



ENVIRONMENTAL MANAGEMENT, INC.

Release 3573
Texaco 63-232-
1413
Auburn

April 24, 2003

KHM Project No. A81-201 Auburn

Mr. John Weitfeld

Washington State Dept. of Ecology, Northwest Region

Toxics Cleanup Program, UST Division

3190 160th Ave SE

Bellevue, WA 98008-5452

Re: GRASP Site Assessment Report
Shell Service Station (SAP No. 120849)
201 Auburn Way South
Auburn, Washington
Ecology Site ID: 4450

Dear Mr. Weitfeld:

KHM Environmental Management, Inc. (KHM) on behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell) has prepared this *GRASP Site Assessment Report* for the above referenced site (Figure 1). The Groundwater Assessment Program (GRASP) activities initiated at the above referenced site on October 30, 2002 did not reveal concentrations of petroleum hydrocarbons in the subsurface soil and groundwater above Washington State Model Toxics Control Act (MTCA) Method A cleanup levels. The findings from the GRASP activities are summarized in this report.

BACKGROUND

GRASP is a voluntary initiative by Shell to install groundwater monitoring wells at retail service stations nationwide that do not have any active release cases but have been identified to be in close proximity to one or more public water supply wells. The purpose of this program is to proactively monitor the groundwater beneath these sites and, in the event of a subsurface release, to respond to protect public wells from this impact.

GRASP WELL INSTALLATION

On October 30, 2002, KHM supervised the drilling and installation of three groundwater monitoring wells (MW-1, MW-2, and MW-3) near the site's fuel pumping islands and underground storage tanks. The boring logs, illustrating sampling intervals, lithologic descriptions, and well completion details are included in Attachment A.

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Following installation, the wellhead elevations of the newly installed wells were surveyed by a state licensed surveyor. The locations of the groundwater monitoring wells, relative to existing site features, are shown on Figure 2. Wellhead survey elevation data is included in Attachment B.

Soil cuttings generated during the subsurface soil investigation were placed into nine 55-gallon steel drums, profiled and disposed at TPS Technologies, Inc. of Lakewood, Washington. One soil sample from the soil cuttings was submitted to the laboratory for profiling purposes. The soil sample was transported using strict chain-of-custody protocols to SPL of Houston, Texas, for analysis. Certified analytical results and chain-of-custody documentation for the soil sample are presented in Attachment C.

GROUNDWATER MONITORING

On January 22, 2003, the newly installed wells were monitored for chemical constituents associated with gasoline and diesel fuels. Prior to sample collection, depth to groundwater was measured in each of the wells. Groundwater samples were collected from each well in accordance with the sampling procedures described in Attachment D. The approximate groundwater flow direction appears to be to the west-northwest. Depth to groundwater and groundwater elevations are included in Table 1. Groundwater elevation contours are presented in Figure 2. Groundwater field sheets are included in Attachment E.

ANALYTICAL FINDINGS

Field screening of soil samples collected during drilling activities included visual observation, sheen testing, and vapor headspace analysis using a photoionization detector (PID). No subsurface soil impacts were observed in the field; therefore, soil samples collected during drilling activities were not submitted to the laboratory for quantitative analysis.

Concentrations of total petroleum hydrocarbons (TPH) in the gasoline, diesel, and oil ranges were not detected at or above Method Reporting Limits (MRLs) in groundwater sampled from the three monitoring wells. Additionally, concentrations of benzene, toluene, ethylbenzene, xylenes, and methyl tert-butyl ether (MTBE) were not detected at or above the MRLs in groundwater from each of the wells. Analytical results for groundwater are summarized in Table 1 and presented on Figure 3. Certified analytical results and chain-of-custody documentation for groundwater samples are presented in Attachment F.



April 24, 2003

Page 3

If you have any questions regarding this site, please contact Tena Seeds (KHM) at (425) 558-0134 or Tony Palagyi (Shell) at (425) 377-8530.

Sincerely,

KHM Environmental Management, Inc.

Tena Seeds

Tena Seeds
Staff Engineer

[Signature]

Ward Crell, R.G.
Principal Geologist

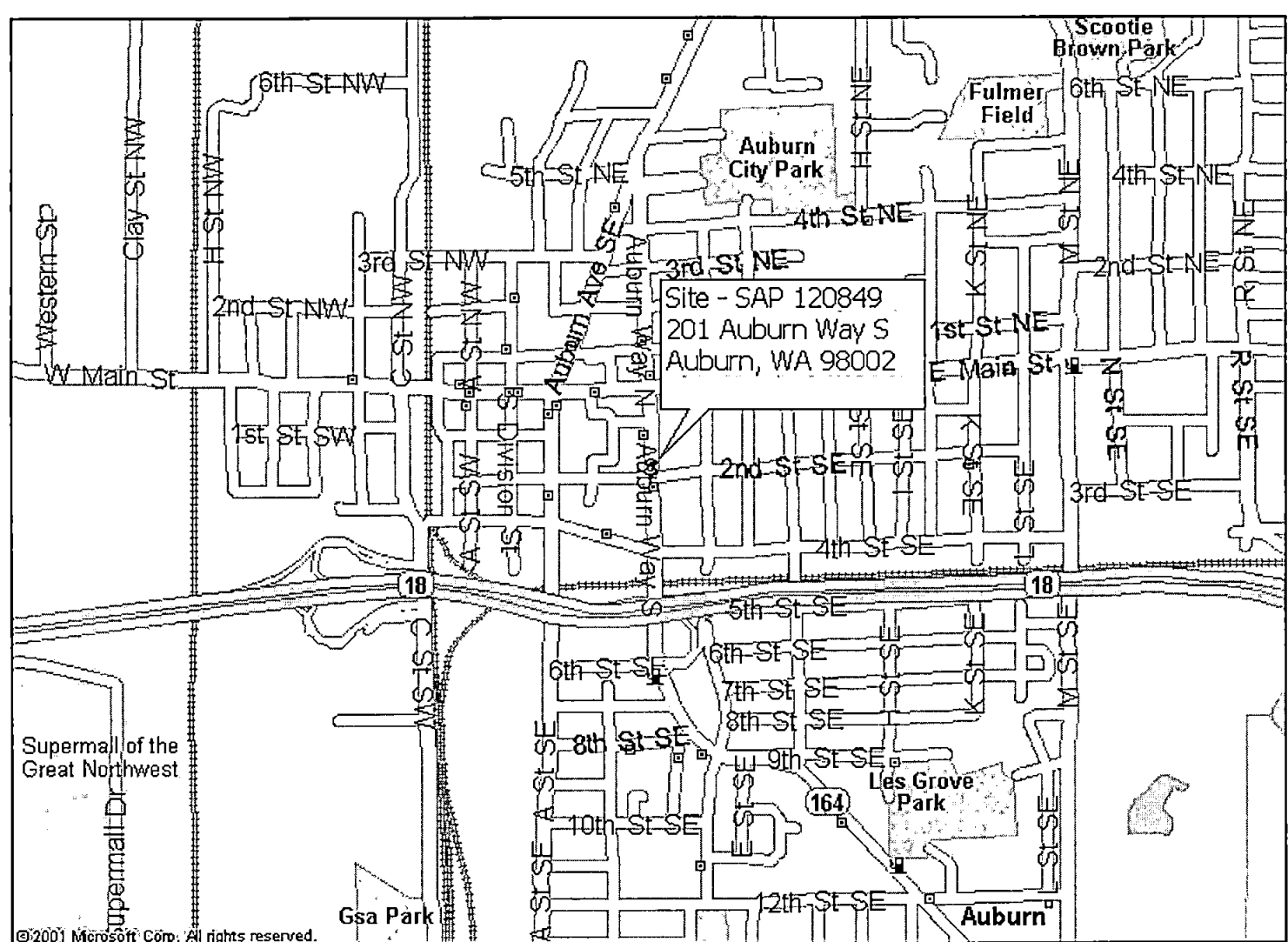


Attachments: Table 1 – Groundwater Gauging and Analytical Data
Figure 1 – Site Location Map
Figure 2 – Groundwater Elevation Contour Map
Figure 3 – Hydrocarbon Distribution in Groundwater
Attachment A – Boring Logs
Attachment B – Wellhead Elevation Survey Data
Attachment C – Laboratory Analytical Report and Chain-of-Custody Documentation - Soil
Attachment D – Groundwater Monitoring and Sampling Procedures
Attachment E – Groundwater Sampling Field Sheets
Attachment F – Laboratory Analytical Report and Chain-of-Custody Documentation - Groundwater

cc: Tony Palagyi, Shell Oil Products US, Seattle, Washington

201 Auburn Way South
Auburn, Washington

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INC.

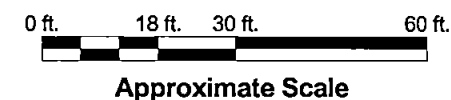
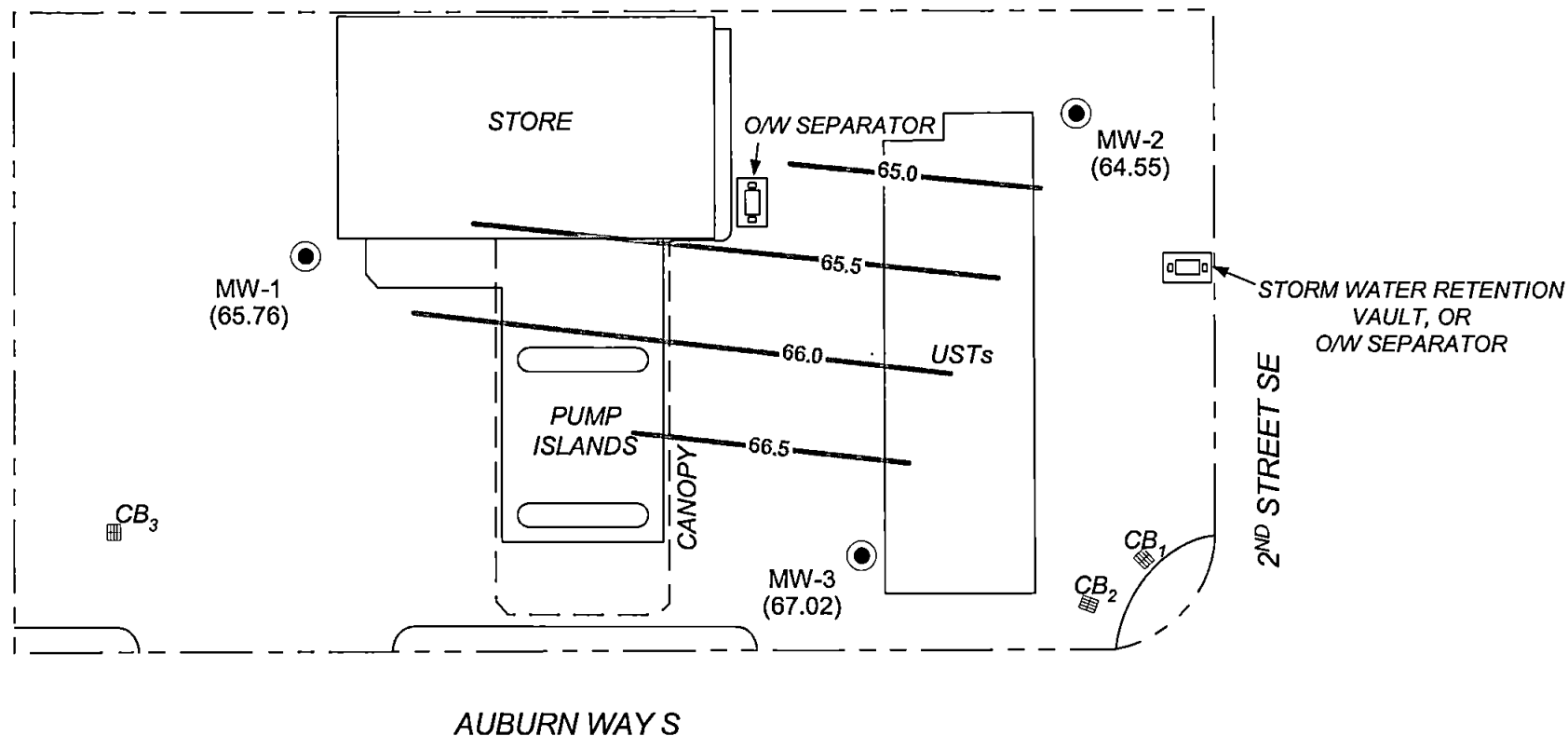
SITE LOCATION MAP

Shell / Equiva Site - SAP 120849
201 Auburn Way South
Auburn, Washington

DATE 4/24/03

PROJECT A81-201 Auburn

FIGURE 1



Legend

- MW-1 Groundwater Monitoring Well
- (65.76) Groundwater Elevation, January 22, 2003
- 65.5— Groundwater Elevation Contour, January 22, 2003

Site map based on drawing prepared by WGR Southwest, Inc. dated 7/00

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GROUNDWATER ELEVATION CONTOUR MAP

Shell/Equiva Site - SAP 120849
201 Auburn Way South
Auburn, Washington

DATE 4/24/03

PROJECT A81-201 Auburn

FIGURE 2



MW-1	
TPH-G/D/O	ND/ND/ND
B	ND
T	ND
E	ND
X	ND
MTBE	ND
TBA	ND

MW-2	
TPH-G/D/O	ND/ND/ND
B	ND
T	ND
E	ND
X	ND
MTBE	ND
TBA	ND

MW-3	
TPH-G/D/O	ND/ND/ND
B	ND
T	ND
E	ND
X	ND
MTBE	ND
TBA	ND

LEGEND

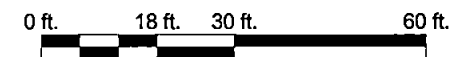
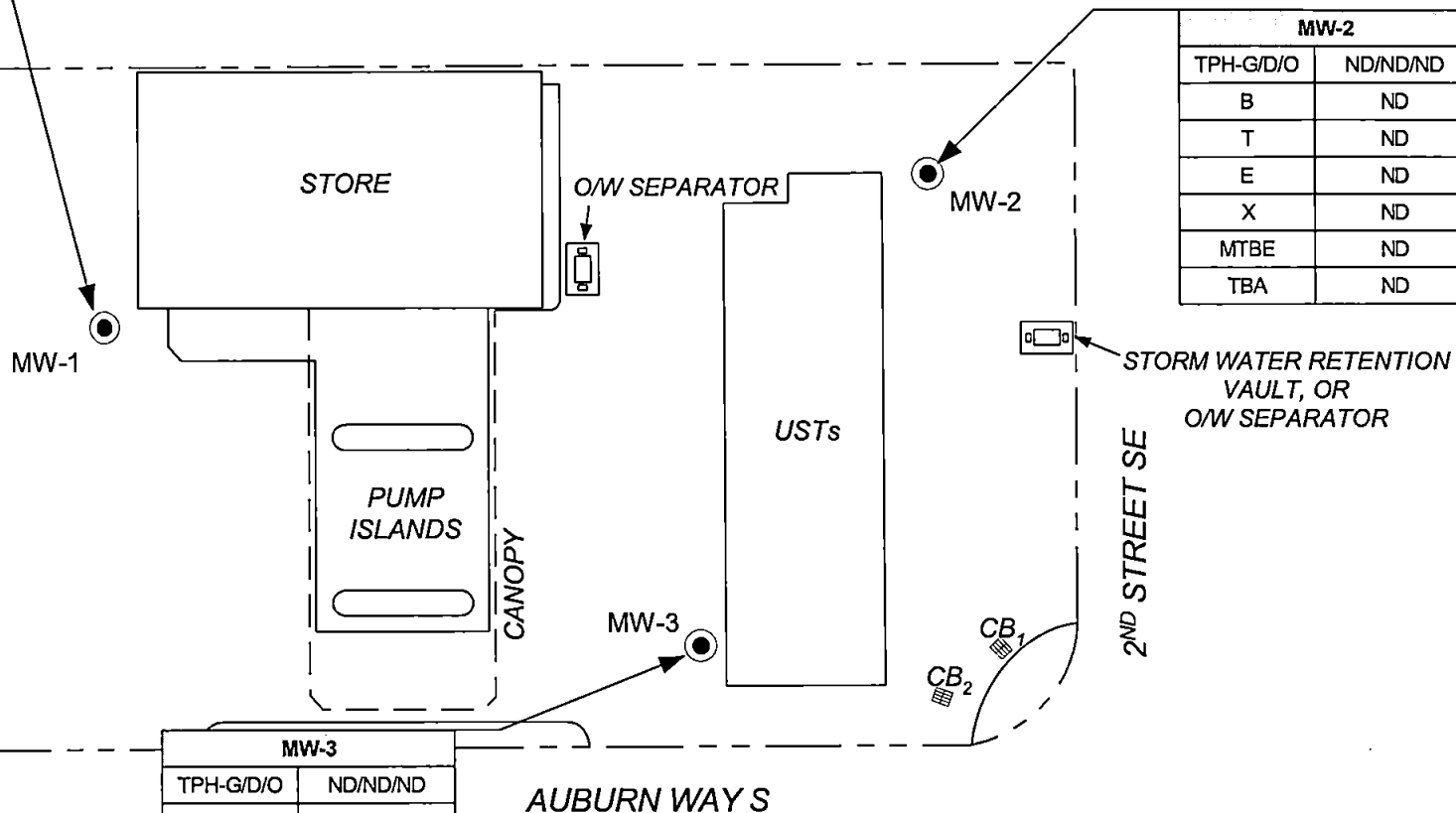
● Groundwater Monitoring Well

TPH-G/D/O Total Petroleum Hydrocarbons as Gasoline/Diesel/Oil

B	Benzene	MTBE	Methyl tert-Butyl Ether
T	Toluene	TBA	Tert-Butyl Alcohol
E	Ethylbenzene	ND	Not Detected
X	Total Xylenes		

Note: All concentrations reported in micrograms per liter (ug/l).

Site map based on drawing prepared by WGR Southwest, Inc. dated 7/00



Approximate Scale

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HYDROCARBON CONCENTRATION IN GROUNDWATER

Shell/Equiva Site - SAP 120849
201 Auburn Way South
Auburn, Washington

DATE 4/24/03

PROJECT A81-201 Auburn

FIGURE 3

ATTACHMENT A

BORING LOGS

KHM

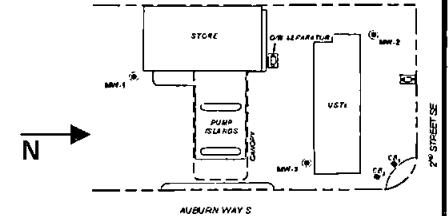
ENVIRONMENTAL
MANAGEMENT
INCORPORATED

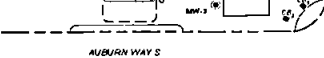


PROJECT NO: A81-201 Auburn
 LOGGED BY: J. North/ O. Popova
 DRILLER: Cascade Drilling Inc.
 DRILLING METHOD: HSA
 SAMPLING METHOD: SS
 CASING TYPE: PVC
 SLOT SIZE: 0.010"
 GRAVEL PACK: 2-12

CLIENT: Shell
 LOCATION: 201 Auburn Way S, Auburn, WA
 DATE DRILLED: 10/30/2002
 HOLE DIAMETER: 9"
 HOLE DEPTH: 25'
 WELL DIAMETER: 2"
 WELL DEPTH: 25'
 CASING STICKUP: 0

BORING/WELL NO: MW-1
 PAGE 1 OF 2

LOCATION MAP



		ELEVATION				NORTHING			EASTING				
Well Completion		Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Recovery	Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION			
Backfill	Casing												
						1				0 - 3" ASPHALT			
										Airknifed to 7' through silt/sand/gravel			
						2							
						3							
						4							
						5							
						6							
						7							
						8							
						9							
			dry to moist	0	14	10			SW	Well Graded SAND with Gravel; brownish grey, 50% medium grained sand, 30% coarse, 20% fine sand, 20% fine to coarse gravel, (subrounded - rounded), cobbles ~ 1.5", loose, dry to moist			
					15	11							
					23	12					GM	Sandy GRAVEL; brown, dark brown, fine to medium, 30-40% medium to coarse sand, loose, moist	
			moist	0	20	12							
					27	13							
					30	13							
			moist	0	15	14					SP	Poorly Graded SAND; dark brown, fine to medium grained, no gravel, dry to moist	
					15	14							
					21	15							
			moist	0	20	15					GM	Sandy GRAVEL; brown to dark brown, fine to medium, 30% medium to coarse sand, loose, moist	
					20	16							
					21	16							
			moist	0	16	17						(As above)	
					16	17							
			moist/ wet	0	15	18						(As above; trace silt, moist to wet)	
					14	18							
					15	19							
			moist/ wet	0	15	19						(As above)	
					27	20							
					16	20							
			moist/ wet	0	29	21						(As above; sand decreasing to 20%, moist to wet)	
					31	21							
					40	22							
					30	22						(As above; wet)	

1035

10/30/02

KHM

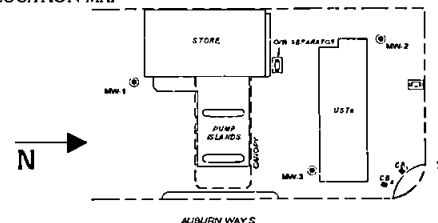
ENVIRONMENTAL
MANAGEMENT
INCORPORATED

PROJECT NO: A81-201 Auburn CLIENT: Shell
 LOGGED BY: J. North/ O. Popova LOCATION: 201 Auburn Way S, Auburn, WA
 DRILLER: Cascade Drilling Inc. DATE DRILLED: 10/30/2002
 DRILLING METHOD: HSA HOLE DIAMETER: 9"
 SAMPLING METHOD: SS HOLE DEPTH: 25'
 CASING TYPE: PVC WELL DIAMETER: 2"
 SLOT SIZE: 0.010" WELL DEPTH: 25'
 GRAVEL PACK: 2-12 CASING STICKUP: 0

BORING/WELL NO: MW-1

PAGE 2 OF 2

LOCATION MAP



ELEVATION

NORTHING

EASTING

Well Completion

Static
Water
LevelMoisture
ContentPID Reading
(ppm)Penetration
(blows/6")

Depth (feet)

Sample
Recovery
Interval

Soil Type

LITHOLOGY / DESCRIPTION

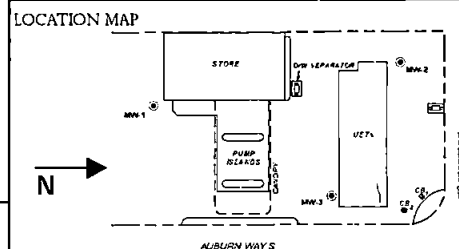
Well Completion Backfill Casing	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Sand	▽	wet	0	30	23		GM	
		wet	0	31	24			(As above; sand increasing up to 30%, wet)
				19	25			
				37	26			
				23	27			
					28			
					29			
					30			
					31			
					32			
					33			
					34			
					35			
					36			
					37			
					38			
					39			
					40			
					41			
					42			
					43			
					44			

BOTTOM OF BORING @ 25 ft



PROJECT NO:	A81-201 Auburn	CLIENT:	Shell
LOGGED BY:	J. North/ O. Popova	LOCATION:	201 Auburn Way S, Auburn, WA
DRILLER:	Cascade Drilling Inc.	DATE DRILLED:	10/30/2002
DRILLING METHOD:	HSA	HOLE DIAMETER:	9"
SAMPLING METHOD:	SS	HOLE DEPTH:	25'
CASING TYPE:	PVC	WELL DIAMETER:	2"
SLOT SIZE:	0.010"	WELL DEPTH:	25'
GRAVEL PACK:	2-12	CASING STICKUP:	0

BORING/WELL NO: MW-2
PAGE 1 OF 2



Well Completion		Static Water Level	ELEVATION		NORTHING		EASTING		LITHOLOGY / DESCRIPTION
Backfill	Casing		Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery Interval	Soil Type	
									0 - 3" ASPHALT
						1			Airknifed to 7' through silt/sand/gravel
						2			
						3			
						4			
						5			
						6			
						7			
						8			
						9			
						10			
			moist	0	20			GM	Sandy GRAVEL ; brown, fine to coarse, subrounded to rounded, 35% fine to coarse sand, loose moist to wet
					20				
					21				
						12			
						13			
						14			
						15			
			moist	0	29			SW	Gravelly SAND ; well graded, 50% medium, 25% fine, 25% coarse grained sand, 30-35% fine to coarse gravel, subrounded cobbles ~ 2", loose
					31				
					29				
						17			
						18			
						19			
						20			(As above)
						21			
			wet	0	15			GP	Poorly Graded GRAVEL with Sand ; brown, fine to coarse, well rounded to subrounded, 25% sand, loose, wet
					15				
					25				
						22			

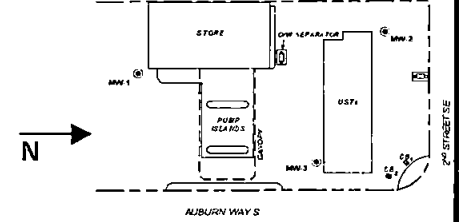
KHM

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PROJECT NO: A81-201 Auburn CLIENT: Shell
LOGGED BY: J. North/ O. Popova LOCATION: 201 Auburn Way S, Auburn, WA
DRILLER: Cascade Drilling Inc. DATE DRILLED: 10/30/2002
DRILLING METHOD: HSA HOLE DIAMETER: 9"
SAMPLING METHOD: SS HOLE DEPTH: 25'
CASING TYPE: PVC WELL DIAMETER: 2"
SLOT SIZE: 0.010" WELL DEPTH: 25'
GRAVEL PACK: 2-12 CASING STICKUP: 0

BORING/WELL NO: MW-2
PAGE 2 OF 2

LOCATION MAP



Well Completion		Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	ELEVATION		NORTHING		EASTING	LITHOLOGY / DESCRIPTION
Backfill	Casing					Depth (feet)	Recovery	Interval	Soil Type		
Sand			wet	0	10 19 25	23			SW		
						24					
						25					
						26					Well Graded SAND with Gravel; dark brown, 45% medium, 40% coarse, 15% fine sand, 30-35% fine to coarse gravel, subrounded to rounded, loose, wet
						27					
						28					BOTTOM OF BORING @ 25 ft
						29					
						30					
						31					
						32					
						33					
						34					
						35					
						36					
						37					
						38					
						39					
						40					
						41					
						42					
						43					
						44					

KHM

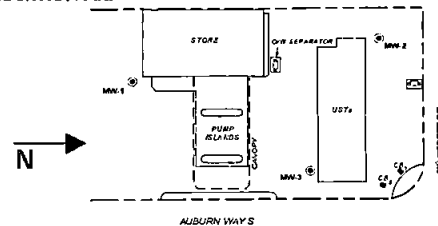
ENVIRONMENTAL
MANAGEMENT
INCORPORATED

PROJECT NO: A81-201 Auburn
LOGGED BY: J. North/ O. Popova
DRILLER: Cascade Drilling Inc.
DRILLING METHOD: HSA
SAMPLING METHOD: SS
CASING TYPE: PVC
SLOT SIZE: 0.010"
GRAVEL PACK: 2-12

CLIENT: Shell
LOCATION: 201 Auburn Way S, Auburn, WA
DATE DRILLED: 10/30/2002
HOLE DIAMETER: 9"
HOLE DEPTH: 25'
WELL DIAMETER: 2"
WELL DEPTH: 25'
CASING STICKUP: 0

BORING/WELL NO: MW-3
PAGE 1 OF 2

LOCATION MAP



		ELEVATION				NORTHING		EASTING				
Well Completion		Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION			
Backfill	Casing											
Bentonite Chips						1				0 - 3" ASPHALT		
						2				Airknifed to 7' through gravel with cobbles, sand, and silt		
						3						
						4						
						5						
						6						
						7						
						8						
						9						
						10						
			moist	0	17			SP	Poorly Graded Gravelly SAND; brown to dark brown, fine to medium sand, trace coarse, 35-40% fine to coarse gravel, subrounded/rounded, loose, moist			
				23								
				27								
						11						
						12						
						13						
						14						
						15			SP	(As above)		
			moist	0	30							
					30							
					30							
						16						
						17						
						18						
						19						
						20			GP	Poorly Graded GRAVEL with Sand; brown, fine to coarse, dominantly medium gravel, 35% medium grained sand, loose, wet		
			wet	0	6							
				8								
					10							
						21						
						22						

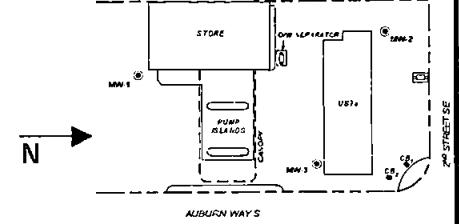
KHM


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MANAGEMENT
INCORPORATED

PROJECT NO: A81-201 Auburn CLIENT: Shell
 LOGGED BY: J. North/ O. Popova LOCATION: 201 Auburn Way S, Auburn, WA
 DRILLER: Cascade Drilling Inc. DATE DRILLED: 10/30/2002
 DRILLING METHOD: HSA HOLE DIAMETER: 9"
 SAMPLING METHOD: SS HOLE DEPTH: 25'
 CASING TYPE: PVC WELL DIAMETER: 2"
 SLOT SIZE: 0.010" WELL DEPTH: 25'
 GRAVEL PACK: 2-12 CASING STICKUP: 0

BORING/WELL NO: MW-3
 PAGE 2 OF 2

LOCATION MAP



Well Completion		Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Backfill	Casing								
Sand 						23			
						24			
						25			
					10	25		SW	Well Graded SAND with Gravel; brown to dark brown, 60% medium grained sand, 20% coarse, 20% fine, 30% fine to coarse gravel, rounded to subrounded, cobbles ~2", loose, wet
			wet	0	17	26			
					23	27			
						28			
						29			BOTTOM OF BORING @ 25 ft
						30			
						31			
						32			
						33			
						34			
						35			
						36			
						37			
						38			
						39			
						40			
						41			
						42			
						43			
						44			

ATTACHMENT B

WELLHEAD ELEVATION SURVEY DATA

**Shell Service Station
201 Auburn Way South
Auburn, Washington**

Project : 30310

Coordinate System US State Plane 1983 Zone Washington North 4601
Project Datum NAD 1983 (Conus)
Vertical Datum NAVD88
Coordinate Units US survey feet
Distance Units US survey feet
Elevation Units US survey feet

POINT NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION	LATITUDE	LONGITUDE
10042	114464.43	1294853.24	85.76	MW-1	47-18-18.80206	122-13-34.23424
10043	114544.37	1294907.62	86.12	MW-3	47-18-19.60055	122-13-33.46631
10044	114595.49	1294837.49	84.85	MW-2	47-18-20.09244	122-13-34.49716

ATTACHMENT C

**LABORATORY ANALYTICAL REPORT AND
CHAIN-OF-CUSTODY DOCUMENTATION - SOIL**



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

Shell Oil Products US

Certificate of Analysis Number:

02110127

<u>Report To:</u> KHM Environmental Management, Inc. Tena Seeds 17720 NE 65th Street Suite 201 Redmond WA 98052- ph: (425) 558-0134 fax:	<u>Project Name:</u> INC#97420034 <u>Site:</u> 201 Auburn Way S. <u>Site Address:</u> 201 Auburn Way S. Auburn WA <u>PO Number:</u> SAP# 120849 <u>State:</u> Washington <u>State Cert. No.:</u> C156 <u>Date Reported:</u> 11/18/2002
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This Report Contains A Total Of 13 Pages

Excluding This Page

And

Chain Of Custody

11/18/2002

Date



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

Case Narrative for:
Shell Oil Products US

Certificate of Analysis Number:
02110127

<u>Report To:</u> KHM Environmental Management, Inc. Tena Seeds 17720 NE 65th Street Suite 201 Redmond WA 98052- ph: (425) 558-0134 fax:	<u>Project Name:</u> INC#97420034 <u>Site:</u> 201 Auburn Way S. <u>Site Address:</u> 201 Auburn Way S. Auburn WA <u>PO Number:</u> SAP# 120849 <u>State:</u> Washington <u>State Cert. No.:</u> C156 <u>Date Reported:</u> 11/18/2002
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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.

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.

Bernadette Fini
Customer Service Manager

11/18/2002

Date



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

Shell Oil Products US

Certificate of Analysis Number:

02110127

Report To: KHM Environmental Management, Inc.
Tena Seeds
17720 NE 65th Street
Suite 201
Redmond
WA
98052-
ph: (425) 558-0134 fax: (425) 869-7494

Project Name: INC#97420034
Site: 201 Auburn Way S.
Site Address: 201 Auburn Way S.
Auburn WA
PO Number: SAP# 120849
State: Washington
State Cert. No.: C156
Date Reported: 11/18/2002

Fax To:

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
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Waste Characterization	02110127-01	Soil	10/30/2002 10:30:00 AM	11/6/2002 9:00:00 AM		<input type="checkbox"/>
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Bernadette Fini
Customer Service Manager

11/18/2002

Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer

11/18/2002 7:42:57 AM



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

Client Sample ID Waste Characterization Collected: 10/30/2002 10:30 SPL Sample ID: 02110127-01

Site: 201 Auburn Way S.

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
GASOLINE RANGE ORGANICS			MCL	NWTPH-GX	Units: mg/kg		
Gasoline Range Organics	ND	5	1		11/07/02 1:01	FB	1388395
Surr: 1,4-Difluorobenzene	102	% 72-153	1		11/07/02 1:01	FB	1388395
Surr: 4-Bromofluorobenzene	85.0	% 51-149	1		11/07/02 1:01	FB	1388395

MERCURY, TOTAL			MCL	SW7471A	Units: mg/Kg		
Mercury	0.0355	0.033	1		11/08/02 11:00	R_T	1390996

Prep Method	Prep Date	Prep Initials
SW7471A	11/08/2002 8:30	R_T

METALS BY METHOD 6010B, TOTAL			MCL	SW6010B	Units: mg/Kg		
Arsenic	2.68	0.5	1		11/15/02 14:37	NS	1396919
Lead	5.06	0.5	1		11/11/02 23:15	NS	1392143
Selenium	ND	0.5	1		11/11/02 23:15	NS	1392143
Barium	25.7	0.5	1		11/11/02 23:14	JS	1392186
Cadmium	ND	0.5	1		11/11/02 23:14	JS	1392186
Chromium	9.62	1	1		11/11/02 23:14	JS	1392186
Silver	ND	1	1		11/11/02 23:14	JS	1392186

Prep Method	Prep Date	Prep Initials
SW3050B	11/08/2002 15:00	MME

PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/Kg		
Benzene	ND	1	1		11/07/02 1:01	FB	1388388
Ethylbenzene	ND	1	1		11/07/02 1:01	FB	1388388
Toluene	ND	1	1		11/07/02 1:01	FB	1388388
m,p-Xylene	ND	1	1		11/07/02 1:01	FB	1388388
o-Xylene	ND	1	1		11/07/02 1:01	FB	1388388
Xylenes, Total	ND	1	1		11/07/02 1:01	FB	1388388
Surr: 1,4-Difluorobenzene	104	% 59-127	1		11/07/02 1:01	FB	1388388
Surr: 4-Bromofluorobenzene	91.2	% 48-156	1		11/07/02 1:01	FB	1388388

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL

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

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Quality Control Documentation



Quality Control Report

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

Shell Oil Products US

INC#97420034

Analysis: Purgeable Aromatics
Method: SW8021B

WorkOrder: 02110127
Lab Batch ID: R71130

Method Blank

RunID: HP_R_021106B-1388387 Units: ug/Kg
Analysis Date: 11/07/2002 0:34 Analyst: FB

Samples in Analytical Batch:

Lab Sample ID Client Sample ID
02110127-01A Waste Characterization

Analyte	Result	Rep Limit
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Toluene	ND	1.0
m,p-Xylene	ND	1.0
o-Xylene	ND	1.0
Xylenes, Total	ND	1.0
Surr: 1,4-Difluorobenzene	103.0	59-127
Surr: 4-Bromofluorobenzene	93.5	48-156

Laboratory Control Sample (LCS)

RunID: HP_R_021106B-1388384 Units: ug/Kg
Analysis Date: 11/06/2002 21:50 Analyst: FB

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	50	48	96	70	124
Ethylbenzene	50	47.6	95	78	128
Toluene	50	48.6	97	70	126
m,p-Xylene	100	94.1	94	71	130
o-Xylene	50	47.2	94	71	129
Xylenes, Total	150	141.3	94	71	130

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

Sample Spiked: 02110127-01
RunID: HP_R_021106B-1388385 Units: ug/Kg
Analysis Date: 11/06/2002 22:44 Analyst: FB

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	14.8	74.0	20	18.6	92.8	22.5	34	35	139
Ethylbenzene	ND	20	11.9	59.3	20	15.8	79.2	28.7	35	31	137
Toluene	ND	20	13.5	67.7	20	17	85.2	22.9	28	31	137

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B - 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
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

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

Shell Oil Products US INC#97420034

Analysis: Purgeable Aromatics
Method: SW8021B

WorkOrder: 02110127
Lab Batch ID: R71130

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

Sample Spiked: 02110127-01
RunID: HP_R_021106B-1388385 Units: ug/Kg
Analysis Date: 11/06/2002 22:44 Analyst: FB

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
m,p-Xylene	ND	40	22.9	57.2	40	31.1	77.7	30.4	38	19	144
o-Xylene	ND	20	11.8	59.2	20	15.9	79.3	29.0	57	25	139
Xylenes, Total	ND	60	34.7	57.8	60	47	78.3	30.1	38	19	144

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B - 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
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

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

Shell Oil Products US

INC#97420034

Analysis: Gasoline Range Organics
Method: NWTPH-Gx

WorkOrder: 02110127
Lab Batch ID: R71131

Method Blank

RunID: HP_R_021106C-1388394 Units: mg/Kg
Analysis Date: 11/07/2002 0:34 Analyst: FB

Samples in Analytical Batch:

Lab Sample ID Client Sample ID
02110127-01A Waste Characterization

Analyte	Result	Rep Limit
Gasoline Range Organics	ND	5.0
Surr: 1,4-Difluorobenzene	101.3	72-153
Surr: 4-Bromofluorobenzene	79.0	51-149

Laboratory Control Sample (LCS)

RunID: HP_R_021106C-1388391 Units: mg/Kg
Analysis Date: 11/06/2002 22:17 Analyst: FB

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Gasoline Range Organics	1	0.726	73	53	137

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

Sample Spiked: 02110127-01
RunID: HP_R_021106C-1388392 Units: mg/Kg
Analysis Date: 11/06/2002 23:39 Analyst: FB

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	0.9	0.469	52.1	0.9	0.384	42.7	19.8	50	36	163

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B - 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
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

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

Shell Oil Products US

INC#97420034

Analysis: Mercury, Total
Method: SW7471A

WorkOrder: 02110127
Lab Batch ID: 23620

Method Blank

Samples in Analytical Batch:

RunID: HGLB_021108A-1390990 Units: mg/kg
Analysis Date: 11/08/2002 10:44 Analyst: R_T
Preparation Date: 11/08/2002 8:30 Prep By: R_T Method SW7471A

Lab Sample ID 02110127-01B
Client Sample ID Waste Characterization

Analyte	Result	Rep Limit
Mercury	ND	0.033

Laboratory Control Sample (LCS)

RunID: HGLB_021108A-1390991 Units: mg/L
Analysis Date: 11/08/2002 10:47 Analyst: R_T
Preparation Date: 11/08/2002 8:30 Prep By: R_T Method SW7471A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Mercury	0.002	0.002078	104	80	120

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

Sample Spiked: 02110135-01
RunID: HGLB_021108A-1390993 Units: mg/kg
Analysis Date: 11/08/2002 10:52 Analyst: R_T
Preparation Date: 11/08/2002 8:30 Prep By: R_T Method SW7471A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Mercury	ND	0.33	0.3517	106.6	0.33	0.3405	103.2	3.226	20	75	125

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B - 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
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

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

Shell Oil Products US

INC#97420034

Analysis: Metals by Method 6010B, Total
Method: SW6010B

WorkOrder: 02110127
Lab Batch ID: 23631

Method Blank

Samples in Analytical Batch:

RunID: TJA_021111E-1392164 Units: mg/Kg
Analysis Date: 11/11/2002 22:06 Analyst: JS
Preparation Date: 11/08/2002 15:00 Prep By: MME Method SW3050B

Lab Sample ID 02110127-01B
Client Sample ID Waste Characterization

Analyte	Result	Rep Limit
Barium	ND	0.5
Cadmium	ND	0.5
Chromium	ND	1
Silver	ND	1

Laboratory Control Sample (LCS)

RunID: TJA_021111E-1392167 Units: mg/L
Analysis Date: 11/11/2002 22:11 Analyst: JS
Preparation Date: 11/08/2002 15:00 Prep By: MME Method SW3050B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Barium	1	0.9746	97	80	120
Cadmium	1	0.9722	97	80	120
Chromium	1	0.9858	99	80	120
Silver	1	1.021	102	80	120

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

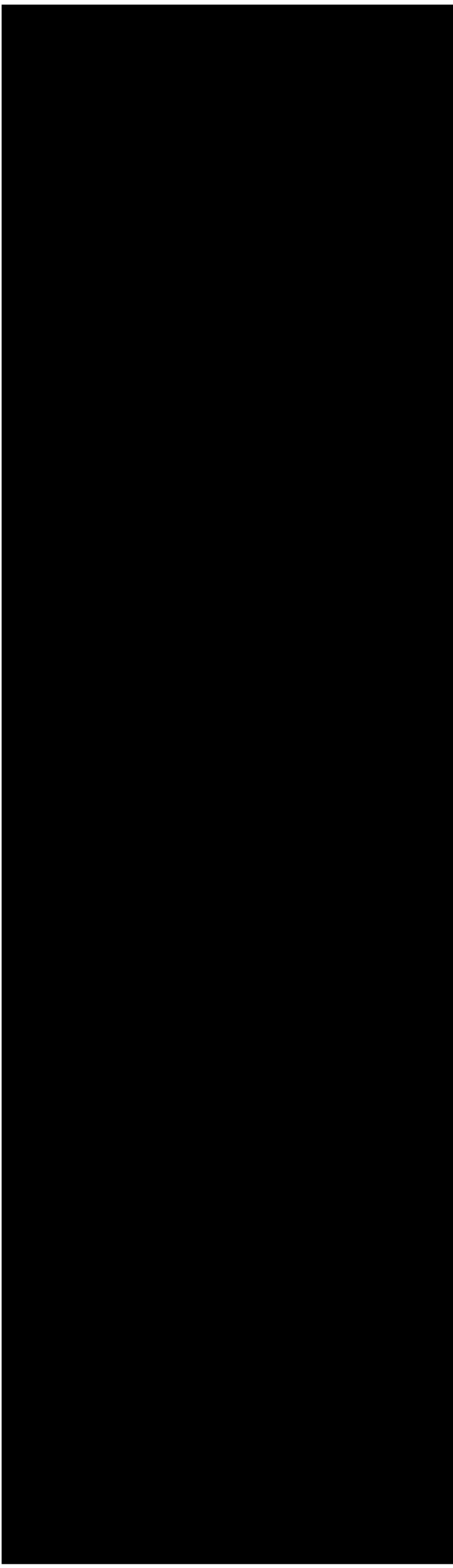
Sample Spiked: 02110164-01
RunID: TJA_021111E-1392171 Units: mg/Kg
Analysis Date: 11/11/2002 22:22 Analyst: JS
Preparation Date: 11/08/2002 15:00 Prep By: MME Method SW3050B

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Barium	108.1	100	214.4	106.3	100	214.1	106.1	0.2589	20	75	125
Cadmium	ND	100	93.29	93.29	100	92.94	92.94	0.3694	20	75	125
Chromium	20.34	100	117.1	96.72	100	118.3	97.95	1.272	20	75	125
Silver	ND	100	96.45	96.45	100	96.36	96.36	0.08921	20	75	125

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B - 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
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

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

Shell Oil Products US

INC#97420034

Analysis: Metals by Method 6010B, Total
Method: SW6010B

WorkOrder: 02110127
Lab Batch ID: 23631-T

Method Blank

RunID: TJAT_021111C-1392096 Units: mg/Kg
Analysis Date: 11/11/2002 21:22 Analyst: NS
Preparation Date: 11/08/2002 15:00 Prep By: MME Method SW3050B

Samples in Analytical Batch:

Lab Sample ID: 02110127-01B
Client Sample ID: Waste Characterization

Analyte	Result	Rep Limit
Lead	ND	0.5
Selenium	ND	0.5

Laboratory Control Sample (LCS)

RunID: TJAT_021111C-1392098 Units: mg/L
Analysis Date: 11/11/2002 21:28 Analyst: NS
Preparation Date: 11/08/2002 15:00 Prep By: MME Method SW3050B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Lead	1	0.8942	89	80	120
Selenium	1	0.8673	87	80	120

Post Digestion Spike (PDS) / Post Digestion Spike Duplicate (PDSD)

Sample Spiked: 02110164-01
RunID: TJAT_021111C-1392102 Units: mg/Kg
Analysis Date: 11/11/2002 21:42 Analyst: NS
Preparation Date: 11/08/2002 15:00 Prep By: Method

Analyte	Sample Result	PDS Spike Added	PDS Result	PDS % Recovery	PDSD Spike Added	PDSD Result	PDSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Lead	7.2	1000	1007	99.98	1000	994.2	98.70	1.287	20	75	125
Selenium	ND	1000	1005	100.5	1000	994.6	99.46	1.046	20	75	125

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

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

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

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

Shell Oil Products US

INC#97420034

Analysis: Metals by Method 6010B, Total
Method: SW6010B

WorkOrder: 02110127
Lab Batch ID: 23631B-T

Method Blank

Samples in Analytical Batch:

RunID: TJAT_021115A-1396913 Units: mg/Kg
Analysis Date: 11/15/2002 14:02 Analyst: NS
Preparation Date: 11/08/2002 15:00 Prep By: MME Method SW3050B

Lab Sample ID 02110127-01B
Client Sample ID Waste Characterization

Analyte	Result	Rep Limit
Arsenic	ND	0.5

Laboratory Control Sample (LCS)

RunID: TJAT_021115A-1396914 Units: mg/Kg
Analysis Date: 11/15/2002 14:08 Analyst: NS
Preparation Date: 11/08/2002 15:00 Prep By: MME Method SW3050B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Arsenic	100	98.83	99	80	120

Post Digestion Spike (PDS) / Post Digestion Spike Duplicate (PDSD)

Sample Spiked: 02110164-01
RunID: TJAT_021115A-1396916 Units: mg/Kg
Analysis Date: 11/15/2002 14:20 Analyst: NS
Preparation Date: 11/08/2002 15:00 Prep By: Method

Analyte	Sample Result	PDS Spike Added	PDS Result	PDS % Recovery	PDSD Spike Added	PDSD Result	PDSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Arsenic	10.5	1000	1019	100.8	1000	1051	104.1	3.146	20	75	125

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B - 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
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

11/18/2002 7:43:06 AM

*Sample Receipt Checklist
And
Chain of Custody*



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

Sample Receipt Checklist

Workorder:	02110127	Received By:	RE
Date and Time Received:	11/6/2002 9:00:00 AM	Carrier name:	FedEx
Temperature:	4	Chilled by:	Water Ice

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

SPL Representative:

Contact Date & Time:

Client Name Contacted:

Non Conformance Issues:

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ATTACHMENT D

GROUNDWATER MONITORING AND SAMPLING PROCEDURES

GROUNDWATER MONITORING AND SAMPLING

Before the sampling event, KHM measured depth to water in each groundwater monitoring well at the facility with an electronic water level meter. This information was recorded on waterproof field sheets. Groundwater elevations (GWE) were measured to an accuracy of 0.01 feet. Wells were sampled after purging three casing volumes of water from the well (or until dry). After the well had recharged to approximately 80% of static level, samples were withdrawn using a disposable polyethylene bailer and placed in the appropriate laboratory-provided container. Samples were labeled, placed into ice filled coolers, logged onto chain-of-custody forms and transported to the laboratory.

ATTACHMENT E

GROUNDWATER SAMPLING FIELD SHEETS

GROUNDWATER SAMPLING INFORMATION SHEET

Project No: A81-201 Auburn Location: Auburn - Auburn way Page 1 of 1
Client: Shell Field Technician: P.P Date: 01/22/03

[illegible]

Comments:

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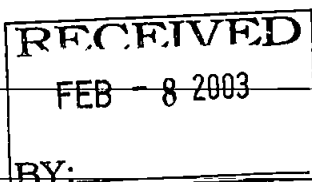
Measuring Device: _____

ATTACHMENT F

**LABORATORY ANALYTICAL REPORT AND
CHAIN-OF-CUSTODY DOCUMENTATION - GROUNDWATER**



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



Shell Oil Products US

Certificate of Analysis Number:
03010933

Report To: KHM Environmental Management, Inc. Tena Seeds 17720 NE 65th Street Suite 201 Redmond WA 98052- ph: (425) 558-0134 fax:	Project Name: INC#97420034 Site: 201 Auburn Way S. Site Address: 201 Auburn Way S. Auburn WA PO Number: SAP# 120849 State: Washington State Cert. No.: C156 Date Reported: 1/31/2003
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This Report Contains A Total Of 13 Pages

Excluding This Page

And

Chain Of Custody

1/31/2003

Date



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

Case Narrative for:
Shell Oil Products US

Certificate of Analysis Number:
03010933

Report To: KHM Environmental Management, Inc. Tena Seeds 17720 NE 65th Street Suite 201 Redmond WA 98052- ph: (425) 558-0134 fax:	Project Name: INC#97420034 Site: 201 Auburn Way S. Site Address: 201 Auburn Way S. Auburn WA PO Number: SAP# 120849 State: Washington State Cert. No.: C156 Date Reported: 1/31/2003
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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.

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.

Bernadette Fini
Customer Service Manager

1/31/2003

Date



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

Shell Oil Products US

Certificate of Analysis Number:

03010933

Report To: KHM Environmental Management, Inc.

Tena Seeds

17720 NE 65th Street

Suite 201

Redmond

WA

98052-

ph: (425) 558-0134

fax: (425) 869-7494

Project Name: INC#97420034

Site: 201 Auburn Way S.

Site Address: 201 Auburn Way S.

Auburn WA

PO Number: SAP# 120849

State: Washington

State Cert. No.: C156

Date Reported: 1/31/2003

Fax To:

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-1	03010933-01	Water	1/22/2003 10:00:00 AM	1/27/2003 10:00:00 AM		<input type="checkbox"/>
MW-2	03010933-02	Water	1/22/2003 11:00:00 AM	1/27/2003 10:00:00 AM		<input type="checkbox"/>
MW-3	03010933-03	Water	1/22/2003 12:00:00 PM	1/27/2003 10:00:00 AM		<input type="checkbox"/>
Trip Blank	03010933-04	Water	1/22/2003	1/27/2003 10:00:00 AM		<input type="checkbox"/>

1/31/2003

Bernadette Fini

Date

Customer Service Manager

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer



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

Client Sample ID MW-1 Collected: 01/22/2003 10:00 SPL Sample ID: 03010933-01

Site: 201 Auburn Way S.

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
DIESEL RANGE ORGANICS			MCL	NWTPH-DX	Units: mg/L		
Diesel Range Organics	ND	0.25	1		01/29/03 21:53	ER	1488329
Motor Oil	ND	0.5	1		01/29/03 21:53	ER	1488329
Surr: n-Pentacosane	48.0	% 20-131	1		01/29/03 21:53	ER	1488329

Prep Method	Prep Date	Prep Initials
SW3510C	01/28/2003 12:15	KL

GASOLINE RANGE ORGANICS			MCL	NWTPH-GX	Units: mg/L		
Gasoline Range Organics	ND	0.25	1		01/30/03 4:24	D_R	1487010
Surr: 1,4-Difluorobenzene	96.3	% 62-144	1		01/30/03 4:24	D_R	1487010
Surr: 4-Bromofluorobenzene	71.3	% 44-153	1		01/30/03 4:24	D_R	1487010

VOLATILE ORGANICS BY METHOD 8260B			MCL	SW8260B	Units: ug/L		
Benzene	ND	1	1		01/29/03 20:17	DO	1489690
Diisopropyl Ether	ND	5	1		01/29/03 20:17	DO	1489690
Ethyl tert-butyl ether	ND	5	1		01/29/03 20:17	DO	1489690
Ethylbenzene	ND	1	1		01/29/03 20:17	DO	1489690
Methyl tert-butyl ether	ND	1	1		01/29/03 20:17	DO	1489690
t-Butyl Alcohol	ND	50	1		01/29/03 20:17	DO	1489690
tert-Amyl methyl ether	ND	5	1		01/29/03 20:17	DO	1489690
Toluene	ND	1	1		01/29/03 20:17	DO	1489690
m,p-Xylene	ND	1	1		01/29/03 20:17	DO	1489690
o-Xylene	ND	1	1		01/29/03 20:17	DO	1489690
Xylenes, Total	ND	1	1		01/29/03 20:17	DO	1489690
Surr: Toluene-d8	99.3	% 70-130	1		01/29/03 20:17	DO	1489690

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL

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

1/31/2003 4:52:17 PM



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

Client Sample ID MW-2

Collected: 01/22/2003 11:00

SPL Sample ID: 03010933-02

Site: 201 Auburn Way S.

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
DIESEL RANGE ORGANICS			MCL	NWTPH-DX	Units: mg/L		
Diesel Range Organics	ND	0.25		1	01/29/03 22:31	ER	1488330
Motor Oil	ND	0.5		1	01/29/03 22:31	ER	1488330
Surr: n-Pentacosane	51.4	% 20-131		1	01/29/03 22:31	ER	1488330

Prep Method	Prep Date	Prep Initials
SW3510C	01/28/2003 12:15	KL

GASOLINE RANGE ORGANICS			MCL	NWTPH-GX	Units: mg/L		
Gasoline Range Organics	ND	0.25		1	01/30/03 4:51	D_R	1487011
Surr: 1,4-Difluorobenzene	98.7	% 62-144		1	01/30/03 4:51	D_R	1487011
Surr: 4-Bromofluorobenzene	76.7	% 44-153		1	01/30/03 4:51	D_R	1487011

VOLATILE ORGANICS BY METHOD 8260B			MCL	SW8260B	Units: ug/L		
Benzene	ND	1		1	01/29/03 20:46	DO	1489691
Diisopropyl Ether	ND	5		1	01/29/03 20:46	DO	1489691
Ethyl tert-butyl ether	ND	5		1	01/29/03 20:46	DO	1489691
Ethylbenzene	ND	1		1	01/29/03 20:46	DO	1489691
Methyl tert-butyl ether	ND	1		1	01/29/03 20:46	DO	1489691
t-Butyl Alcohol	ND	50		1	01/29/03 20:46	DO	1489691
tert-Amyl methyl ether	ND	5		1	01/29/03 20:46	DO	1489691
Toluene	ND	1		1	01/29/03 20:46	DO	1489691
m,p-Xylene	ND	1		1	01/29/03 20:46	DO	1489691
o-Xylene	ND	1		1	01/29/03 20:46	DO	1489691
Xylenes,Total	ND	1		1	01/29/03 20:46	DO	1489691
Surr: Toluene-d8	98.4	% 70-130		1	01/29/03 20:46	DO	1489691

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL

>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: 01/22/2003 12:00

SPL Sample ID: 03010933-03

Site: 201 Auburn Way S.

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
DIESEL RANGE ORGANICS			MCL	NWTPH-DX	Units: mg/L		
Diesel Range Organics	ND	0.25		1	01/29/03 23:09	ER	1488331
Motor Oil	ND	0.5		1	01/29/03 23:09	ER	1488331
Surr: n-Pentacosane	50.0 %	20-131		1	01/29/03 23:09	ER	1488331

Prep Method	Prep Date	Prep Initials
SW3510C	01/28/2003 12:15	KL

GASOLINE RANGE ORGANICS			MCL	NWTPH-GX	Units: mg/L		
Gasoline Range Organics	ND	0.25		1	01/30/03 5:18	D_R	1487012
Surr: 1,4-Difluorobenzene	117 %	62-144		1	01/30/03 5:18	D_R	1487012
Surr: 4-Bromofluorobenzene	69.7 %	44-153		1	01/30/03 5:18	D_R	1487012

VOLATILE ORGANICS BY METHOD 8260B			MCL	SW8260B	Units: ug/L		
Benzene	ND	1		1	01/29/03 21:14	DO	1489692
Diisopropyl Ether	ND	5		1	01/29/03 21:14	DO	1489692
Ethyl tert-butyl ether	ND	5		1	01/29/03 21:14	DO	1489692
Ethylbenzene	ND	1		1	01/29/03 21:14	DO	1489692
Methyl tert-butyl ether	ND	1		1	01/29/03 21:14	DO	1489692
t-Butyl Alcohol	ND	50		1	01/29/03 21:14	DO	1489692
tert-Amyl methyl ether	ND	5		1	01/29/03 21:14	DO	1489692
Toluene	ND	1		1	01/29/03 21:14	DO	1489692
m,p-Xylene	ND	1		1	01/29/03 21:14	DO	1489692
o-Xylene	ND	1		1	01/29/03 21:14	DO	1489692
Xylenes, Total	ND	1		1	01/29/03 21:14	DO	1489692
Surr: Toluene-d8	102 %	70-130		1	01/29/03 21:14	DO	1489692

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL

>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 Trip Blank Collected: 01/22/2003 0:00 SPL Sample ID: 03010933-04

Site: 201 Auburn Way S.

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B			MCL	SW8260B	Units: ug/L		
Benzene	ND	1		1	01/29/03 18:22	DO	1489686
Diisopropyl Ether	ND	5		1	01/29/03 18:22	DO	1489686
Ethyl tert-butyl ether	ND	5		1	01/29/03 18:22	DO	1489686
Ethylbenzene	ND	1		1	01/29/03 18:22	DO	1489686
Methyl tert-butyl ether	ND	1		1	01/29/03 18:22	DO	1489686
t-Butyl Alcohol	ND	50		1	01/29/03 18:22	DO	1489686
tert-Amyl methyl ether	ND	5		1	01/29/03 18:22	DO	1489686
Toluene	ND	1		1	01/29/03 18:22	DO	1489686
m,p-Xylene	ND	1		1	01/29/03 18:22	DO	1489686
o-Xylene	ND	1		1	01/29/03 18:22	DO	1489686
Xylenes, Total	ND	1		1	01/29/03 18:22	DO	1489686
Surr: Toluene-d8	97.2	% 70-130		1	01/29/03 18:22	DO	1489686

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL

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

Quality Control Documentation

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Quality Control Report

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

Shell Oil Products US

INC#97420034

Analysis: Diesel Range Organics
Method: NWTPH-Dx

WorkOrder: 03010933
Lab Batch ID: 25192

Method Blank

RunID: HP_V_030129A-1488323 Units: mg/L
Analysis Date: 01/29/2003 18:05 Analyst: ER
Preparation Date: 01/28/2003 12:15 Prep By: KL Method SW3510C

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
03010933-01B	MW-1
03010933-02B	MW-2
03010933-03B	MW-3

Analyte	Result	Rep Limit
Diesel Range Organics	ND	0.25
Motor Oil	ND	0.50
Surr: n-Pentacosane	53.8	20-131

Laboratory Control Sample (LCS)

RunID: HP_V_030129A-1488322 Units: mg/L
Analysis Date: 01/29/2003 17:27 Analyst: ER
Preparation Date: 01/28/2003 12:15 Prep By: KL Method SW3510C

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Diesel Range Organics	2.5	1.6	64	21	175

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

Sample Spiked: 03010932-01
RunID: HP_V_030129A-1488325 Units: mg/L
Analysis Date: 01/29/2003 19:21 Analyst: ER
Preparation Date: 01/28/2003 12:15 Prep By: KL Method SW3510C

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Diesel Range Organics	ND	5	3.85	76.9	5	3.76	75.1	2.39	20	21	175

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B - 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
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

1/31/2003 4:52:24 PM



Quality Control Report

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

Shell Oil Products US

INC#97420034

Analysis: Gasoline Range Organics
Method: NWTPH-Gx

WorkOrder: 03010933
Lab Batch ID: R76469

Method Blank

RunID: HP_J_030129B-1486991 Units: mg/L
Analysis Date: 01/29/2003 16:47 Analyst: D_R

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
03010933-01A	MW-1
03010933-02A	MW-2
03010933-03A	MW-3

Analyte	Result	Rep Limit
Gasoline Range Organics	ND	0.25
Surr: 1,4-Difluorobenzene	98.7	62-144
Surr: 4-Bromofluorobenzene	92.7	44-153

Laboratory Control Sample (LCS)

RunID: HP_J_030129B-1486990 Units: mg/L
Analysis Date: 01/29/2003 16:20 Analyst: D_R

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Gasoline Range Organics	1	1.03	103	64	131

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

Sample Spiked: 03010802-06
RunID: HP_J_030129B-1486992 Units: mg/L
Analysis Date: 01/29/2003 18:08 Analyst: D_R

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	0.9	1.53	157 *	0.9	1.57	162 *	2.82	36	36	140

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B - 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
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

1/31/2003 4:52:25 PM



Quality Control Report

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

Shell Oil Products US

INC#97420034

Analysis: Volatile Organics by Method 8260B
Method: SW8260B

WorkOrder: 03010933
Lab Batch ID: R76605

Method Blank

RunID: MDSVOA2_030129B-14896 Units: ug/L
Analysis Date: 01/29/2003 15:52 Analyst: DO

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
03010933-01A	MW-1
03010933-02A	MW-2
03010933-03A	MW-3
03010933-04A	Trip Blank

Analyte	Result	Rep Limit
Benzene	ND	1.0
Diisopropyl Ether	ND	5.0
Ethyl tert-butyl ether	ND	5.0
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
t-Butyl Alcohol	ND	50
tert-Amyl methyl ether	ND	5.0
Toluene	ND	1.0
m,p-Xylene	ND	1.0
o-Xylene	ND	1.0
Xylenes, Total	ND	1.0
Surr: Toluene-d8	101.1	70-130

Laboratory Control Sample (LCS)

RunID: MDSVOA2_030129B-14896 Units: ug/L
Analysis Date: 01/29/2003 12:27 Analyst: DO

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	20	19.8	99	70	130
Diisopropyl Ether	20	20.4	102	70	130
Ethyl tert-butyl ether	20	20.7	103	70	130
Ethylbenzene	20	18.9	94	70	130
Methyl tert-butyl ether	20	20.6	103	70	130
t-Butyl Alcohol	100	102	102	60	140
tert-Amyl methyl ether	20	20	100	70	130
Toluene	20	20.2	101	70	130
m,p-Xylene	40	38.7	97	70	130
o-Xylene	20	19.2	96	70	130
Xylenes, Total	60	57.9	96	70	130

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

Sample Spiked: 03010933-02
RunID: MDSVOA2_030129B-14896 Units: ug/L
Analysis Date: 01/29/2003 22:12 Analyst: DO

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

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

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.



Quality Control Report

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

Shell Oil Products US

INC#97420034

Analysis: Volatile Organics by Method 8260B
Method: SW8260B

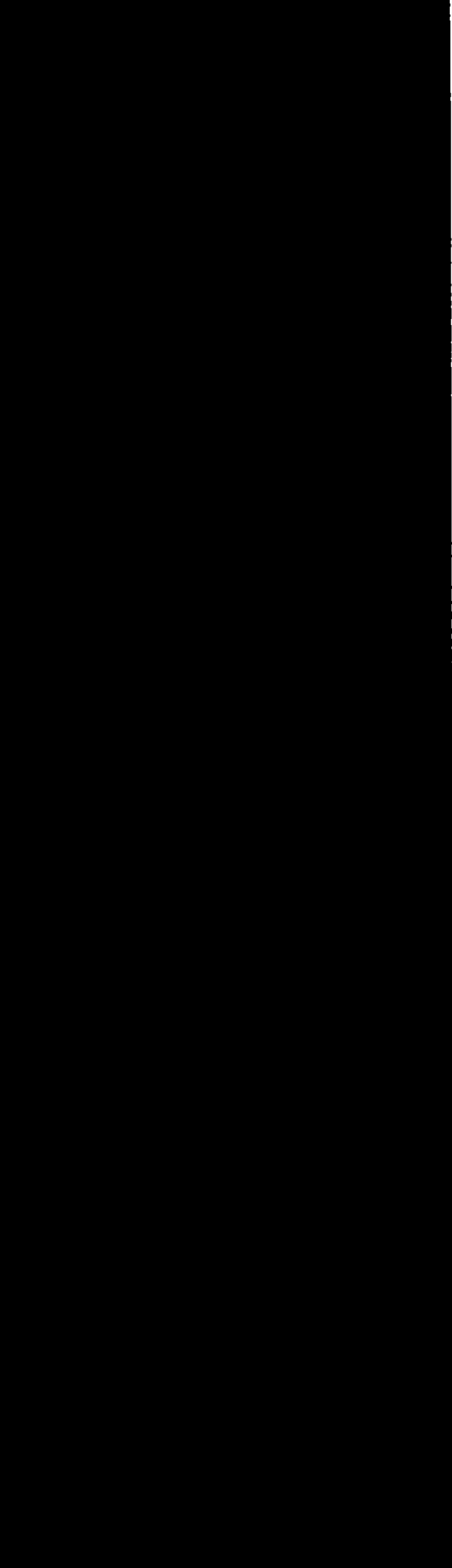
WorkOrder: 03010933
Lab Batch ID: R76605

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	19.9	99.6	20	19.9	99.5	0.0502	20	70	130
Diisopropyl Ether	ND	20	20.1	100	20	20.1	101	0.299	20	70	130
Ethyl tert-butyl ether	ND	20	19.6	98.1	20	19.4	96.8	1.39	20	70	130
Ethylbenzene	ND	20	19.8	99.2	20	19.1	95.4	4.01	20	70	130
Methyl tert-butyl ether	ND	20	19.5	97.5	20	19.6	98.0	0.512	20	70	130
t-Butyl Alcohol	ND	100	112	112	100	121	121	8.07	20	60	140
tert-Amyl methyl ether	ND	20	19	95.1	20	18.5	92.7	2.56	20	70	130
Toluene	ND	20	21.1	103	20	21	102	0.536	20	70	130
m,p-Xylene	ND	40	40.7	102	40	39.2	98.0	3.63	20	70	130
o-Xylene	ND	20	20.4	102	20	19	95.2	6.75	20	70	130
Xylenes, Total	ND	60	61.1	102	60	58.2	97.0	4.86	20	70	130

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B - 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
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

1/31/2003 4:52:26 PM



*Sample Receipt Checklist
And
Chain of Custody*



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

Sample Receipt Checklist

Workorder:	03010933	Received By:	NB
Date and Time Received:	1/27/2003 10:00:00 AM	Carrier name:	FedEx
Temperature:	4	Chilled by:	Water Ice

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

SPL Representative:

Contact Date & Time:

Client Name Contacted:

Non Conformance Issues:

Client Instructions:

800-969-6775

CRMT-HOUSTON

1	2	0	8	4	9
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PAGE: 1 of 1

1005



ENVIRONMENTAL MANAGEMENT, INC.

RECEIVED

APR 30 2003

DEPT OF ECOLOGY

Date: April 28, 2003

Projects: Various

To: Mr. John Weitfeld
Washington State Department of Ecology
Northwest Regional Office
Toxics Cleanup Program, UST Division
3190 160th Avenue SE
Bellevue, Washington 98008-5452

We have enclosed:

Copies Description

Copies	Description
	GRASP Site Assessment Reports for the following sites:
1	1935 N. Norhtgate Way, Seattle, Washington — (SAP No. 120819)
1	1505 NE 205 th Street, Shoreline, Washington — (SAP No. 120865)
1	4333 Tolt Avenue (SR 203), Carnation, Washington — (SAP No. 121719)
1	3432 132 nd Street SE, Bothell, Washington — (SAP No. 128023)
1	201 Auburn Way South, Auburn, Washington — (SAP No. 120849)
1	14210 SE Petrovitsky Road, Renton, Washington — (SAP No. 120649)
1	17941 108 th Avenue SE, Renton, Washington — (SAP No. 120781)

For your:

- ☒ Use
- ☐ Approval
- ☐ Review
- ☐ Information

Comments: _____

Ward Crell