



King County

Solid Waste Division

Department of Natural Resources and Parks

King Street Center
201 South Jackson Street, Suite 701
Seattle, WA 98104-3855

206-296-6542
711 TTY Relay

February 8, 2007

Jing Liu
State of Washington Department of Ecology
Toxics Cleanup Program
Northwest Regional Office
3190 - 160th Avenue SE
Bellevue, WA 98008-5452

RECEIVED

FEB 12 2007

DEPT OF ECOLOGY

Dear Ms. Liu:

A letter prepared by King County's environmental consultant, CDM, is enclosed summarizing groundwater monitoring performed in January 2007 at the Ellisport Creek Greenspace site. The letter supplements information contained in CDM's December 21, 2006 report titled *Supplemental Phase II Environmental Site Assessment, Ellisport Creek Greenspace Site, Vashon Island, Washington*. Groundwater monitoring is being performed to document impacts from a Bunker C oil release at the site. The January 2007 groundwater monitoring round was performed to further evaluate the presence of dissolved hydrocarbons in groundwater at the site.

None of the hydrocarbon constituents analyzed exceeded their respective MTCA Method A cleanup levels in the January 2007 samples. King County believes sufficient data has been collected to demonstrate that the groundwater pathway is not a threat to the environment. We are currently completing a work plan for a site specific Terrestrial Ecological Evaluation (TEE) that will develop soil cleanup levels protective of plants and animals and anticipate transmitting the draft TEE work plan to Ecology for your review by the end of February 2007.

Thank you very much for your attention to this project. Please contact me at 206-296-8476, if you should have any questions.

Sincerely,

Lucy Auster
Senior Planner

LA:mw
s\2007\EllisportGW

Enclosure



11811 N.E. 1st Street, Suite 201
Bellevue, Washington 98005
tel: 425 453-8383
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FEB 7 - 2007
SOLID WASTE DIVISION

January 31, 2007

Mr. James Neely
King County Solid Waste Division
King Street Center
201 South Jackson Street, M.S. KSC-NR-701
Seattle, Washington 98104-3855

Subject: Groundwater Monitoring Summary
Ellisport Creek Greenspace Project Site
Vashon Island, Washington
Work Order No. 20, Contract No. E23023E

Dear Mr. Neely:

This letter summarizes groundwater monitoring conducted in January 2007 by Camp Dresser & McKee Inc. (CDM) on behalf of King County (the County) at the Ellisport Creek Greenspace Project site (the site) located on Vashon Island, Washington. CDM's services were performed in accordance with our April 25, 2006 proposal, Work Order No. 20, Contract No. E23023E. In addition, the May 23, 2006 Sampling and Quality Assurance Plan (SQAP) prepared by CDM was used to direct the sampling effort.

SITE DESCRIPTION AND BACKGROUND

The Ellisport Greenspace Project Site (the site) consists of four privately owned contiguous parcels totaling 8.66 acres of which 5.65 acres are tide land at the northwest head of Tramp Harbor on the east coast of Vashon Island. The remaining 3.01 acres are mostly wetland bisected by Ellisport Creek. **Figure 1** presents a vicinity map. A paved road, Chautauqua Beach Road SW, crosses the lower end of the upland property just above the beach. Ellisport Creek currently flows under Chautauqua Beach Road through a pair of culverts approximately 3 feet in diameter.

Four shallow drive-point wells were installed as part of a July 2006 supplemental site assessment. The wells were placed around and within the estimated concentrated Bunker C area identified during previous environmental assessment work. The groundwater monitoring wells were installed in locations inferred to be hydraulically upgradient (MW-1) and downgradient (MW-3 and MW-4) from the concentrated Bunker C area. MW2 was installed with the concentrated Bunker C area. Well locations are shown on **Figure 2**. During the July 2006 sampling event, Bunker C-range hydrocarbons were detected in two water samples (from wells MW-2 and MW-3) at concentrations that exceeded the Model Toxics



Mr. James Neely
January 31, 2007
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Control Act (MTCA) Method A cleanup level. Concentrations of six of the polycyclic aromatic hydrocarbon (PAH) compounds detected in the sample from MW-3 exceeded their individual MTCA Method A and/or B cleanup levels and the calculated carcinogenic PAH (cPAH) Toxic Equivalency (TEQ) for the cPAHs exceeded the MTCA Method A cleanup level. The water sample from the downgradient well (MW-4) contained one PAH (chrysene) exceeding the MTCA Method B cleanup level, but the calculated cPAH TEQ did not exceed the MTCA Method A cleanup level. The purpose of the January 2007 sampling event was to provide additional monitoring data approximately 6 months from the initial sampling event.

WATER LEVEL MONITORING

Depth-to-water measurements for the four wells on January 26, 2007 are shown on **Table 1**. The well casings were not surveyed; hence, no groundwater flow direction maps were developed.

GROUNDWATER MONITORING

Groundwater samples were collected from each drive point well using a peristaltic pump utilizing clean polyethylene tubing. Water was purged at a low rate (less than 1 liter per minute) with parameter measurements of temperature, specific conductance, and pH recorded periodically. The water clarity, sheen, or noticeable odor was noted on a sample collection form. Water purged from all four wells was clear with no noticeable hydrocarbon-like odor. A slight sulfur-like odor was noted in water purged from MW-3. The water samples were transferred directly into sample containers (500 and 1,000 mL pre-cleaned amber glass) from the polyethylene tubing. The sample containers were immediately labeled, placed in a cooler, and chilled with ice. The water samples were analyzed by OnSite Analytical for diesel and lube oil-range hydrocarbons by Northwest Method NWTPH-Dx and PAHs by EPA Method 8270C/SIM. A quality control field duplicate water sample was collected from MW-3. The duplicate was identified as sample number EC-MW-5-01/07 and was analyzed for the same parameters as the water sample from MW-3. Five PAH compounds were detected in the duplicate; the percent differences were all less than 12 percent, indicating good correlation between the sample and its duplicate.

Analytical results for the groundwater samples are summarized in **Table 2**. The laboratory report is attached. No diesel- or oil-range total petroleum hydrocarbons (TPH) were detected above the laboratory's reporting limits in samples from the four wells. Because the samples were non-detect for diesel- and oil-range TPH no quantitation for Bunker C-range TPH was performed. No PAHs were detected in MW-1 or MW-4. Only acenaphthene at a concentration of 0.1 µg/L was detected in MW-2. Five PAH compounds were detected in the



Mr. James Neely
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sample from MW-3 at concentrations ranging from 0.0098 to 0.26 $\mu\text{g}/\text{L}$. None of the detected PAH compounds at either MW-2 or MW-3 exceed MTCA Method A cleanup levels.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Lance E. Peterson'.

Lance E. Peterson, LHG
Senior Hydrogeologist
Camp Dresser & McKee Inc.

Attachments

CDM

Tables

Table 1**Groundwater Level Data**

King County/Ellisport Creek Greenspace Property Assessment
 Vashon Island, Washington

Monitoring Well I.D.	Date Measured	Time (hours)	Well Depth (ft bgs)	Casing Stickup ^a (feet)	Depth to Groundwater (ft below TOC)	Approx. Depth to Groundwater (ft bgs)
MW-1	07/27/06	1600	3.5	3	3.50	0.5
	08/17/06	1345			3.44	0.4
	01/04/07	1420			3.20	0.2
MW-2	07/27/06	1630	8	2.3	8.30	6.0
	08/17/06	1400			3.92	1.6
	01/04/07	1315			3.85	1.6
MW-3	07/27/06	1740	10	2	6.26	4.1
	08/17/06	1430			6.17	4.0
	01/04/07	1015			5.88	3.7
MW-4	07/27/06	1530	4	2	2.20	0.2
	08/17/06	1355			2.00	0.0
	01/04/07	1655			1.91	-0.1

Notes:

- a) Casing stickup is length of well pipe from top of casing to the ground surface.
 ft bgs - Feet below ground surface.
 TOC - top of 1¼-inch-diameter galvanized steel well casing.

Table 2

Analytical Laboratory Results for Groundwater

King County/Ellisport Creek Greenspace Property Assessment
Vashon Island, Washington

Analyte	Regulatory Criteria		Sample Location, Lab I.D., and Date Sampled						
	Method A Cleanup Level ^a	Method B Cleanup Level ^b	MW-1		MW-2		MW-3		
			EC-MW-01-7/06 07/27/06	EC-MW-01-01/07 01/04/07	EC-MW-02-7/06 07/27/06	EC-MW-02-01/07 01/04/07	EC-MW-03-7/06 07/27/06	EC-MW-03-8/06 ^c 08/17/06	EC-MW-05-8/06 ^d 08/17/06
NWTPH-Dx (µg/L)									
Oil as Bunker C	500	NL/NL	<400	--	1,200	--	4,600	<500	<500
Diesel	500	NL/NL	--	<250	--	<250	--	--	--
Lube Oil	500	NL/NL	--	<410	--	<410	--	--	--
Polycyclic Aromatic Hydrocarbons (PAHs)									
EPA Test Method 8270C/SIM (µg/L)									
Napthalene	160	NL/160	<0.095	<0.095	0.13	<0.096	1.8	0.20	0.24
2-Methylnaphthalene	NL	320/NL	<0.095	<0.095	<0.097	<0.096	7.3	0.65	0.80
1-Methylnaphthalene	NL	2.4/NL	<0.095	<0.095	<0.097	<0.096	5.1	0.56	0.69
Acenaphthylene	NL	NL/NL	<0.095	<0.095	<0.097	<0.096	<0.095	<0.095	<0.095
Acenaphthene	NL	NL/960	<0.095	<0.095	0.11	0.10	0.63	<0.095	<0.095
Fluorene	NL	NL/640	<0.095	<0.095	<0.097	<0.096	0.87	<0.095	<0.095
Phenanthrene	NL	NL/NL	<0.095	<0.095	<0.097	<0.096	4.4	0.29	0.39
Anthracene	NL	NL/4,800	<0.095	<0.095	<0.097	<0.096	0.81	<0.095	<0.095
Fluoranthene	NL	NL/640	<0.095	<0.095	<0.097	<0.096	0.42	<0.095	<0.095
Pyrene	NL	NL/480	<0.095	<0.095	<0.097	<0.096	3.5	0.10	0.14
Benzo[a]anthracene*	NL	0.012/NL	<0.0095	<0.0095	0.010	<0.0096	0.68	0.015	0.024
Chrysene*	NL	0.012/NL	<0.0095	<0.0095	<0.0097	<0.0096	0.93	0.012	0.025
Benzo(b)fluoranthene*	NL	0.012/NL	<0.0095	<0.0095	<0.0097	<0.0096	0.21	<0.0095	<0.0095
Benzo(k)fluoranthene*	NL	0.012/NL	<0.0095	<0.0095	<0.0097	<0.0096	0.027	<0.0095	<0.0095
Benzo(a)pyrene*	0.1	0.012/NL	<0.0095	<0.0095	<0.0097	<0.0096	0.53	<0.0095	<0.0095
Indeno(1,2,3-c,d)pyrene*	NL	0.012/NL	<0.0095	<0.0095	<0.0097	<0.0096	0.10	<0.0095	<0.0095
Dibenz(a,h)anthracene*	NL	0.012/NL	<0.0095	<0.0095	<0.0097	<0.0096	0.056	<0.0095	<0.0095
Benzo(g,h,i)perylene	NL	NL/NL	<0.0095	<0.0095	<0.0097	<0.0096	0.37	<0.0095	<0.0095
TEQ cPAHs*	0.1		<0.0095	<0.0095	0.001	<0.0096	0.6607	0.00162	0.00265

Table 2
Analytical Laboratory Results for Groundwater
 King County/Ellisport Creek Greenspace Property Assessment
 Vashon Island, Washington

Analyte	Regulatory Criteria		MW-3		MW-4	
	Method A Cleanup Level ^a	Method B Cleanup Level ^b	EC-MW-03-01/07 01/04/07	EC-MW-05-01/07 ^d 01/04/07	EC-MW-04-7/06 07/27/06	EC-MW-04-01/07 01/04/07
	NWTPH-Dx (µg/L)					
Oil as Bunker C	500	NL/NL	--	--	<400	--
Diesel	500	NL/NL	<250	<250	--	<250
Lube Oil	500	NL/NL	<410	<410	--	<410
Polycyclic Aromatic Hydrocarbons (PAHs)						
EPA Test Method 8270C/SIM (µg/L)						
Napthalene	160	NL/160	0.12	0.11	<0.096	<0.095
2-Methylnaphthalene	NL	320/NL	0.22	0.20	<0.096	<0.095
1-Methylnaphthalene	NL	2.4/NL	0.29	0.26	<0.096	<0.095
Acenaphthylene	NL	NL/NL	<0.095	<0.096	<0.096	<0.095
Acenaphthene	NL	NL/960	<0.095	<0.096	<0.096	<0.095
Fluorene	NL	NL/640	<0.095	<0.096	<0.096	<0.095
Phenanthrene	NL	NL/NL	0.18	0.16	<0.096	<0.095
Anthracene	NL	NL/4,800	<0.095	<0.096	<0.096	<0.095
Fluoranthene	NL	NL/640	<0.095	<0.096	<0.096	<0.095
Pyrene	NL	NL/480	<0.095	<0.096	<0.096	<0.095
Benzo[a]anthracene*	NL	0.012/NL	<0.0095	0.0098	<0.096	<0.0095
Chrysene*	NL	0.012/NL	<0.0095	<0.0096	0.015	<0.0095
Benzo(b)fluoranthene*	NL	0.012/NL	<0.0095	<0.0096	0.011	<0.0095
Benzo(k)fluoranthene*	NL	0.012/NL	<0.0095	<0.0096	<0.0096	<0.0095
Benzo(a)pyrene*	0.1	0.012/NL	<0.0095	<0.0096	<0.0096	<0.0095
Indeno(1,2,3-c,d)pyrene*	NL	0.012/NL	<0.0095	<0.0096	<0.0096	<0.0095
Dibenz(a,h)anthracene*	NL	0.012/NL	<0.0095	<0.0096	<0.0096	<0.0095
Benzo(g,h,i)perylene	NL	NL/NL	<0.0095	<0.0096	0.013	<0.0095
TEQ cPAHs*	0.1		<0.0095	0.00098	0.00125	<0.0095

Notes:

*Carcinogenic polycyclic aromatic hydrocarbons (cPAHs).

Bold value indicates detection above detection limit.

Boxed value indicates value exceeds one or more cleanup criteria.

a) Washington Administrative Code Chapter 173-340, Model Toxics Control Act Cleanup Regulation, Method A suggested

groundwater cleanup level; online database available on Ecology's website at <https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>. Retrieved January 25, 2007.

b) Method B cleanup levels based on values obtained from the Washington State Department of Ecology online CLARC database. Retrieved January 25, 2007.

Risk values based on use as potable groundwater (both carcinogen and non-carcinogen values listed).

Format NL/NL = carcinogenic/non-carcinogenic value.

c) Resample of MW3.

NL - not listed.

d) Duplicate of resampled MW3.

µg/L - micrograms per liter

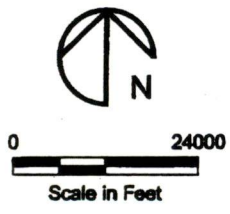
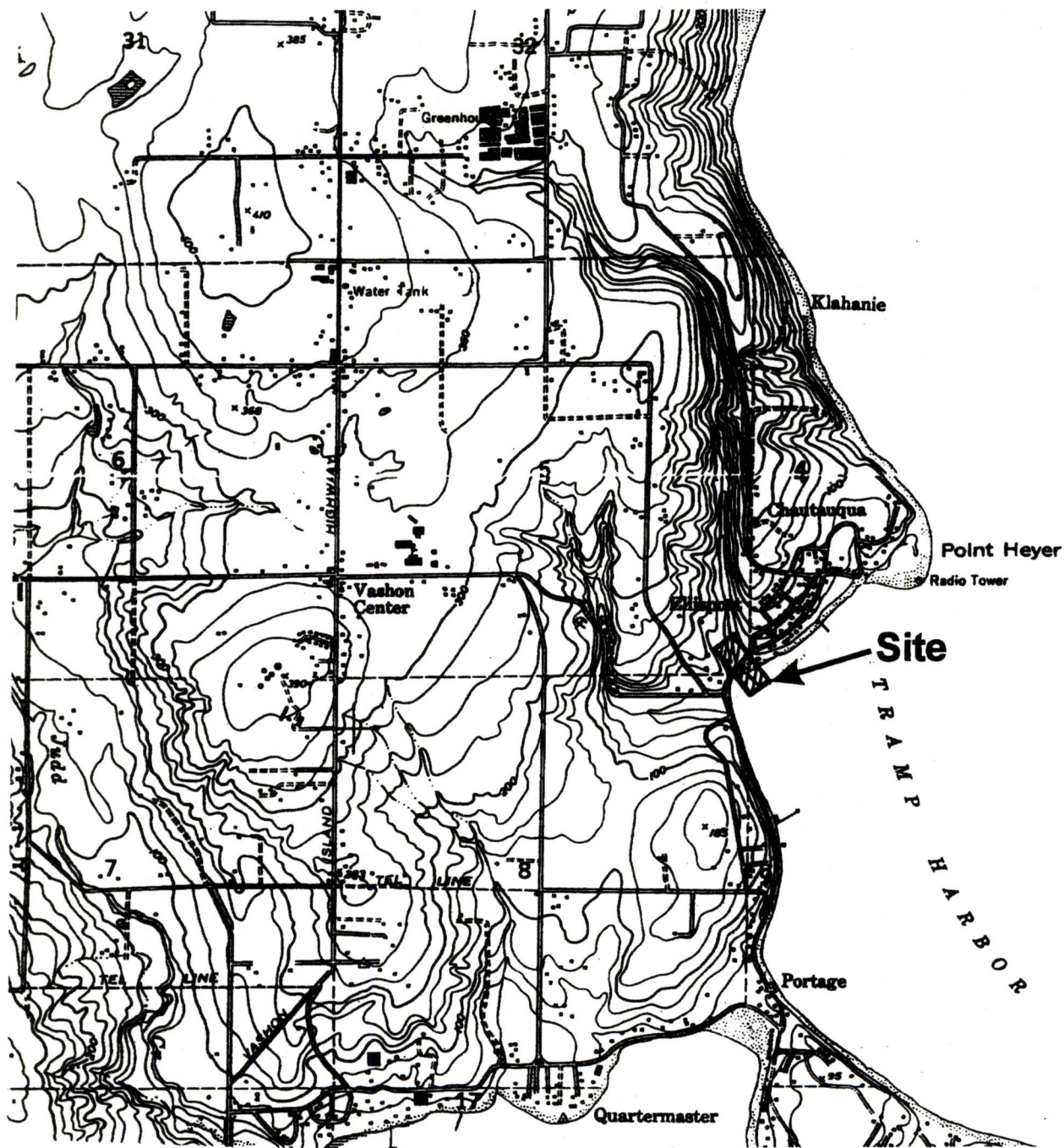
e) Duplicate of EC-MW-03-01/07.

TEQ - Toxic Equivalent value.

CDM

Figures

P:\19897\45396\ELLISPORT PHASE II\ FIGURE-1 06/10/05 09:01 pencebs XREFS: 8X11BDR



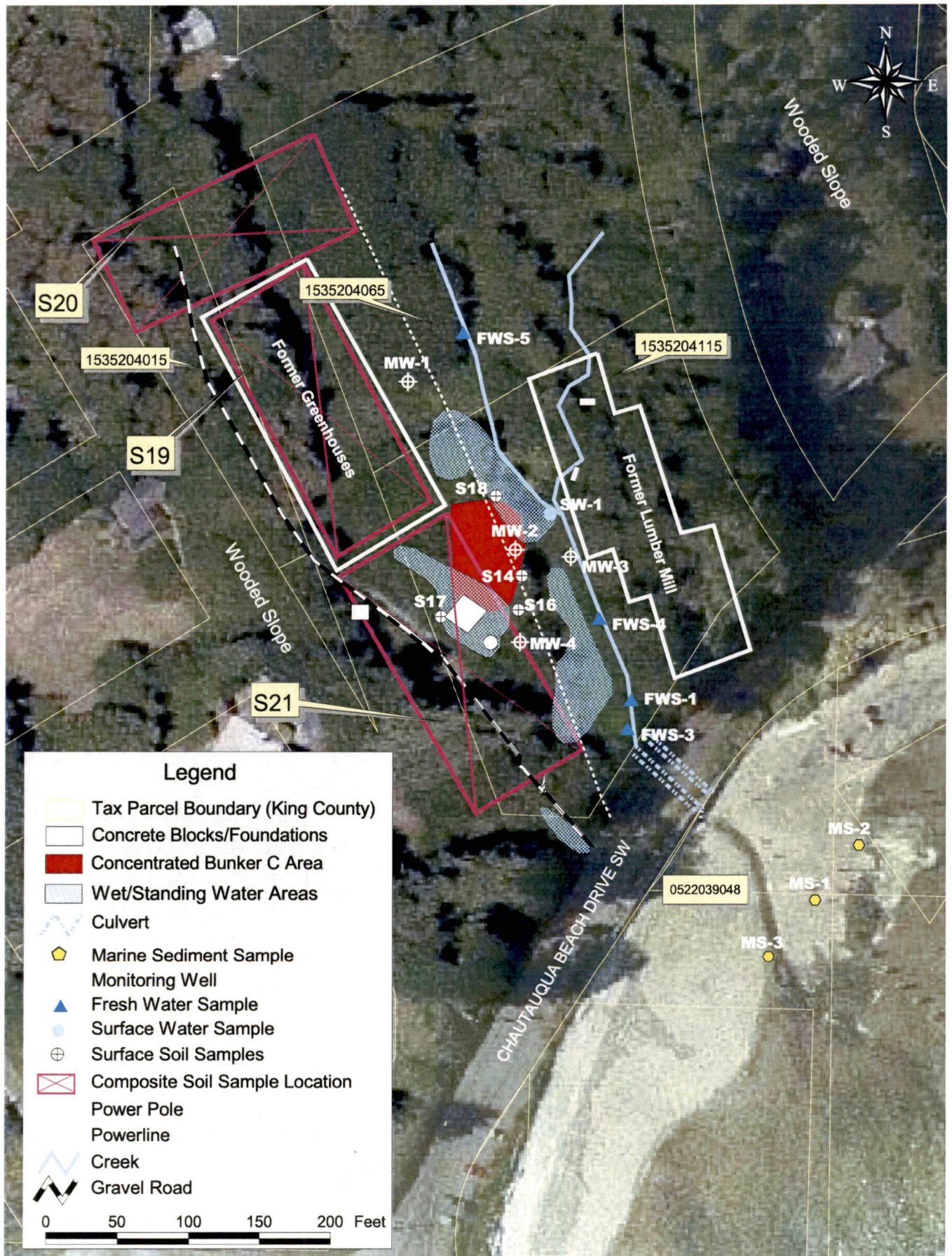
Reference: USGS Map, Vashon, Washington 1949, Revised 1958



KING COUNTY/ELLISPORT CREEK GREENSPACE
 PROPERTY ASSESSMENT
 VASHON ISLAND, WA

Figure No. 1
Vicinity Map





CDM

**Attachment
Laboratory Data**

Received

JAN 22 2007



**OnSite
Environmental Inc.**

Analytical Testing and Mobile Laboratory Services

CDM

January 17, 2007

Lance Peterson
CDM
P.O. Box 3885
Bellevue, WA 98009

Re: Analytical Data for Project 19897-32181-Task 2
Laboratory Reference No. 0701-044

Dear Lance:

Enclosed are the analytical results and associated quality control data for samples submitted on January 5, 2007.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read 'David Baumeister', with a long horizontal flourish extending to the right.

David Baumeister
Project Manager

Enclosures

Date of Report: January 17, 2007
Samples Submitted: January 5, 2007
Laboratory Reference: 0701-044
Project: 19897-32181-Task 2

Case Narrative

Samples were collected on January 4, 2007 and received by the laboratory on January 5, 2007. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: January 17, 2007
 Samples Submitted: January 5, 2007
 Laboratory Reference: 0701-044
 Project: 19897-32181-Task 2

NWTPH-Dx

Date Extracted: 1-8-07
 Date Analyzed: 1-8-07

Matrix: Water
 Units: mg/L (ppm)

Client ID:	EC-MW-01-01/07	EC-MW-02-01/07	EC-MW-05-01/07
Lab ID:	01-044-01	01-044-02	01-044-03
Diesel Range:	ND	ND	ND
PQL:	0.25	0.25	0.25
Identification:	---	---	---
Lube Oil Range:	ND	ND	ND
PQL:	0.41	0.41	0.41
Identification:	---	---	---
Surrogate Recovery o-Terphenyl:	103%	98%	98%
Flags:	Y	Y	Y

Date of Report: January 17, 2007
 Samples Submitted: January 5, 2007
 Laboratory Reference: 0701-044
 Project: 19897-32181-Task 2

NWTPH-Dx

Date Extracted: 1-8-07
 Date Analyzed: 1-8-07

Matrix: Water
 Units: mg/L (ppm)

Client ID:	EC-MW-03-01/07	EC-MW-04-01/07
Lab ID:	01-044-04	01-044-05

Diesel Range:	ND	ND
PQL:	0.25	0.25
Identification:	---	---

Lube Oil Range:	ND	ND
PQL:	0.41	0.41
Identification:	---	---

Surrogate Recovery		
o-Terphenyl:	100%	97%

Flags:	Y	Y
--------	---	---

Date of Report: January 17, 2007
Samples Submitted: January 5, 2007
Laboratory Reference: 0701-044
Project: 19897-32181-Task 2

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted: 1-8-07
Date Analyzed: 1-8-07

Matrix: Water
Units: mg/L (ppm)

Lab ID: MB0108W1

Diesel Range: **ND**
PQL: 0.25
Identification: ---

Lube Oil Range: **ND**
PQL: 0.40
Identification: ---

Surrogate Recovery
o-Terphenyl: 98%

Flags: Y

Date of Report: January 17, 2007
Samples Submitted: January 5, 2007
Laboratory Reference: 0701-044
Project: 19897-32181-Task 2

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted: 1-8-07
Date Analyzed: 1-8-07

Matrix: Water
Units: mg/L (ppm)

Lab ID: 01-049-01 01-049-01 DUP

Diesel Range: **ND** **ND**
PQL: 0.25 0.25

RPD: N/A

Surrogate Recovery
o-Terphenyl: 95% 102%

Flags: Y Y

Date of Report: January 17, 2007
 Samples Submitted: January 5, 2007
 Laboratory Reference: 0701-044
 Project: 19897-32181-Task 2

PAHs by EPA 8270C/SIM

Date Extracted: 1-9-07
 Date Analyzed: 1-10-07
 Matrix: Water
 Units: ug/L (ppb)
 Lab ID: 01-044-01
 Client ID: EC-MW-01-01/07

Compound:	Results	Flags	PQL
Naphthalene	ND		0.095
2-Methylnaphthalene	ND		0.095
1-Methylnaphthalene	ND		0.095
Acenaphthylene	ND		0.095
Acenaphthene	ND		0.095
Fluorene	ND		0.095
Phenanthrene	ND		0.095
Anthracene	ND		0.095
Fluoranthene	ND		0.095
Pyrene	ND		0.095
Benzo[a]anthracene	ND		0.0095
Chrysene	ND		0.0095
Benzo[b]fluoranthene	ND		0.0095
Benzo[k]fluoranthene	ND		0.0095
Benzo[a]pyrene	ND		0.0095
Indeno(1,2,3-c,d)pyrene	ND		0.0095
Dibenz[a,h]anthracene	ND		0.0095
Benzo[g,h,i]perylene	ND		0.0095

Surrogate :	Percent Recovery	Control Limits
Nitrobenzene-d5	56	24 - 92
2-Fluorobiphenyl	52	25 - 89
Terphenyl-d14	81	39 - 92

Date of Report: January 17, 2007
 Samples Submitted: January 5, 2007
 Laboratory Reference: 0701-044
 Project: 19897-32181-Task 2

PAHs by EPA 8270C/SIM

Date Extracted: 1-9-07
 Date Analyzed: 1-10-07
 Matrix: Water
 Units: ug/L (ppb)
 Lab ID: 01-044-02
 Client ID: **EC-MW-02-01/07**

Compound:	Results	Flags	PQL
Naphthalene	ND		0.096
2-Methylnaphthalene	ND		0.096
1-Methylnaphthalene	ND		0.096
Acenaphthylene	ND		0.096
Acenaphthene	0.10		0.096
Fluorene	ND		0.096
Phenanthrene	ND		0.096
Anthracene	ND		0.096
Fluoranthene	ND		0.096
Pyrene	ND		0.096
Benzo[a]anthracene	ND		0.0096
Chrysene	ND		0.0096
Benzo[b]fluoranthene	ND		0.0096
Benzo[k]fluoranthene	ND		0.0096
Benzo[a]pyrene	ND		0.0096
Indeno(1,2,3-c,d)pyrene	ND		0.0096
Dibenz[a,h]anthracene	ND		0.0096
Benzo[g,h,i]perylene	ND		0.0096

Surrogate :	Percent Recovery	Control Limits
Nitrobenzene-d5	65	24 - 92
2-Fluorobiphenyl	59	25 - 89
Terphenyl-d14	79	39 - 92

Date of Report: January 17, 2007
 Samples Submitted: January 5, 2007
 Laboratory Reference: 0701-044
 Project: 19897-32181-Task 2

PAHs by EPA 8270C/SIM

Date Extracted: 1-9-07
 Date Analyzed: 1-10-07
 Matrix: Water
 Units: ug/L (ppb)
 Lab ID: 01-044-03
 Client ID: EC-MW-05-01/07

Compound:	Results	Flags	PQL
Naphthalene	0.11		0.096
2-Methylnaphthalene	0.20		0.096
1-Methylnaphthalene	0.26		0.096
Acenaphthylene	ND		0.096
Acenaphthene	ND		0.096
Fluorene	ND		0.096
Phenanthrene	0.16		0.096
Anthracene	ND		0.096
Fluoranthene	ND		0.096
Pyrene	ND		0.096
Benzo[a]anthracene	0.0098		0.0096
Chrysene	ND		0.0096
Benzo[b]fluoranthene	ND		0.0096
Benzo[k]fluoranthene	ND		0.0096
Benzo[a]pyrene	ND		0.0096
Indeno(1,2,3-c,d)pyrene	ND		0.0096
Dibenz[a,h]anthracene	ND		0.0096
Benzo[g,h,i]perylene	ND		0.0096

Surrogate :	Percent Recovery	Control Limits
Nitrobenzene-d5	59	24 - 92
2-Fluorobiphenyl	55	25 - 89
Terphenyl-d14	81	39 - 92

Date of Report: January 17, 2007
 Samples Submitted: January 5, 2007
 Laboratory Reference: 0701-044
 Project: 19897-32181-Task 2

PAHs by EPA 8270C/SIM

Date Extracted: 1-9-07
 Date Analyzed: 1-10-07
 Matrix: Water
 Units: ug/L (ppb)
 Lab ID: 01-044-04
 Client ID: EC-MW-03-01/07

Compound:	Results	Flags	PQL
Naphthalene	0.12		0.095
2-Methylnaphthalene	0.22		0.095
1-Methylnaphthalene	0.29		0.095
Acenaphthylene	ND		0.095
Acenaphthene	ND		0.095
Fluorene	ND		0.095
Phenanthrene	0.18		0.095
Anthracene	ND		0.095
Fluoranthene	ND		0.095
Pyrene	ND		0.095
Benzo[a]anthracene	ND		0.0095
Chrysene	ND		0.0095
Benzo[b]fluoranthene	ND		0.0095
Benzo[k]fluoranthene	ND		0.0095
Benzo[a]pyrene	ND		0.0095
Indeno(1,2,3-c,d)pyrene	ND		0.0095
Dibenz[a,h]anthracene	ND		0.0095
Benzo[g,h,i]perylene	ND		0.0095

Surrogate :	Percent Recovery	Control Limits
Nitrobenzene-d5	68	24 - 92
2-Fluorobiphenyl	63	25 - 89
Terphenyl-d14	88	39 - 92

Date of Report: January 17, 2007
 Samples Submitted: January 5, 2007
 Laboratory Reference: 0701-044
 Project: 19897-32181-Task 2

PAHs by EPA 8270C/SIM

Date Extracted: 1-9-07
 Date Analyzed: 1-10-07
 Matrix: Water
 Units: ug/L (ppb)
 Lab ID: 01-044-05
 Client ID: EC-MW-04-01/07

Compound:	Results	Flags	PQL
Naphthalene	ND		0.095
2-Methylnaphthalene	ND		0.095
1-Methylnaphthalene	ND		0.095
Acenaphthylene	ND		0.095
Acenaphthene	ND		0.095
Fluorene	ND		0.095
Phenanthrene	ND		0.095
Anthracene	ND		0.095
Fluoranthene	ND		0.095
Pyrene	ND		0.095
Benzo[a]anthracene	ND		0.0095
Chrysene	ND		0.0095
Benzo[b]fluoranthene	ND		0.0095
Benzo[k]fluoranthene	ND		0.0095
Benzo[a]pyrene	ND		0.0095
Indeno(1,2,3-c,d)pyrene	ND		0.0095
Dibenz[a,h]anthracene	ND		0.0095
Benzo[g,h,i]perylene	ND		0.0095

Surrogate :	Percent Recovery	Control Limits
Nitrobenzene-d5	57	24 - 92
2-Fluorobiphenyl	50	25 - 89
Terphenyl-d14	85	39 - 92

Date of Report: January 17, 2007
 Samples Submitted: January 5, 2007
 Laboratory Reference: 0701-044
 Project: 19897-32181-Task 2

**PAHs by EPA 8270C/SIM
 METHOD BLANK QUALITY CONTROL**

Date Extracted: 1-9-07
 Date Analyzed: 1-10-07
 Matrix: Water
 Units: ug/L (ppb)
 Lab ID: MB0109W1

Compound:	Results	Flags	PQL
Naphthalene	ND		0.10
2-Methylnaphthalene	ND		0.10
1-Methylnaphthalene	ND		0.10
Acenaphthylene	ND		0.10
Acenaphthene	ND		0.10
Fluorene	ND		0.10
Phenanthrene	ND		0.10
Anthracene	ND		0.10
Fluoranthene	ND		0.10
Pyrene	ND		0.10
Benzo[a]anthracene	ND		0.010
Chrysene	ND		0.010
Benzo[b]fluoranthene	ND		0.010
Benzo[k]fluoranthene	ND		0.010
Benzo[a]pyrene	ND		0.010
Indeno(1,2,3-c,d)pyrene	ND		0.010
Dibenz[a,h]anthracene	ND		0.010
Benzo[g,h,i]perylene	ND		0.010

Surrogate :	Percent Recovery	Control Limits
Nitrobenzene-d5	71	24 - 92
2-Fluorobiphenyl	67	25 - 89
Terphenyl-d14	89	39 - 92

Date of Report: January 17, 2007
 Samples Submitted: January 5, 2007
 Laboratory Reference: 0701-044
 Project: 19897-32181-Task 2

**PAHs by EPA 8270C/SIM
 SB/SBD QUALITY CONTROL**

Date Extracted: 1-9-07
 Date Analyzed: 1-10-07

Matrix: Water
 Units: ug/L (ppb)

Lab ID: SB0109W1

Compound:	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	Recovery Limits	Flags
Naphthalene	0.500	0.275	55	0.320	64	43-76	
Acenaphthylene	0.500	0.270	54	0.311	62	41-88	
Acenaphthene	0.500	0.277	55	0.322	64	45-80	
Fluorene	0.500	0.275	55	0.311	62	49-92	
Phenanthrene	0.500	0.299	60	0.318	64	53-90	
Anthracene	0.500	0.310	62	0.326	65	55-94	
Fluoranthene	0.500	0.354	71	0.359	72	56-102	
Pyrene	0.500	0.349	70	0.354	71	53-99	
Benzo[a]anthracene	0.500	0.333	67	0.334	67	48-104	
Chrysene	0.500	0.430	86	0.433	87	43-94	
Benzo[b]fluoranthene	0.500	0.371	74	0.376	75	52-102	
Benzo[k]fluoranthene	0.500	0.368	74	0.369	74	53-100	
Benzo[a]pyrene	0.500	0.354	71	0.353	71	43-111	
Indeno(1,2,3-c,d)pyrene	0.500	0.363	73	0.366	73	50-105	
Dibenz[a,h]anthracene	0.500	0.471	94	0.468	94	49-96	
Benzo[g,h,i]perylene	0.500	0.343	69	0.346	69	50-103	

	RPD	RPD Limit	Flags
Naphthalene	15	25	
Acenaphthylene	14	25	
Acenaphthene	15	25	
Fluorene	12	25	
Phenanthrene	6	25	
Anthracene	5	25	
Fluoranthene	1	25	
Pyrene	1	25	
Benzo[a]anthracene	0	25	
Chrysene	1	25	
Benzo[b]fluoranthene	1	25	
Benzo[k]fluoranthene	0	25	
Benzo[a]pyrene	0	25	
Indeno(1,2,3-c,d)pyrene	1	25	
Dibenz[a,h]anthracene	1	25	
Benzo[g,h,i]perylene	1	25	

OnSite Environmental, Inc. 14648 NE 95th Street, Redmond, WA 98052 (425) 883-3881

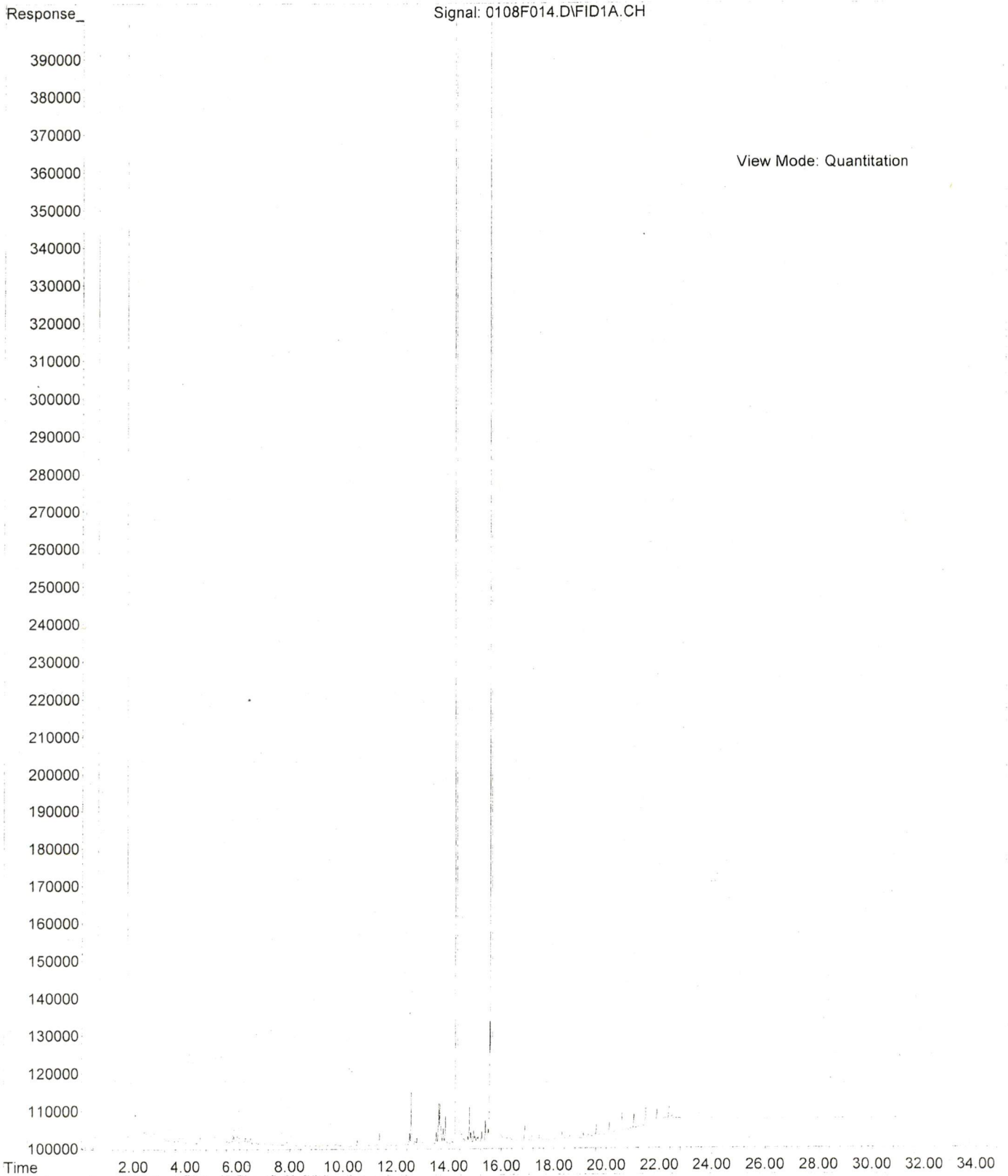
This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.



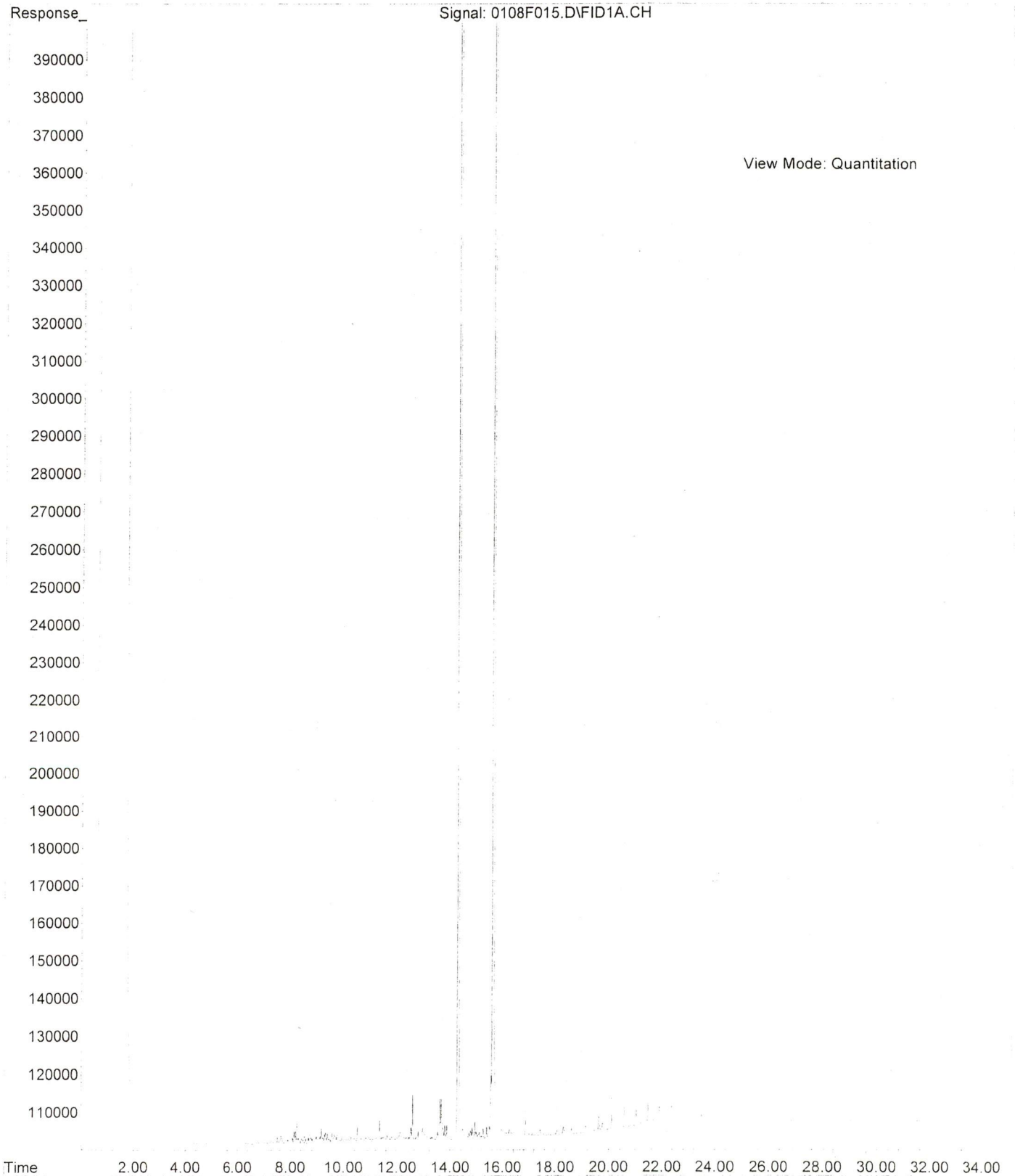
Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
 - B - The analyte indicated was also found in the blank sample.
 - C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
 - E - The value reported exceeds the quantitation range and is an estimate.
 - F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
 - G - Insufficient sample quantity for duplicate analysis.
 - H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
 - I - Compound recovery is outside of the control limits.
 - J - The value reported was below the practical quantitation limit. The value is an estimate.
 - K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
 - L - The RPD is outside of the control limits.
 - M - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
 - O - Hydrocarbons indicative of diesel fuel are present in the sample and are impacting the gasoline result.
 - P - The RPD of the detected concentrations between the two columns is greater than 40.
 - Q - Surrogate recovery is outside of the control limits.
 - S - Surrogate recovery data is not available due to the necessary dilution of the sample.
 - T - The sample chromatogram is not similar to a typical _____.
 - U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
 - V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
 - W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
 - X - Sample extract treated with a silica gel cleanup procedure.
 - Y - Sample extract treated with an acid/silica gel cleanup procedure.
 - Z -
- ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

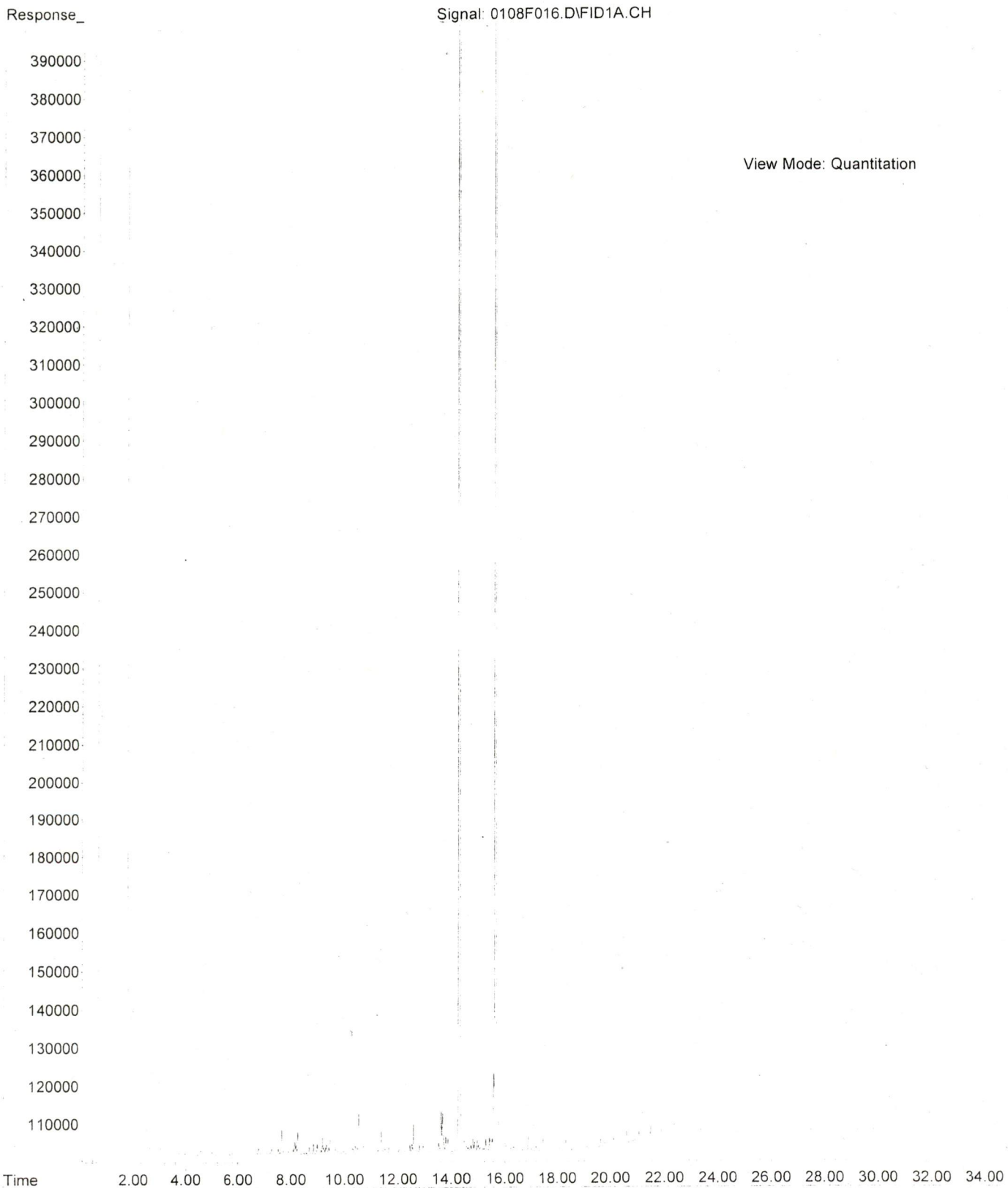
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Instrument : Teri
Sample Name: 01-044-01
Misc Info : 1
Vial Number: 14



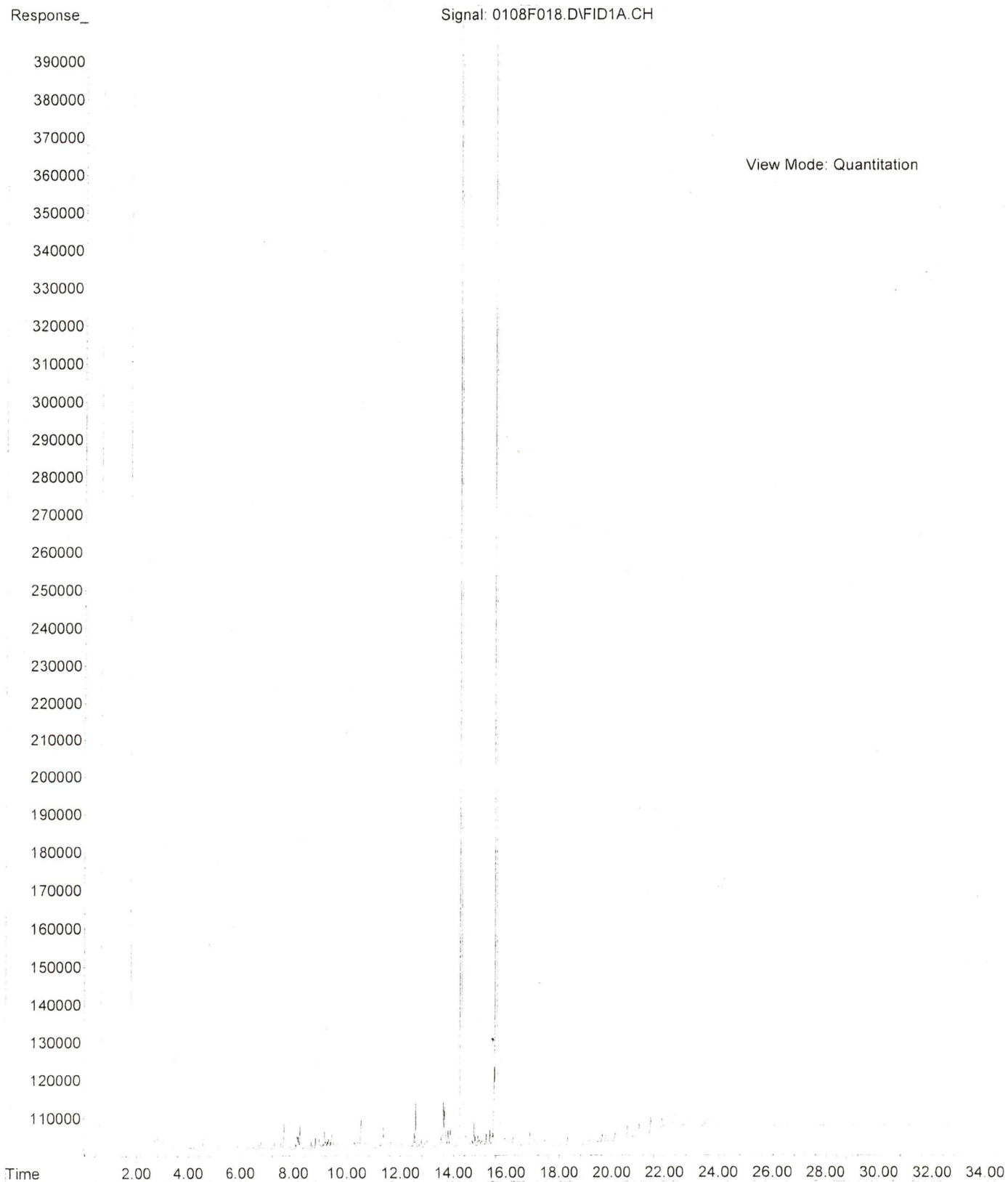
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Instrument : Teri
Sample Name: 01-044-02
Misc Info : 1
Vial Number: 15



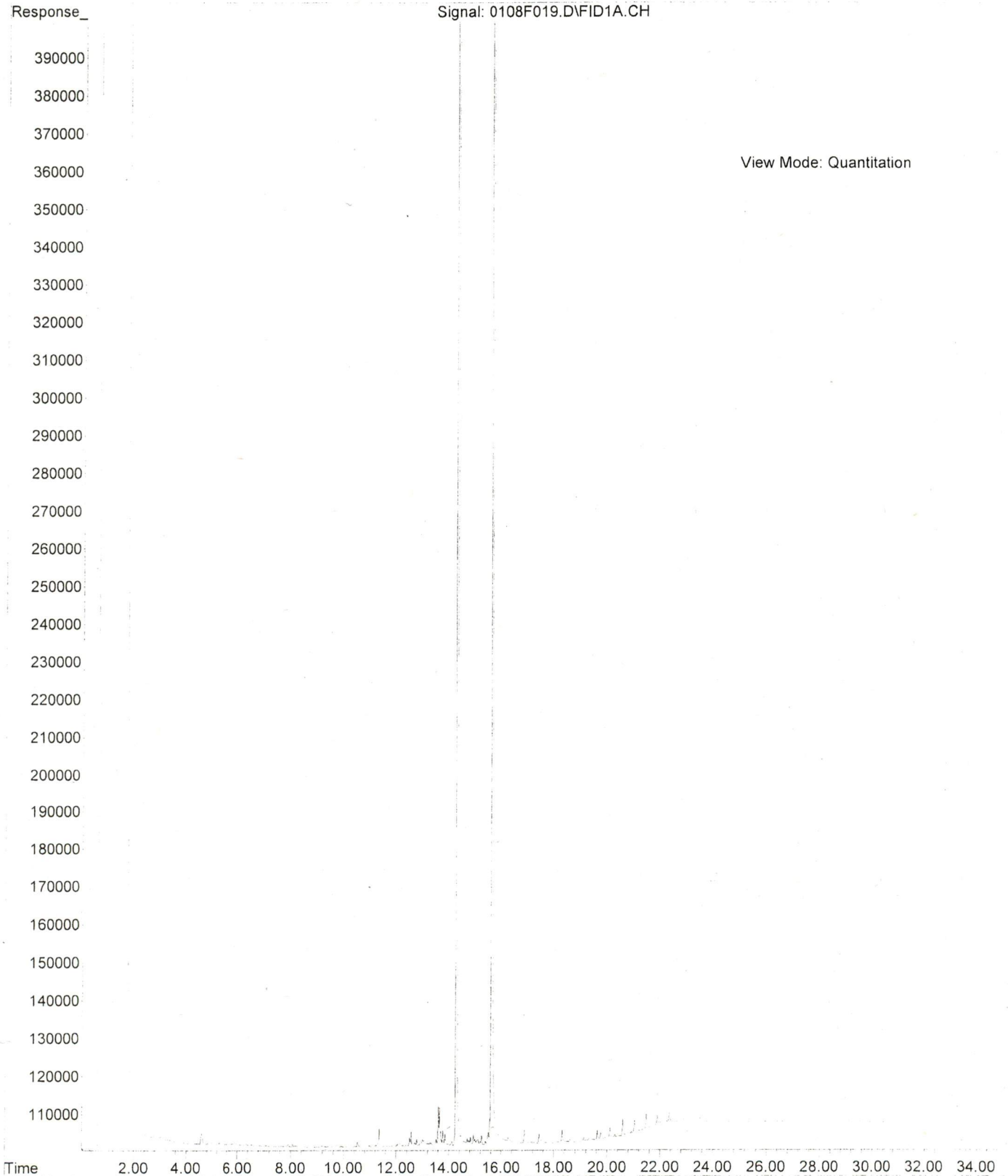
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Instrument : Teri
Sample Name: 01-044-03
Misc Info : 1
Vial Number: 16



File :X:\DIESELS\TERI\DATA\T070108\0108F018.D
Operator : DY
Acquired : 09 Jan 2007 1:22 using AcqMethod F061102.M
Instrument : Teri
Sample Name: 01-044-04
Misc Info : 1
Vial Number: 18



File :X:\DIESELS\TERI\DATA\T070108\0108F019.D
Operator : DY
Acquired : 09 Jan 2007 2:05 using AcqMethod F061102.M
Instrument : Teri
Sample Name: 01-044-05
Misc Info : 1
Vial Number: 19



Laboratory Number: **01-044**

Company: **CDM**
 Project Number: **19897-32181-Task 2**
 Project Name: **KC-Ellisport Creek**
 Project Manager: **Lance Peterson**
 Sampled by: **Alexis Lopez**

Turnaround Request (In working days)
 (Check One)
 Same Day 1 Day
 2 Day 3 Day
 Standard (7 working days)
 (TPH analysis 5 working days)

 (other)

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	VPH	EPH	% Moisture	
4	EC-MW-03-01/07	01/04	1200	H ₂ O	4			X				X										
5	EC-MW-04-01/07	01/04	1735	H ₂ O	4			X				X										

Signature	Company	Date	Time	Comments/Special Instructions:
Relinquished by: <i>[Signature]</i>	CDM	01/04	2010	
Received by: <i>[Signature]</i>	OSE	1/5/07	1400	
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				
Reviewed by/Date	Reviewed by/Date	Chromatograms with final report <input checked="" type="checkbox"/>		