

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
8/15/2012

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>Petroleum Development Corporation</u>	OGCC Operator No: <u>69175</u>	Phone Numbers
Address: <u>1775 Sherman Street, Suite 3000</u>		No: <u>(303) 860-5800</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>bbruns@petd.com</u>

DESCRIPTION OF SPILL OR RELEASE

Date of Incident: <u>4/23/2012</u>	Facility Name & No: <u>Hettinger 34-18</u>	County: <u>Weld</u>
Type of Facility (well, tank battery, flow line, pit): <u>Tank Battery</u>		QtrQtr: <u>SWSE</u> Section: <u>18</u>
Well Name and Number: <u>Hettinger 34-18</u>		Township: <u>5N</u> Range: <u>64W</u>
API Number: <u>05-123-19476</u>		Meridian: <u>6th</u>

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

Oil spilled: 156 Oil recov'd: 68 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: ~1890 ft² x ~15 ft bgs

Current land use: Oil and Gas Production Facility/Agriculture Weather conditions: High 60s

Soil/geology description: Medium grained sands

IF LESS THAN A MILE, report distance IN FEET to nearest ... Surface water: NA Wetlands: NA Buildings: ~850' NW

Livestock: NA Water wells: ~557 S Depth to shallowest ground water: NA

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

During routine maintenance activities, it was discovered that a leak in a drain line from the production tank to the produced water tank had caused subsurface impacts below the bermed area containing the condensate and produced water tanks. A topographic map of the site is included as Figure 1.

CORRECTIVE ACTION

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

On April 23, 2012 PDC shut-in the well feeding the tank battery and the earthen berm was removed. Excavation occurred on April 23, 2012 and approximately 670 cubic yards (yd³) of impacted material was removed and shipped to the Waste Management Facility in Ault, Colorado. The location and extent of the excavation is illustrated on Figure 2. In addition to the excavation, a vacuum truck was utilized to recover approximately 68-barrels of oil released from the leaking drain line.

Describe any emergency pits constructed: NA

How was the extent of contamination determined?

On April 24, 2012, five soil samples were collected at approximately seven feet below ground surface (bgs) at the northwest corner (SS02), southwest corner (SS01), northeast corner (SS03) and southeast corner (SS04). On soil sample was also collected approximately 15 feet bgs at the floor of the excavation (SS05). A photoionization detector (PID) was used during sample collection to determine volatile organic compound (VOC) impacts within the soil. Soil samples were submitted for laboratory analysis of BTEX, TPH-GRO, and naphthalene by EPA Method 8260B and TPH-DRO by EPA Method 8015B. Soil analytical results are summarized in Table 1. Post excavation soil concentrations are in compliance with the COGCC Table 910-1 soil standards. Groundwater was not encountered during excavation activities. The laboratory analytical reports are included as Attachment A. The extent of the excavation and the soil sample locations within the excavation are illustrated on Figure 2.

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

Laboratory analytical results for soil indicate BTEX, TPH-GRO, TPH-DRO, and naphthalene concentrations for the samples collected from the extent of the excavation are in compliance with COGCC Table 910-1 concentration levels and are below laboratory reporting limits. Based on the laboratory results, all impacted material has been removed from the site and PDC is requesting a No Further Action determination for the site.

Describe measures taken to prevent problem from reoccurring:

PDC replaced the leaking line and is evaluating the use of upgraded fitting materials.

OTHER NOTIFICATIONS

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

Date	Agency	Contact	Phone	Response

Spill/Release Tracking No: 2230122

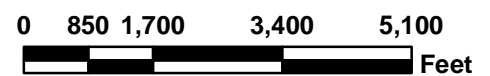
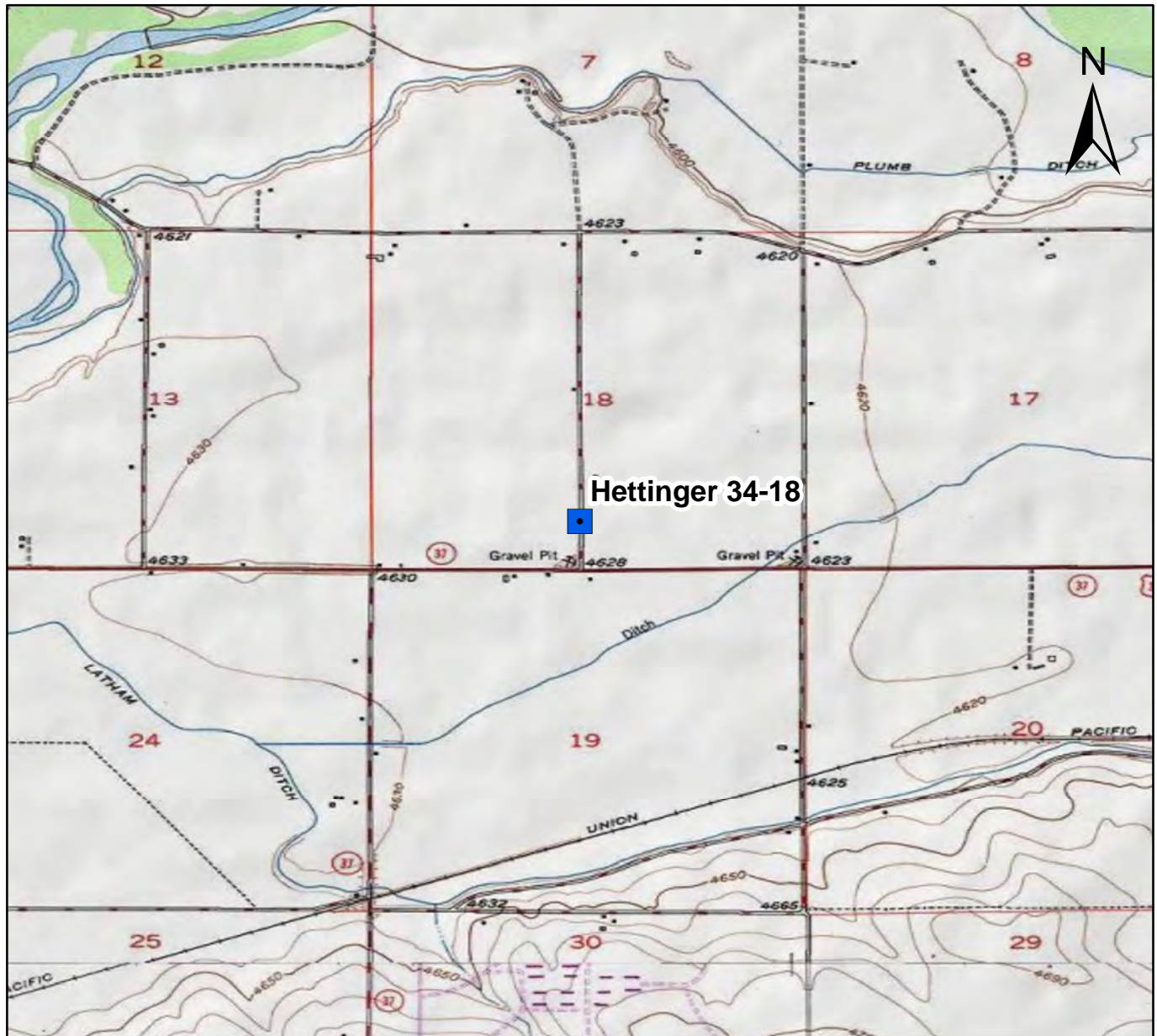
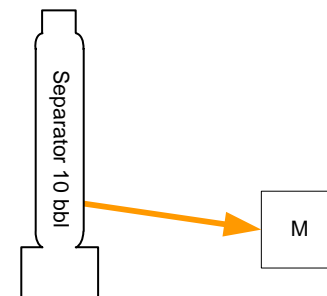
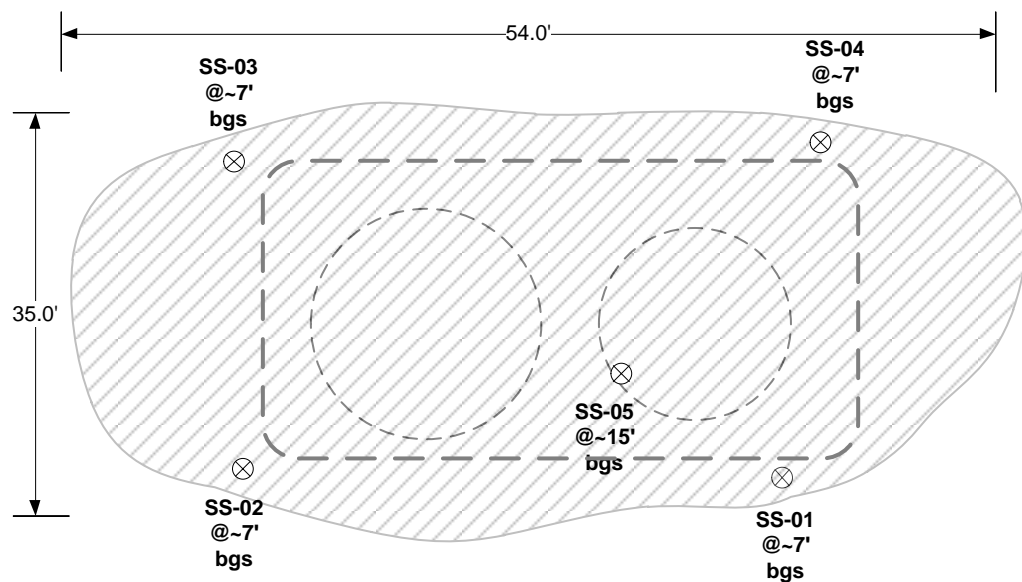


Figure 1

Site Location Map
 Hettinger 34-18
 SWSE S18 T5N R64W
 Weld County, Colorado

Drawn By: CAW
 Date: 04/27/2012





Total Excavation Area

Length (feet)	54
Width (feet)	35
Depth (feet)	15

PROJECT
NO: 011-1891

DRAWN BY: AMB

DATE: 4/25/2012

Facility Diagram
PDC Energy – DJ Basin
Hettinger 34-18
T5N 64W S18 SWSE
Weld County, CO



5690 Webster Street
Arvada, CO 80002

LEGEND	
	Soil Sample Location
	Former secondary containment location
	Former PW and condensate tank location
	Approximate extent of excavation
	Meter Shed

FIGURE 2
Not to Scale

TABLE 1
HETTINGER 34-18
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)	Napthalene (mg/kg)	TPH ⁽²⁾ (mg/kg)
SS01	4/24/2012	7	11.6	ND	ND	ND	ND	ND	ND
SS02	4/24/2012	7	2.6	ND	ND	ND	ND	ND	ND
SS03	4/24/2012	7	21.9	ND	ND	ND	ND	ND	ND
SS04	4/24/2012	7	5.6	ND	ND	ND	ND	ND	ND
SS05	4/24/2012	15	64	ND	ND	ND	ND	ND	ND
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.

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

April 25, 2012

Brandon Bruns
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Hettinger 34-18

Enclosed are the results of analyses for samples received by Summit Scientific on 04/24/12 16:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Paul Shrewsbury', is written over a light gray circular background.

Paul Shrewsbury For Ben Shrewsbury
President / Laboratory Director



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

Project: Hettinger 34-18
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/25/12 07:02

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01	R204182-01	Soil	04/24/12 07:20	04/24/12 16:40
SS02	R204182-02	Soil	04/24/12 07:25	04/24/12 16:40
SS03	R204182-03	Soil	04/24/12 07:30	04/24/12 16:40
SS04	R204182-04	Soil	04/24/12 07:35	04/24/12 16:40
SS05	R204182-05	Soil	04/24/12 07:50	04/24/12 16:40

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: Hettinger 34-18

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/25/12 07:02

Summit Scientific 264182

711 Corporate Circle Suite 1 • Golden, Colorado 80401
303-277-4910 • 303-277-4931 Fax

Client: PDC Energy

Address: 1775 Sherman St Suite 3000

City/State/Zip: Denver, CO 80203

Phone: (303) 860-5800

Sample Name: 41454-18480

Project Manager: Brandon Bruns

E-Mail: bbruns@pdc.com

Project Name: HETTINGER 34-18

Project Number:

Page 1 of 1

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:	Special Instructions	
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)			
34-18 Sampled 10 4/24/12 7:10														
604 Sampled 10 4/24/12 7:25														
34-18 Sampled 10 4/24/12 7:50														
34-18 Sampled 10 4/24/12 7:55														
34-18 Sampled 10 4/24/12 7:50														
Relinquished by: Date/Time: 4/24/12 14:40 Received by: Date/Time: Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/> 72 Hours Standard Notes: 1st sample 2.0-5 please contact Hysan for 710-253-2532														
Relinquished by: Date/Time: Received by: Date/Time: Sample Integrity: Temperature/Post Receipt: Initial: Yes/No														
Relinquished by: Date/Time: Received by: Date/Time: 4/24/12 14:40 www.s2scientific.com														

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: Hettinger 34-18
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/25/12 07:02

SS01
R204182-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/12 07:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2042411	04/24/12	04/25/12	8015 Full Carbon Chain	

Date Sampled: **04/24/12 07:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		95.7 %	80-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/12 07:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	5.0	ug/kg	1	2042410	04/24/12	04/25/12	EPA 8260B	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
Xylenes (total)	ND	10	"	"	"	"	"	"	
Naphthalene	ND	10	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	500	"	"	"	"	"	"	

Date Sampled: **04/24/12 07:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		96.4 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.8 %	78.4-125		"	"	"	"	

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: Hettinger 34-18
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/25/12 07:02

SS02
R204182-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/12 07:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2042411	04/24/12	04/25/12	8015 Full Carbon Chain	

Date Sampled: **04/24/12 07:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.3 %	80-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/12 07:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	5.0	ug/kg	1	2042410	04/24/12	04/25/12	EPA 8260B	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
Xylenes (total)	ND	10	"	"	"	"	"	"	
Naphthalene	ND	10	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	500	"	"	"	"	"	"	

Date Sampled: **04/24/12 07:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		120 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		98.2 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.6 %	78.4-125		"	"	"	"	

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: Hettinger 34-18
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
04/25/12 07:02

SS03
R204182-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/12 07:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2042411	04/24/12	04/25/12	8015 Full Carbon Chain	

Date Sampled: **04/24/12 07:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.7 %	80-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/12 07:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	5.0	ug/kg	1	2042410	04/24/12	04/25/12	EPA 8260B	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
Xylenes (total)	ND	10	"	"	"	"	"	"	
Naphthalene	ND	10	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	500	"	"	"	"	"	"	

Date Sampled: **04/24/12 07:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		117 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		96.2 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.1 %	78.4-125		"	"	"	"	

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: Hettinger 34-18
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
04/25/12 07:02

SS04
R204182-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/12 07:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2042411	04/24/12	04/25/12	8015 Full Carbon Chain	

Date Sampled: **04/24/12 07:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.9 %	80-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/12 07:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	5.0	ug/kg	1	2042410	04/24/12	04/25/12	EPA 8260B	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
Xylenes (total)	ND	10	"	"	"	"	"	"	
Naphthalene	ND	10	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	500	"	"	"	"	"	"	

Date Sampled: **04/24/12 07:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		119 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		99.5 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.5 %	78.4-125		"	"	"	"	

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: Hettinger 34-18
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/25/12 07:02

SS05
R204182-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/12 07:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2042411	04/24/12	04/25/12	8015 Full Carbon Chain	

Date Sampled: **04/24/12 07:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.3 %	80-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/12 07:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	5.0	ug/kg	1	2042410	04/24/12	04/25/12	EPA 8260B	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
Xylenes (total)	ND	10	"	"	"	"	"	"	
Naphthalene	ND	10	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	500	"	"	"	"	"	"	

Date Sampled: **04/24/12 07:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		114 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		99.6 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.5 %	78.4-125		"	"	"	"	

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: Hettinger 34-18
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
04/25/12 07:02

Extractable 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 2042411 - EPA 3550A

Blank (2042411-BLK1)

Prepared & Analyzed: 04/24/12

C10-C28 (DRO) ND 50 mg/kg

LCS (2042411-BS1)

Prepared & Analyzed: 04/24/12

C10-C28 (DRO) 498 50 mg/kg 501 99.4 81.4-129

LCS Dup (2042411-BSD1)

Prepared: 04/24/12 Analyzed: 04/25/12

C10-C28 (DRO) 510 50 mg/kg 501 102 81.4-129 2.42 9.26

Matrix Spike (2042411-MS1)

Source: R204182-01

Prepared: 04/24/12 Analyzed: 04/25/12

C10-C28 (DRO) 508 50 mg/kg 501 ND 101 77.8-133

Matrix Spike Dup (2042411-MSD1)

Source: R204182-01

Prepared: 04/24/12 Analyzed: 04/25/12

C10-C28 (DRO) 516 50 mg/kg 501 ND 103 77.8-133 1.64 8.48

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: Hettinger 34-18
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/25/12 07:02

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 2042410 - EPA 5030 Soil MS

Blank (2042410-BLK1)

Prepared & Analyzed: 04/24/12

Benzene	ND	5.0	ug/kg
Toluene	ND	5.0	"
Ethylbenzene	ND	5.0	"
Xylenes (total)	ND	10	"
Naphthalene	ND	10	"
Gasoline Range Hydrocarbons	ND	500	"

<i>Surrogate: 1,2-Dichloroethane-d4</i>	42.2		"	39.7	106	67.4-143
<i>Surrogate: Toluene-d8</i>	38.7		"	40.0	96.8	77.3-114
<i>Surrogate: 4-Bromofluorobenzene</i>	38.5		"	40.0	96.3	78.4-125

LCS (2042410-BS1)

Prepared: 04/24/12 Analyzed: 04/25/12

Benzene	104	5.0	ug/kg	100	104	61-139
Toluene	110	5.0	"	100	110	64-132
Ethylbenzene	122	5.0	"	100	122	68.7-135
m,p-Xylene	228	5.0	"	200	114	70.4-129
o-Xylene	119	5.0	"	100	119	66.9-126
Naphthalene	ND	10	"			67.8-151

<i>Surrogate: 1,2-Dichloroethane-d4</i>	41.8		"	39.7	105	67.4-143
<i>Surrogate: Toluene-d8</i>	39.5		"	40.0	98.7	77.3-114
<i>Surrogate: 4-Bromofluorobenzene</i>	38.8		"	40.0	97.0	78.4-125

LCS Dup (2042410-BS1)

Prepared: 04/24/12 Analyzed: 04/25/12

Benzene	98.8	5.0	ug/kg	100	98.8	61-139	4.65	11.1
Toluene	110	5.0	"	100	110	64-132	0.710	10.9
Ethylbenzene	122	5.0	"	100	122	68.7-135	0.468	20
m,p-Xylene	228	5.0	"	200	114	70.4-129	0.119	20
o-Xylene	120	5.0	"	100	120	66.9-126	0.351	20
Naphthalene	ND	10	"			67.8-151		25

<i>Surrogate: 1,2-Dichloroethane-d4</i>	41.9		"	39.7	106	67.4-143
<i>Surrogate: Toluene-d8</i>	39.2		"	40.0	97.9	77.3-114
<i>Surrogate: 4-Bromofluorobenzene</i>	37.9		"	40.0	94.8	78.4-125

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: Hettinger 34-18
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/25/12 07:02

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 2042410 - EPA 5030 Soil MS

Matrix Spike (2042410-MS1)

Source: R204182-01

Prepared: 04/24/12 Analyzed: 04/25/12

Benzene	104	5.0	ug/kg	100	ND	104	42.9-137			
Toluene	113	5.0	"	100	ND	113	42.6-130			
Ethylbenzene	123	5.0	"	100	ND	123	39-133			
m,p-Xylene	230	5.0	"	200	ND	115	34.7-134			
o-Xylene	120	5.0	"	100	ND	120	41.3-126			
Naphthalene	ND	10	"		ND		26.4-144			
Surrogate: 1,2-Dichloroethane-d4	45.3		"	39.7		114	67.4-143			
Surrogate: Toluene-d8	39.7		"	40.0		99.2	77.3-114			
Surrogate: 4-Bromofluorobenzene	39.0		"	40.0		97.6	78.4-125			

Matrix Spike Dup (2042410-MSD1)

Source: R204182-01

Prepared: 04/24/12 Analyzed: 04/25/12

Benzene	104	5.0	ug/kg	100	ND	104	42.9-137	0.00	17.9	
Toluene	113	5.0	"	100	ND	113	42.6-130	0.399	11.9	
Ethylbenzene	122	5.0	"	100	ND	122	39-133	0.489	20	
m,p-Xylene	230	5.0	"	200	ND	115	34.7-134	0.170	20	
o-Xylene	120	5.0	"	100	ND	120	41.3-126	0.249	20	
Naphthalene	ND	10	"		ND		26.4-144		30	
Surrogate: 1,2-Dichloroethane-d4	45.9		"	39.7		116	67.4-143			
Surrogate: Toluene-d8	40.0		"	40.0		100	77.3-114			
Surrogate: 4-Bromofluorobenzene	38.2		"	40.0		95.6	78.4-125			

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: Hettinger 34-18
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/25/12 07:02

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

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