-130%
460-00-4	4-Bromofluorobenzene	103%	102%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C30810
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C30810-6MS	V16465.D	25	11/15/13	RD	n/a	n/a	VV651
C30810-6MSD	V16466.D	25	11/15/13	RD	n/a	n/a	VV651
C30810-6	V16461.D	25	11/15/13	RD	n/a	n/a	VV651

The QC reported here applies to the following samples: **Method:** SW846 8260B

C30810-1, C30810-2, C30810-3, C30810-4, C30810-6, C30810-7, C30810-8, C30810-9

CAS No.	Compound	C30810-6 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	101		500	611	102	633	106	4	77-122/16
100-41-4	Ethylbenzene	482		500	979	99	1020	108	4	76-126/17
108-88-3	Toluene	50.2		500	553	101	552	100	0	75-122/17
1330-20-7	Xylene (total)	2650		1500	4080	95	4270	108	5	77-125/17

CAS No.	Surrogate Recoveries	MS	MSD	C30810-6	Limits
1868-53-7	Dibromofluoromethane	105%	105%	112%	70-130%
2037-26-5	Toluene-D8	105%	105%	105%	70-130%
460-00-4	4-Bromofluorobenzene	101%	104%	105%	70-130%

* = Outside of Control Limits.

Northern California ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: C30810
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GJK1640-MB	JK40671.D	1	11/19/13	TT	n/a	n/a	GJK1640

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C30810-1, C30810-2, C30810-3, C30810-4, C30810-5, C30810-6, C30810-7, C30810-8, C30810-9

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Gasoline)	ND	0.20	0.050	mg/l	

CAS No.	Surrogate Recoveries		Limits
98-08-8	aaa-Trifluorotoluene	109%	50-150%
460-00-4	4-Bromofluorobenzene	106%	50-150%

Method Blank Summary

Job Number: C30810
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAA209-MB	AA004497.D	1	11/12/13	TT	n/a	n/a	GAA209

The QC reported here applies to the following samples: **Method:** RSK-175

C30810-8

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	0.26	0.50	0.25	ug/l	J
124-38-9	Carbon Dioxide	30.9	100	7.9	ug/l	J

Blank Spike Summary

Job Number: C30810
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAA209-BS	AA004499.D	1	11/12/13	TT	n/a	n/a	GAA209

The QC reported here applies to the following samples: **Method:** RSK-175

C30810-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
74-82-8	Methane	21.5	17.9	83	70-130
124-38-9	Carbon Dioxide	77.1	71.7	93	70-130

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: C30810
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GJK1640-BS	JK40672.D	1	11/19/13	TT	n/a	n/a	GJK1640
GJK1640-BSD	JK40673.D	1	11/19/13	TT	n/a	n/a	GJK1640

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C30810-1, C30810-2, C30810-3, C30810-4, C30810-5, C30810-6, C30810-7, C30810-8, C30810-9

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	BSD mg/l	BSD %	RPD	Limits Rec/RPD
	TPH (Gasoline)	0.4	0.487	122	0.479	120	2	60-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
98-08-8	aaa-Trifluorotoluene	107%	102%	50-150%
460-00-4	4-Bromofluorobenzene	106%	100%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C30810
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C30810-1MS	JK40686.D	1	11/19/13	TT	n/a	n/a	GJK1640
C30810-1MSD	JK40687.D	1	11/19/13	TT	n/a	n/a	GJK1640
C30810-1	JK40674.D	1	11/19/13	TT	n/a	n/a	GJK1640

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C30810-1, C30810-2, C30810-3, C30810-4, C30810-5, C30810-6, C30810-7, C30810-8, C30810-9

CAS No.	Compound	C30810-1 mg/l	Q	Spike mg/l	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH (Gasoline)	ND		0.4	0.447	112	0.454	114	2	60-140/20

CAS No.	Surrogate Recoveries	MS	MSD	C30810-1	Limits
98-08-8	aaa-Trifluorotoluene	97%	102%	103%	50-150%
460-00-4	4-Bromofluorobenzene	95%	101%	99%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: C30810
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C30810-3DUP	JK40677.D	1	11/19/13	TT	n/a	n/a	GJK1640
C30810-3	JK40676.D	1	11/19/13	TT	n/a	n/a	GJK1640

The QC reported here applies to the following samples: **Method:** NWTPH-GX

C30810-1, C30810-2, C30810-3, C30810-4, C30810-5, C30810-6, C30810-7, C30810-8, C30810-9

CAS No.	Compound	C30810-3 mg/l	Q	DUP mg/l	Q	RPD	Limits
	TPH (Gasoline)	ND		ND		nc	20

CAS No.	Surrogate Recoveries	DUP	C30810-3	Limits
98-08-8	aaa-Trifluorotoluene	101%	60%	50-150%
460-00-4	4-Bromofluorobenzene	99%	66%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: C30810
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C30762-2DUP	AA004514.D	1	11/12/13	TT	n/a	n/a	GAA209
C30762-2	AA004512.D	1	11/12/13	TT	n/a	n/a	GAA209
C30762-2	AA004513.D	1	11/12/13	TT	n/a	n/a	GAA209

The QC reported here applies to the following samples: **Method:** RSK-175

C30810-8

CAS No.	Compound	C30762-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
74-82-8	Methane	158 [a]		152		4	30
124-38-9	Carbon Dioxide	3470 [a]		3590		3	30

(a) Result is from Run #2.

* = Outside of Control Limits.

Northern California ACCUTEST LABORATORIES

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: C30810
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9036-MB	HH309290.D	1	11/12/13	AG	11/12/13	OP9036	GHH1130

The QC reported here applies to the following samples: **Method:** NWTPH-DX

C30810-1, C30810-2, C30810-3, C30810-4, C30810-5, C30810-9

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (Diesel)	ND	0.10	0.050	mg/l	
	TPH (Motor Oil)	ND	0.20	0.10	mg/l	

CAS No.	Surrogate Recoveries		Limits
630-01-3	Hexacosane	73%	50-150%

Blank Spike/Blank Spike Duplicate Summary

Job Number: C30810
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9036-BS	HH309289.D	1	11/12/13	AG	11/12/13	OP9036	GHH1130
OP9036-BSD	HH309291.D	1	11/12/13	AG	11/12/13	OP9036	GHH1130

The QC reported here applies to the following samples: **Method:** NWTPH-DX

C30810-1, C30810-2, C30810-3, C30810-4, C30810-5, C30810-9

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	BSD mg/l	BSD %	RPD	Limits Rec/RPD
	TPH (Diesel)	1	0.785	79	0.656	66	18	45-140/30
	TPH (Motor Oil)	1	0.899	90	0.734	73	20	45-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
630-01-3	Hexacosane	80%	79%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: C30810
Account: SHELLWIC Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9036-DUP	HH309298.D	1	11/12/13	AG	11/12/13	OP9036	GHH1130
C30810-5	HH309296.D	1	11/12/13	AG	11/12/13	OP9036	GHH1130

The QC reported here applies to the following samples: **Method:** NWTPH-DX

C30810-1, C30810-2, C30810-3, C30810-4, C30810-5, C30810-9

CAS No.	Compound	C30810-5 mg/l	Q	DUP mg/l	Q	RPD	Limits
	TPH (Diesel)	0.666		0.900		30* [a]	25
	TPH (Motor Oil)	ND		0.182	J	200* [a]	25

CAS No.	Surrogate Recoveries	DUP	C30810-5	Limits
630-01-3	Hexacosane	76%	66%	50-150%

(a) Outside laboratory control limits.

* = Outside of Control Limits.

Northern California ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: C30810
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP6984
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/12/13

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	13	8.5		
Antimony	6.0	.7	.51		
Arsenic	10	.7	.65		
Barium	200	.4	.35		
Beryllium	5.0	.2	.4		
Boron	100	.9	.64		
Cadmium	2.0	.2	.15		
Calcium	5000	7.1	12	-11	<5000
Chromium	10	.3	.41		
Cobalt	5.0	.2	.3		
Copper	10	1.2	3		
Iron	200	6.4	12	-2.8	<200
Lead	10	.7	.85	1.0	<10
Lithium	50		2		
Magnesium	5000	27	36	17.9	<5000
Manganese	15	.1	1.3		
Molybdenum	20	.2	.22		
Nickel	5.0	.2	.12		
Potassium	10000	18	44		
Selenium	10	1.8	2.2		
Silicon	100	1.2	6.9		
Silver	5.0	.3	.47		
Sodium	10000	15	13		
Strontium	10	.2	.24		
Thallium	10	.5	.54		
Tin	50	.2	.7		
Titanium	10	.4	.34		
Vanadium	10	.3	.3		
Zinc	20	.3	4.2		

Associated samples MP6984: C30810-3, C30810-5, C30810-8

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C30810
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP6984
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/12/13

Metal	C30786-6 Original	MS	Spikelot MPIR4	% Rec	QC Limits
Aluminum					
Antimony	anr				
Arsenic	anr				
Barium					
Beryllium	anr				
Boron					
Cadmium	anr				
Calcium	17000	29500	12500	100.0	75-125
Chromium	anr				
Cobalt					
Copper	anr				
Iron	35500	35600	500	20.0 (a)	75-125
Lead	0.0	509	500	101.8	75-125
Lithium					
Magnesium	11200	24200	12500	104.0	75-125
Manganese					
Molybdenum					
Nickel	anr				
Potassium					
Selenium	anr				
Silicon					
Silver	anr				
Sodium	anr				
Strontium					
Thallium					
Tin					
Titanium					
Vanadium					
Zinc	anr				

Associated samples MP6984: C30810-3, C30810-5, C30810-8

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C30810
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP6984 Methods: SW846 6010B
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 11/12/13

Metal	C30786-6 Original	MSD	Spikelot MPIR4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony	anr					
Arsenic	anr					
Barium						
Beryllium	anr					
Boron						
Cadmium	anr					
Calcium	17000	29700	12500	101.6	0.7	20
Chromium	anr					
Cobalt						
Copper	anr					
Iron	35500	36000	500	100.0	1.1	20
Lead	0.0	508	500	101.6	0.2	20
Lithium						
Magnesium	11200	24300	12500	104.5	0.4	20
Manganese						
Molybdenum						
Nickel	anr					
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	anr					

Associated samples MP6984: C30810-3, C30810-5, C30810-8

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: C30810
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP6984
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:		11/12/13				11/12/13			
Metal	BSP Result	Spikelot MPIR4	% Rec	QC Limits	BSD Result	Spikelot MPIR4	% Rec	BSD RPD	QC Limit
Aluminum									
Antimony	anr								
Arsenic	anr								
Barium									
Beryllium	anr								
Boron									
Cadmium	anr								
Calcium	12800	12500	102.4	80-120	12700	12500	101.6	0.8	
Chromium	anr								
Cobalt									
Copper	anr								
Iron	510	500	102.0	80-120	515	500	103.0	1.0	
Lead	509	500	101.8	80-120	504	500	100.8	1.0	
Lithium									
Magnesium	13000	12500	104.0	80-120	12800	12500	102.4	1.6	
Manganese									
Molybdenum									
Nickel	anr								
Potassium									
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	anr								

Associated samples MP6984: C30810-3, C30810-5, C30810-8

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: C30810
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP6984
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/12/13

Metal	C30786-6 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony	anr			
Arsenic	anr			
Barium				
Beryllium	anr			
Boron				
Cadmium	anr			
Calcium	17000	19900	17.4*(a)	0-10
Chromium	anr			
Cobalt				
Copper	anr			
Iron	35500	41800	17.6*(a)	0-10
Lead	0.00	0.00	NC	0-10
Lithium				
Magnesium	11200	13200	18.2*(a)	0-10
Manganese				
Molybdenum				
Nickel	anr			
Potassium				
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	anr			

Associated samples MP6984: C30810-3, C30810-5, C30810-8

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: C30810
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP7009
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/18/13

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	13	8.5		
Antimony	6.0	.7	.51		
Arsenic	10	.7	.65		
Barium	200	.4	.35		
Beryllium	5.0	.2	.4		
Boron	100	.9	.64		
Cadmium	2.0	.2	.15		
Calcium	5000	7.1	12		
Chromium	10	.3	.41		
Cobalt	5.0	.2	.3		
Copper	10	1.2	3		
Iron	200	6.4	12	3.8	<200
Lead	10	.7	.85		
Lithium	50		2		
Magnesium	5000	27	36		
Manganese	15	.1	1.3	0.0	<15
Molybdenum	20	.2	.22		
Nickel	5.0	.2	.12		
Potassium	10000	18	44		
Selenium	10	1.8	2.2		
Silicon	100	1.2	6.9		
Silver	5.0	.3	.47		
Sodium	10000	15	13		
Strontium	10	.2	.24		
Thallium	10	.5	.54		
Tin	50	.2	.7		
Titanium	10	.4	.34		
Vanadium	10	.3	.3		
Zinc	20	.3	4.2		

Associated samples MP7009: C30810-8F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C30810
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP7009
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/18/13

Metal	C30786-6F Original MS		Spikelot MPIR4A	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron	345	856	500	102.2	75-125
Lead					
Lithium					
Magnesium					
Manganese	273	797	500	104.8	75-125
Molybdenum					
Nickel					
Potassium					
Selenium					
Silicon					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Vanadium					
Zinc					

Associated samples MP7009: C30810-8F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C30810
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP7009
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/18/13

Metal	C30786-6F Original	MSD	Spikelot MPIR4A	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron	345	845	500	100.0	1.3	20
Lead						
Lithium						
Magnesium						
Manganese	273	789	500	103.2	1.0	20
Molybdenum						
Nickel						
Potassium						
Selenium						
Silicon						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP7009: C30810-8F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: C30810
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP7009
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/18/13

Metal	BSP Result	Spikelot MPIR4A	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron	502	500	100.4	80-120
Lead				
Lithium				
Magnesium				
Manganese	528	500	105.6	80-120
Molybdenum				
Nickel				
Potassium				
Selenium				
Silicon				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP7009: C30810-8F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: C30810
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

QC Batch ID: MP7009
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/18/13

Metal	C30786-6F Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron	345	365	5.7	0-10
Lead				
Lithium				
Magnesium				
Manganese	273	293	7.4	0-10
Molybdenum				
Nickel				
Potassium				
Selenium				
Silicon				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP7009: C30810-8F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

Northern California ACCUTEST LABORATORIES

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C30810
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Total as CaCO3	GN12281	5.0	0.0	mg/l	250	250	100.0	75-125%
Chloride	GP5801/GN12325	0.50	0.0	mg/l	5	4.70	94.0	90-110%
Fluoride	GP5801/GN12325	0.10	0.020	mg/l	5	4.75	95.0	90-110%
Nitrogen, Nitrate	GP5801/GN12325	0.10	0.0	mg/l	5	4.94	98.8	90-110%
Nitrogen, Nitrite	GP5801/GN12325	0.10	0.0	mg/l	5	4.85	97.0	90-110%
Sulfate	GP5801/GN12325	0.50	0.0	mg/l	5	4.78	95.6	90-110%

Associated Samples:
Batch GP5801: C30810-8
Batch GN12281: C30810-8
(*) Outside of QC limits

BLANK SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C30810
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
Alkalinity, Total as CaCO3	GN12281	mg/l	250	246	1.6	
Chloride	GP5801/GN12325	mg/l	5	4.59	2.4	25%
Fluoride	GP5801/GN12325	mg/l	5	4.72	0.6	25%
Nitrogen, Nitrate	GP5801/GN12325	mg/l	5	4.91	0.6	25%
Nitrogen, Nitrite	GP5801/GN12325	mg/l	5	4.89	0.8	25%
Sulfate	GP5801/GN12325	mg/l	5	4.74	0.8	25%

Associated Samples:
Batch GP5801: C30810-8
Batch GN12281: C30810-8
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C30810
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN12281	C30810-8	mg/l	80.0	80.0	0.0	0-25%

Associated Samples:
Batch GN12281: C30810-8
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C30810
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chloride	GP5801/GN12325	C30810-8	mg/l	0.90	5	5.7	96.0	80-120%
Fluoride	GP5801/GN12325	C30810-8	mg/l	0.25	5	4.9	93.0	80-120%
Nitrogen, Nitrate	GP5801/GN12325	C30810-8	mg/l	0.0	5	4.7	94.0	80-120%
Nitrogen, Nitrite	GP5801/GN12325	C30810-8	mg/l	0.0	5	4.9	98.0	80-120%
Sulfate	GP5801/GN12325	C30810-8	mg/l	2.7	5	7.5	96.0	80-120%

Associated Samples:
Batch GP5801: C30810-8
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C30810
Account: SHELLWIC - Shell Oil Company
Project: URSORP: Shell/Harbor Island - 2555 13th Ave SW., Seattle, WA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chloride	GP5801/GN12325	C30810-8	mg/l	0.90	5	5.7	0.0	
Fluoride	GP5801/GN12325	C30810-8	mg/l	0.25	5	4.9	0.0	
Nitrogen, Nitrate	GP5801/GN12325	C30810-8	mg/l	0.0	5	4.7	0.0	
Nitrogen, Nitrite	GP5801/GN12325	C30810-8	mg/l	0.0	5	5.0	2.0	
Sulfate	GP5801/GN12325	C30810-8	mg/l	2.7	5	7.5	0.0	

Associated Samples:
Batch GP5801: C30810-8
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

Final Data Review

The data quality review of the 32 primary groundwater samples collected November 4, 2013 to November 7, 2013 at the Harbor Island site in Seattle, Washington has been completed. Samples were submitted to Accutest Laboratories (Accutest) of San Jose, California. The samples submitted were analyzed for one or more of the following: benzene, toluene, ethylbenzene, and total xylene (BTEX; EPA Method 8260B); TPH gasoline (NWTPH-Gx); TPH diesel (NWTPH-Dx); methane and carbon dioxide (RSK-175); total calcium, iron, lead, and magnesium (EPA 6010B); alkalinity (SM18 2320B); hardness (EPA 6010B/SM2340B); sulfate (EPA 300.0/9056A); dissolved iron and manganese (EPA 6010B); and polycyclic aromatic hydrocarbons (PAH, EPA 8270C SIM).

The review included the analytical data presented in Accutest reports C30786 and C30810. The data were reviewed based on *United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines (NFGs) for Organic Data Review*, June 2008, *USEPA CLP NFGs for Inorganic Superfund Data Review*, January 2010, and laboratory quality control criteria. Items reviewed included: chain-of-custody (COC) records, hold times, surrogate recoveries, matrix spike and matrix spike duplicate results, laboratory control and laboratory control duplicate results, laboratory duplicate results, and method blank results. Trip blanks were not included on the COC and not analyzed by the laboratory, therefore; sample results could not be evaluated for contamination related to the transport of the samples. Qualifiers assigned as a result of this review are included in Table 1.

The following criteria were evaluated during the review:

- COC Records – Acceptable
- Temperature – Acceptable
- Preservation – Acceptable
- Hold Times – Acceptable
- Method Blanks – Acceptable with the following exceptions:

  Methane and Carbon Dioxide by RSK 175 – Methane (0.26 micrograms per liter [µg/L]) and carbon dioxide (30.9 µg/L) were detected in the method blank in analytical batch GAA209 and carbon dioxide (29.1 µg/L) was detected in the method blank in analytical batch GAA208. The associated sample result concentration is greater than five times the method blank detection, therefore; no qualification is needed.
- Surrogates – Acceptable

- Laboratory Control Samples (LCS/LCSD) – Acceptable with the following exceptions:

  PAH by Method 8270C SIM – The LCS/LCSD recoveries for acenaphthylene (54%/42%) acenaphthene (--/46%), anthracene (--/56%), benzo(a)pyrene (--/64%), fluoranthene (--/60%), fluorene (--/48%), 1-methylnaphthalene (--/44%), 2-methylnaphthalene (--/50%), naphthalene (--/46%), phenanthrene (--/54%), were below the laboratory control limits ranging from 53% to 65% in batch OP9024. Additionally, the relative percent differences (RPDs) of 25% and 26% exceeded the laboratory limits for fluorene and naphthalene of 24% and 23% respectively. All associated sample detections of these analytes were previously qualified by laboratory due to the concentration being between the method detection limit (MDL) and the method reporting limit (MRL). The remaining associated sample results were non-detect, and were qualified as estimated and flagged 'UJ' due to a potential low bias.

- Matrix Spike/Matrix Spike Duplicate (MS/MSD) – Acceptable

- Laboratory Duplicates – Acceptable with the following exceptions:

  TPH Diesel by NWTPH-Dx – The RPD exceeded the laboratory limit of 25% at 30% in the laboratory duplicate associated with analytical batch GHH1130 performed on sample MW-10401113 (C30810-5). The RPD for the LCS/LCSD was in control indicating the analytical batch was in control, therefore; only the parent sample was qualified as estimated and flagged 'J' for precision.

- Reporting Limits – The laboratory reported all detections between the MDL and MRL (when applicable) as estimated and flagged the results 'J'.

- Laboratory Notes –

  TPH Gasoline by NWTPH-Gx – The laboratory noted the continuing calibration verification sample associated with samples MW-213-1113 (C30786-7), MW-206A-1113 (C30786-11), MW-214-1113 (C30786-16), TES-MW-1-1113 (C30786-18), and laboratory duplicate sample C30786-11DUP was outside control limits and biased high. TPH gasoline was not detected in the associated samples therefore; no qualification is needed.

Overall Assessment of Data

The completeness of the analytical reports for this groundwater monitoring event is 100%. The usefulness of the data is based on the USEPA guidance documents referenced in the introduction of this report. Upon consideration of the information presented above, the data are considered usable. Data qualified as estimated, and flagged 'J' or 'UJ', during this review process are summarized in Table 1.

References

USEPA, 2008. U.S. Environmental Protection Agency Contract Laboratory Program National Functional Guidelines for Organic Data Review. June 2008.

USEPA, 2010. U.S. Environmental Protection Agency (USEPA) Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review. January 2010.

Table 1 Sample Qualification Summary

Sample Number	Laboratory ID	Analyte	Data Qualifier	Reason for Qualification
MW-213-1113	C30786-7	Acenaphthene	UJ	LCS/LCSD recovery
		Acenaphthylene		
		Anthracene		
		Benzo(a)pyrene		
		Fluoranthene		
		Fluorene		
		1-Methylnaphthalene		
		2-Methylnaphthalene		
		Naphthalene		
		Phenanthrene		
MW-208-1113	C30786-10	Acenaphthylene	UJ	LCS/LCSD recovery
		Anthracene		
		Benzo(a)pyrene		
		Fluoranthene		
		Fluorene		
		1-Methylnaphthalene		
		2-Methylnaphthalene		
		Phenanthrene		
MW-211-1113	C30786-15	Acenaphthylene	UJ	LCS/LCSD recovery

Sample Number	Laboratory ID	Analyte	Data Qualifier	Reason for Qualification
		Anthracene		
		Benzo(a)pyrene		
		2-Methylnaphthalene		
		Naphthalene		
		Phenanthrene		
MW-214-1113	C30786-16	Acenaphthene	UJ	LCS/LCSD recovery
		Acenaphthylene		
		Anthracene		
		Benzo(a)pyrene		
		Fluoranthene		
		Fluorene		
		1-Methylnaphthalene		
		2-Methylnaphthalene		
		Naphthalene		
		Phenanthrene		
		Acenaphthene		
MW-104-1113	C30810-5	TPH diesel	J	Laboratory duplicate