

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 Phone: (303)894-2100 Fax: (303)894-2109



FOR OGCC USE ONLY

RECEIVED
9/17/2012

SPILL/RELEASE REPORT

This form is to be submitted by the party responsible for the oil and gas spill or release. Any spill or release which may impact waters of the State must be reported as soon as practicable; any spill over 20 bbls must be reported within 24 hours and all spills over five bbls must be reported within ten days. Submit a Site Investigation and

Spill report taken by:

FACILITY ID:

OPERATOR INFORMATION

Name of Operator: <u>PDC Energy, Inc.</u>	OGCC Operator No: <u>69175</u>	Phone Numbers
Address: <u>1775 Sherman Street, Suite 3000</u>	No: <u>(303) 831-3971</u>	
City: <u>Denver</u> State: <u>CO</u> Zip: <u>80203</u>	Fax: <u>(303) 860-5838</u>	
Contact Person: <u>Brandon Bruns</u>	Email: <u>brandon.bruns@pdce.com</u>	

DESCRIPTION OF SPILL OR RELEASE

Date of Incident: <u>8/22/2012</u>	Facility Name & No: <u>Seeley Lake 1, 2, 3, 4, 5</u>	County: <u>Weld</u>
Type of Facility (well, tank battery, flow line, pit): <u>Tank Battery</u>	QtrQtr: <u>SESW</u> Section: <u>24</u>	
Well Name and Number: <u>Seeley Lake 1, 2, 3, 4, 5</u>	Township: <u>6N</u> Range: <u>66W</u>	
API Number: <u>05-123-16690</u>	Meridian: <u>6th</u>	

Specify volume spilled and recovered (in bbls) for the following materials:

Oil spilled: Unk Oil recov'd: 0 Water spilled: 0 Water recov'd: 0 Other spilled: 0 Other recov'd: 0

Ground Water impacted? ☒ Yes ☐ No Surface Water impacted? ☐ Yes ☒ No

Contained within berm? ☐ Yes ☒ No Area and vertical extent of spill: ~2,300 ft² x ~7' bgs

Current land use: Oil and Gas Production Facility/Agriculture Weather conditions: High 80s

Soil/geology description: Silty fine sands

IF LESS THAN A MILE, report distance IN FEET to nearest ... Surface water: ~535' S Wetlands: NA Buildings: ~915' W

Livestock: NA Water wells: ~1,760 SE Depth to shallowest ground water: 7' bgs

Cause of spill (e.g. equipment failure, human error, etc.): Equipment failure Detailed description of the spill/release incident:

During the removal of a buried concrete vault, a historical release was discovered. Wells Seeley Lake 1 (API #05-123-16690), Seeley Lake 2 (API #05-123-16627), Seeley Lake 3 (API #05-123-16521), Seeley Lake 4 (API #05-123-16520), and Seeley Lake 5 (API #05-123-23657) produce to this tank battery. A topographic map of the site is included as Figure 1.

CORRECTIVE ACTION

Describe immediate response (how stopped, contained and recovered):

Excavation of impacted soil began on August 22, 2012 and concluded on August 24, 2012. Approximately 750 cubic yards (yd3) of impacted material was removed and transported to the Waste Management Facility in Ault, Colorado. The location and extent of the excavation is illustrated on Figure 2.

Describe any emergency pits constructed: NA

How was the extent of contamination determined?

On August 23, 2012, three soil samples were collected at the north wall (SS02) at approximately 6 feet below ground surface (bgs), at the northwest wall (SS03) at approximately 5.5 feet bgs, and at the northeast wall (SS04) at approximately 5.5 feet bgs. One soil sample (SS01) was collected on the northern floor of the excavation at approximately 7 feet bgs. On August 24, 2012, three soil samples were collected on the walls of the excavation, one at the south (SS06) at approximately 5.5 feet bgs, one at the southeast wall (SS08) at approximately 6 feet bgs, and one at the southwest wall (SS09) at approximately 5.5 feet bgs. An additional sample (SS05) was collected on the southern floor of the excavation at approximately 8 feet bgs. Due to the space constraint to the east by the gas sales line, a test pit was dug 9 feet east of the excavation to delineate impacts outside of the current area. A confirmation soil sample (SS07) was collected at approximately 7 feet bgs. Soil sample locations were determined based on elevated photoionization detector (PID) readings. Soil samples were submitted for laboratory analysis of benzene, toluene, ethylbenzene, and total xylenes, TPH (GRO), and naphthalene by EPA Method 8260B and TPH (DRO) by EPA Method 8015. Soil analytical results are summarized in Table 1. Groundwater was encountered during the excavation activities at approximately 7 feet bgs. On August 24, 2012, a groundwater sample (GW01) was collected in the central area of the excavation and the laboratory results are summarized in Table 2. The laboratory analytical reports are included as Attachment A. The extent of the excavation, test pit location, and the soil and groundwater sample locations are illustrated on Figure 2.

Further remediation activities proposed (attach separate sheet if needed):

PDC is currently evaluating in-situ remediation strategies to address residual subsurface impacts.

Describe measures taken to prevent problem from reoccurring:

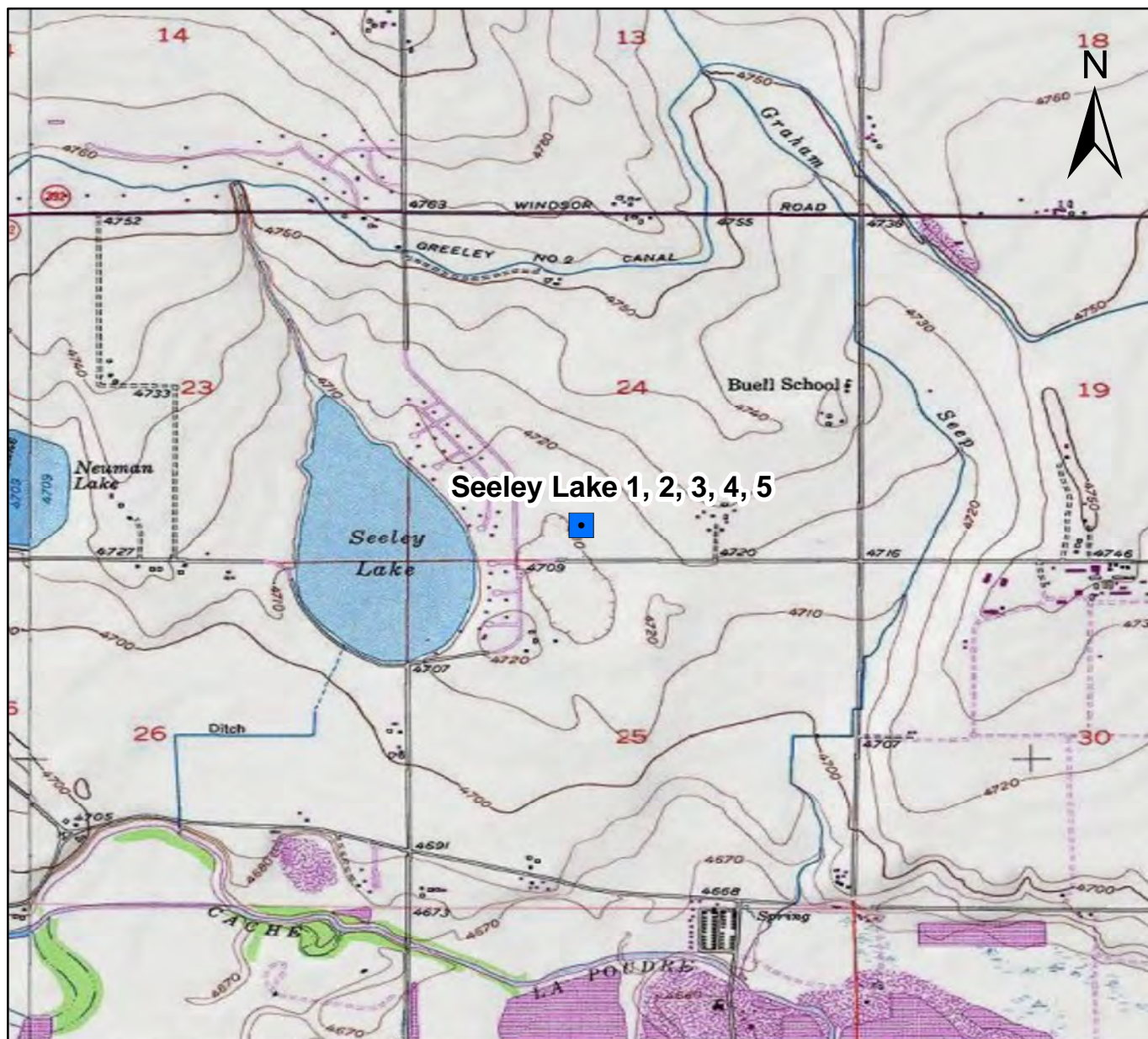
PDC will initiate yearly production line testing once remediation activities are completed and the location is back to being operational.

OTHER NOTIFICATIONS

List the parties and agencies notified (County, BLM, EPA, DOT, Local Emergency Planning Coordinator or other).

Date	Agency	Contact	Phone	Response
8/28/2012		Landowner Mr. Fagerberg		

Spill/Release Tracking No: **2230381**



0 1,250 2,500 5,000
Feet



Figure 1

Site Location Map
Seeley Lake 1, 2, 3, 4, 5
SESW S24 T6N R66W
Weld County, Colorado

Drawn By: CAW
Date: 08/27/2012

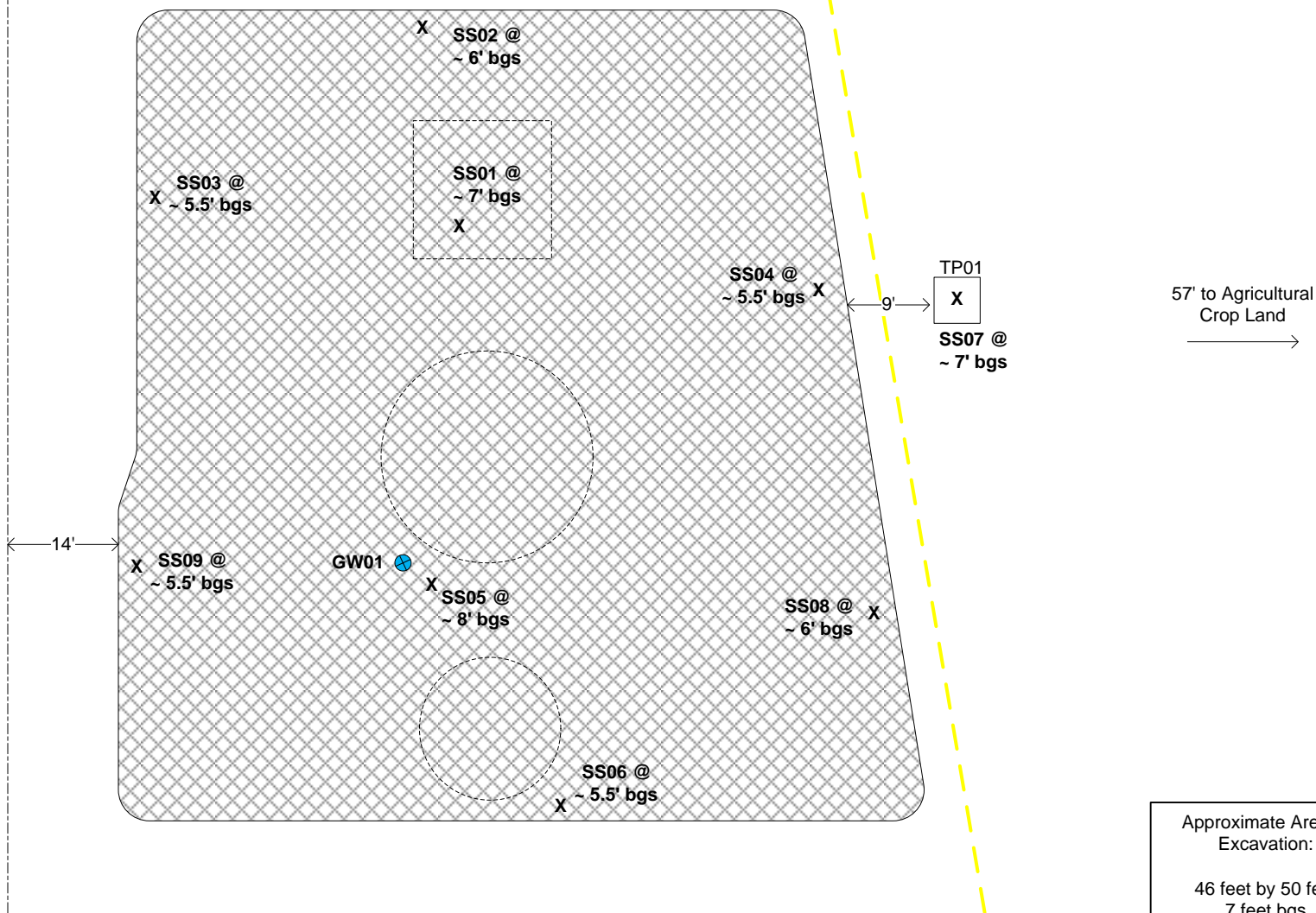


Property Fence

27' to Separator and
Meter House

DCP Sales Line

Surface
Drainage



Approximate Area of
Excavation:

46 feet by 50 feet
7 feet bgs

PROJECT
NO:

DRAWN BY: CAW

DATE: 8/27/2012

Facility Diagram
PDC Energy – DJ Basin
Seeley Lake 1, 2, 3, 4, 5
SESW S24 T6N R66W
Weld County, CO



5690 Webster Avenue
Arvada CO 80002

LEGEND

- Former Storage Tank Location
- Approximate Area of Excavation
- X Soil Sample Location
- Groundwater Sample Location

FIGURE 2

Not to Scale

TABLE 1
SEELEY LAKE 1, 2, 3, 4, 5
SOIL ANALYTICAL RESULTS TABLE

Sample ID	Date Sampled	Depth (Feet bgs)	PID Readings (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH ⁽²⁾ (mg/kg)
SS01	8/23/2012	7	65	0.017	0.0064	0.017	0.13	<0.005	<43
SS02	8/23/2012	6	47	<0.005	<0.005	<0.005	<0.01	<0.005	<44
SS03	8/23/2012	5.5	125	0.0066	<0.005	<0.005	<0.01	<0.005	<50
SS04	8/23/2012	5.5	1,401	0.61	4.7	0.45	9.0	0.11	187
SS05	8/24/2012	8	90	0.047	0.0058	0.024	<0.01	0.0088	<44
SS06	8/24/2012	5.5	260	<0.005	<0.005	<0.005	<0.01	<0.005	<45
SS07	8/24/2012	7	0	<0.005	<0.005	<0.005	<0.01	<0.005	<50
SS08	8/24/2012	6	1,905	0.30	0.46	0.17	<0.01	0.037	<50
SS09	8/24/2012	5.5	164	<0.005	<0.005	<0.005	<0.01	<0.005	<50
COGCC standards for Soil (mg/kg) ⁽¹⁾				0.17	85	100	175	23	500

Notes:

1). Standards for Soil are taken from 2 CCR 404-1, Table 910-1, effective April 1, 2009.

2). TPH - Total volatile and extractable petroleum hydrocarbons. Value calculated by adding GRO and DRO concentrations.

GRO - Gasoline range organics.

DRO - Diesel range organics.

mg/kg= Milligrams per kilogram.

bgs - Below ground surface.

ppm - Parts per million

ND- Not Detected

Bold red values indicate an exceedance of the COGCC soil standards for the Site.

TABLE 2
SEELEY LAKE 1, 2, 3, 4, 5
GROUNDWATER ANALYTICAL RESULTS

Sample ID	Date Sampled	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Naphthalene (ug/L)
GW01	8/24/2012	180	23	22	140	4.9
COGCC standards for Groundwater (ug/L) ⁽¹⁾		5	560	700	1,400	

Notes:

1). The environmental cleanup standards for groundwater that are applicable to this site are the Colorado Oil and Gas Conservation Commission (COGCC) standards for contaminants in groundwater according to Table 910-1 of the COGCC 900 Series Rule for E&P Waste Management.

Bold red values indicate an exceedance of the COGCC soil standards for the Site.

ug/L= Micrograms per liter. ND - Not Detected

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

August 24, 2012

Brandon Bruns
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Seele Lake 1,2,3,4,5

Enclosed are the results of analyses for samples received by Summit Scientific on 08/23/12 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury For Ben Shrewsbury
President / Laboratory Director



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Seele Lake 1,2,3,4,5

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
08/24/12 06:42

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@7'	R208154-01	Soil	08/23/12 11:45	08/23/12 17:00
SS02@6'	R208154-02	Soil	08/23/12 11:50	08/23/12 17:00
SS03@5.5'	R208154-03	Soil	08/23/12 12:45	08/23/12 17:00
SS04@5.5'	R208154-04	Soil	08/23/12 14:25	08/23/12 17:00

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Seele Lake 1,2,3,4,5

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
08/24/12 06:42

SS01@7'
R208154-01 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **08/23/12 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	43	mg/kg	1	2082311	08/23/12	08/23/12	8015 DRO	

Date Sampled: **08/23/12 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		105 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/23/12 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2082312	08/23/12	08/23/12	EPA 8260B	
Benzene	0.017	0.0050	"	"	"	"	"	"	
Toluene	0.0064	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.017	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.13	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2.4	0.50	"	"	"	"	"	"	

Date Sampled: **08/23/12 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		98.3 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.0 %	30-150		"	"	"	"	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Seele Lake 1,2,3,4,5

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
08/24/12 06:42

SS02@6'
R208154-02 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **08/23/12 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	44	mg/kg	1	2082311	08/23/12	08/23/12	8015 DRO	

Date Sampled: **08/23/12 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.4 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/23/12 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2082312	08/23/12	08/23/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/23/12 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		115 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		97.1 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.7 %	30-150		"	"	"	"	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Seele Lake 1,2,3,4,5
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
08/24/12 06:42

SS03@5.5'
R208154-03 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **08/23/12 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2082311	08/23/12	08/23/12	8015 DRO	

Date Sampled: **08/23/12 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.3 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/23/12 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2082312	08/23/12	08/23/12	EPA 8260B	
Benzene	0.0066	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/23/12 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		92.6 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.9 %	30-150		"	"	"	"	

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Seele Lake 1,2,3,4,5

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
08/24/12 06:42

SS04@5.5'
R208154-04 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **08/23/12 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	97	42	mg/kg	1	2082311	08/23/12	08/23/12	8015 DRO	

Date Sampled: **08/23/12 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		94.8 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/23/12 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.11	0.0050	mg/kg	1	2082312	08/23/12	08/23/12	EPA 8260B	
Benzene	0.61	0.0050	"	"	"	"	"	"	
Toluene	4.7	0.050	"	10	"	"	"	"	
Ethylbenzene	0.45	0.0050	"	1	"	"	"	"	
Xylenes (total)	9.0	0.10	"	10	"	"	"	"	
Gasoline Range Hydrocarbons	90	5.0	"	"	"	"	"	"	

Date Sampled: **08/23/12 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		92.0 %	30-150		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		124 %	30-150		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		118 %	30-150		"	"	"	"	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Seele Lake 1,2,3,4,5
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
08/24/12 06:42

Total Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 2082311 - EPA 3550A

Blank (2082311-BLK1)

Prepared & Analyzed: 08/23/12

C10-C28 (DRO) ND 50 mg/kg

LCS (2082311-BS1)

Prepared & Analyzed: 08/23/12

C10-C28 (DRO) 488 50 mg/kg 501 97.5 77-133

LCS Dup (2082311-BSD1)

Prepared: 08/23/12 Analyzed: 08/24/12

C10-C28 (DRO) 493 50 mg/kg 501 98.4 77-133 0.990 11

Matrix Spike (2082311-MS1)

Source: R208154-01

Prepared: 08/23/12 Analyzed: 08/24/12

C10-C28 (DRO) 455 50 mg/kg 471 ND 96.7 68-141

Matrix Spike Dup (2082311-MSD1)

Source: R208154-01

Prepared: 08/23/12 Analyzed: 08/24/12

C10-C28 (DRO) 449 50 mg/kg 481 ND 93.3 68-141 1.48 25

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Seele Lake 1,2,3,4,5
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
08/24/12 06:42

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 2082312 - EPA 5030 Soil MS

Blank (2082312-BLK1)

Prepared & Analyzed: 08/23/12

Naphthalene	ND	0.0050	mg/kg							
Benzene	ND	0.0050	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0407		"	0.0397	103	30-150				
Surrogate: Toluene-d8	0.0370		"	0.0400	92.5	30-150				
Surrogate: 4-Bromofluorobenzene	0.0385		"	0.0400	96.2	30-150				

LCS (2082312-BS1)

Prepared & Analyzed: 08/23/12

Naphthalene	ND	0.0050	mg/kg			85.7-124				
Benzene	0.0795	0.0050	"	0.100	79.5	58.1-115				
Toluene	0.0902	0.0050	"	0.100	90.2	56.7-123				
Ethylbenzene	0.106	0.0050	"	0.100	106	61.4-138				
m,p-Xylene	0.213	0.010	"	0.200	106	63.6-128				
o-Xylene	0.121	0.0050	"	0.100	121	62.6-134				
Surrogate: 1,2-Dichloroethane-d4	0.0388		"	0.0397	97.8	30-150				
Surrogate: Toluene-d8	0.0376		"	0.0400	94.0	30-150				
Surrogate: 4-Bromofluorobenzene	0.0375		"	0.0400	93.8	30-150				

LCS Dup (2082312-BSD1)

Prepared: 08/23/12 Analyzed: 08/24/12

Naphthalene	ND	0.0050	mg/kg			85.7-124			12.6	
Benzene	0.0807	0.0050	"	0.100	80.7	58.1-115	1.54	20		
Toluene	0.0860	0.0050	"	0.100	86.0	56.7-123	4.73	20		
Ethylbenzene	0.108	0.0050	"	0.100	108	61.4-138	2.02	12.2		
m,p-Xylene	0.215	0.010	"	0.200	107	63.6-128	0.884	13.2		
o-Xylene	0.115	0.0050	"	0.100	115	62.6-134	5.06	12.2		
Surrogate: 1,2-Dichloroethane-d4	0.0405		"	0.0397	102	30-150				
Surrogate: Toluene-d8	0.0375		"	0.0400	93.7	30-150				
Surrogate: 4-Bromofluorobenzene	0.0353		"	0.0400	88.2	30-150				

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Seele Lake 1,2,3,4,5
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
08/24/12 06:42

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 2082312 - EPA 5030 Soil MS

Matrix Spike (2082312-MS1)

Source: R208154-01

Prepared: 08/23/12

Analyzed: 08/24/12

Naphthalene	ND	0.0050	mg/kg		0.00452		34-148			
Benzene	0.0832	0.0050	"	0.0855	0.0174	76.9	47.2-120			
Toluene	0.0820	0.0050	"	0.0855	0.00644	88.4	47.7-125			
Ethylbenzene	0.0962	0.0050	"	0.0855	0.0169	92.8	34.5-150			
m,p-Xylene	0.190	0.010	"	0.171	0.104	49.9	30-150			
o-Xylene	0.106	0.0050	"	0.0855	0.0227	97.3	30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0351		"	0.0339		104	30-150			
Surrogate: Toluene-d8	0.0324		"	0.0342		94.8	30-150			
Surrogate: 4-Bromofluorobenzene	0.0319		"	0.0342		93.2	30-150			

Matrix Spike Dup (2082312-MSD1)

Source: R208154-01

Prepared: 08/23/12

Analyzed: 08/24/12

Naphthalene	ND	0.0050	mg/kg		0.00452		34-148		23.9	
Benzene	0.0854	0.0050	"	0.0899	0.0174	75.5	47.2-120	2.62	15.1	
Toluene	0.0805	0.0050	"	0.0899	0.00644	82.4	47.7-125	1.84	16.8	
Ethylbenzene	0.0996	0.0050	"	0.0899	0.0169	92.0	34.5-150	3.47	10.1	
m,p-Xylene	0.205	0.010	"	0.180	0.104	55.8	30-150	7.63	17.2	
o-Xylene	0.112	0.0050	"	0.0899	0.0227	99.4	30-150	5.71	15.2	
Surrogate: 1,2-Dichloroethane-d4	0.0384		"	0.0357		108	30-150			
Surrogate: Toluene-d8	0.0321		"	0.0360		89.1	30-150			
Surrogate: 4-Bromofluorobenzene	0.0334		"	0.0360		92.9	30-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Seele Lake 1,2,3,4,5

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
08/24/12 06:42

Notes and Definitions

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

Summit Scientific

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A handwritten signature in black ink, appearing to be 'MSM'.

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

August 27, 2012

Brandon Bruns
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Seele Lake 1,2,3,4,5

Enclosed are the results of analyses for samples received by Summit Scientific on 08/24/12 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Joe Egry IV", with a stylized flourish at the end.

Joe Egry For Ben Shrewsbury
President / Laboratory Director



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Seele Lake 1,2,3,4,5

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
08/27/12 09:36

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS05@8'	R208163-01	Soil	08/24/12 09:15	08/24/12 16:30
SS06@5.5'	R208163-02	Soil	08/24/12 10:30	08/24/12 16:30
SS07@7'	R208163-03	Soil	08/24/12 11:00	08/24/12 16:30
SS08@6'	R208163-04	Soil	08/24/12 11:30	08/24/12 16:30
SS09@5.5'	R208163-05	Soil	08/24/12 13:20	08/24/12 16:30
GW01	R208163-06	Water	08/24/12 09:45	08/24/12 16:30

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Seele Lake 1,2,3,4,5

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
08/27/12 09:36

SS05@8'
R208163-01 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: 08/24/12 09:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	44	mg/kg	1	2082502	08/25/12	08/25/12	8015 DRO	

Date Sampled: 08/24/12 09:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		102 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 08/24/12 09:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.0088	0.0050	mg/kg	1	2082503	08/25/12	08/25/12	EPA 8260B	
Benzene	0.047	0.0050	"	"	"	"	"	"	
Toluene	0.0058	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.024	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 08/24/12 09:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		89.1 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.9 %	30-150		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Seele Lake 1,2,3,4,5

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
08/27/12 09:36

SS06@5.5'
R208163-02 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **08/24/12 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	45	mg/kg	1	2082502	08/25/12	08/25/12	8015 DRO	

Date Sampled: **08/24/12 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		97.3 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/24/12 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2082503	08/25/12	08/25/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/24/12 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		107 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.9 %	30-150		"	"	"	"	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Seele Lake 1,2,3,4,5

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
08/27/12 09:36

SS07@7'
R208163-03 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **08/24/12 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2082502	08/25/12	08/25/12	8015 DRO	

Date Sampled: **08/24/12 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		102 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/24/12 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2082503	08/25/12	08/25/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/24/12 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		112 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		91.4 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.6 %	30-150		"	"	"	"	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Seele Lake 1,2,3,4,5

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
08/27/12 09:36

SS08@6'
R208163-04 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **08/24/12 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2082502	08/25/12	08/25/12	8015 DRO	

Date Sampled: **08/24/12 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		110 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/24/12 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.037	0.0050	mg/kg	1	2082503	08/25/12	08/25/12	EPA 8260B	
Benzene	0.30	0.0050	"	"	"	"	"	"	
Toluene	0.46	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.17	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/24/12 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		96.4 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		116 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.7 %	30-150		"	"	"	"	

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Seele Lake 1,2,3,4,5

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
08/27/12 09:36

SS09@5.5'
R208163-05 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **08/24/12 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2082502	08/25/12	08/25/12	8015 DRO	

Date Sampled: **08/24/12 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.6 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/24/12 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2082503	08/25/12	08/25/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/24/12 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		91.9 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.9 %	30-150		"	"	"	"	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Seele Lake 1,2,3,4,5
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
08/27/12 09:36

GW01
R208163-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/24/12 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Naphthalene	4.9	1.0		ug/l	1	2082504	08/25/12	08/26/12	EPA 8260B	
Benzene	180	1.0		"	"	"	"	"	"	
Toluene	23	1.0		"	"	"	"	"	"	
Ethylbenzene	22	1.0		"	"	"	"	"	"	
Xylenes (total)	140	1.0		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2200	500		"	"	"	"	"	"	

Date Sampled: **08/24/12 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		80.9 %		49.7-150		"	"	"	"	
Surrogate: Toluene-d8		99.8 %		51-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.7 %		50.1-150		"	"	"	"	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Seele Lake 1,2,3,4,5
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
08/27/12 09:36

Total Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 2082502 - EPA 3550A

Blank (2082502-BLK1)

Prepared & Analyzed: 08/25/12

C10-C28 (DRO) ND 50 mg/kg

LCS (2082502-BS1)

Prepared & Analyzed: 08/25/12

C10-C28 (DRO) 516 50 mg/kg 501 103 77-133

LCS Dup (2082502-BSD1)

Prepared & Analyzed: 08/25/12

C10-C28 (DRO) 505 50 mg/kg 501 101 77-133 2.16 11

Matrix Spike (2082502-MS1)

Source: R208164-01

Prepared & Analyzed: 08/25/12

C10-C28 (DRO) 633 50 mg/kg 459 149 105 68-141

Matrix Spike Dup (2082502-MSD1)

Source: R208164-01

Prepared & Analyzed: 08/25/12

C10-C28 (DRO) 643 50 mg/kg 466 149 106 68-141 1.63 25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Seele Lake 1,2,3,4,5
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
08/27/12 09:36

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 2082503 - EPA 5030 Soil MS

Blank (2082503-BLK1)

Prepared & Analyzed: 08/25/12

Naphthalene	ND	0.0050	mg/kg							
Benzene	ND	0.0050	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0327		"	0.0397	82.3	30-150				
Surrogate: Toluene-d8	0.0368		"	0.0400	91.9	30-150				
Surrogate: 4-Bromofluorobenzene	0.0343		"	0.0400	85.6	30-150				

LCS (2082503-BS1)

Prepared & Analyzed: 08/25/12

Naphthalene	ND	0.0050	mg/kg			64-139				
Benzene	0.0779	0.0050	"	0.100	77.9	58-126				
Toluene	0.0898	0.0050	"	0.100	89.8	60-132				
Ethylbenzene	0.106	0.0050	"	0.100	106	74-138				
m,p-Xylene	0.213	0.010	"	0.200	107	72-135				
o-Xylene	0.114	0.0050	"	0.100	114	73-139				
Surrogate: 1,2-Dichloroethane-d4	0.0347		"	0.0397	87.4	30-150				
Surrogate: Toluene-d8	0.0375		"	0.0400	93.7	30-150				
Surrogate: 4-Bromofluorobenzene	0.0344		"	0.0400	86.0	30-150				

LCS Dup (2082503-BSD1)

Prepared & Analyzed: 08/25/12

Naphthalene	ND	0.0050	mg/kg			64-139			12	
Benzene	0.0788	0.0050	"	0.100	78.8	58-126	1.07		13	
Toluene	0.0906	0.0050	"	0.100	90.6	60-132	0.798		14	
Ethylbenzene	0.108	0.0050	"	0.100	108	74-138	1.46		13	
m,p-Xylene	0.214	0.010	"	0.200	107	72-135	0.561		14	
o-Xylene	0.114	0.0050	"	0.100	114	73-139	0.316		13	
Surrogate: 1,2-Dichloroethane-d4	0.0346		"	0.0397	87.1	30-150				
Surrogate: Toluene-d8	0.0373		"	0.0400	93.2	30-150				
Surrogate: 4-Bromofluorobenzene	0.0340		"	0.0400	85.0	30-150				

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Seele Lake 1,2,3,4,5
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
08/27/12 09:36

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 2082503 - EPA 5030 Soil MS

Matrix Spike (2082503-MS1)

Source: R208164-01

Prepared & Analyzed: 08/25/12

Naphthalene	ND	0.0050	mg/kg	ND	ND		15-161			
Benzene	0.0831	0.0050	"	0.100	0.00	83.1	33-127			
Toluene	0.0915	0.0050	"	0.100	0.00	91.5	32-131			
Ethylbenzene	0.106	0.0050	"	0.100	0.00	106	24-153			
m,p-Xylene	0.212	0.010	"	0.200	0.00	106	12-157			
o-Xylene	0.112	0.0050	"	0.100	0.00	112	35-149			
Surrogate: 1,2-Dichloroethane-d4	0.0403		"	0.0397		101	30-150			
Surrogate: Toluene-d8	0.0376		"	0.0400		94.0	30-150			
Surrogate: 4-Bromofluorobenzene	0.0335		"	0.0400		83.8	30-150			

Matrix Spike Dup (2082503-MSD1)

Source: R208164-01

Prepared & Analyzed: 08/25/12

Naphthalene	ND	0.0050	mg/kg	ND	ND		15-161		44	
Benzene	0.0820	0.0050	"	0.0980	0.00	83.6	33-127	1.40	33	
Toluene	0.0921	0.0050	"	0.0980	0.00	93.9	32-131	0.609	31	
Ethylbenzene	0.109	0.0050	"	0.0980	0.00	111	24-153	2.73	23	
m,p-Xylene	0.217	0.010	"	0.196	0.00	111	12-157	2.44	67	
o-Xylene	0.113	0.0050	"	0.0980	0.00	115	35-149	0.131	38	
Surrogate: 1,2-Dichloroethane-d4	0.0385		"	0.0389		98.8	30-150			
Surrogate: Toluene-d8	0.0364		"	0.0392		92.8	30-150			
Surrogate: 4-Bromofluorobenzene	0.0325		"	0.0392		82.8	30-150			

Batch 2082504 - EPA 5030 Water MS

Blank (2082504-BLK1)

Prepared: 08/25/12 Analyzed: 08/26/12

Naphthalene	ND	1.0	ug/l							
Benzene	ND	1.0	"							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Gasoline Range Hydrocarbons	ND	500	"							
Surrogate: 1,2-Dichloroethane-d4	11.8		"	13.2		88.9	49.7-150			
Surrogate: Toluene-d8	12.5		"	13.3		93.6	51-150			
Surrogate: 4-Bromofluorobenzene	11.7		"	13.3		87.5	50.1-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Seele Lake 1,2,3,4,5
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
08/27/12 09:36

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 2082504 - EPA 5030 Water MS

LCS (2082504-BS1)

Prepared: 08/25/12 Analyzed: 08/26/12

Naphthalene	ND	1.0	ug/l				74-130			
Benzene	26.4	1.0	"	33.3		79.4	50-125			
Toluene	30.4	1.0	"	33.3		91.2	51-130			
Ethylbenzene	36.1	1.0	"	33.3		108	56-141			
m,p-Xylene	71.7	2.0	"	66.7		108	56-138			
o-Xylene	37.6	1.0	"	33.3		113	51-142			
Surrogate: 1,2-Dichloroethane-d4	11.3		"	13.2		85.2	49.7-150			
Surrogate: Toluene-d8	12.5		"	13.3		93.6	51-150			
Surrogate: 4-Bromofluorobenzene	11.4		"	13.3		85.5	50.1-150			

LCS Dup (2082504-BSD1)

Prepared: 08/25/12 Analyzed: 08/26/12

Naphthalene	ND	1.0	ug/l				74-130		9.87	
Benzene	26.7	1.0	"	33.3		80.1	50-125	0.903	14.6	
Toluene	30.8	1.0	"	33.3		92.5	51-130	1.34	18.9	
Ethylbenzene	36.5	1.0	"	33.3		109	56-141	1.19	11.9	
m,p-Xylene	72.3	2.0	"	66.7		108	56-138	0.903	13.7	
o-Xylene	38.4	1.0	"	33.3		115	51-142	2.05	15	
Surrogate: 1,2-Dichloroethane-d4	11.4		"	13.2		86.1	49.7-150			
Surrogate: Toluene-d8	12.5		"	13.3		93.8	51-150			
Surrogate: 4-Bromofluorobenzene	11.1		"	13.3		83.5	50.1-150			

Matrix Spike (2082504-MS1)

Source: R208163-06

Prepared: 08/25/12 Analyzed: 08/26/12

Naphthalene	3.37	1.0	ug/l		4.87		78-127			
Benzene	140	1.0	"	33.3	180	NR	41-127			QM-07
Toluene	41.2	1.0	"	33.3	22.8	55.4	32-140			
Ethylbenzene	43.3	1.0	"	33.3	21.8	64.6	32-151			
m,p-Xylene	134	2.0	"	66.7	117	24.3	29-153			QM-07
o-Xylene	50.4	1.0	"	33.3	24.4	78.0	34-152			
Surrogate: 1,2-Dichloroethane-d4	11.3		"	13.2		85.2	49.7-150			
Surrogate: Toluene-d8	13.0		"	13.3		97.4	51-150			
Surrogate: 4-Bromofluorobenzene	11.4		"	13.3		85.4	50.1-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Seele Lake 1,2,3,4,5
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
08/27/12 09:36

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 2082504 - EPA 5030 Water MS

Matrix Spike Dup (2082504-MSD1)		Source: R208163-06			Prepared: 08/25/12		Analyzed: 08/26/12			
Naphthalene	3.71	1.0	ug/l		4.87		78-127	9.60	7.87	QM-07
Benzene	145	1.0	"	33.3	180	NR	41-127	2.91	21.3	QM-07
Toluene	41.4	1.0	"	33.3	22.8	55.9	32-140	0.387	15.5	
Ethylbenzene	44.3	1.0	"	33.3	21.8	67.7	32-151	2.37	17.4	
m,p-Xylene	137	2.0	"	66.7	117	30.0	29-153	2.84	18.1	
o-Xylene	54.5	1.0	"	33.3	24.4	90.2	34-152	7.72	15	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	12.6		"	13.2		95.6	49.7-150			
Surrogate: Toluene-d8	12.7		"	13.3		95.3	51-150			
Surrogate: 4-Bromofluorobenzene	11.6		"	13.3		87.4	50.1-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Seele Lake 1,2,3,4,5

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
08/27/12 09:36

Notes and Definitions

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.

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