

Exhibit No. ___ (GECB-11)
Docket No. PG-041624
Witness: Dr. Graham E.C. Bell

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY,

Respondent.

DOCKET NO. PG-041624

EXHIBIT OF

GRAHAM E. C. BELL, Ph.D., P.E.

**ON BEHALF OF STAFF
OF WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION**

PSE Response to WUTC Data Request No. 65 (32 pages)

July 21, 2005

**BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION
COMMISSION**

Docket No. PG-041624

**Complaint Regarding Natural Gas Incident and House Fire
September 2, 2004; Bellevue, WA**

WUTC STAFF DATA REQUEST NO. 65

WUTC STAFF DATA REQUEST NO. 65:

Were any soil samples taken by PSE (or any other entity on PSE's behalf) on or after September 2, 2005, in the area served by the rectifier? If so, please provide the following information. Please designate each sample separately in such a manner that the information for each sample can be correlated to each sample:

- a) State who gathered each sample, and the amount of each sample gathered
- b) State the street address where each sample was gathered, and the location (*e.g.*, near the meter, near the street, *etc.*)
- c) State the date when each sample was gathered
- d) Describe in detail the manner in which each sample was collected and preserved (*e.g.*, core sampling device, shovel, *etc.*)
- e) State the date when each sample was tested, who tested it, and the type of test
- f) Provide the test results and any related analysis, including any analysis whether the soil sampled was preserved appropriately for the testing that was conducted

Response:

Please see attached information. Additionally, PSE is providing (via hard copy) the lab results of the soils samples taken on September 16, 2004.

March 28, 2005
Docket No. PG-041624

**WUTC STAFF DATA REQUEST NO. 65
RESPONSES**

Response to Paragraph a)

The soil in question was obtained from the service line and the adjacent trench. The service line was removed by a Pilchuck field crew under direct observation of PSE personnel and WUTC personnel.

Response to Paragraph b)

The soil in question was obtained from the service line. The service line was removed from 16645 SE 26 Place, Bellevue Washington.

Response to Paragraph c)

The service line was removed on September 3, 2004. Soil samples were obtained on 9/3/04 (Pipe Trench), 9/14/04 (Trench Background), and 9/16/04 (Trench Sidewall, Trench Base and Remote Background)

Response to Paragraph d)

The soil in question was obtained with a shovel and was placed in a container that was sealed. The sealed containers were shipped to CC Technologies in Dublin, Ohio

Response to Paragraph e)

The soils samples were tested on 10/4/2004 through 10/8/2004.

Response to Paragraph f)

See response to Data Request 64 for test results. The samples were determined to have been properly preserved for the testing performed.

MAR 30 2005

ATTY GEN DIV
WASHINGTON

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

Docket No. PG-041624

Complaint Regarding Natural Gas Incident and House Fire
September 2, 2004; Bellevue, WA

WUTC STAFF INFORMAL DATA REQUEST NO. 65

WUTC STAFF INFORMAL DATA REQUEST NO. 65:

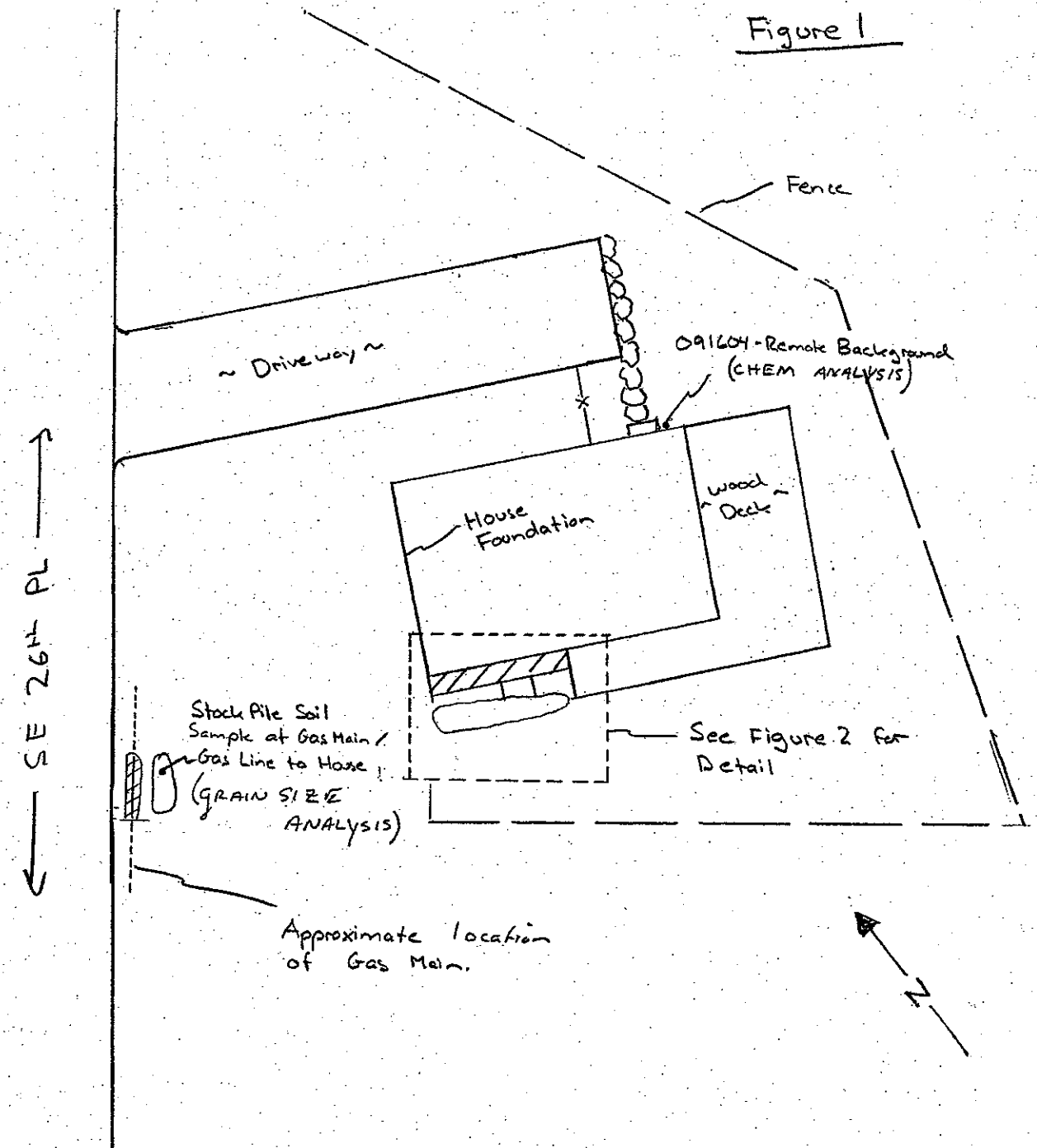
Were any soil samples taken by PSE (or any other entity on PSE's behalf) on or after September 2, 2005, in the area served by the rectifier? If so, please provide the following information. Please designate each sample separately in such a manner that the information for each sample can be correlated to each sample:

- a) State who gathered each sample, and the amount of each sample gathered
- b) State the street address where each sample was gathered, and the location (*e.g.*, near the meter, near the street, *etc.*)
- c) State the date when each sample was gathered
- d) Describe in detail the manner in which each sample was collected and preserved (*e.g.*, core sampling device, shovel, *etc.*)
- e) State the date when each sample was tested, who tested it, and the type of test
- f) Provide the test results and any related analysis, including any analysis whether the soil sampled was preserved appropriately for the testing that was conducted


Supplemental Response:

Attached is supplemental information to the email sent by Steve Secrist on March 29, 2005.

Figure 1

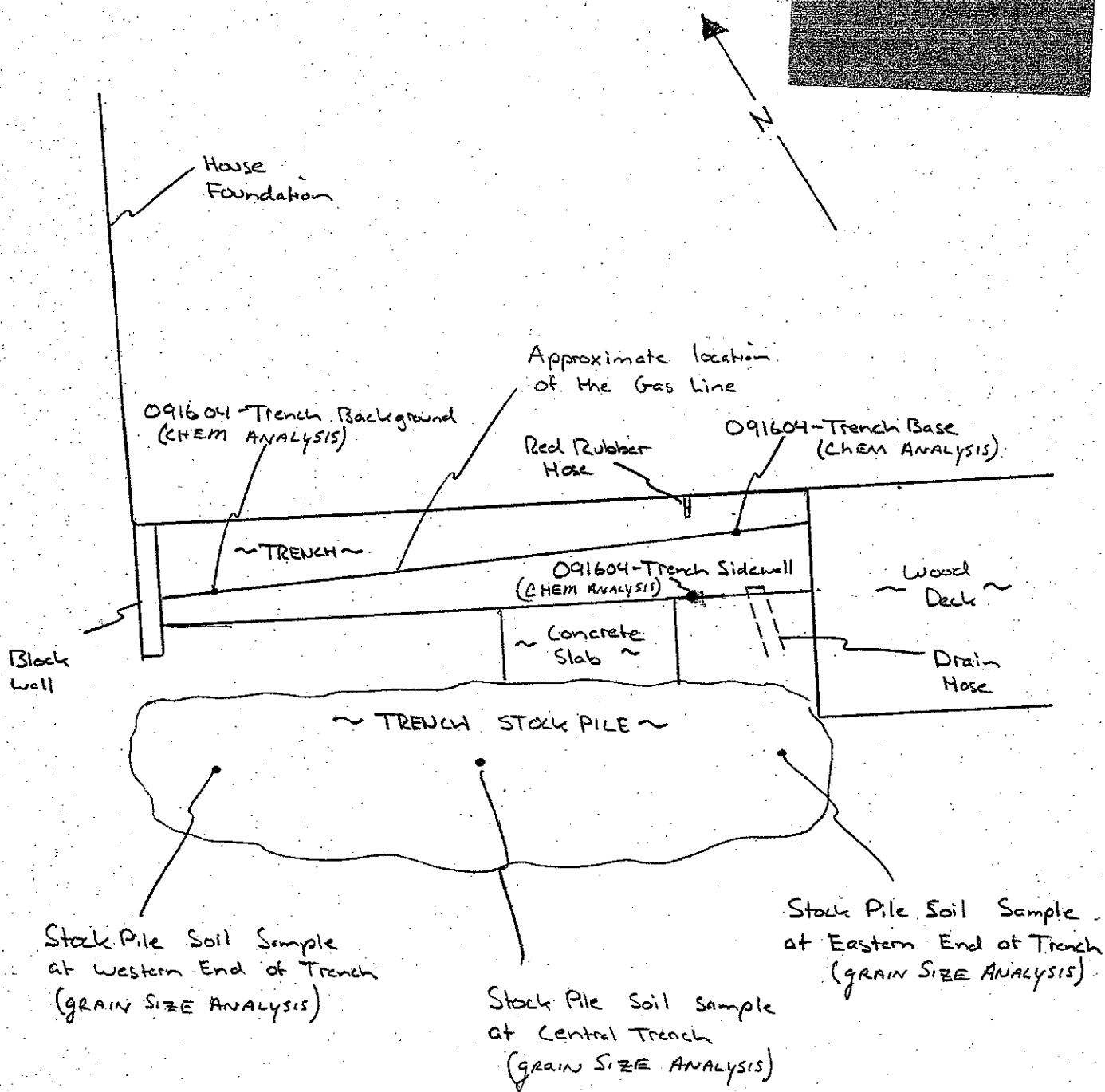
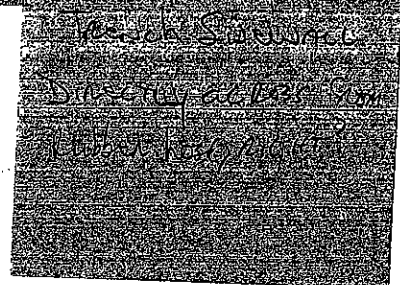


Notes

 = Approximate Area of Excavation

Scale = 1" : 20'

Figure 2



Scale = 1" : 4'

TABLE 1
SOIL FIELD SCREENING AND CHEMICAL ANALYTICAL DATA¹

16645 SE 26th Place
 Bellevue, Washington
 PUGET SOUND ENERGY
 GEI PROJECT NO. 0186-642-00

Sample Identification ²	Date Sampled	Sample Depth (feet bgs) ³	Water Sheen Screening	Photo Ionization Detection (ppm)	Total Alkalinity ⁴ (mg/kg)	Ammonia-Nitrogen ⁵ (mg/kg)	pH ⁶	Sulfide ⁷ (mg/kg)	Soil Resistivity ⁸ (Ohms-cm)	Bromide ⁹ (mg/kg)	Chloride ⁹ (mg/kg)	Fluoride ⁹ (mg/kg)	Orthophosphate-Phosphorus ⁹ (mg/kg)
090304-Pipe Trench	09/03/04	--	NS	--	16.4	<25.0	5.95	<19.2	1910	<4.0	28.7	8.22	7.6
091604-Trench-Base	09/16/04	3.5	NS	80.5	43.5	<22.1	5.79	<97.7	4,540	<4.0	20.8	<2.0	<4.0
091604-Trench-Side Wall	09/16/04	3.0	NS	0	9.35	<25.0	5.39	<96.6	6280	<4.0	10.7	<2.0	<4.0
091604-Trench-Background	09/16/04	4.0	NS	0	39.7	<25.0	6.03	<94.4	13400	<4.0	7.07	<2.0	<4.0
091604-Remote-Background	09/16/04	1.5	NS	0	105	<25.0	6.23	<97.8	4610	<4.0	27.3	4.31	<4.0

Notes:
 1. Chemical analyses by North Creek Analytical in Bothell, Washington.
 2. Approximate sample locations are shown in Figures 1 and 2.
 3. Sample depths are approximate and were determined as depth beneath local ground surface.
 4. Total alkalinity analyzed by Ecology Method 910-11, modified.
 5. Ammonia nitrogen analyzed by Ecology Method 350.3.
 6. Acidity (pH) analyzed by Ecology Method 905.1C.
 7. Sulfide analyzed by Ecology Method 9030B.
 8. Soil resistivity analyzed by Ecology Method S12510B.
 9. Bromide, chloride, fluoride and orthophosphate analyzed by Ecology Method 900.0.
 mg/kg = milligrams per kilogram
 ppm = parts per million
 bgs = below ground surface
 NS = no sheen

Redm:100\mains\0186-642-00-Table 1.xls



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907.563.9200 fax 907.563.9210

11 November 2004

Paul Craig
Geo Engineers - Redmond
8410 154th Ave NE
Redmond, WA/USA 98052

RE: PSE-Bellevue Explosion Investigation Site

Enclosed are amended results of analyses for samples received by the laboratory on 09/22/04 18:25. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeff Gerdes
Project Manager



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Project: PSE-Bellevue Explosion Investigation Site
 Project Number: 0186-642-00
 Project Manager: Paul Craig

Amended Report
 Issued: 11/11/04 14:32

ANALYTICAL REPORT FOR SAMPLES - Amended

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
090304-PIPE TRENCH	B4I0656-01	Soil	09/03/04 12:00	09/22/04 18:25

Docket No. PG-041624
 Exhibit No. _____
 Page 8

North Creek Analytical - Bothell

Jeff Gerdes, Project Manager

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Project: PSE-Bellevue Explosion Investigation Site
 Project Number: 0186-642-00
 Project Manager: Paul Craig

Amended Report
 Issued: 11/11/04 14:32

Conventional Chemistry Parameters by APHA/EPA Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						

090304-PIPE TRENCH (B4I0656-01) Soil. Sampled: 09/03/04 12:00 Received: 09/22/04 18:25

Total Alkalinity	16.4	4.82	mg/kg wet	I	4I30059	09/30/04	09/30/04	EPA 310.1 Mod.	I-05
Ammonia-Nitrogen	ND	25.0	mg/kg as N wet	"	4I30051	09/30/04	09/30/04	EPA 350.3	
pH	5.95		pH Units	"	4I30061	"	"	EPA 9045C	
Sulfide	ND	19.2	mg/kg wet	"	4I27063	09/27/04	09/27/04	EPA 9030B	I-05

Docket No. PG-041624
 Exhibit No. _____
 Page 9

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Page 2 of 9



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Project: PSE-Bellevue Explosion Investigation Site
 Project Number: 0186-642-00
 Project Manager: Paul Craig

Amended Report
 Issued: 11/11/04 14:32

Conventional Chemistry by Standard Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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090304-PIPE TRENCH (B4I0656-01) Soil. Sampled: 09/03/04 12:00. Received: 09/22/04 18:25

Resistivity	1910		Ohms-cm	1	4I30063	09/30/04	09/30/04	SM2510B	
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Docket No. PG-041624
 Exhibit No. _____
 Page 10

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Anions by EPA Method 300.0
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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090304-PIPE TRENCH (B4I0656-01) Soil Sampled: 09/03/04 12:00 Received: 09/22/04 18:25

Bromide	ND	4.00	mg/kg wet	1	4J03004	10/01/04	10/01/04	EPA 300.0	
Chloride	28.7	4.00	"	"	"	"	"	"	
Fluoride	8.22	2.00	"	"	"	"	"	"	
Orthophosphate-phosphorus	7.60	4.00	"	"	"	"	"	"	I-05

Docket No. PG-041624
 Exhibit No. _____
 Page 11

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Page 4 of 9



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Amended Report
 Issued: 11/11/04 14:32

**Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4I27063: Prepared 09/27/04 Using General Preparation

Blank (4I27063-BLK1)

Sulfide	ND	20.0	mg/kg							
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LCS (4I27063-BS1)

Sulfide	104	20.0	mg/kg	112		92.9	75-125			
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LCS Dup (4I27063-BSD1)

Sulfide	102	20.0	mg/kg	112		91.1	75-125	1.94	25	
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Duplicate (4I27063-DUP1)

Source: B4I0656-01

Sulfide	ND	20.0	mg/kg wet		ND			NA	30	
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Matrix Spike (4I27063-MS1)

Source: B4I0656-01

Sulfide	37.2	16.2	mg/kg wet	90.9	ND	40.9	20-120			
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Batch 4I30051: Prepared 09/30/04 Using General Preparation

Blank (4I30051-BLK1)

Ammonia-Nitrogen	ND	0.500	mg/kg as N							
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LCS (4I30051-BS1)

Ammonia-Nitrogen	4.93	0.500	mg/kg as N	5.00		98.6	75-125			
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LCS Dup (4I30051-BSD1)

Ammonia-Nitrogen	4.95	0.500	mg/kg as N	5.00		99.0	75-125	0.405	25	
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Duplicate (4I30051-DUP1)

Source: B4I0656-01

Ammonia-Nitrogen	ND	25.0	mg/kg as N wet		5.44				30	
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Docket No. PG-041624
 Exhibit No. _____
 Page 12

North Creek Analytical - Bothell

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Page 5 of 9



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Project: PSE-Bellevue Explosion Investigation Site
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Amended Report
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Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4I30051: Prepared 09/30/04 Using General Preparation										
Matrix Spike (4I30051-MS1) Source: B4I0656-01										
Ammonia-Nitrogen	239	25.0	mg/kg as N wet	233	5.44	100	33-168			
Batch 4I30059: Prepared 09/30/04 Using General Preparation										
Duplicate (4I30059-DUP1) Source: B4I0425-01										
Total Alkalinity	41.7	5.00	mg/kg dry		43.5			4.23	25	
Batch 4I30061: Prepared 09/30/04 Using General Preparation										
Duplicate (4I30061-DUP1) Source: B4I0656-01										
pH	5.60		pH Units		5.95			6.06	10	

Docket No. PG-041624
 Exhibit No. _____
 Page 13

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Conventional Chemistry by Standard Methods - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 4I30063: Prepared 09/30/04 Using General Preparation

Duplicate (4I30063-DUP1)

Source: B410656-01

Resistivity	1720		Ohms-cm		1910			10.5	30	
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 Page 14

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Project: PSE-Bellevue Explosion Investigation Site
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Amended Report
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Anions by EPA Method 300.0 - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4J03004: Prepared 10/01/04 Using General Preparation

Blank (4J03004-BLK1)

Bromide	ND	4.00	mg/kg							
Chloride	ND	4.00	"							
Fluoride	ND	2.00	"							
Orthophosphate-phosphorus	ND	4.00	"							

LCS (4J03004-BS1)

Bromide	41.4	4.00	mg/kg	40.0		104	90-110			
Chloride	20.5	4.00	"	20.0		102	90-110			
Fluoride	8.41	2.00	"	8.00		105	90-110			
Orthophosphate-phosphorus	20.1	4.00	"	19.4		104	90-110			

LCS Dup (4J03004-BS1)

Bromide	41.0	4.00	mg/kg	40.0		102	90-110	0.971	25	
Chloride	20.8	4.00	"	20.0		104	90-110	1.45	10	
Fluoride	8.65	2.00	"	8.00		108	90-110	2.81	10	
Orthophosphate-phosphorus	19.8	4.00	"	19.4		102	90-110	1.50	10	

Duplicate (4J03004-DUP1)

Source: B4I0656-01

Bromide	ND	4.00	mg/kg wet		ND			NA	25	
Chloride	25.5	4.00	"		28.7			11.8	25	
Fluoride	6.71	2.00	"		8.22			20.2	25	
Orthophosphate-phosphorus	9.76	4.00	"		7.60			24.9	25	

Matrix Spike (4J03004-MS1)

Source: B4I0656-01

Bromide	41.3	4.00	mg/kg wet	39.8	ND	104	75-125			
Chloride	47.5	4.00	"	19.9	28.7	94.5	62-157			
Fluoride	11.8	2.00	"	7.96	8.22	45.0	75-125			Q-01
Orthophosphate-phosphorus	18.9	4.00	"	19.3	7.60	58.5	64-117			Q-01

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 Page 15

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Jeff Gerdes, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network

Page 8 of 9



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Geo Engineers - Redmond
 8410 154th Ave NE
 Redmond, WA/USA 98052

Project: PSE-Bellevue Explosion Investigation Site
 Project Number: 0186-642-00
 Project Manager: Paul Craig

Amended Report
 Issued: 11/11/04 14:32

Notes and Definitions

- I-05 Since the sample was out of hold at the time of receipt, the preparation/analysis of the sample could not be initiated within the method-specified hold time.
- Q-01 The spike recovery for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Docket No. PG-041624
 Exhibit No. _____
 Page 16

North Creek Analytical - Bothell

Jeff Gerdes, Project Manager

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 541-383-9310 FAX 382-7588
 907-334-9200 FAX 334-9210

CHAIN OF CUSTODY REPORT

Work Order #:

CLIENT: PSE		INVOICE TO:																																																	
REPORT TO: [Blank]		TURNAROUND REQUEST																																																	
ADDRESS: [Blank]		in Business Days *																																																	
PHONE: 425-420-9200 FAX: 920-9210		<table border="1"> <tr> <td>10</td><td>7</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td><1</td> </tr> <tr> <td colspan="8">STD.</td> </tr> <tr> <td colspan="8">Organic & Inorganic Analyses</td> </tr> <tr> <td colspan="8">Petroleum Hydrocarbon Analyses</td> </tr> <tr> <td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td><1</td><td colspan="2"></td> </tr> <tr> <td colspan="8">STD.</td> </tr> </table>		10	7	5	4	3	2	1	<1	STD.								Organic & Inorganic Analyses								Petroleum Hydrocarbon Analyses								5	4	3	2	1	<1			STD.							
10	7	5	4	3	2	1	<1																																												
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STD.																																																			
PROJECT NAME: [Blank]		OTHER Specify:																																																	
PROJECT NUMBER: [Blank]		* Turnaround Requests less than standard may incur Rush Charges.																																																	
SAMPLED BY: [Blank]		MATRIX (W, S, O)																																																	
CLIENT SAMPLE IDENTIFICATION		# OF CONT.																																																	
10-20-2004		1																																																	
2																																																			
3																																																			
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RECEIVED BY: [Blank]		DATE: [Blank]																																																	
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PRINT NAME: [Blank]		FIRM: [Blank]																																																	
ADDITIONAL REMARKS:		TEMP: [Blank]																																																	
COC REV 1/03		PAGE OF																																																	



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CHAIN OF CUSTODY REPORT

Work Order #: **B410656**

CLIENT: PSE	INVOICE TO: Same	TURNAROUND REQUEST <small>in Business Days *</small>	
REPORT TO: Paul Craig	ADDRESS: 8410 NE 154th Ave Redmond Wa, 98052	Organic & Inorganic Analyses <input type="checkbox"/> 10 <input type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1	Petroleum Hydrocarbon Analyses <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1
PHONE: 425.861.6000	FAX: 425.861.6050	* Turnaround Requests less than standard may incur Rush Charges.	
PROJECT NAME: PSE - Bellevue Explosion Investigation Site		OTHER: Specify:	
PROJECT NUMBER: 0186-642-00			
SAMPLED BY: PSE			
CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	MATRIX (W, S, O)	# OF CONT.
1 090501 - Pipe Trench	9-3-04	Soil	1
2			
3			
4			
5			
6			
7			
8			
9			
10			

PRESERVATIVE		REQUESTED ANALYSES																	
		PH	Resistivity	Clonides	Fluorides	Phosphates	Ammonia	Bromide	SP	GF	ST								
		X	X	X	X	X	X	X											

RELEASED BY:	DATE: 9-21-04	TIME: 1600	FIRM: GEL	RECEIVED BY: Ken Hepler	DATE: 9/29/2004	TIME: 1825	FIRM: NCA
PRINT NAME: Robert Trisham	DATE:	TIME:	FIRM:	PRINT NAME: Ken Hepler	DATE:	TIME:	FIRM:
RECEIVED BY:	DATE:	TIME:	FIRM:	PRINT NAME: Ken Hepler	DATE:	TIME:	FIRM:
PRINT NAME:	DATE:	TIME:	FIRM:	PRINT NAME:	DATE:	TIME:	FIRM:

ADDITIONAL REMARKS: Strong odor. Please be cautious. Report Results to Paul Craig

TERM: 15.6 **PAGE OF** W/CS



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907.563.9200 fax 907.563.9210

05 October 2004

Paul Craig
Geo Engineers - Redmond
8410 154th Ave NE
Redmond, WA/USA 98052

RE: PSE-Bellevue Explosion Investigation Site

Enclosed are the results of analyses for samples received by the laboratory on 09/16/04 14:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeff Gerdes
Project Manager



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Geo Engineers - Redmond
 8410 154th Ave NE
 Redmond, WA/USA 98052

Project: PSE-Bellevue Explosion Investigation Site
 Project Number: 0186-642-00
 Project Manager: Paul Craig

Reported:
 10/05/04 09:51

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
091604-TRENCH-BASE	B4I0425-01	Soil	09/16/04 11:15	09/16/04 14:00
091604-TRENCH-SIDE WALL	B4I0425-02	Soil	09/16/04 11:25	09/16/04 14:00
091604-TRENCH-BACKGROUND	B4I0425-03	Soil	09/16/04 11:55	09/16/04 14:00
091604-REMOTE-BACKGROUND	B4I0425-04	Soil	09/16/04 12:20	09/16/04 14:00

Docket No. PG-041624
 Exhibit No. _____
 Page 20

North Creek Analytical - Bothell

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 907.563.9200 fax 907.563.9210

Geo Engineers - Redmond 8410 154th Ave NE Redmond, WA/USA 98052	Project: PSE-Bellevue Explosion Investigation Site Project Number: 0186-642-00 Project Manager: Paul Craig	Reported: 10/05/04 09:51
---	--	-----------------------------

**Conventional Chemistry Parameters by APHA/EPA Methods
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
091604-TRENCH-BASE (B4I0425-01) Soil ... Sampled: 09/16/04 11:15 ... Received: 09/16/04 14:00									
Total Alkalinity	43.5	5.00	mg/kg dry	1	4I30059	09/30/04	09/30/04	EPA 310.1 Mod.	
Ammonia-Nitrogen	ND	22.1	mg/kg as N dry	"	4I21034	09/21/04	09/21/04	EPA 350.3	
pH	5.79		pH Units	"	4I20046	09/17/04	09/17/04	EPA 9045C	
Sulfide	ND	97.7	mg/kg dry	"	4I21040	09/21/04	09/21/04	EPA 9030B	
091604-TRENCH-SIDE WALL (B4I0425-02) Soil ... Sampled: 09/16/04 11:25 ... Received: 09/16/04 14:00									
Total Alkalinity	9.35	4.98	mg/kg dry	1	4I30059	09/30/04	09/30/04	EPA 310.1 Mod.	
Ammonia-Nitrogen	ND	25.0	mg/kg as N dry	"	4I21034	09/21/04	09/21/04	EPA 350.3	
pH	5.39		pH Units	"	4I20046	09/17/04	09/17/04	EPA 9045C	
Sulfide	ND	96.6	mg/kg dry	"	4I21040	09/21/04	09/21/04	EPA 9030B	
091604-TRENCH-BACKGROUND (B4I0425-03) Soil ... Sampled: 09/16/04 11:55 ... Received: 09/16/04 14:00									
Total Alkalinity	39.7	4.96	mg/kg dry	1	4I30059	09/30/04	09/30/04	EPA 310.1 Mod.	
Ammonia-Nitrogen	ND	25.0	mg/kg as N dry	"	4I21034	09/21/04	09/21/04	EPA 350.3	
pH	6.03		pH Units	"	4I20046	09/17/04	09/17/04	EPA 9045C	
Sulfide	ND	94.4	mg/kg dry	"	4I21040	09/21/04	09/21/04	EPA 9030B	
091604-REMOTE-BACKGROUND (B4I0425-04) Soil ... Sampled: 09/16/04 12:20 ... Received: 09/16/04 14:00									
Total Alkalinity	105	4.98	mg/kg dry	1	4I30059	09/30/04	09/30/04	EPA 310.1 Mod.	
Ammonia-Nitrogen	ND	25.0	mg/kg as N dry	"	4I21034	09/21/04	09/21/04	EPA 350.3	
pH	6.23		pH Units	"	4I20046	09/17/04	09/17/04	EPA 9045C	
Sulfide	ND	97.8	mg/kg dry	"	4I21040	09/21/04	09/21/04	EPA 9030B	

Docket No. PG-041624
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 Page 21

North Creek Analytical - Bothell

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Jeff Gerdes, Project Manager



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Geo Engineers - Redmond
 8410 154th Ave NE
 Redmond, WA/USA 98052

Project: PSE-Bellevue Explosion Investigation Site
 Project Number: 0186-642-00
 Project Manager: Paul Craig

Reported:
 10/05/04 09:51

Conventional Chemistry by Standard Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
091604-TRENCH-BASE (B4I0425-01) Soil .. Sampled: 09/16/04 11:15 .. Received: 09/16/04 14:00									
Resistivity	4540		Ohms-cm	1	4I17042	09/17/04	09/17/04	SM2510B	
091604-TRENCH-SIDE WALL (B4I0425-02) Soil .. Sampled: 09/16/04 11:25 .. Received: 09/16/04 14:00									
Resistivity	6280		Ohms-cm	1	4I17042	09/17/04	09/17/04	SM2510B	
091604-TRENCH-BACKGROUND (B4I0425-03) Soil .. Sampled: 09/16/04 11:55 .. Received: 09/16/04 14:00									
Resistivity	13400		Ohms-cm	1	4I17042	09/17/04	09/17/04	SM2510B	
091604-REMOTE-BACKGROUND (B4I0425-04) Soil .. Sampled: 09/16/04 12:20 .. Received: 09/16/04 14:00									
Resistivity	4610		Ohms-cm	1	4I17042	09/17/04	09/17/04	SM2510B	

Docket No. PG-041624
 Exhibit No. _____
 Page 22

North Creek Analytical - Bothell

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Geo Engineers - Redmond
 8410 154th Ave NE
 Redmond, WA/USA 98052

Project: PSE-Bellevue Explosion Investigation Site
 Project Number: 0186-642-00
 Project Manager: Paul Craig

Reported:
 10/05/04 09:51

Anions by EPA Method 300.0
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
091604-TRENCH-BASE (B4I0425-01) Soil... Sampled: 09/16/04 11:15... Received: 09/16/04 14:00									
Bromide	ND	4.00	mg/kg dry	1	4I19003	09/18/04	09/18/04	EPA 300.0	
Chloride	20.8	4.00	"	"	"	"	"	"	
Fluoride	ND	2.00	"	"	4I20038	09/18/04	09/19/04	"	
Orthophosphate-phosphorus	ND	4.00	"	"	4I21042	"	09/20/04	"	Q-29
091604-TRENCH-SIDE WALL (B4I0425-02) Soil... Sampled: 09/16/04 11:25... Received: 09/16/04 14:00									
Bromide	ND	4.00	mg/kg dry	1	4I19003	09/18/04	09/18/04	EPA 300.0	
Chloride	10.7	4.00	"	"	"	"	"	"	
Fluoride	ND	2.00	"	"	4I20038	09/18/04	09/19/04	"	
Orthophosphate-phosphorus	ND	4.00	"	"	4I21042	"	09/20/04	"	Q-29
091604-TRENCH-BACKGROUND (B4I0425-03) Soil... Sampled: 09/16/04 11:55... Received: 09/16/04 14:00									
Bromide	ND	4.00	mg/kg dry	1	4I19003	09/18/04	09/18/04	EPA 300.0	
Chloride	7.07	4.00	"	"	"	"	"	"	
Fluoride	ND	2.00	"	"	4I20038	09/18/04	09/19/04	"	
Orthophosphate-phosphorus	ND	4.00	"	"	4I21042	"	09/20/04	"	Q-29
091604-REMOTE-BACKGROUND (B4I0425-04) Soil... Sampled: 09/16/04 12:20... Received: 09/16/04 14:00									
Bromide	ND	4.00	mg/kg dry	1	4I19003	09/18/04	09/18/04	EPA 300.0	
Chloride	27.3	4.00	"	"	"	"	"	"	
Fluoride	4.31	2.00	"	"	4I20038	09/18/04	09/19/04	"	
Orthophosphate-phosphorus	ND	4.00	"	"	4I21042	"	09/20/04	"	Q-29

Docket No. PG-041624
 Exhibit No. _____
 Page 23

North Creek Analytical - Bothell

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Geo Engineers - Redmond
 8410 154th Ave NE
 Redmond, WA/USA 98052

Project: PSE-Bellevue Explosion Investigation Site
 Project Number: 0186-642-00
 Project Manager: Paul Craig

Reported:
 10/05/04 09:51

Physical Parameters by APHA/ASTM/EPA Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
091604-TRENCH-BASE (B4I0425-01) Soil... Sampled: 09/16/04 11:15... Received: 09/16/04 14:00										
Dry Weight	85.0	1.00		%	1	4I20026	09/19/04	09/20/04	BSOPSPL003R08	
091604-TRENCH-SIDE WALL (B4I0425-02) Soil... Sampled: 09/16/04 11:25... Received: 09/16/04 14:00										
Dry Weight	85.1	1.00		%	1	4I20026	09/19/04	09/20/04	BSOPSPL003R08	
091604-TRENCH-BACKGROUND (B4I0425-03) Soil... Sampled: 09/16/04 11:55... Received: 09/16/04 14:00										
Dry Weight	88.9	1.00		%	1	4I17029	09/17/04	09/18/04	BSOPSPL003R08	
091604-REMOTE-BACKGROUND (B4I0425-04) Soil... Sampled: 09/16/04 12:20... Received: 09/16/04 14:00										
Dry Weight	77.4	1.00		%	1	4I17029	09/17/04	09/18/04	BSOPSPL003R08	

Docket No. PG-041624
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 Page 24

North Creek Analytical - Bothell

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Project: PSE-Bellevue Explosion Investigation Site
 Project Number: 0186-642-00
 Project Manager: Paul Craig

Reported:
 10/05/04 09:51

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control
 North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 4I20046: Prepared 09/17/04 Using General Preparation

Duplicate (4I20046-DUP1)

Source: B4I0425-01

pH	5.87		pH Units		5.79			1.37	10	
----	------	--	----------	--	------	--	--	------	----	--

Batch 4I21034: Prepared 09/21/04 Using General Preparation

Blank (4I21034-BLK1)

Ammonia-Nitrogen	ND	50.0	mg/kg as N							
------------------	----	------	------------	--	--	--	--	--	--	--

LCS (4I21034-BS1)

Ammonia-Nitrogen	494	50.0	mg/kg as N	500		98.8	75-125			
------------------	-----	------	------------	-----	--	------	--------	--	--	--

LCS Dup (4I21034-BSD1)

Ammonia-Nitrogen	496	50.0	mg/kg as N	500		99.2	75-125	0.404	25	
------------------	-----	------	------------	-----	--	------	--------	-------	----	--

Duplicate (4I21034-DUP1)

Source: B4I0425-01

Ammonia-Nitrogen	5.19	25.0	mg/kg as N dry		4.92			5.34	30	
------------------	------	------	----------------	--	------	--	--	------	----	--

Matrix Spike (4I21034-MS1)

Source: B4I0425-01

Ammonia-Nitrogen	282	25.0	mg/kg as N dry	297	4.92	93.3	33-168			
------------------	-----	------	----------------	-----	------	------	--------	--	--	--

Batch 4I21040: Prepared 09/21/04 Using General Preparation

Blank (4I21040-BLK1)

Sulfide	ND	99.9	mg/kg							
---------	----	------	-------	--	--	--	--	--	--	--

LCS (4I21040-BS1)

Sulfide	86.0	98.2	mg/kg	106		81.1	75-125			
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Docket No. PG-041624
 Exhibit No. _____
 Page 25

North Creek Analytical - Bothell

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Jeff Gerdes

Jeff Gerdes, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network

Page 6 of 12



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 541.383.9310 fax 541.382.7588
 Anchorage 2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119
 907.563.9200 fax 907.563.9210

Geo Engineers - Redmond
 8410 154th Ave NE
 Redmond, WA/USA 98052

Project: PSE-Bellevue Explosion Investigation Site
 Project Number: 0186-642-00
 Project Manager: Paul Craig

Reported:
 10/05/04 09:51

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%RBC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 4I21040: Prepared 09/21/04 Using General Preparation

LCS Dup (4I21040-BSD1)

Sulfide	87.3	99.6	mg/kg	107		81.6	75-125	1.50	25	
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Duplicate (4I21040-DUP1)

Source: B4I0425-01

Sulfide	ND	97.5	mg/kg dry		ND			NA	30	
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Matrix Spike (4I21040-MS1)

Source: B4I0425-01

Sulfide	92.6	96.5	mg/kg dry	122	ND	75.9	20-120			
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Batch 4I30059: Prepared 09/30/04 Using General Preparation

Duplicate (4I30059-DUP1)

Source: B4I0425-01

Total Alkalinity	41.7	5.00	mg/kg dry		43.5			4.23	25	
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Docket No. PG-041624
 Exhibit No. _____
 Page 26

North Creek Analytical - Bothell

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Jeff Gerdes, Project Manager



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Geo Engineers - Redmond
 8410 154th Ave NE
 Redmond, WA/USA 98052

Project: PSE-Bellevue Explosion Investigation Site
 Project Number: 0186-642-00
 Project Manager: Paul Craig

Reported:
 10/05/04 09:51

Conventional Chemistry by Standard Methods - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4I17042: Prepared 09/17/04 Using Water Extraction

Duplicate (4I17042-DUP1)

Source: B4I0375-01

Resistivity	8850		Ohms-cm		9410			6.13	30	
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Docket No. PG-041624
 Exhibit No. _____
 Page 27

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Page 8 of 12



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Geo Engineers - Redmond
 8410 154th Ave NE
 Redmond, WA/USA 98052

Project: PSE-Bellevue Explosion Investigation Site
 Project Number: 0186-642-00
 Project Manager: Paul Craig

Reported:
 10/05/04 09:51

Anions by EPA Method 300.0 - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 4I19003: Prepared 09/18/04 Using General Preparation

Blank (4I19003-BLK1)

Bromide	ND	4.00	mg/kg							
Chloride	ND	4.00	"							

LCS (4I19003-BS1)

Bromide	39.2	4.00	mg/kg	40.0		98.0	90-110			
Chloride	19.5	4.00	"	20.0		97.5	90-110			

LCS Dup (4I19003-BSD1)

Bromide	38.8	4.00	mg/kg	40.0		97.0	90-110	1.03	25	
Chloride	18.9	4.00	"	20.0		94.5	90-110	3.13	10	

Duplicate (4I19003-DUP2)

Source: B4I0425-01

Bromide	ND	4.00	mg/kg dry		ND			NA	25	
	22.7	4.00	"		20.8			8.74	25	

Matrix Spike (4I19003-MS2)

Source: B4I0425-01

Bromide	44.9	4.00	mg/kg dry	45.5	ND	98.7	75-125			
Chloride	45.4	4.00	"	22.7	20.8	108	62-157			

Batch 4I20038: Prepared 09/18/04 Using Water Extraction

Blank (4I20038-BLK1)

Fluoride	ND	2.00	mg/kg							
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LCS (4I20038-BS1)

Fluoride	8.43	2.00	mg/kg	8.00		105	90-110			
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Docket No. PG-041624
 Exhibit No. _____
 Page 28

North Creek Analytical - Bothell

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Page 9 of 12



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Geo Engineers - Redmond 8410 154th Ave NE Redmond, WA/USA 98052	Project: PSE-Bellevue Explosion Investigation Site Project Number: 0186-642-00 Project Manager: Paul Craig	Reported: 10/05/04 09:51
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**Anions by EPA Method 300.0 - Quality Control
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 4I20038: Prepared 09/18/04 Using Water Extraction

LCS Dup (4I20038-BSD1)

Fluoride	8.57	2.00	mg/kg	8.00		107	90-110	1.65	10	
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Duplicate (4I20038-DUP1)

Source: B4I0425-01

Fluoride	1.66	2.00	mg/kg dry		1.56			6.21	25	
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Matrix Spike (4I20038-MS1)

Source: B4I0425-01

Fluoride	3.04	2.00	mg/kg dry	9.10	1.56	16.3	75-125			Q-02
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Batch 4I21042: Prepared 09/18/04 Using Water Extraction

Blank (4I21042-BLK1)

Orthophosphate-phosphorus	ND	4.00	mg/kg							
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LCS (4I21042-BS1)

Orthophosphate-phosphorus	19.9	4.00	mg/kg	19.4		103	90-110			
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LCS Dup (4I21042-BSD1)

Orthophosphate-phosphorus	19.9	4.00	mg/kg	19.4		103	90-110	0.00	10	
---------------------------	------	------	-------	------	--	-----	--------	------	----	--

Duplicate (4I21042-DUP1)

Source: B4I0425-01

Orthophosphate-phosphorus	1.25	4.00	mg/kg dry		1.36			8.43	25	
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Matrix Spike (4I21042-MS1)

Source: B4I0425-01

Orthophosphate-phosphorus	1.96	4.00	mg/kg dry	22.1	1.36	2.71	64-117			Q-02
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Docket No. PG-041624
 Exhibit No. _____
 Page 29

North Creek Analytical - Bothell

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Page 10 of 12



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Geo Engineers - Redmond
 8410 154th Ave NE
 Redmond, WA/USA 98052

Project: PSE-Bellevue Explosion Investigation Site
 Project Number: 0186-642-00
 Project Manager: Paul Craig

Reported:
 10/05/04 09:51

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 4I17029: Prepared 09/17/04 Using General Preparation

Blank (4I17029-BLK1)

Dry Weight	100	1.00	%							
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Batch 4I20026: Prepared 09/19/04 Using General Preparation

Blank (4I20026-BLK1)

Dry Weight	100	1.00	%							
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Docket No. PG-041624
 Exhibit No. _____
 Page 30

North Creek Analytical - Bothell

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Geo Engineers - Redmond
 8410 154th Ave NE
 Redmond, WA/USA 98052

Project: PSE-Bellevue Explosion Investigation Site
 Project Number: 0186-642-00
 Project Manager: Paul Craig

Reported:
 10/05/04 09:51

Notes and Definitions

- Q-02 The spike recovery for this QC sample is outside of NCA established control limits due to sample matrix interference.
- Q-29 This sample was prepared outside of the method established holding time.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Docket No. PG-041624
 Exhibit No. _____
 Page 31

North Creek Analytical - Bothell

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Jeff Gerdes, Project Manager

CHAIN OF CUSTODY RECORD

GEOENGINEERS, INC.
 8410 154TH AVENUE N.E.
 REDMOND, WASHINGTON 98052
 (425) 861-6000



DATE _____ OF _____
 PAGE _____ OF _____
 LAB _____
 LAB NO. _____

PROJECT NAME/LOCATION		PROJECT NUMBER		PROJECT MANAGER		SAMPLED BY		ANALYSIS REQUIRED										NOTES/COMMENTS						
PXE - Bellevue Explosives Train Station Site		0186-642-00		Paul Craig		Robert Trahan				Ammonia		Soil Resistivity		Sulfides		Fluorides		Phosphates		Soil		Total Acidity/Alkalinity		(Preserved, filtered, etc.)
LAB	GEOENGINEERS	SAMPLE IDENTIFICATION	SAMPLE COLLECTION		# OF JARS	PH																		
			DATE	TIME			MATRIX	Chlorides	Sulfides	Fluorides	Phosphates	Soil	Resistivity	Ammonia	STD TAT	Bromine		Sodium Hydroxide	Confirm Moisture Content					
		091604-TRENCH	9-16-04	1115	Soil	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
		091604-TRENCH	9-16-04	1125	Soil	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
		091604-TRENCH	9-16-04	1155	Soil	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
		091604-RIMSTONE	9-16-04	1220	Soil	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

RELINQUISHED BY SIGNATURE	RELINQUISHED BY SIGNATURE	RELINQUISHED BY SIGNATURE	RELINQUISHED BY SIGNATURE
PRINTED NAME Robert Trahan	PRINTED NAME Paul Craig	PRINTED NAME Robert Trahan	PRINTED NAME Paul Craig
DATE 9-16-04	DATE 9-16-04	DATE 9-16-04	DATE 9-16-04
TIME 15:00	TIME 14:00	TIME 14:00	TIME 14:00
RECEIVED BY SIGNATURE	RECEIVED BY SIGNATURE	RECEIVED BY SIGNATURE	RECEIVED BY SIGNATURE
PRINTED NAME	PRINTED NAME	PRINTED NAME	PRINTED NAME
DATE	DATE	DATE	DATE
TIME	TIME	TIME	TIME

GEOENGINEERS, INC.
 8410 154TH AVENUE N.E.
 REDMOND, WASHINGTON 98052
 (425) 861-6000



CHAIN OF CUSTODY RECORD
 Revised Chain of Custody

DATE
 PAGE OF
 LAB
 LAB NO.

PROJECT NAME/LOCATION PSE - Bellevue Explosion Investigation Site
 PROJECT NUMBER 0186-642-00
 PROJECT MANAGER Paul Craig

SAMPLED BY Robert Trebers

LAB	GEOENGINEERS	SAMPLE COLLECTION		# OF JARS	ANALYSIS REQUIRED	NOTES/COMMENTS
		DATE	TIME			
01	OSILON-TRENCH	9-16-04	1115	5	Soil	Ammonia Resistivity Phosphates Fluorides Sulfides Chlorides HI
02	BASE					
03	OSILON-TRENCH	9-16-04	1125	5	Soil	
04	SIDEWALL					
05	OSILON-TRENCH	9-16-04	1155	5	Soil	
06	RIVERGROUND					
07	OSILON-REHOTE	9-16-04	1120	5	Soil	
08	BEKGROUND					

RELINQUISHED BY SIGNATURE	FIRM	DATE	TIME	RECEIVED BY SIGNATURE	FIRM	DATE	TIME
<i>[Signature]</i>	GE	9-16-04	14:00	<i>[Signature]</i>	GE	9-16-04	14:00
PRINTED NAME <u>Robert Trebers</u>				PRINTED NAME <u>Robert Trebers</u>			
RELINQUISHED BY SIGNATURE	FIRM	DATE	TIME	RECEIVED BY SIGNATURE	FIRM	DATE	TIME
<i>[Signature]</i>	GE	9-16-04	14:00	<i>[Signature]</i>	GE	9-16-04	14:00
PRINTED NAME <u>Robert Trebers</u>				PRINTED NAME <u>Robert Trebers</u>			

ADDITIONAL COMMENTS:

CHAIN OF CUSTODY RECORD

B410425

GEOENGINEERS, INC.
 8410 154TH AVENUE N.E.
 FREDMOND, WASHINGTON 98052
 (425) 861-6000

Geo Engineers

DATE _____ OF _____
 PAGE _____ OF _____
 LAB _____ OF _____
 LAB NO. _____

PROJECT NAME/LOCATION		PSE - Bellevue Explosion Investigation		Site		ANALYSIS REQUIRED		NOTES/COMMENTS	
PROJECT NUMBER		Q186-642-00						(Preserved, filtered, etc.)	
PROJECT MANAGER		Paul Craig							
SAMPLED BY		Robert Trahan							
LAB	GEOENGINEERS	SAMPLE COLLECTION		# OF JARS					
		DATE	TIME						
	091604-TRENCH	9-16-04	1115	5	Soil				
	BASE								
	091604-TRENCH	9-16-04	1125	5	Soil				
	SIDEWALK								
	091604-TRENCH	9-16-04	1155	5	Soil				
	BACKGROUND								
	091604-REMOTE	9-16-04	1220	5	Soil				
	BACKGROUND								

Chlorides
Sulfides
Fluorides
Phosphates
Soil Resistivity
Ammonia
STD TAT

RELINQUISHED BY
 SIGNATURE: [Signature]
 PRINTED NAME: Robert Trahan
 DATE: 9-16-04 TIME: 14:00
 RECEIVED BY
 SIGNATURE: [Signature]
 PRINTED NAME: Robert Trahan
 DATE: 9-16-04 TIME: 14:00

RELINQUISHED BY
 SIGNATURE: [Signature]
 PRINTED NAME: [Name]
 DATE: [Date] TIME: [Time]

RECEIVED BY
 SIGNATURE: [Signature]
 PRINTED NAME: [Name]
 DATE: [Date] TIME: [Time]

ADDITIONAL COMMENTS:
 W/S 13.7