



**CONESTOGA-ROVERS
& ASSOCIATES**

December 15, 2008

Mr. John Bails
Washington State Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, Washington 98008-5452

Re: **Revised Groundwater Monitoring Report – Second Quarter 2008**

Jiffy Lube Facility
4902 25th Avenue Northeast
Seattle, Washington
SAP Code 171156
Incident No. 97605414
Ecology ID No. 41675877

Dear Mr. Bails:

Conestoga-Rovers & Associates (CRA) prepared this report on behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell).

If you have questions regarding this report, please contact Justin Foslien at (425) 212-5111.

Sincerely,

Conestoga-Rovers & Associates

Justin Foslien, LG
Project Manager



cc: Carol Campagna, Shell Oil Products US, 20945 S. Wilmington Ave., Carson, CA 90810
Mark Burquist, 1800 Creekside Place, Anacortes, WA 98221-2468
Attn: SVP/Real Estate, Office Depot, 2200 Old Germantown Road, Delray Beach, Florida 33445-8823
Attn: General Counsel/Real Estate, Office Depot, 2200 Old Germantown Road, Delray Beach, Florida 33445-8823
Brian Clark, Heartland Automotive Services, Inc., 11308 Davenport Street, The Atrium Building, Omaha, NB 68154-5645
Bob Cahill, Heartland Automotive Services, Inc., 15007 Woodinville-Redmond Rd. Suite A, Woodinville, WA 98072



CONESTOGA-ROVERS
& ASSOCIATES

Mr. John Bails
December 15, 2008

REVISED GROUNDWATER MONITORING REPORT – SECOND QUARTER 2008

Site Address	<u>4902 25th Avenue Northeast, Seattle</u>
Site Use	<u>Jiffy Lube Facility</u>
Shell Project Manager	<u>Carol Campagna</u>
Consultant and Contact Person	<u>CRA, Justin Foslien</u>
Lead Agency and Contact	<u>WDOE, John Bails</u>
Ecology ID No.	<u>41675877</u>
Shell SAP Code	<u>171156</u>
Shell Incident No.	<u>97605414</u>
Date of Most Recent Agency Correspondence	<u>No agency correspondence on record</u>

Current Quarter's Activities

1. Blaine Tech Services, Inc. (Blaine) gauged and sampled wells according to the established monitoring program for this site.
2. CRA prepared a vicinity map (Figure 1) and a groundwater elevation contour and chemical concentration map (Figure 2). CRA prepared Tables 1, 2 and 3 summarizing groundwater monitoring data and the laboratory analytical results. Field forms and the laboratory analytical report are included as Attachments A and B, respectively.
3. On May 5, 2008, CRA installed four groundwater monitoring wells to further characterize the extent of impacted soil and groundwater down-gradient of the site. The detailed results of the site investigation will be presented in CRA's *Site Investigation Report*, dated August 2008.

Current Quarter's Findings

Groundwater Flow Direction	<u>South</u>
Hydraulic Gradient	<u>0.007 feet/foot</u>
Depth to Water	<u>2.44 to 4.08 feet below top of well casing</u>



**CONESTOGA-ROVERS
& ASSOCIATES**

Proposed Activities for Next Quarter

1. Blaine will gauge and sample wells during the second month of the third quarter of 2008, according to the established quarterly monitoring program for this site.

Discussion

Monitoring wells MW-1 through MW-4 were gauged for depth to groundwater and sampled on May 21, 2008. All constituents were below the Washington State Model Toxics Control Act Method A cleanup levels.

- Figures: 1 - Vicinity Map
 2 - Groundwater Contour and Chemical Concentration Map
- Tables: 1 - Summary of Groundwater Monitoring Data – BETX, MTBE, and Petroleum Hydrocarbons
 2 - Summary of Groundwater Monitoring Data – Oxygenates
 3 - Summary of Groundwater Monitoring Data – Polycyclic Aromatic Hydrocarbons
- Attachments: A - Blaine Tech Services, Inc. - Field Forms
 B - Laboratory Analysis Report

I:\Everett.Shell\WA Shell Sites\4902 25th Avenue NE Seattle\QMRS\2Q08\2Q08 QMR.doc



FIGURE
1

Jiffy Lube No. 2075

4902 25th Avenue N.E.

Seattle, Washington



**CONESTOGA-ROVERS
& ASSOCIATES**

Vicinity Map

TABLE 1
SUMMARY OF GROUNDWATER MONITORING DATA
BETX, MTBE, AND PETROLEUM HYDROCARBONS

4902 25th Avenue NE
 SEATTLE, WASHINGTON

Well Number	Date	TOC (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	B (µg/L)	E (µg/L)	T (µg/L)	X (µg/L)	Gasoline-range Hydrocarbons (µg/L)	Diesel-range Hydrocarbons (µg/L)	Heavy Oil-range Hydrocarbons (µg/L)	MTBE (µg/L)	Total Lead (µg/L)
MW-1	05/21/08	32.11	3.00	29.11	<1.00	<1.00	<1.00	<1.00	<50	<250	<400	<1.00	94.2
MW-2	05/21/08	31.72	2.84	28.88	<1.00	<1.00	<1.00	<1.00	<50	<250	<400	<1.00	23.4
MW-3	05/21/08	30.89	2.44	28.45	<1.00	<1.00	<1.00	<1.00	73	<250	<400	<1.00	111
MW-4	05/21/08	32.47	4.08	28.39	<1.0	<1.0	<1.0	<1.0	<50	<250	<400	<1.00	53.9
MTCA Method A Cleanup Level					5	700	1,000	1,000	800	500	500	20	

Abbreviations and Notes:

Well locations are shown in Figure 2.

TOC = Top of Casing elevations.

Depth to water from top of well casing.

B = benzene, E = ethylbenzene, T = toluene, X = total xylenes. Analyzed by EPA Method 8260B; before November 22, 2006, analyzed by EPA Method 8021B.

Gasoline-range hydrocarbons analyzed using NWTPH-Gx; before November 22, 2006, analyzed by NWTPH-Gx or WTPH-G.

Diesel-range hydrocarbons and Heavy Oil-Range hydrocarbons analyzed by NWTPH-Gx; before November 22, 2006, analyzed by NWTPH-D extended or WTPH-D extended.

MTBE = methyl tert-butyl ether. Analyzed by EPA Method 8260B; before November 22, 2006, analyzed by EPA Method 8021B.

* = The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbons in the sample was based upon the specified standard. The sample extract was subjected to Silica Gel treatment prior to analysis.

µg/L = micrograms per liter

--- = Not measured

MTCA = Model Toxics Control Act

TABLE 2

SUMMARY OF GROUNDWATER MONITORING DATA
OXYGENATES4902 25th Avenue NE
SEATTLE, WASHINGTON

Well Number	Date	TAME (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)
MW-1	05/21/08	<1.0	<5.0	<1.00	<1.00
MW-2	05/21/08	<1.0	<5.0	<1.00	<1.00
MW-3	05/21/08	<1.0	<5.0	<1.00	<1.00
MW-4	05/21/08	<1.0	<5.0	<1.00	<1.00

Abbreviations and Notes:

Well locations are shown in Figure 2.

TAME = Tertiary-amyl methyl ether analyzed by EPA Method 8260B

TBA = Tertiary-butanol analyzed by EPA Method 8260B

DIPE = Di-isopropyl ether analyzed by EPA Method 8260B

ETBE = Ethyl tertiary-butyl ether analyzed by EPA Method 8260B

µg/L = micrograms per liter

TABLE 3
SUMMARY OF GROUNDWATER MONITORING DATA
POLYCYCLIC AROMATIC HYDROCARBONS

4902 25th Avenue NE
 SEATTLE, WASHINGTON

Well Number	Date	Acenaphthene (µg/L)	Acenaphthylene (µg/L)	Anthracene (µg/L)	Benzo(g,h,i)perylene (µg/L)	Fluoranthene (µg/L)	Fluorene (µg/L)	1-Methylnaphthalene (µg/L)	2-Methylnaphthalene (µg/L)	Naphthalene (µg/L)	Phenanthrene (µg/L)	Pyrene (µg/L)	cPAHs Analytical Results							Sum of TEF Adjusted cPAHs (µg/L)
													Benzo(a)anthracene (µg/L)	Benzo(a)pyrene (µg/L)	Benzo(b)fluoranthene (µg/L)	Benzo(k)fluoranthene (µg/L)	Chrysene (µg/L)	Dibenzo(a,h)anthracene (µg/L)	Indeno(1,2,3-cd)pyrene (µg/L)	
													TEF 0.1	1	0.1	0.1	0.01	0.1	0.1	
MW-1	05/21/08	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
MW-2	05/21/08	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
MW-3	05/21/08	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
MW-4	05/21/08	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
MTCA Method A Cleanup Levels (µg/L)														0.1						0.1

Abbreviations and Notes:

Well locations are shown in Figure 2.

Polycyclic aromatic hydrocarbons(PAH) analyzed by EPA Method 8270C-SIM.

Sum of TEF Adjusted cPAHs = Sum of the product of the analytical result and the specific Toxic Equivalent Factors for cPAH's as per WAC 173-340-708

µg/L = micrograms per liter

MTCA = Model Toxics Control Act

NA - No applicable MTCA level

Attachment A

**Blaine Tech Services, Inc.
Field Forms**

The contractor through its authorized representative shall sign, issue and be solely responsible for all job clearance forms and the obligations arising there under applicable to the work.

This form covers important reminders and is not intended to relieve the contractor from fully performing the work in compliance with all applicable laws and regulations.

The Site Representative may require the contractor to stop work if it appears that the contractor or any of its workers are failing to comply with the requirements in the applicable items of this form or other applicable safety requirements.

LAB (LOCATION)

- ☐ CALSCIENCE ()
☒ SPL Houston ()
☐ XENCO ()
☐ TEST AMERICA ()
☐ OTHER ()



Shell Oil Products Chain Of Custody Record

Please Check Appropriate Box:		Print Bill To Contact Name:		INCIDENT # (ENV SERVICES)		☐ CHECK IF NO INCIDENT # APPLIES	
☒ ENV. SERVICES	☐ MOTIVA RETAIL	☐ SHELL RETAIL	Carol Compagna	9	7	6	0
☐ MOTIVA S&CH	☐ CONSULTANT	☐ LUBES	PO #	SAP #	5	4	1
☐ SHELL PIPELINE	☐ OTHER				4		

DATE: 5/21/08
PAGE: 1 of 1

SAMPLING COMPANY:		LOG CODE:
Blaine Tech Services		
ADDRESS:		
1680 Rogers Avenues, San Jose, Ca		
PROJECT CONTACT (Hardcopy or PDF Report to):		
Eric Morse		
TELEPHONE:	FAX:	E-MAIL:
916-925-2913x102	916-925-2891	emorse@blainetech.com
TURNAROUND TIME (CALENDAR DAYS):		
☒ STANDARD (14 DAY)	☐ 5 DAYS	☐ 3 DAYS
☐ 2 DAYS	☐ 24 HOURS	☐ RESULTS NEEDED ON WEEKEND

SITE ADDRESS: Street and City		State	GLOBAL ID NO.:
4902 25th Ave. NE, Seattle		WA	NA
EDF DELIVERABLE TO (Name, Company, Office Location)		PHONE NO.:	E-MAIL:
Christine Schwoelger, CRA, Everett		425-212-5100	cschwoelger@CRAworld.com
SAMPLER NAME(S) (Print)		CONSULTANT PROJECT NO.:	
S. L. J. R.		080521-541	

☐ LA - RWQCB REPORT FORMAT	☐ UST AGENCY:
SPECIAL INSTRUCTIONS OR NOTES:	
See SPL PM for WA Dept. of Ecology MTCA Method A cleanup levels for minimum detection limits	
☒ SHELL CONTRACT RATE APPLIES	☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED	☒ RECEIPT VERIFICATION REQUESTED

LAB USE ONLY	Field Sample Identification	SAMPLING		MATRIX	PRESERVATIVE						NO. OF CONT.	REQUESTED ANALYSIS												Container PID Readings or Laboratory Notes	
		DATE	TIME		HCL	HNO3	H2SO4	NONE	OTHER	NWTPH-GX		NWTPH-DX w/Silica Gel Cleanup	BTEX (8260B)	5 Oxygenates, MTBE, TBA, DIPE, TAME, ETBE (8260B)	EDB, EDC (8260B)	Total Lead (6020)	PCBs (8082)	PAHs (8070 SIM)	VOCs Full list (8260B)	Pest (8080)	NWTPH-VPH	NWTPH-EPH	n-Hexane (9071B)		
	MW-1	5/21/08	0840	W	X	X		X		11	X	X	X	X		X	X	X							
	MW-2	5/21/08	0920	W	X	X		X		11	X	X	X	X		X	X	X							
	MW-3	5/21/08	0900	W	X	X		X		11	X	X	X	X		X	X	X							
	MW-4	5/21/08	0845	W	X	X		X		11	X	X	X	X		X	X	X							

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
<i>[Signature]</i>			
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Shell

Client:

Site:

97605414

Date _____

5/21/08

Job #:

080521-5L1

Technician:

SL

Page

of _____

Check indicates deficiency

Well ID

MW-1

MW-2

MW-3

mu. 4

**Well Inspected - No
Corrective Action Required**

Case non-functional

back non-functional

Rock Mining

Booth missing (list qty.)

Table 1. Descriptive statistics

T-1000

Prüfungsausschuss

[illegible]

Tide Height

Below Grade

Other (specify): _____

(explain in notes)

Notes

(list if cap or lock replaced, if there are access issues associated with repairs, if traffic control is required, if stand pipe damaged, or any specific details not covered by checklist)

Notes:

SHELL BILL OF LADING

SOURCE RECORD **BILL OF LADING**

FOR NON-HAZARDOUS PURGEWATER RECOVERED FROM GROUNDWATER WELLS AT SHELL FACILITIES IN THE STATE OF WASHINGTON OR OREGON. THE NON-HAZARDOUS PURGE- WATER WHICH HAS BEEN RECOVERED FROM GROUND- WATER WELLS, IS MADE UP INTO LOADS OF APPROPRIATE SIZE TO BE TRANSPORTED & PROCESSED BY A SHELL APPROVED WASTE HAULER.

The contractor performing this work is BLAINE TECH SERVICES, INC. 22727 72ND Ave South, Suite D - 102, Kent, WA 98032. Blaine Tech Services, Inc. is authorized by SHELL OIL COMPANY (SHELL) to recover, collect, apportion into loads, and haul the Non-Hazardous Well Purgewater that is drawn from wells at the SHELL facility indicated below and to deliver that purgewater to BTS. Transport routing of the Non-Hazardous Well Purgewater may be direct from one Shell facility to BTS; from one Shell facility to BTS via another Shell facility; or any combination thereof. The Non-Hazardous Well Purgewater is and remains the property of SHELL.

This **Source Record BILL OF LADING** was initiated to cover the recovery of Non-Hazardous Well Purgewater from wells at the SHELL facility described below:

97605414
INCIDENT #
4902 29th Ave Seattle
street number street name city state
Carol Campagna
Shell Engineer

WELL I.D.	GALS.	WELL I.D.	GALS.
MW-1	2.1		
MW-2	2.1		
MW-3	2.4		
MW-4	4.2		
added equip.		any other	
rinse water		adjustments	
TOTAL GALS.	11.0	loaded onto	71
RECOVERED		BTS vehicle #	
BTS event #	080521-SL1	time	0930
signature	GLR	date	5.21.02

RECEIVED AT		time	
BTS Kent		date	
unloaded by			
signature			

WELL GAUGING DATA

Project # 080521-54 Date 5/21/08 Client Shell

Site 4902 25th Ave Seattle

[illegible]

SHELL WELL MONITORING DATA SHEET

BTS #: 080521-SL1	Site: 97605414
Sampler: SL	Date: 5/21/08
Well I.D.: MW-1	Well Diameter: 2 3 4 6 8
Total Well Depth (TD): 7.75	Depth to Water (DTW): 3.00
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 3.87	

Purge Method: Bailer
~~Disposable Bailer~~
 Positive Air Displacement
 Electric Submersible

Water
 Peristaltic
 Extraction Pump
 Other

Sampling Method: Bailer
~~Disposable Bailer~~
 Extraction Port
 Dedicated Tubing

Other:

0.7 (Gals.) X 3 = 2.1 Gals.
 1 Case Volume Specified Volumes Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp (°F)	pH	Cond. (mS or μ S)	Turbidity (NTUs)	Gals. Removed	Observations
0832	59.7	6.68	552	>1000	0.7	Brown
0834	59.6	6.57	559	>1000	1.4	
0839	59.9	6.90	564	>1000	2.1	

Did well dewater? Yes No Gallons actually evacuated: 2.1

Sampling Date: 5/21/08 Sampling Time: 0840 Depth to Water: 3.25

Sample I.D.: MW-1 Laboratory: STL SPL Other

Analyzed for: TPH-G BTEX MTBE TPH-D Oxy's 1,2-DCA EDB Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxy's 1,2-DCA EDB Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

SHELL WELL MONITORING DATA SHEET

BTS #: <u>080521-SL1</u>	Site: <u>97605414</u>
Sampler: <u>SL</u>	Date: <u>5/21/08</u>
Well I.D.: <u>MW-2</u>	Well Diameter: <u>(2)</u> 3 4 6 8
Total Well Depth (TD): <u>7.38</u>	Depth to Water (DTW): <u>2.84</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <u>3.75</u>	

Purge Method: ☒ Bailer ☐ Disposable Bailer ☐ Positive Air Displacement ☐ Electric Submersible

Water: ☐ Peristaltic ☐ Extraction Pump ☐ Other

Sampling Method: ☒ Bailer ☐ Disposable Bailer ☐ Extraction Port ☐ Dedicated Tubing

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

0.7 (Gals.) X 3 = 2.1 Gals.
 Case Volume Specified Volumes Calculated Volume

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
0909	58.9	6.91	556	71000	0.7	BROWN
0911	58.8	6.90	554	71000	1.4	
0912	58.9	6.95	553	71000	2.1	↓

Did well dewater? Yes ☒ No ☐ Gallons actually evacuated: 2.1

Sampling Date: 5/21/08 Sampling Time: 0920 Depth to Water: 3.76

Sample I.D.: MW-2 Laboratory: STL (SPL) Other

Analyzed for: TPH-G BTEX MTBE TPH-D Oxy's 1,2-DCA EDB Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxy's 1,2-DCA EDB Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

SHELL WELL MONITORING DATA SHEET

BTS #: <u>080521-SL1</u>	Site: <u>97605414</u>
Sampler: <u>SL</u>	Date: <u>5/21/08</u>
Well I.D.: <u>MW-3</u>	Well Diameter: <u>2</u> 3 4 6 8
Total Well Depth (TD): <u>7.35</u>	Depth to Water (DTW): <u>2.44</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <u>3.42</u>	

Purge Method: ☒ Bailer ☐ Waterwa ☐ Sampling Method: ☒ Bailer
☒ Disposable Bailer ☐ Peristaltic ☒ Disposable Bailer
☐ Positive Air Displacement ☐ Extraction Pump ☐ Extraction Port
☐ Electric Submersible ☐ Other ☐ Dedicated Tubing

<u>0.8</u> (Gals.) X <u>3</u> = <u>2.4</u> Gals.	Well Diameter Multiplier	Well Diameter Multiplier
1 Case Volume Specified Volumes Calculated Volume	1" 0.04	4" 0.65
	2" 0.16	6" 1.47
	3" 0.37	Other radius ² * 0.163

Time	Temp (°F)	pH	Cond. (mS or <u>µS</u>)	Turbidity (NTUs)	Gals. Removed	Observations
<u>0850</u>	<u>59.6</u>	<u>7.01</u>	<u>476</u>	<u>>1000</u>	<u>0.8</u>	<u>Brown</u>
<u>0852</u>	<u>59.7</u>	<u>6.80</u>	<u>457</u>	<u>>1000</u>	<u>1.6</u>	
<u>0853</u>	<u>59.9</u>	<u>6.76</u>	<u>452</u>	<u>>1000</u>	<u>2.4</u>	

Did well dewater? Yes ☒ No ☐ Gallons actually evacuated: 2.4

Sampling Date: 5/21/08 Sampling Time: 0900 Depth to Water: 3.76

Sample I.D.: MW-3 Laboratory: STL SPL Other:

Analyzed for: TPH-G BTEX MTBE TPH-D Oxy's 1,2-DCA EDB Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxy's 1,2-DCA EDB Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

SHELL WELL MONITORING DATA SHEET

BTS #: <u>080521-SL1</u>	Site: <u>97605414</u>
Sampler: <u>SL</u>	Date: <u>5/21/08</u>
Well I.D.: <u>MW-4</u>	Well Diameter: <u>2</u> 3 4 6 8
Total Well Depth (TD): <u>12.94</u>	Depth to Water (DTW): <u>4.08</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <u>5.85</u>	

Purge Method: ☒ Bailer
☒ Disposable Bailer
☐ Positive Air Displacement
☐ Electric Submersible

Waterra
☐ Peristaltic
☐ Extraction Pump
☐ Other

Sampling Method: ☒ Bailer
☒ Disposable Bailer
☐ Extraction Port
☐ Dedicated Tubing

Other:

<u>1.4</u> (Gals.) X <u>3</u> = <u>4.2</u> Gals.	Well Diameter Multiplier	Well Diameter Multiplier
1 Case Volume Specified Volumes Calculated Volume	1" 0.04	4" 0.65
	2" 0.16	6" 1.47
	3" 0.37	Other radius ² * 0.163

Time	Temp (°F)	pH	Cond. (mS or μ S)	Turbidity (NTUs)	Gals. Removed	Observations
0810	58.4	6.87	436	>1000	1.4	Brown
0812	58.2	6.51	423	>1000	2.8	
0814	58.2	6.49	425	>1000	4.2	↓

Did well dewater? Yes ☐ No ☒ Gallons actually evacuated: 4.2

Sampling Date: 5/21/08 Sampling Time: 0815 Depth to Water: 4.22

Sample I.D.: MW-4 Laboratory: STL ☒ SPL Other

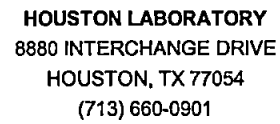
Analyzed for: TPH-G BTEX MTBE TPH-D Oxy's 1,2-DCA EDB Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxy's 1,2-DCA EDB Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

Attachment B
Laboratory Analysis Report



Certificate of Analysis Number:

<u>Report To:</u>	<u>Project Name:</u>	INC#97605414,SAP#NA
Conestoga Rovers and Associates	<u>Site:</u>	4902 25th Ave NE
Christine Schwelgert	<u>Site Address:</u>	4902 25th Avenue NE
526 Commerce Center - Bldg. B		Seattle WA
1420 80th Street SW, Suite A	<u>PO Number:</u>	4700002340
Everett	<u>State:</u>	Washington
WA	<u>State Cert. No.:</u>	C1350
98203-	<u>Date Reported:</u>	6/16/2008
ph: (425) 212-5100		
fax:		

Any Attachments

Date _____

Test results meet all requirements of NELAC, unless specified in the narrative.



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:
Shell Products US - Environmental Services

Certificate of Analysis Number:

08051641

Report To: Conestoga Rovers and Associates Christine Schweigert 526 Commerce Center - Bldg. B 1420 80th Street SW, Suite A Everett WA 98203- ph: (425) 212-5100 fax:	Project Name: INC#97605414,SAP#NA Site: 4902 25th Ave NE Site Address: 4902 25th Avenue NE Seattle WA PO Number: 4700002340 State: Washington State Cert. No.: C1350 Date Reported: 6/16/2008
--	--

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Due to limited sample volume, a Matrix Spike (MS) or Matrix Spike Duplicate (MSD) was not extracted with Batch ID: 79485 for the Diesel Range Organics analysis by Method NWTPH-Dx. A Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) were extracted with the analytical batch and serve as the batch quality control (QC). The LCS and LCSD recovered acceptably and precision criteria were met.

Due to limited sample volume, a Matrix Spike (MS) or Matrix Spike Duplicate (MSD) was not extracted with Batch ID: 79596 for the Semivolatile Organics analysis by SW846 Method 8270C. A Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) were extracted with the analytical batch and serve as the batch quality control (QC). The LCS and LCSD recovered acceptably and precision criteria were met.

Some of the percent recoveries and RPD's on the QC report for the MS/MSD may be different than the calculated recoveries and RPD's using the sample result and the MS/MSD results that appear on the report because, the actual raw result is used to perform the calculations for percent recovery and RPD.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Erica Cardenas
Project Manager

Test results meet all requirements of NELAC, unless specified in the narrative.

08051641 Page 1

6/16/2008

Date



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Shell Products US - Environmental Services

Certificate of Analysis Number:

08051641

Report To: Conestoga Rovers and Associates
Christine Schweigert
526 Commerce Center - Bldg. B
1420 80th Street SW, Suite A
Everett
WA
98203-
ph: (425) 212-5100 fax: (425) 212-5199

Project Name: INC#97605414,SAP#NA
Site: 4902 25th Ave NE
Site Address: 4902 25th Avenue NE
Seattle WA
PO Number: 4700002340
State: Washington
State Cert. No.: C1350
Date Reported: 6/16/2008

Fax To:

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-1	08051641-01	Water	5/21/2008 8:40:00 AM	5/22/2008 10:00:00 AM		☐
MW-2	08051641-02	Water	5/21/2008 9:20:00 AM	5/22/2008 10:00:00 AM		☐
MW-3	08051641-03	Water	5/21/2008 9:00:00 AM	5/22/2008 10:00:00 AM		☐
MW-4	08051641-04	Water	5/21/2008 8:15:00 AM	5/22/2008 10:00:00 AM		☐

6/16/2008

Erica Cardenas
Project Manager

Date

Richard R. Reed
Laboratory Director

Ted Yen
Quality Assurance Officer



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-1

Collected: 05/21/2008 8:40

SPL Sample ID: 08051641-01

Site: 4902 25th Ave NE

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
DIESEL RANGE ORGANICS			MCL	NWTPH-DX	Units: mg/L		
Diesel Range Organics (C12-C24)	ND		0.25	1	05/26/08 21:45	RLR	4465991
Oil Range Organics (C24-C32)	ND		0.4	1	05/26/08 21:45	RLR	4465991
Surr: n-Pentacosane	47.6		% 20-150	1	05/26/08 21:45	RLR	4465991

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C/3630	05/23/2008 18:25	N_M	1.00

GASOLINE RANGE ORGANICS			MCL	NWTPH-GX	Units: mg/L		
Gasoline Range Organics	ND		0.05	1	05/30/08 18:39	DMN	4475672
Surr: 1,4-Difluorobenzene	104		% 60-155	1	05/30/08 18:39	DMN	4475672
Surr: 4-Bromofluorobenzene	106		% 50-158	1	05/30/08 18:39	DMN	4475672

METALS BY METHOD 6020, TOTAL			MCL	SW6020A	Units: mg/L		
Lead	0.0942		0.005	1	06/03/08 22:07	EG	4482505

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	06/02/2008 13:10	DDW	1.00

SIM SEMIVOLATILES ORGANICS BY METHOD 8270C			MCL	SW8270C	Units: ug/L		
1-Methylnaphthalene	ND		1	1	06/13/08 14:26	S_G	4500916
2-Methylnaphthalene	ND		1	1	06/13/08 14:26	S_G	4500916
Acenaphthene	ND		1	1	06/13/08 14:26	S_G	4500916
Acenaphthylene	ND		1	1	06/13/08 14:26	S_G	4500916
Anthracene	ND		1	1	06/13/08 14:26	S_G	4500916
Benz(a)anthracene	ND		1	1	06/13/08 14:26	S_G	4500916
Benzo(a)pyrene	ND		1	1	06/13/08 14:26	S_G	4500916
Benzo(b)fluoranthene	ND		1	1	06/13/08 14:26	S_G	4500916
Benzo(g,h,i)perylene	ND		1	1	06/13/08 14:26	S_G	4500916
Benzo(k)fluoranthene	ND		1	1	06/13/08 14:26	S_G	4500916
Chrysene	ND		1	1	06/13/08 14:26	S_G	4500916
Dibenz(a,h)anthracene	ND		1	1	06/13/08 14:26	S_G	4500916
Dibenzofuran	ND		1	1	06/13/08 14:26	S_G	4500916
Fluoranthene	ND		1	1	06/13/08 14:26	S_G	4500916
Fluorene	ND		1	1	06/13/08 14:26	S_G	4500916
Indeno(1,2,3-cd)pyrene	ND		1	1	06/13/08 14:26	S_G	4500916
Naphthalene	ND		1	1	06/13/08 14:26	S_G	4500916
Phenanthrene	ND		1	1	06/13/08 14:26	S_G	4500916
Pyrene	ND		1	1	06/13/08 14:26	S_G	4500916
Surr: 2-Fluorobiphenyl	67.2		% 10-146	1	06/13/08 14:26	S_G	4500916
Surr: Nitrobenzene-d5	105		% 10-195	1	06/13/08 14:26	S_G	4500916
Surr: Terphenyl-d14	58.9		% 10-149	1	06/13/08 14:26	S_G	4500916

Qualifiers: ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-1

Collected: 05/21/2008 8:40

SPL Sample ID: 08051641-01

Site: 4902 25th Ave NE

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
-----------------	--------	------	-----------	-------------	---------------	---------	--------

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	05/28/2008 11:52	N M	1.00

VOLATILE ORGANICS BY METHOD 8260B				MCL	SW8260B	Units: ug/L	
Benzene	ND	1		1	06/04/08 5:19	DY	4480879
Diisopropyl Ether	ND	1		1	06/04/08 5:19	DY	4480879
Ethyl tert-butyl ether	ND	1		1	06/04/08 5:19	DY	4480879
Ethylbenzene	ND	1		1	06/04/08 5:19	DY	4480879
Methyl tert-butyl ether	ND	1		1	06/04/08 5:19	DY	4480879
t-Butyl Alcohol	ND	5		1	06/04/08 5:19	DY	4480879
tert-Amyl methyl ether	ND	1		1	06/04/08 5:19	DY	4480879
Toluene	ND	1		1	06/04/08 5:19	DY	4480879
m,p-Xylene	ND	1		1	06/04/08 5:19	DY	4480879
o-Xylene	ND	1		1	06/04/08 5:19	DY	4480879
Xylenes,Total	ND	1		1	06/04/08 5:19	DY	4480879
Surr: 1,2-Dichloroethane-d4	96.6	% 71-140		1	06/04/08 5:19	DY	4480879
Surr: 4-Bromofluorobenzene	99.9	% 70-130		1	06/04/08 5:19	DY	4480879
Surr: Toluene-d8	101	% 61-121		1	06/04/08 5:19	DY	4480879

Qualifiers: ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-2

Collected: 05/21/2008 9:20

SPL Sample ID: 08051641-02

Site: 4902 25th Ave NE

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
DIESEL RANGE ORGANICS				MCL	NWTPH-DX	Units: mg/L	
Diesel Range Organics (C12-C24)	ND		0.25	1	05/26/08 22:46	RLR	4465999
Oil Range Organics (C24-C32)	ND		0.4	1	05/26/08 22:46	RLR	4465999
Surr: n-Pentacosane	100		% 20-150	1	05/26/08 22:46	RLR	4465999

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C/3630	05/23/2008 18:25	N_M	1.00

GASOLINE RANGE ORGANICS				MCL	NWTPH-GX	Units: mg/L	
Gasoline Range Organics	ND		0.05	1	05/30/08 19:07	DMN	4475673
Surr: 1,4-Difluorobenzene	104		% 60-155	1	05/30/08 19:07	DMN	4475673
Surr: 4-Bromofluorobenzene	107		% 50-158	1	05/30/08 19:07	DMN	4475673

METALS BY METHOD 6020, TOTAL				MCL	SW6020A	Units: mg/L	
Lead	0.0234		0.005	1	06/03/08 22:12	EG	4482506

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	06/02/2008 13:10	DDW	1.00

SIM SEMIVOLATILES ORGANICS BY METHOD 8270C				MCL	SW8270C	Units: ug/L	
1-Methylnaphthalene	ND		1	1	06/13/08 14:57	S_G	4500917
2-Methylnaphthalene	ND		1	1	06/13/08 14:57	S_G	4500917
Acenaphthene	ND		1	1	06/13/08 14:57	S_G	4500917
Acenaphthylene	ND		1	1	06/13/08 14:57	S_G	4500917
Anthracene	ND		1	1	06/13/08 14:57	S_G	4500917
Benz(a)anthracene	ND		1	1	06/13/08 14:57	S_G	4500917
Benzo(a)pyrene	ND		1	1	06/13/08 14:57	S_G	4500917
Benzo(b)fluoranthene	ND		1	1	06/13/08 14:57	S_G	4500917
Benzo(g,h,i)perylene	ND		1	1	06/13/08 14:57	S_G	4500917
Benzo(k)fluoranthene	ND		1	1	06/13/08 14:57	S_G	4500917
Chrysene	ND		1	1	06/13/08 14:57	S_G	4500917
Dibenz(a,h)anthracene	ND		1	1	06/13/08 14:57	S_G	4500917
Dibenzofuran	ND		1	1	06/13/08 14:57	S_G	4500917
Fluoranthene	ND		1	1	06/13/08 14:57	S_G	4500917
Fluorene	ND		1	1	06/13/08 14:57	S_G	4500917
Indeno(1,2,3-cd)pyrene	ND		1	1	06/13/08 14:57	S_G	4500917
Naphthalene	ND		1	1	06/13/08 14:57	S_G	4500917
Phenanthrene	ND		1	1	06/13/08 14:57	S_G	4500917
Pyrene	ND		1	1	06/13/08 14:57	S_G	4500917
Surr: 2-Fluorobiphenyl	69.9		% 10-146	1	06/13/08 14:57	S_G	4500917
Surr: Nitrobenzene-d5	104		% 10-195	1	06/13/08 14:57	S_G	4500917
Surr: Terphenyl-d14	51.7		% 10-149	1	06/13/08 14:57	S_G	4500917

Qualifiers: ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-2

Collected: 05/21/2008 9:20

SPL Sample ID: 08051641-02

Site: 4902 25th Ave NE

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
-----------------	--------	------	-----------	-------------	---------------	---------	--------

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	05/28/2008 11:52	N_M	1.00

VOLATILE ORGANICS BY METHOD 8260B			MCL	SW8260B	Units: ug/L		
Benzene	ND	1	1	06/04/08 5:41	DY	4480880	
Diisopropyl Ether	ND	1	1	06/04/08 5:41	DY	4480880	
Ethyl tert-butyl ether	ND	1	1	06/04/08 5:41	DY	4480880	
Ethylbenzene	ND	1	1	06/04/08 5:41	DY	4480880	
Methyl tert-butyl ether	ND	1	1	06/04/08 5:41	DY	4480880	
t-Butyl Alcohol	ND	5	1	06/04/08 5:41	DY	4480880	
tert-Amyl methyl ether	ND	1	1	06/04/08 5:41	DY	4480880	
Toluene	ND	1	1	06/04/08 5:41	DY	4480880	
m,p-Xylene	ND	1	1	06/04/08 5:41	DY	4480880	
o-Xylene	ND	1	1	06/04/08 5:41	DY	4480880	
Xylenes, Total	ND	1	1	06/04/08 5:41	DY	4480880	
Surr: 1,2-Dichloroethane-d4	95.6	% 71-140	1	06/04/08 5:41	DY	4480880	
Surr: 4-Bromofluorobenzene	97.7	% 70-130	1	06/04/08 5:41	DY	4480880	
Surr: Toluene-d8	99.7	% 61-121	1	06/04/08 5:41	DY	4480880	

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-3

Collected: 05/21/2008 9:00

SPL Sample ID: 08051641-03

Site: 4902 25th Ave NE

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
DIESEL RANGE ORGANICS				MCL	NWTPH-DX	Units: mg/L	
Diesel Range Organics (C12-C24)	ND		0.25	1	05/26/08 23:07	RLR	4466003
Oil Range Organics (C24-C32)	ND		0.4	1	05/26/08 23:07	RLR	4466003
Surr: n-Pentacosane	75.4		% 20-150	1	05/26/08 23:07	RLR	4466003

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C/3630	05/23/2008 18:25	N_M	1.00

GASOLINE RANGE ORGANICS				MCL	NWTPH-GX	Units: mg/L	
Gasoline Range Organics	0.073		0.05	1	06/02/08 17:46	DMN	4479952
Surr: 1,4-Difluorobenzene	105		% 60-155	1	06/02/08 17:46	DMN	4479952
Surr: 4-Bromofluorobenzene	105		% 50-158	1	06/02/08 17:46	DMN	4479952

METALS BY METHOD 6020, TOTAL				MCL	SW6020A	Units: mg/L	
Lead	0.111		0.005	1	06/03/08 22:17	EG	4482507

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	06/02/2008 13:10	DDW	1.00

SIM SEMIVOLATILES ORGANICS BY METHOD 8270C				MCL	SW8270C	Units: ug/L	
1-Methylnaphthalene	ND		1	1	06/13/08 15:28	S_G	4500918
2-Methylnaphthalene	ND		1	1	06/13/08 15:28	S_G	4500918
Acenaphthene	ND		1	1	06/13/08 15:28	S_G	4500918
Acenaphthylene	ND		1	1	06/13/08 15:28	S_G	4500918
Anthracene	ND		1	1	06/13/08 15:28	S_G	4500918
Benz(a)anthracene	ND		1	1	06/13/08 15:28	S_G	4500918
Benzo(a)pyrene	ND		1	1	06/13/08 15:28	S_G	4500918
Benzo(b)fluoranthene	ND		1	1	06/13/08 15:28	S_G	4500918
Benzo(g,h,i)perylene	ND		1	1	06/13/08 15:28	S_G	4500918
Benzo(k)fluoranthene	ND		1	1	06/13/08 15:28	S_G	4500918
Chrysene	ND		1	1	06/13/08 15:28	S_G	4500918
Dibenz(a,h)anthracene	ND		1	1	06/13/08 15:28	S_G	4500918
Dibenzofuran	ND		1	1	06/13/08 15:28	S_G	4500918
Fluoranthene	ND		1	1	06/13/08 15:28	S_G	4500918
Fluorene	ND		1	1	06/13/08 15:28	S_G	4500918
Indeno(1,2,3-cd)pyrene	ND		1	1	06/13/08 15:28	S_G	4500918
Naphthalene	ND		1	1	06/13/08 15:28	S_G	4500918
Phenanthrene	ND		1	1	06/13/08 15:28	S_G	4500918
Pyrene	ND		1	1	06/13/08 15:28	S_G	4500918
Surr: 2-Fluorobiphenyl	86.3		% 10-146	1	06/13/08 15:28	S_G	4500918
Surr: Nitrobenzene-d5	124		% 10-195	1	06/13/08 15:28	S_G	4500918
Surr: Terphenyl-d14	75.3		% 10-149	1	06/13/08 15:28	S_G	4500918

Qualifiers: ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-3

Collected: 05/21/2008 9:00

SPL Sample ID: 08051641-03

Site: 4902 25th Ave NE

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
-----------------	--------	------	-----------	-------------	---------------	---------	--------

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	05/28/2008 11:52	N_M	1.00

VOLATILE ORGANICS BY METHOD 8260B				MCL	SW8260B	Units: ug/L	
Benzene	ND		1	1	06/04/08 9:42	DY	4481685
Diisopropyl Ether	ND		1	1	06/04/08 9:42	DY	4481685
Ethyl tert-butyl ether	ND		1	1	06/04/08 9:42	DY	4481685
Ethylbenzene	ND		1	1	06/04/08 9:42	DY	4481685
Methyl tert-butyl ether	ND		1	1	06/04/08 9:42	DY	4481685
t-Butyl Alcohol	ND		5	1	06/04/08 9:42	DY	4481685
tert-Amyl methyl ether	ND		1	1	06/04/08 9:42	DY	4481685
Toluene	ND		1	1	06/04/08 9:42	DY	4481685
m,p-Xylene	ND		1	1	06/04/08 9:42	DY	4481685
o-Xylene	ND		1	1	06/04/08 9:42	DY	4481685
Xylenes, Total	ND		1	1	06/04/08 9:42	DY	4481685
Surr: 1,2-Dichloroethane-d4	95.9	%	71-140	1	06/04/08 9:42	DY	4481685
Surr: 4-Bromofluorobenzene	102	%	70-130	1	06/04/08 9:42	DY	4481685
Surr: Toluene-d8	103	%	61-121	1	06/04/08 9:42	DY	4481685

Qualifiers: ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

08051641 Page 8
6/16/2008 5:20:10 PM



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-4

Collected: 05/21/2008 8:15

SPL Sample ID: 08051641-04

Site: 4902 25th Ave NE

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
DIESEL RANGE ORGANICS			MCL	NWTPH-DX	Units: mg/L		
Diesel Range Organics (C12-C24)	ND		0.25	1	05/26/08 23:28	RLR	4466005
Oil Range Organics (C24-C32)	ND		0.4	1	05/26/08 23:28	RLR	4466005
Surr: n-Pentacosane	99.8		% 20-150	1	05/26/08 23:28	RLR	4466005

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C/3630	05/23/2008 18:25	N_M	1.00

GASOLINE RANGE ORGANICS			MCL	NWTPH-GX	Units: mg/L		
Gasoline Range Organics	ND		0.05	1	05/30/08 20:02	DMN	4475675
Surr: 1,4-Difluorobenzene	103		% 60-155	1	05/30/08 20:02	DMN	4475675
Surr: 4-Bromofluorobenzene	105		% 50-158	1	05/30/08 20:02	DMN	4475675

METALS BY METHOD 6020, TOTAL			MCL	SW6020A	Units: mg/L		
Lead	0.0539		0.005	1	06/03/08 22:22	EG	4482508

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	06/02/2008 13:10	DDW	1.00

SIM SEMIVOLATILES ORGANICS BY METHOD 8270C			MCL	SW8270C	Units: ug/L		
1-Methylnaphthalene	ND		1	1	06/12/08 1:37	S_G	4498565
2-Methylnaphthalene	ND		1	1	06/12/08 1:37	S_G	4498565
Acenaphthene	ND		1	1	06/12/08 1:37	S_G	4498565
Acenaphthylene	ND		1	1	06/12/08 1:37	S_G	4498565
Anthracene	ND		1	1	06/12/08 1:37	S_G	4498565
Benz(a)anthracene	ND		1	1	06/12/08 1:37	S_G	4498565
Benzo(a)pyrene	ND		1	1	06/12/08 1:37	S_G	4498565
Benzo(b)fluoranthene	ND		1	1	06/12/08 1:37	S_G	4498565
Benzo(g,h,i)perylene	ND		1	1	06/12/08 1:37	S_G	4498565
Benzo(k)fluoranthene	ND		1	1	06/12/08 1:37	S_G	4498565
Chrysene	ND		1	1	06/12/08 1:37	S_G	4498565
Dibenz(a,h)anthracene	ND		1	1	06/12/08 1:37	S_G	4498565
Dibenzofuran	ND		1	1	06/12/08 1:37	S_G	4498565
Fluoranthene	ND		1	1	06/12/08 1:37	S_G	4498565
Fluorene	ND		1	1	06/12/08 1:37	S_G	4498565
Indeno(1,2,3-cd)pyrene	ND		1	1	06/12/08 1:37	S_G	4498565
Naphthalene	ND		1	1	06/12/08 1:37	S_G	4498565
Phenanthrene	ND		1	1	06/12/08 1:37	S_G	4498565
Pyrene	ND		1	1	06/12/08 1:37	S_G	4498565
Surr: 2-Fluorobiphenyl	53.9		% 10-146	1	06/12/08 1:37	S_G	4498565
Surr: Nitrobenzene-d5	70.6		% 10-195	1	06/12/08 1:37	S_G	4498565
Surr: Terphenyl-d14	44.8		% 10-149	1	06/12/08 1:37	S_G	4498565

Qualifiers: ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-4

Collected: 05/21/2008 8:15

SPL Sample ID: 08051641-04

Site: 4902 25th Ave NE

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
-----------------	--------	------	-----------	-------------	---------------	---------	--------

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	05/28/2008 11:52	N_M	1.00

VOLATILE ORGANICS BY METHOD 8260B			MCL	SW8260B	Units: ug/L		
Benzene	ND	1	1	06/04/08 10:03	DY	4481686	
Diisopropyl Ether	ND	1	1	06/04/08 10:03	DY	4481686	
Ethyl tert-butyl ether	ND	1	1	06/04/08 10:03	DY	4481686	
Ethylbenzene	ND	1	1	06/04/08 10:03	DY	4481686	
Methyl tert-butyl ether	ND	1	1	06/04/08 10:03	DY	4481686	
t-Butyl Alcohol	ND	5	1	06/04/08 10:03	DY	4481686	
tert-Amyl methyl ether	ND	1	1	06/04/08 10:03	DY	4481686	
Toluene	ND	1	1	06/04/08 10:03	DY	4481686	
m,p-Xylene	ND	1	1	06/04/08 10:03	DY	4481686	
o-Xylene	ND	1	1	06/04/08 10:03	DY	4481686	
Xylenes, Total	ND	1	1	06/04/08 10:03	DY	4481686	
Surr: 1,2-Dichloroethane-d4	94.7	% 71-140	1	06/04/08 10:03	DY	4481686	
Surr: 4-Bromofluorobenzene	99.7	% 70-130	1	06/04/08 10:03	DY	4481686	
Surr: Toluene-d8	101	% 61-121	1	06/04/08 10:03	DY	4481686	

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Shell Products US - Environmental Services

INC#97605414,SAP#NA

Analysis: Diesel Range Organics
Method: NWTPH-Dx

WorkOrder: 08051641
Lab Batch ID: 79485

Method Blank

Samples in Analytical Batch:

RunID: TH_X_080526A-4465981
Analysis Date: 05/26/2008 17:54
Preparation Date: 05/23/2008 18:25

Units: mg/L
Analyst: RLR
Prep By: N_M Method SW3510C/3630

Lab Sample ID	Client Sample ID
08051641-01C	MW-1
08051641-02C	MW-2
08051641-03C	MW-3
08051641-04C	MW-4

Analyte	Result	Rep Limit
Diesel Range Organics (C12-C24)	ND	0.25
Oil Range Organics (C24-C32)	ND	0.40
Surr: n-Pentacosane	78.2	20-150

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: TH_X_080526A-4465982 Units: mg/L
Analysis Date: 05/26/2008 18:15 Analyst: RLR
Preparation Date: 05/23/2008 18:25 Prep By: N_M Method SW3510C/3630

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Diesel Range Organics (C12-C24)	1.00	1.33	133	1.00	1.43	143	7.0	20	21	175
Oil Range Organics (C24-C32)	1.00	1.20	120	1.00	1.33	133	10.2	20	40	160
Surr: n-Pentacosane	0.0500	0.0321	64.2	0.0500	0.0391	78.2	19.7	30	20	150

Qualifiers: ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TN/C - Too numerous to count

MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

08051641 Page 12

6/16/2008 5:20:14 PM



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Shell Products US - Environmental Services

INC#97605414,SAP#NA

Analysis: Gasoline Range Organics

Method: NWTPH-Gx

WorkOrder: 08051641

Lab Batch ID: R239720

Method Blank

Samples in Analytical Batch:

RunID: HP_U_080530D-4475665 Units: mg/L
Analysis Date: 05/30/2008 15:25 Analyst: DMN
Preparation Date: 05/30/2008 15:25 Prep By: Method

Lab Sample ID	Client Sample ID
08051641-01A	MW-1
08051641-02A	MW-2
08051641-04A	MW-4

Analyte	Result	Rep Limit
Gasoline Range Organics	ND	0.050
Surr: 1,4-Difluorobenzene	101.7	60-155
Surr: 4-Bromofluorobenzene	102.9	50-158

Laboratory Control Sample (LCS)

RunID: HP_U_080530D-4475664 Units: mg/L
Analysis Date: 05/30/2008 14:29 Analyst: DMN
Preparation Date: 05/30/2008 14:29 Prep By: Method SW5030B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Gasoline Range Organics	1.00	0.951	95.1	64	131
Surr: 1,4-Difluorobenzene	0.100	0.106	106	60	155
Surr: 4-Bromofluorobenzene	0.100	0.109	109	50	158

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08051644-03
RunID: HP_U_080530D-4475666 Units: mg/L
Analysis Date: 05/30/2008 15:53 Analyst: DMN

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Gasoline Range Organics	ND	1	0.788	74.6	1	0.763	72.1	3.17	36	36	140
Surr: 1,4-Difluorobenzene	ND	0.1	0.105	105	0.1	0.104	104	1.15	30	60	155
Surr: 4-Bromofluorobenzene	ND	0.1	0.108	108	0.1	0.109	109	0.184	30	50	158

Qualifiers: ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

08051641 Page 13

6/16/2008 5:20:14 PM



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Shell Products US - Environmental Services INC#97605414,SAP#NA

Analysis: Gasoline Range Organics
Method: NWTPH-Gx

WorkOrder: 08051641
Lab Batch ID: R240006

Method Blank

Samples in Analytical Batch:

RunID: HP_U_080602A-4479941 Units: mg/L
Analysis Date: 06/02/2008 11:43 Analyst: DMN
Preparation Date: 06/02/2008 11:43 Prep By: Method

Lab Sample ID: 08051641-03A
Client Sample ID: MW-3

Analyte	Result	Rep Limit
Gasoline Range Organics	ND	0.050
Surr: 1,4-Difluorobenzene	105.8	60-155
Surr: 4-Bromofluorobenzene	104.8	50-158

Laboratory Control Sample (LCS)

RunID: HP_U_080602A-4479940 Units: mg/L
Analysis Date: 06/02/2008 10:48 Analyst: DMN
Preparation Date: 06/02/2008 10:48 Prep By: Method SW5030B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Gasoline Range Organics	1.00	1.03	103	64	131
Surr: 1,4-Difluorobenzene	0.100	0.108	108	60	155
Surr: 4-Bromofluorobenzene	0.100	0.109	109	50	158

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08051697-04
RunID: HP_U_080602A-4479943 Units: mg/L
Analysis Date: 06/02/2008 12:39 Analyst: DMN

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Gasoline Range Organics	0.196	1	0.956	76.0	1	0.942	74.6	1.41	36	36	140
Surr: 1,4-Difluorobenzene	ND	0.1	0.107	107	0.1	0.105	105	1.32	30	60	155
Surr: 4-Bromofluorobenzene	ND	0.1	0.108	108	0.1	0.107	107	0.466	30	50	158

Qualifiers: ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

08051641 Page 14

6/16/2008 5:20:15 PM



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Shell Products US - Environmental Services

INC#97605414,SAP#NA

Analysis: Volatile Organics by Method 8260B
Method: SW8260B

WorkOrder: 08051641
Lab Batch ID: R240061

Method Blank

RunID: MSDVOA2_080603D-4480867 Units: ug/L
Analysis Date: 06/03/2008 22:30 Analyst: DY
Preparation Date: 06/03/2008 22:30 Prep By: Method

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08051641-01B	MW-1
08051641-02B	MW-2

Analyte	Result	Rep Limit
Benzene	ND	1.0
Diisopropyl Ether	ND	1.0
Ethyl tert-butyl ether	ND	1.0
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
t-Butyl Alcohol	ND	5.0
tert-Amyl methyl ether	ND	1.0
Toluene	ND	1.0
m,p-Xylene	ND	1.0
o-Xylene	ND	1.0
Xylenes,Total	ND	1.0
Surr: 1,2-Dichloroethane-d4	93.2	71-140
Surr: 4-Bromofluorobenzene	97.9	70-130
Surr: Toluene-d8	100.6	61-121

Laboratory Control Sample (LCS)

RunID: MSDVOA2_080603D-44808 Units: ug/L
Analysis Date: 06/03/2008 21:26 Analyst: DY
Preparation Date: 06/03/2008 21:26 Prep By: Method SW5030B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	20.0	20.7	104	70	130
Diisopropyl Ether	20.0	19.9	99.3	70	130
Ethyl tert-butyl ether	20.0	19.8	99.1	57	140
Ethylbenzene	20.0	21.1	105	70	130
Methyl tert-butyl ether	20.0	19.9	99.7	60	140
t-Butyl Alcohol	200	201	100	44	161
tert-Amyl methyl ether	20.0	21.0	105	60	139
Toluene	20.0	21.5	107	73	130
m,p-Xylene	40.0	41.5	104	70	130
o-Xylene	20.0	20.9	104	70	130
Xylenes,Total	60.0	62.4	104	70	130
Surr: 1,2-Dichloroethane-d4	50.0	46.8	93.6	71	140
Surr: 4-Bromofluorobenzene	50.0	49.1	98.2	70	130
Surr: Toluene-d8	50.0	50.1	100	61	121

Qualifiers: ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

08051641 Page 15

6/16/2008 5:20:15 PM



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Shell Products US - Environmental Services

INC#97605414,SAP#NA

Analysis: Volatile Organics by Method 8260B
Method: SW8260B

WorkOrder: 08051641
Lab Batch ID: R240061

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08051612-01
RunID: MSDVOA2_080603D-44808 Units: ug/L
Analysis Date: 06/04/2008 6:02 Analyst: DY

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	9.03	20	31.1	110	20	30.3	106	2.72	20	67	202
Diisopropyl Ether	ND	20	20.3	102	20	19.4	97.0	4.62	20	25	166
Ethyl tert-butyl ether	ND	20	19.7	98.7	20	19.7	98.7	0.00811	20	40	153
Ethylbenzene	32.8	20	61.6	144	20	57.5	124	6.75	20	49	165
Methyl tert-butyl ether	ND	20	19.7	97.7	20	19.8	98.3	0.654	20	53	149
t-Butyl Alcohol	ND	200	180	89.8	200	186	93.1	3.54	20	42	200
tert-Amyl methyl ether	ND	20	19.6	98.2	20	19.8	99.1	0.881	20	45	148
Toluene	163	20	223	N/C	20	209	N/C	N/C	20	48	162
m,p-Xylene	146	40	229	209 *	40	215	174 *	6.30	20	44	167
o-Xylene	118	20	172	N/C	20	162	N/C	N/C	20	54	158
Xylenes, Total	263	60	401	N/C	60	377	N/C	N/C	20	44	167
Surr: 1,2-Dichloroethane-d4	ND	50	49.3	98.6	50	48.1	96.3	2.33	30	71	140
Surr: 4-Bromofluorobenzene	ND	50	49.9	99.8	50	48.9	97.8	2.06	30	70	130
Surr: Toluene-d8	ND	50	49.6	99.2	50	49.3	98.6	0.571	30	61	121

Qualifiers: ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

08051641 Page 16

6/16/2008 5:20:15 PM



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Shell Products US - Environmental Services

INC#97605414,SAP#NA

Analysis: Volatile Organics by Method 8260B

Method: SW8260B

WorkOrder: 08051641

Lab Batch ID: R240120

Method Blank

Samples in Analytical Batch:

RunID: MSDVOA2_080604A-4481683 Units: ug/L
Analysis Date: 06/04/2008 8:56 Analyst: DY
Preparation Date: 06/04/2008 8:56 Prep By: Method

Lab Sample ID Client Sample ID
08051641-03B MW-3
08051641-04B MW-4

Analyte	Result	Rep Limit
Benzene	ND	1.0
Diisopropyl Ether	ND	1.0
Ethyl tert-butyl ether	ND	1.0
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
t-Butyl Alcohol	ND	5.0
tert-Amyl methyl ether	ND	1.0
Toluene	ND	1.0
m,p-Xylene	ND	1.0
o-Xylene	ND	1.0
Xylenes,Total	ND	1.0
Surr: 1,2-Dichloroethane-d4	94.9	71-140
Surr: 4-Bromofluorobenzene	98.6	70-130
Surr: Toluene-d8	101.2	61-121

Laboratory Control Sample (LCS)

RunID: MSDVOA2_080604A-44816 Units: ug/L
Analysis Date: 06/04/2008 7:52 Analyst: DY
Preparation Date: 06/04/2008 7:52 Prep By: Method SW5030B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	20.0	20.5	103	70	130
Diisopropyl Ether	20.0	19.7	98.4	70	130
Ethyl tert-butyl ether	20.0	19.8	99.1	57	140
Ethylbenzene	20.0	20.2	101	70	130
Methyl tert-butyl ether	20.0	19.7	98.3	60	140
t-Butyl Alcohol	100	90.3	90.3	44	161
tert-Amyl methyl ether	20.0	19.8	98.8	60	139
Toluene	20.0	20.4	102	73	130
m,p-Xylene	40.0	40.1	100	70	130
o-Xylene	20.0	20.0	100	70	130
Xylenes,Total	60.0	60.1	100	70	130
Surr: 1,2-Dichloroethane-d4	50.0	47.5	95.0	71	140
Surr: 4-Bromofluorobenzene	50.0	48.6	97.2	70	130
Surr: Toluene-d8	50.0	49.3	98.6	61	121

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B/V - Analyte detected in the associated Method Blank D - Recovery Unreportable due to Dilution
J - Estimated value between MDL and PQL * - Recovery Outside Advisable QC Limits
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

08051641 Page 17

6/16/2008 5:20:16 PM



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Shell Products US - Environmental Services

INC#97605414,SAP#NA

Analysis: Volatile Organics by Method 8260B

Method: SW8260B

WorkOrder: 08051641

Lab Batch ID: R240120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08052087-01
RunID: MSDVOA2_080604A-44817 Units: ug/L
Analysis Date: 06/04/2008 14:48 Analyst: DY

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	20	22.4	112	20	19.9	99.6	11.5	20	67	202
Diisopropyl Ether	ND	20	19.0	95.1	20	18.9	94.6	0.526	20	25	166
Ethyl tert-butyl ether	ND	20	19.2	96.2	20	18.9	94.4	1.87	20	40	153
Ethylbenzene	ND	20	20.5	102	20	19.8	98.8	3.63	20	49	165
Methyl tert-butyl ether	ND	20	18.7	93.3	20	18.7	93.5	0.139	20	53	149
t-Butyl Alcohol	ND	200	211	105	200	204	102	3.15	20	42	200
tert-Amyl methyl ether	ND	20	19.9	96.0	20	19.7	95.0	1.09	20	45	148
Toluene	ND	20	20.7	103	20	20.0	100	3.06	20	48	162
m,p-Xylene	ND	40	40.9	102	40	39.8	99.4	2.76	20	44	167
o-Xylene	ND	20	20.2	101	20	19.9	99.4	1.55	20	54	158
Xylenes, Total	ND	60	61.1	102	60	59.7	99.4	2.36	20	44	167
Surr: 1,2-Dichloroethane-d4	ND	50	47.5	95.0	50	47.3	94.5	0.562	30	71	140
Surr: 4-Bromofluorobenzene	ND	50	49.1	98.2	50	49.0	98.0	0.210	30	70	130
Surr: Toluene-d8	ND	50	49.8	99.6	50	50.0	100	0.404	30	61	121

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B/V - Analyte detected in the associated Method Blank

J - Estimated value between MDL and PQL

E - Estimated Value exceeds calibration curve

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

TNTC - Too numerous to count

MI - Matrix Interference

D - Recovery Unreportable due to Dilution

* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

08051641 Page 18

6/16/2008 5:20:16 PM



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Shell Products US - Environmental Services

INC#97605414,SAP#NA

Analysis: Metals by Method 6020, Total
Method: SW6020A

WorkOrder: 08051641
Lab Batch ID: 79795-I

Method Blank

RunID: ICPMS_080603A-4482495 Units: mg/L
Analysis Date: 06/03/2008 21:16 Analyst: EG
Preparation Date: 06/02/2008 13:10 Prep By: DD Method SW3010A

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08051641-01D	MW-1
08051641-02D	MW-2
08051641-03D	MW-3
08051641-04D	MW-4

Analyte	Result	Rep Limit
Lead	ND	0.005

Laboratory Control Sample (LCS)

RunID: ICPMS_080603A-4482496 Units: mg/L
Analysis Date: 06/03/2008 21:22 Analyst: EG
Preparation Date: 06/02/2008 13:10 Prep By: DD Method SW3010A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Lead	0.1000	0.09697	96.97	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08051880-01
RunID: ICPMS_080603A-4482498 Units: mg/L
Analysis Date: 06/03/2008 21:32 Analyst: EG
Preparation Date: 06/02/2008 13:10 Prep By: DD Method SW3010A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Lead	ND	0.1	0.1057	105.7	0.1	0.1063	106.3	0.5660	20	75	125

Qualifiers: ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

08051641 Page 19

6/16/2008 5:20:16 PM



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Shell Products US - Environmental Services

INC#97605414,SAP#NA

Analysis: SIM Semivolatiles Organics by Method 8270C
Method: SW8270C

WorkOrder: 08051641
Lab Batch ID: 79596

Method Blank

Samples in Analytical Batch:

RunID: S_080613A-4500915 Units: ug/L
Analysis Date: 06/13/2008 13:55 Analyst: S_G
Preparation Date: 05/28/2008 11:52 Prep By: N_M Method SW3510C

Lab Sample ID	Client Sample ID
08051641-01E	MW-1
08051641-02E	MW-2
08051641-03E	MW-3
08051641-04E	MW-4

Analyte	Result	Rep Limit
1-Methylnaphthalene	ND	1.0
2-Methylnaphthalene	ND	1.0
Acenaphthene	ND	1.0
Acenaphthylene	ND	1.0
Anthracene	ND	1.0
Benz(a)anthracene	ND	1.0
Benzo(a)pyrene	ND	1.0
Benzo(b)fluoranthene	ND	1.0
Benzo(g,h,i)perylene	ND	1.0
Benzo(k)fluoranthene	ND	1.0
Chrysene	ND	1.0
Dibenz(a,h)anthracene	ND	1.0
Dibenzofuran	ND	1.0
Fluoranthene	ND	1.0
Fluorene	ND	1.0
Indeno(1,2,3-cd)pyrene	ND	1.0
Naphthalene	ND	1.0
Phenanthrene	ND	1.0
Pyrene	ND	1.0
Surr: 2-Fluorobiphenyl	71.0	10-146
Surr: Nitrobenzene-d5	123.1	10-195
Surr: Terphenyl-d14	77.3	10-149

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: S_080613A-4500913 Units: ug/L
Analysis Date: 06/13/2008 12:54 Analyst: S_G
Preparation Date: 05/28/2008 11:52 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1-Methylnaphthalene	2.00	1.28	64.0	2.00	1.24	61.9	3.3	50	25	174
2-Methylnaphthalene	2.00	1.25	62.3	2.00	1.21	60.6	2.8	50	20	170
Acenaphthene	2.00	1.39	69.7	2.00	1.38	69.2	0.8	50	30	150
Acenaphthylene	2.00	1.30	64.8	2.00	1.30	65.1	0.4	50	33	250
Anthracene	2.00	1.38	68.9	2.00	1.42	71.0	3.0	50	27	150
Benz(a)anthracene	2.00	1.49	74.6	2.00	1.50	74.9	0.5	50	33	150
Benzo(a)pyrene	2.00	1.31	65.7	2.00	1.33	66.6	1.4	50	17	163
Benzo(b)fluoranthene	2.00	1.38	69.1	2.00	1.43	71.3	3.0	50	24	170

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B/V - Analyte detected in the associated Method Blank D - Recovery Unreportable due to Dilution
J - Estimated value between MDL and PQL * - Recovery Outside Advisable QC Limits
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

08051641 Page 20

6/16/2008 5:20:17 PM



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Shell Products US - Environmental Services

INC#97605414,SAP#NA

Analysis: SIM Semivolatiles Organics by Method 8270C
Method: SW8270C

WorkOrder: 08051641
Lab Batch ID: 79596

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: S_080613A-4500913 Units: ug/L
Analysis Date: 06/13/2008 12:54 Analyst: S_G
Preparation Date: 05/28/2008 11:52 Prep By: N_M Method SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Benzo(g,h,i)perylene	2.00	1.43	71.4	2.00	1.34	67.2	6.0	50	10	145
Benzo(k)fluoranthene	2.00	1.36	67.8	2.00	1.36	67.8	0.1	50	11	162
Chrysene	2.00	1.46	73.1	2.00	1.46	73.1	0.1	50	17	168
Dibenz(a,h)anthracene	2.00	1.37	68.3	2.00	1.31	65.7	3.8	50	10	138
Dibenzofuran	2.00	1.27	63.6	2.00	1.29	64.3	1.1	50	30	160
Fluoranthene	2.00	1.42	71.1	2.00	1.51	75.5	5.9	50	26	160
Fluorene	2.00	1.41	70.4	2.00	1.44	72.1	2.4	50	30	150
Indeno(1,2,3-cd)pyrene	2.00	1.65	82.7	2.00	2.01	101	19.4	50	10	190
Naphthalene	2.00	1.36	68.0	2.00	1.36	67.9	0.2	50	21	140
Phenanthrene	2.00	1.46	73.0	2.00	1.47	73.3	0.4	50	10	140
Pyrene	2.00	1.38	68.9	2.00	1.28	64.0	7.3	50	30	150
Surr: 2-Fluorobiphenyl	2.00	1.45	72.6	2.00	1.46	73.2	0.7	50	10	146
Surr: Nitrobenzene-d5	2.00	1.92	95.8	2.00	1.68	84.2	12.8	50	10	195
Surr: Terphenyl-d14	2.00	1.42	71.1	2.00	1.36	67.9	4.6	50	10	149

Qualifiers: ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

08051641 Page 21

6/16/2008 5:20:17 PM

*Sample Receipt Checklist
And
Chain of Custody*



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	08051641	Received By:	RE
Date and Time Received:	5/22/2008 10:00:00 AM	Carrier name:	Fedex-Standard Overnight
Temperature:	3.03.5°C	Chilled by:	Water Ice

- | | | | |
|--|---|-----------------------------|--|
| 1. Shipping container/cooler in good condition? | Yes ☒ | No ☐ | Not Present ☐ |
| 2. Custody seals intact on shipping container/cooler? | Yes ☐ | No ☐ | Not Present ☒ |
| 3. Custody seals intact on sample bottles? | Yes ☐ | No ☐ | Not Present ☒ |
| 4. Chain of custody present? | Yes ☒ | No ☐ | |
| 5. Chain of custody signed when relinquished and received? | Yes ☒ | No ☐ | |
| 6. Chain of custody agrees with sample labels? | Yes ☒ | No ☐ | |
| 7. Samples in proper container/bottle? | Yes ☒ | No ☐ | |
| 8. Sample containers intact? | Yes ☒ | No ☐ | |
| 9. Sufficient sample volume for indicated test? | Yes ☒ | No ☐ | |
| 10. All samples received within holding time? | Yes ☒ | No ☐ | |
| 11. Container/Temp Blank temperature in compliance? | Yes ☒ | No ☐ | |
| 12. Water - VOA vials have zero headspace? | Yes ☒ | No ☐ | VOA Vials Not Present ☐ |
| 13. Water - Preservation checked upon receipt (except VOA*)? | Yes ☐ | No ☐ | Not Applicable ☒ |

*VOA Preservation Checked After Sample Analysis

SPL Representative:
Client Name Contacted:

Contact Date & Time:

Non Conformance Issues:	
Client Instructions:	

