



**Corporate Office**  
1775 Sherman Street, #3000  
Denver, Colorado 80203  
303.860.5800  
www.pdce.com

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PROJECT 9281  
Document #: 2211265

February 4, 2016

Mr. Peter Gintautas, Ph.D.  
Environmental Protection Specialist, Northeast Region  
Colorado Oil and Gas Conservation Commission  
1120 Lincoln Street, Suite 801  
Denver, CO 80203

**FORM 27 ADDENDUM: SUMMARY OF REMEDIATION ACTIVITIES  
EXCAVATION AND CHEMICAL TREATMENT  
URSULA #2 TANK BATTERY  
API #: 05-123-09920  
NENE S28 T2N R66W  
WELD COUNTY, COLORADO  
REMEDATION #: 9281**

Dear Mr. Gintautas:

PDC Energy, Inc. (PDC) is submitting this Form 27 Addendum: Summary of Remediation Activities to the Colorado Oil and Gas Conservation Commission (COGCC) to summarize remediation and environmental sampling activities completed at the Ursula #2 tank battery (Figure 1).

On March 23, 2015, a historic release was discovered below the produced water vessel during plug and abandonment activities at the Ursula #2 tank battery (Site). A summary of Site assessment activities and the proposed remediation strategy was submitted in a Form 27 on October 6, 2015. The COGCC issued Remediation Number 9281 for the project.

Remediation activities conducted in accordance with the approved Form 27 are summarized below.

**Ex-Situ Chemical Oxidation**

Between October 19 and December 16, 2015, approximately 2,600 cubic yards (cy) of impacted soil were excavated and treated ex-situ through chemical oxidation using hydrogen peroxide. An additional

1,860 cy of material were removed and transported to the Front Range Regional Landfill in Erie, Colorado for disposal under PDC waste manifests. Soil encountered in the excavation area was field screened for volatile organic compound (VOC) concentrations using a photoionization detector (PID). A total of 31 soil samples (SS01 – SS31) were collected from the sidewalls of the excavation at approximately 5-6 feet below ground surface (bgs). Soil samples were submitted to Summit Scientific Laboratories (Summit) in Golden, Colorado for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, total petroleum hydrocarbons (TPH) – gasoline range organics (GRO) by USEPA Method 8260, and TPH – diesel range organics (DRO) by USEPA Method 8015.

Analytical results indicated constituent concentrations were in exceedance of COGCC Table 910-1 standards in eleven (11) soil samples collected from the sidewalls of the excavation (Figure 2). As illustrated in Figure 2, additional soil removal and treatment could not be completed due to the presence of third-party infrastructure and adjacent property boundaries. Constituent concentrations were below regulatory standards in the remaining 20 soil sample locations. Analytical results from the soil samples collected from the excavation are summarized in Table 1.

During the chemical oxidation treatment process, confirmation soil samples were collected for every 100 cy of soil treated with hydrogen peroxide to confirm hydrocarbon concentrations were reduced below COGCC Table 910-1 soil standards and material could be used for backfilling. Confirmation soil samples were designated with a CS- sample identification. A total of 39 confirmation soil samples were collected from the treated material and submitted for laboratory analysis of BTEX, naphthalene, TPH – GRO, and TPH – DRO. Analytical results indicated ten (10) soil samples exhibited constituent concentrations in exceedance of COGCC Table 910-1 standards. Consequently, the material was further treated and re-sampled using the designated sample identification CSXX-R or CSXX-R2.

Final analytical results for samples collected from soil that required additional application of hydrogen peroxide indicated petroleum hydrocarbons were reduced below COGCC Table 910-1 soil standards. Analytical results from the soil samples collected from the treated material are summarized in Table 2.

Groundwater was encountered in the excavation area at approximately 7 feet bgs. Groundwater and approximately 1,650 cy of saturated soil below the groundwater table were chemically treated using hydrogen peroxide. Following treatment activities, eight (8) groundwater samples (GW01 – GW08) were collected from the excavation area (Figure 2) and submitted for laboratory analysis of BTEX.

Final analytical results confirmed chemical treatment successfully decreased dissolved phase BTEX concentrations in the excavation area below COGCC Table 910-1 groundwater standards. Groundwater analytical results are summarized in Table 3.

## **Path Forward**

Remaining soil impacts in exceedance of regulatory standards were successfully delineated during initial assessment and excavation activities. The lateral extent of dissolved phase hydrocarbon impacts

remains undefined off-site. As such, PDC will conduct a subsequent site assessment to further delineate sub-surface impacts.

Based on the results of this assessment, PDC will submit a supplemental report detailing a remedial strategy to address hydrocarbon impacts above COGCC Table 910-1 standards in both soil and groundwater on and off Site.

If you have any questions regarding this location, please contact me by phone at (303) 318-6106.

Sincerely,

Karen Shanahan Olson  
Senior EHS Manager  
PDC Energy, Inc.

**Enclosures:**

Figure 1 – Site Location Map

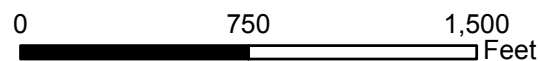
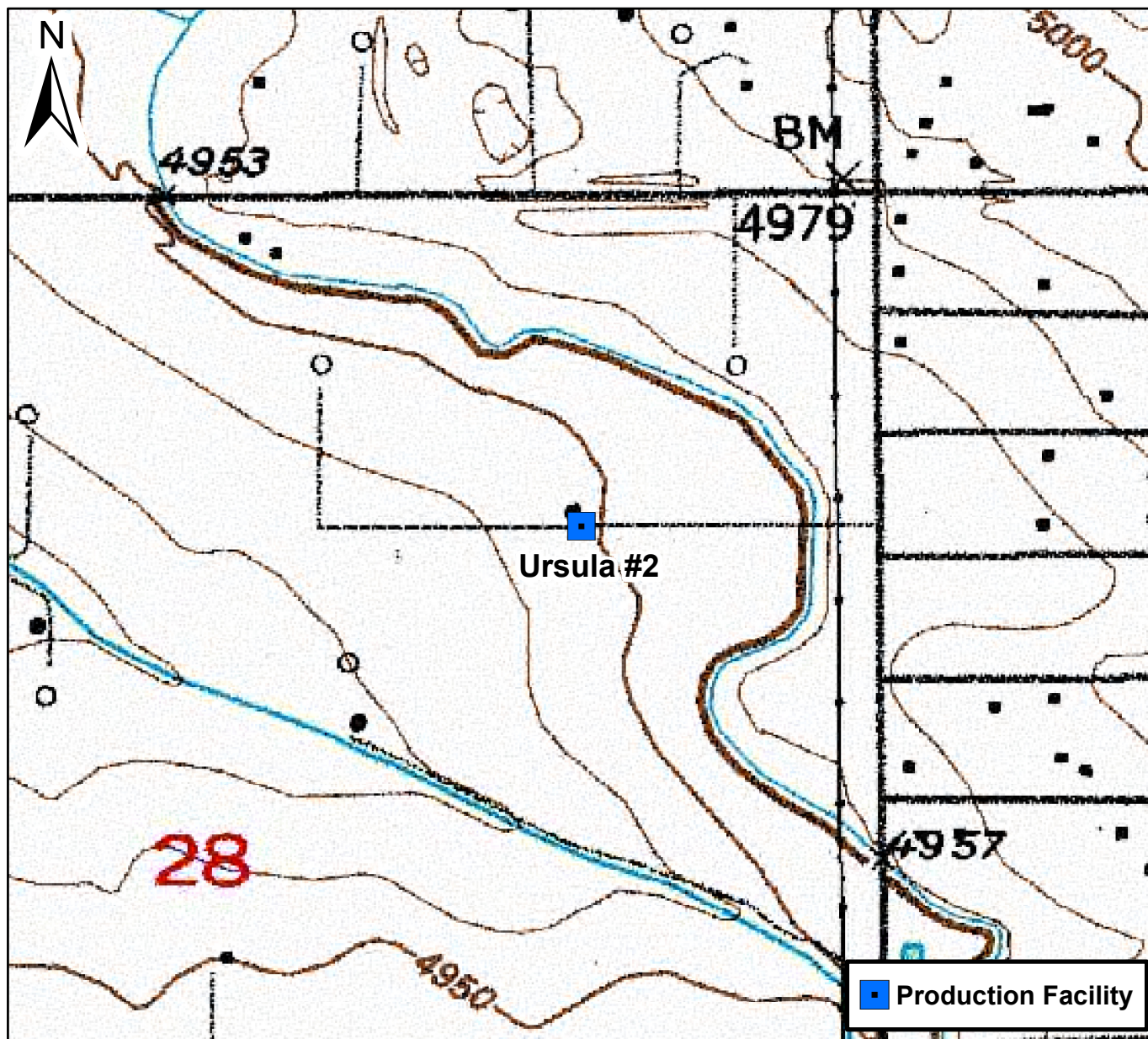
Figure 2 – Excavation and Sample Overview Map – December 16, 2015

Table 1 – Soil Analytical Results Summary Table

Table 2 – Confirmation Soil Analytical Results Summary Table

Table 3 – Groundwater Analytical Results Summary Table

Attachment A – Laboratory Analytical Reports



## Figure 1

Site Location Map  
 Ursula #2  
 NENE S28 T2N R66W  
 Weld County, Colorado







DATE:	December 2015
DESIGNED BY:	M. Petersen
DRAWN BY:	D. Arnold



**PDC Energy, Inc. - DJ Basin**  
**Ursula #2**  
 NENE Section 28, Township 2 North, Range 66 West  
 Weld County, Colorado

Excavation and Sample  
 Overview  
 Map

Figure  
 2



**TABLE 1**  
**URSULA #2 TANK BATTERY**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH <sup>(2)</sup> (mg/kg)
COGCC standards for soil (mg/kg) <sup>(1)</sup>			0.17	85	100	175	23	500
Initial Assessment Activities								
BH01 @ 4-5	4/6/2015	4-5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH02 @ 5-6	4/6/2015	5-6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH04 @ 5-6	4/6/2015	5-6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH06 @ 6	4/6/2015	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH07 @ 5-6	4/6/2015	5-6	0.014	<0.0050	2.3	69	0.34	6,100
BH08 @ 5-6	4/6/2015	5-6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH09 @ 5-6	4/6/2015	5-6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH10 @ 5-6	4/6/2015	5-6	0.0053	<0.0050	0.020	<0.010	0.076	680
BH11 @ 3-4	4/10/2015	3-4	<0.0020	<0.0050	<0.0050	<0.010	<0.010	0.55
BH12 @ 6-7	4/10/2015	6-7	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SB01 @ 2	4/10/2015	2	0.027	<0.0050	0.38	0.056	0.39	666
SB01 @ 5	4/10/2015	5	0.15	<0.0050	7.2	15	4.8	3,030
Excavation and Soil Treatment Activities								
SS01 @ 5	10/20/2015	5	0.53	1.2	12	17	4.1	3,800
SS02 @ 5	10/20/2015	5	0.46	1.1	9.0	35	4.6	3,600
SS03 @ 5	10/28/2015	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS04 @ 5	10/28/2015	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	39
SS05 @ 5	11/3/2015	5	0.0046	<0.0050	0.27	<0.010	2.8	2,100
SS06 @ 5	11/9/2015	5	<0.0020	<0.0050	0.021	0.020	0.93	780
SS07 @ 6	11/13/2015	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	0.92
SS08 @ 6	11/16/2015	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	1.7
SS09 @ 6	11/17/2015	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS10 @ 6	11/17/2015	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS11 @ 5	11/19/2015	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS12 @ 5	11/19/2015	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS13 @ 5	12/7/2015	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS14 @ 5	12/7/2015	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	108.7
SS15 @ 5	12/7/2015	5	<0.0020	<0.0050	0.016	<0.010	0.091	1,320
SS16 @ 5	12/7/2015	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS17 @ 5	12/7/2015	5	0.092	<0.0050	2.3	1.5	3.8	1,940
SS18 @ 5	12/8/2015	5	0.034	<0.0050	0.11	<0.010	0.13	1,290
SS19 @ 5	12/8/2015	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS20 @ 5	12/8/2015	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS21 @ 5	12/9/2015	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS22 @ 5	12/10/2015	5	4.1	1.3	25	160	0.86	4,930
SS23 @ 5	12/10/2015	5	0.084	<0.0050	2.0	0.93	0.94	1,130
SS24 @ 5	12/11/2015	5	0.041	<0.0050	0.041	0.18	0.072	2.6
SS25 @ 5	12/11/2015	5	0.47	1.3	3.9	77	2.2	3,010
SS26 @ 5	12/11/2015	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS27 @ 5	12/11/2015	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS28 @ 5	12/14/2015	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50

**TABLE 1**  
**URSULA #2 TANK BATTERY**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH <sup>(2)</sup> (mg/kg)
COGCC standards for soil (mg/kg) <sup>(1)</sup>			0.17	85	100	175	23	500
SS29 @ 5	12/14/2015	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS30 @ 5	12/14/2015	5	<b>2.4</b>	1.3	9.2	55	4.0	<b>4,150</b>
SS31 @ 5	12/14/2015	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50

**Notes:**

1. Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective January 30, 2015.

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

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

GRO = Total volatile petroleum hydrocarbons - gasoline range organics

DRO = Total extractable petroleum hydrocarbons - diesel range organics

mg/kg = Milligrams per kilogram

bgs = Below ground surface

**BOLD** = Analytical result is in exceedance of COGCC soil standards.

**TABLE 2**  
**URSULA #2 TANK BATTERY**  
**CONFIRMATION SOIL ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH <sup>(2)</sup> (mg/kg)
<b>COGCC standards for soil (mg/kg) <sup>(1)</sup></b>		<b>0.17</b>	<b>85</b>	<b>100</b>	<b>175</b>	<b>23</b>	<b>500</b>
CS01	10/23/2015	<0.0020	<0.0050	<0.0050	0.21	0.029	966
CS01-R	11/3/2015	<0.0020	<0.0050	<0.0050	0.069	0.031	140
CS02	10/23/2015	<0.0020	<0.0050	<0.0050	0.055	0.020	561
CS02-R	11/3/2015	0.0029	<0.0050	<0.0050	0.23	0.030	170
CS03	10/28/2015	<0.0020	<0.0050	<0.0050	0.25	0.041	662
CS03-R	11/3/2015	<0.0020	<0.0050	<0.0050	0.024	0.015	140
CS04	10/28/2015	<0.0020	<0.0050	<0.0050	0.14	0.028	643
CS04-R	11/3/2015	<0.0020	<0.0050	0.0050	0.18	0.049	670
CS04-R2	11/4/2015	<0.0020	<0.0050	0.028	0.66	0.12	250
CS05	10/28/2015	<0.0020	<0.0050	<0.0050	3.1	0.051	835
CS05-R	11/4/2015	<0.0020	<0.0050	<0.0050	0.12	0.037	240
CS06	10/28/2015	0.0050	<0.0050	0.22	0.97	0.31	940
CS06-R	11/4/2015	<0.0020	<0.0050	0.012	0.30	0.060	250
CS07-R <sup>(3)</sup>	11/4/2015	<0.0020	<0.0050	<0.0050	0.14	0.034	230
CS08	11/5/2015	<0.0020	<0.0050	0.090	1.0	0.14	200
CS09	11/5/2015	0.21	0.36	1.1	0.31	2.7	540
CS09-R	11/9/2015	<0.0020	<0.0050	0.0086	0.014	0.018	1,090
CS09-R2	12/14/2015	<0.0020	<0.0050	<0.0050	<0.010	<0.010	49
CS10	11/13/2015	<0.0020	<0.0050	0.0078	0.37	0.083	120
CS11	11/13/2015	<0.0020	<0.0050	0.010	0.54	0.097	195
CS12	11/13/2015	<0.0020	<0.0050	0.0062	0.20	0.043	91
CS13	11/13/2015	<0.0020	<0.0050	0.016	0.37	0.079	86
CS14	11/16/2015	<0.0020	<0.0050	<0.0050	<0.010	<0.010	19
CS15	11/16/2015	<0.0020	<0.0050	<0.0050	<0.010	<0.010	36
CS16	11/18/2015	<0.0020	<0.0050	<0.0050	<0.010	<0.010	11
CS17	11/18/2015	<0.0020	<0.0050	<0.0050	<0.010	<0.010	6.4
CS18	11/22/2015	0.0030	<0.0050	0.035	0.14	0.11	394
CS19	11/22/2015	<0.0020	<0.0050	<0.0050	0.011	0.018	52
CS20	11/22/2015	<0.0020	<0.0050	0.0053	0.019	0.021	88
CS21	11/25/2015	<0.0020	<0.0050	<0.0050	0.015	<0.010	100
CS22	11/25/2015	<0.0020	<0.0050	<0.0050	<0.010	<0.010	134
CS23	11/25/2015	<0.0020	<0.0050	<0.0050	0.019	<0.010	50
CS24	11/25/2015	<0.0020	<0.0050	0.0057	0.019	<0.010	50
CS25	12/2/2015	<0.0020	<0.0050	0.073	0.096	0.25	319
CS26	12/2/2015	<0.0020	<0.0050	0.0051	0.050	0.068	760
CS26-R	12/14/2015	<0.0020	<0.0050	<0.0050	<0.010	<0.010	107
CS27	12/2/2015	<0.0020	<0.0050	0.014	0.026	0.050	290

**TABLE 2**  
**URSULA #2 TANK BATTERY**  
**CONFIRMATION SOIL ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH <sup>(2)</sup> (mg/kg)
<b>COGCC standards for soil (mg/kg) <sup>(1)</sup></b>		<b>0.17</b>	<b>85</b>	<b>100</b>	<b>175</b>	<b>23</b>	<b>500</b>
CS28	12/2/2015	<0.0020	<0.0050	0.084	0.062	0.27	85
CS29	12/14/2015	<0.0020	<0.0050	<0.0050	<0.010	<0.010	77

**Notes:**

- Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective January 30, 2015.
- TPH - Total volatile and extractable petroleum hydrocarbons. Value calculated by adding GRO and DRO concentrations.
- Sample ID used in place of CS07; soil sample CS07 was not submitted for analysis.

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

GRO = Total volatile petroleum hydrocarbons - gasoline range organics

DRO = Total extractable petroleum hydrocarbons - diesel range organics

mg/kg = Milligrams per kilogram

bgs = Below ground surface

**BOLD** = Analytical result is in exceedance of COGCC soil standards



**TABLE 3**  
**URSULA #2 TANK BATTERY**  
**GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water <sup>(2)</sup> (feet)
<b>COGCC Table 910-1 Groundwater Standard (µg/L) <sup>(1)</sup></b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	
<b>Initial Assessment Activities</b>						
GW01	3/23/2015	<b>800</b>	<1.0	<b>750</b>	420	~ 6
BH01	4/6/2015	<1.0	<1.0	<1.0	<1.0	6.53
BH02	4/6/2015	<b>24</b>	<1.0	<b>1,600</b>	<b>13,000</b>	7.02
BH03	4/6/2015	<1.0	<1.0	<1.0	5.0	7.78
BH04	4/6/2015	<b>1,100</b>	6.4	<b>920</b>	<b>8,900</b>	6.99
BH05	4/6/2015	<b>1,100</b>	7.0	<b>1,200</b>	<b>9,400</b>	9.23
BH06	4/6/2015	<1.0	<1.0	<1.0	<1.0	7.75
BH07	4/6/2015	<b>450</b>	<1.0	12	540	6.69
BH08	4/6/2015	<b>15</b>	<1.0	4.0	3.5	5.20
BH09	4/6/2015	<b>28</b>	200	130	<b>2,700</b>	6.00
BH10	4/6/2015	2.5	1.6	2.5	5.0	8.81
BH11	4/10/2015	<1.0	<1.0	<1.0	<1.0	8.03
BH12	4/10/2015	<1.0	<1.0	<1.0	<1.0	9.16
BH13	4/10/2015	<1.0	<1.0	<1.0	<1.0	4.71
BH14	4/10/2015	<1.0	<1.0	<1.0	<1.0	5.53
<b>Excavation and Soil Treatment Activities</b>						
GW01	10/29/2015	1.1	<1.0	<1.0	27	~ 7
GW02	10/29/2015	3.2	<1.0	16	180	~ 7
GW03	11/13/2015	<b>21</b>	<1.0	260	<b>3,600</b>	~ 7
GW03-R	11/18/2015	<1.0	<1.0	11	61	~ 7
GW04	11/18/2015	<1.0	<1.0	<1.0	2.6	~ 7
GW05	11/22/2015	3.3	<1.0	55	250	~ 7
GW06	12/1/2015	<1.0	<1.0	42	8.2	~ 7
GW07	12/9/2015	<1.0	<1.0	1.3	3.2	~ 7
GW08	12/16/2015	<1.0	<1.0	10	130	~ 7

**Notes:**

1. Groundwater standards referenced from 2 CCR 404-1, Table 910-1, effective January 30, 2015.
2. Depth to water measured from top of well casing or ground surface for monitoring well samples and excavation samples, respectively.

COGCC = Colorado Oil and Gas Conservation Commission

µg/L= Micrograms per liter

**BOLD** = Analytical result is in exceedance of COGCC groundwater standards.

## **ATTACHMENT A**

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

March 24, 2015

Brandon Bruns  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 03/23/15 18:10. 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  
President





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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
03/24/15 07:50

**GW01**  
**1503195-01 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 03/23/15 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>800</b>	100	ug/l	100	1503265	03/23/15	03/23/15	EPA 8260B	
Toluene	ND	1.0	"	1	"	"	03/23/15	"	
<b>Ethylbenzene</b>	<b>750</b>	100	"	100	"	"	03/23/15	"	
<b>Xylenes (total)</b>	<b>420</b>	1.0	"	1	"	"	03/23/15	"	

Date Sampled: 03/23/15 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		92.7 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		114 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		105 %	45-146		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
03/24/15 07:50

## 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 1503265 - EPA 5030 Water MS

##### Blank (1503265-BLK1)

Prepared & Analyzed: 03/23/15

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	11.0		"	13.2		83.0	37-154			
Surrogate: Toluene-d8	12.7		"	13.3		95.3	45-149			
Surrogate: 4-Bromofluorobenzene	15.2		"	13.3		114	45-146			

##### LCS (1503265-BS1)

Prepared & Analyzed: 03/23/15

Benzene	31.3	1.0	ug/l	33.3		93.9	51-132			
Toluene	29.5	1.0	"	33.3		88.6	51-138			
Ethylbenzene	31.4	1.0	"	33.1		94.8	58-146			
m,p-Xylene	64.6	2.0	"	66.5		97.2	57-144			
o-Xylene	30.6	1.0	"	32.8		93.2	53-146			
Surrogate: 1,2-Dichloroethane-d4	11.5		"	13.2		87.0	37-154			
Surrogate: Toluene-d8	13.0		"	13.3		97.7	45-149			
Surrogate: 4-Bromofluorobenzene	13.8		"	13.3		103	45-146			

##### Matrix Spike (1503265-MS1)

Source: 1503186-01

Prepared & Analyzed: 03/23/15

Benzene	31.4	1.0	ug/l	33.3	ND	94.3	34-141			
Toluene	29.6	1.0	"	33.3	ND	88.7	27-151			
Ethylbenzene	32.4	1.0	"	33.1	ND	97.8	29-160			
m,p-Xylene	65.9	2.0	"	66.5	ND	99.1	20-166			
o-Xylene	31.6	1.0	"	32.8	ND	96.3	33-159			
Surrogate: 1,2-Dichloroethane-d4	11.7		"	13.2		88.3	37-154			
Surrogate: Toluene-d8	12.6		"	13.3		94.4	45-149			
Surrogate: 4-Bromofluorobenzene	14.0		"	13.3		105	45-146			

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: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
03/24/15 07:50

**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 1503265 - EPA 5030 Water MS**

Matrix Spike Dup (1503265-MSD1)	Source: 1503186-01			Prepared & Analyzed: 03/23/15						
Benzene	32.2	1.0	ug/l	33.3	ND	96.7	34-141	2.51	32	
Toluene	30.5	1.0	"	33.3	ND	91.4	27-151	3.03	25	
Ethylbenzene	32.5	1.0	"	33.1	ND	98.3	29-160	0.524	50	
m,p-Xylene	66.7	2.0	"	66.5	ND	100	20-166	1.19	36	
o-Xylene	31.7	1.0	"	32.8	ND	96.6	33-159	0.348	26	
Surrogate: 1,2-Dichloroethane-d4	12.4		"	13.2		94.3	37-154			
Surrogate: Toluene-d8	13.0		"	13.3		97.7	45-149			
Surrogate: 4-Bromofluorobenzene	14.0		"	13.3		105	45-146			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
03/24/15 07:50

### 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

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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.*

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

April 09, 2015

Brandon Bruns  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 04/06/15 16:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to be 'Ben Shrewsbury', with a long, sweeping horizontal line extending to the right.

Ben Shrewsbury For Paul Shrewsbury  
President



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/09/15 14:16

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01@4-5'	1504044-01	Soil	04/06/15 09:20	04/06/15 16:20
BH02@5-6'	1504044-02	Soil	04/06/15 10:10	04/06/15 16:20
BH04@5-6'	1504044-03	Soil	04/06/15 11:40	04/06/15 16:20
BH06@6'	1504044-04	Soil	04/06/15 12:50	04/06/15 16:20
BH07@5-6'	1504044-05	Soil	04/06/15 13:25	04/06/15 16:20
BH08@5-6'	1504044-06	Soil	04/06/15 13:55	04/06/15 16:20
BH09@5-6'	1504044-07	Soil	04/06/15 14:25	04/06/15 16:20
BH10@5-6'	1504044-08	Soil	04/06/15 14:50	04/06/15 16:20
BH01	1504044-09	Water	04/06/15 10:20	04/06/15 16:20
BH02	1504044-10	Water	04/06/15 11:00	04/06/15 16:20
BH03	1504044-11	Water	04/06/15 11:30	04/06/15 16:20
BH04	1504044-12	Water	04/06/15 12:20	04/06/15 16:20
BH05	1504044-13	Water	04/06/15 12:45	04/06/15 16:20
BH06	1504044-14	Water	04/06/15 13:10	04/06/15 16:20
BH07	1504044-15	Water	04/06/15 13:45	04/06/15 16:20
BH08	1504044-16	Water	04/06/15 14:10	04/06/15 16:20
BH09	1504044-17	Water	04/06/15 14:40	04/06/15 16:20
BH10	1504044-18	Water	04/06/15 15:15	04/06/15 16:20

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: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
04/09/15 14:16

# Summit Scientific

1504044.1

S<sub>2</sub>

741 Corporate Circle, Suite J&K ♦ Golden, Colorado 80401  
303-277-9310 ♦ 303-374-5933

Page 1 of 2

Client: PDC/Tasman

Project Manager: Brandon Bruns

Address:

E-Mail:

City/State/Zip:

Phone:

Fax:

Project Name: Ursula #2

Sampler Name: Eric Sigel

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested								Special Instructions
					HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	8260 GBXN	8015 DRO						
1	BH01 e 5-6'	4/6/15	920	1			X			X			X	X						
2	BH02 e 5-6'		1010	1																
3	BH04 e 5-6'		1140	1																
4	BH06 e 6'		1250	1																
5	BH07 e 5-6'		1325	1																
6	BH08 e 5-6'		1355	1																
7	BH09 e 5-6'		1425	1																
8	BH10 e 5-6'		1450	1																
9																				
10																				

Relinquished by: <i>E. A. Sigel</i>	Date/Time: 4/6/15	Received by: <i>Auto Coll</i>	Date/Time: 4/6/15	Turn Around Time (Check)	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day <input type="checkbox"/> 72 hours <input checked="" type="checkbox"/>	<i>on ice</i>
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours <input type="checkbox"/> Standard <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	48 hours <input type="checkbox"/>	
Sample Integrity:				Temperature Upon Receipt: <i>7.6</i>	
Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No					

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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: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
04/09/15 14:16

# Summit Scientific

1504044.2

741 Corporate Circle, Suite J&K ♦ Golden, Colorado 80401  
303-277-9310 ♦ 303-374-5933

Page 2 of 2

Client: PDC/Tasman

Project Manager: Brandon Bruns

Address:

E-Mail:

City/State/Zip:

Phone:

Fax:

Project Name: Ursula #2

Sampler Name: Eric Siegel

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested				Special Instructions
					HCl	HNO3	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)				
1	BH01	4/6/15	1020	3	X				X			X				
2	BH02		1100		X											
3	BH03		1130		X											
4	BH04		1220		X											
5	BH05		1245		X											
6	BH06		1310		X											
7	BH07		1345		X											
8	BH08		1410		X											
9	BH09		1440		X											
10	BH10		1515		X											

Relinquished by: Eric A. Siegel	Date/Time: 4/6/15	Received by: [Signature]	Date/Time: 4/6/15	Turn Around Time (Check)	Notes: on ice
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day <input type="checkbox"/>	72 hours <input checked="" type="checkbox"/>
				24 hours <input type="checkbox"/>	Standard <input type="checkbox"/>
				48 hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	
				Temperature Upon Receipt: 7.6	
				Intact: Yes <input checked="" type="radio"/> No <input type="radio"/>	

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/09/15 14:16

**BH01@4-5'**  
**1504044-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/06/15 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1504063	04/07/15	04/08/15	8015M	

Date Sampled: **04/06/15 09:20**

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: **04/06/15 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1504062	04/07/15	04/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/06/15 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
04/09/15 14:16

**BH02@5-6'**  
**1504044-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/06/15 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1504063	04/07/15	04/09/15	8015M	

Date Sampled: **04/06/15 10:10**

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: **04/06/15 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1504062	04/07/15	04/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/06/15 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
04/09/15 14:16

**BH04@5-6'**  
**1504044-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/06/15 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1504063	04/07/15	04/09/15	8015M	

Date Sampled: **04/06/15 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		109 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/06/15 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1504062	04/07/15	04/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/06/15 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
04/09/15 14:16

**BH06@6'**  
**1504044-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/06/15 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1504063	04/07/15	04/09/15	8015M	

Date Sampled: **04/06/15 12:50**

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: **04/06/15 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1504062	04/07/15	04/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/06/15 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

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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: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/09/15 14:16

**BH07@5-6'**  
**1504044-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/06/15 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>2400</b>	50	mg/kg	1	1504063	04/07/15	04/09/15	8015M	

Date Sampled: **04/06/15 13:25**

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

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/06/15 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Naphthalene</b>	<b>0.34</b>	0.010	mg/kg	1	1504062	04/07/15	04/09/15	EPA 8260B	
<b>Benzene</b>	<b>0.014</b>	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>2.3</b>	0.50	"	100	"	"	04/09/15	"	
<b>Xylenes (total)</b>	<b>69</b>	1.0	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>3700</b>	50	"	"	"	"	"	"	

Date Sampled: **04/06/15 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		114 %	23-173		"	"	04/09/15	"	
<i>Surrogate: Toluene-d8</i>		701 %	20-170		"	"	"	"	S-02
<i>Surrogate: 4-Bromofluorobenzene</i>		161 %	21-167		"	"	"	"	S-02

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: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
04/09/15 14:16

**BH08@5-6'**  
**1504044-06 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/06/15 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1504063	04/07/15	04/09/15	8015M	

Date Sampled: **04/06/15 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		108 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/06/15 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1504062	04/07/15	04/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/06/15 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/09/15 14:16

**BH09@5-6'**  
**1504044-07 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/06/15 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1504063	04/07/15	04/09/15	8015M	

Date Sampled: **04/06/15 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		109 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/06/15 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1504062	04/07/15	04/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/06/15 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/09/15 14:16

**BH10@5-6'**  
**1504044-08 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/06/15 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>240</b>	50	mg/kg	1	1504063	04/07/15	04/09/15	8015M	

Date Sampled: **04/06/15 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		116 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/06/15 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Naphthalene</b>	<b>0.076</b>	0.010	mg/kg	1	1504062	04/07/15	04/09/15	EPA 8260B	
<b>Benzene</b>	<b>0.0053</b>	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.020</b>	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>440</b>	5.0	"	10	"	"	04/09/15	"	

Date Sampled: **04/06/15 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		105 %	23-173		"	"	04/09/15	"	
<i>Surrogate: Toluene-d8</i>		121 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		167 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
04/09/15 14:16

**BH01**  
**1504044-09 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/06/15 10:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	1504061	04/08/15	04/08/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/06/15 10:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		97.8 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		96.5 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %	45-146		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
04/09/15 14:16

**BH02**  
**1504044-10 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/06/15 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>24</b>	1.0	ug/l	1	1504061	04/08/15	04/08/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>1600</b>	100	"	100	"	"	"	"	
<b>Xylenes (total)</b>	<b>13000</b>	100	"	"	"	"	"	"	

Date Sampled: **04/06/15 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.2 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		98.8 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %	45-146		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
04/09/15 14:16

**BH03**  
**1504044-11 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/06/15 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1504061	04/08/15	04/08/15	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>5.0</b>	1.0		"	"	"	"	"	"	

Date Sampled: **04/06/15 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		102 %		37-154		"	"	"	"	
Surrogate: Toluene-d8		98.3 %		45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %		45-146		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/09/15 14:16

**BH04**  
**1504044-12 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/06/15 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>1100</b>	100	ug/l	100	1504061	04/08/15	04/08/15	EPA 8260B	
<b>Toluene</b>	<b>6.4</b>	1.0	"	1	"	"	"	"	
<b>Ethylbenzene</b>	<b>920</b>	100	"	100	"	"	"	"	
<b>Xylenes (total)</b>	<b>8900</b>	100	"	"	"	"	"	"	

Date Sampled: **04/06/15 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		99.2 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.6 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		107 %	45-146		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/09/15 14:16

**BH05**  
**1504044-13 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/06/15 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>1100</b>	100	ug/l	100	1504061	04/08/15	04/08/15	EPA 8260B	
<b>Toluene</b>	<b>7.0</b>	1.0	"	1	"	"	"	"	
<b>Ethylbenzene</b>	<b>1200</b>	100	"	100	"	"	"	"	
<b>Xylenes (total)</b>	<b>9400</b>	100	"	"	"	"	"	"	

Date Sampled: **04/06/15 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>94.4 %</i>	<i>37-154</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>		<i>97.7 %</i>	<i>45-149</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>111 %</i>	<i>45-146</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
04/09/15 14:16

**BH06**  
**1504044-14 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/06/15 13:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	1504061	04/08/15	04/08/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/06/15 13:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		99.7 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		96.9 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %	45-146		"	"	"	"	

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/09/15 14:16

**BH07**  
**1504044-15 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/06/15 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>450</b>	10	ug/l	10	1504061	04/08/15	04/08/15	EPA 8260B	
Toluene	ND	1.0	"	1	"	"	"	"	
<b>Ethylbenzene</b>	<b>12</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>540</b>	1.0	"	"	"	"	"	"	

Date Sampled: **04/06/15 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		110 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		113 %	45-146		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
04/09/15 14:16

**BH08**  
**1504044-16 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/06/15 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>15</b>	1.0	ug/l	1	1504061	04/08/15	04/08/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>4.0</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>3.5</b>	1.0	"	"	"	"	"	"	

Date Sampled: **04/06/15 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		96.1 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.9 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		107 %	45-146		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/09/15 14:16

**BH09**  
**1504044-17 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/06/15 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>28</b>	1.0	ug/l	1	1504061	04/08/15	04/08/15	EPA 8260B	
<b>Toluene</b>	<b>200</b>	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>130</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>2700</b>	10	"	10	"	"	"	"	

Date Sampled: **04/06/15 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		94.8 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		96.3 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		104 %	45-146		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/09/15 14:16

**BH10**  
**1504044-18 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/06/15 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>2.5</b>	1.0	ug/l	1	1504061	04/08/15	04/08/15	EPA 8260B	
<b>Toluene</b>	<b>1.6</b>	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>2.5</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>5.0</b>	1.0	"	"	"	"	"	"	

Date Sampled: **04/06/15 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		91.7 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.2 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		110 %	45-146		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
04/09/15 14:16

**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 1504063 - EPA 3550A**

**Blank (1504063-BLK1)**

Prepared & Analyzed: 04/07/15

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 13.9 " 12.2 114 30-150

**LCS (1504063-BS1)**

Prepared & Analyzed: 04/07/15

C10-C28 (DRO) 452 50 mg/kg 501 90.2 73-134

Surrogate: o-Terphenyl 13.2 " 12.2 108 30-150

**Matrix Spike (1504063-MS1)**

Source: 1504052-03

Prepared & Analyzed: 04/07/15

C10-C28 (DRO) 438 50 mg/kg 474 ND 92.3 50-148

Surrogate: o-Terphenyl 13.1 " 11.6 114 30-150

**Matrix Spike Dup (1504063-MSD1)**

Source: 1504052-03

Prepared & Analyzed: 04/07/15

C10-C28 (DRO) 440 50 mg/kg 475 ND 92.6 50-148 0.501 13

Surrogate: o-Terphenyl 13.1 " 11.6 113 30-150

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/09/15 14:16

**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 1504061 - EPA 5030 Water MS**

**Blank (1504061-BLK1)**

Prepared & Analyzed: 04/07/15

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	12.5		"	13.2		95.0	37-154			
Surrogate: Toluene-d8	13.0		"	13.3		97.4	45-149			
Surrogate: 4-Bromofluorobenzene	14.8		"	13.3		111	45-146			

**LCS (1504061-BS1)**

Prepared & Analyzed: 04/07/15

Benzene	30.8	1.0	ug/l	33.3		92.4	51-132			
Toluene	29.3	1.0	"	33.3		87.9	51-138			
Ethylbenzene	31.2	1.0	"	33.1		94.2	58-146			
m,p-Xylene	62.7	2.0	"	66.5		94.3	57-144			
o-Xylene	30.6	1.0	"	32.8		93.4	53-146			
Surrogate: 1,2-Dichloroethane-d4	12.9		"	13.2		97.6	37-154			
Surrogate: Toluene-d8	13.3		"	13.3		100	45-149			
Surrogate: 4-Bromofluorobenzene	14.2		"	13.3		106	45-146			

**Matrix Spike (1504061-MS1)**

Source: 1504048-01

Prepared & Analyzed: 04/07/15

Benzene	30.4	1.0	ug/l	33.3	ND	91.2	34-141			
Toluene	28.9	1.0	"	33.3	ND	86.6	27-151			
Ethylbenzene	31.8	1.0	"	33.1	ND	96.3	29-160			
m,p-Xylene	63.7	2.0	"	66.5	ND	95.8	20-166			
o-Xylene	30.8	1.0	"	32.8	ND	94.0	33-159			
Surrogate: 1,2-Dichloroethane-d4	12.8		"	13.2		97.0	37-154			
Surrogate: Toluene-d8	13.0		"	13.3		97.2	45-149			
Surrogate: 4-Bromofluorobenzene	14.2		"	13.3		107	45-146			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
04/09/15 14:16

**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 1504061 - EPA 5030 Water MS**

Matrix Spike Dup (1504061-MSD1)			Source: 1504048-01		Prepared & Analyzed: 04/07/15					
Benzene	30.9	1.0	ug/l	33.3	ND	92.7	34-141	1.66	32	
Toluene	29.4	1.0	"	33.3	ND	88.4	27-151	2.02	25	
Ethylbenzene	32.2	1.0	"	33.1	ND	97.5	29-160	1.22	50	
m,p-Xylene	64.9	2.0	"	66.5	ND	97.6	20-166	1.83	36	
o-Xylene	31.0	1.0	"	32.8	ND	94.6	33-159	0.582	26	
Surrogate: 1,2-Dichloroethane-d4	13.9		"	13.2		105	37-154			
Surrogate: Toluene-d8	13.1		"	13.3		98.0	45-149			
Surrogate: 4-Bromofluorobenzene	14.5		"	13.3		109	45-146			

**Batch 1504062 - EPA 5030 Soil MS**

Blank (1504062-BLK1)			Prepared & Analyzed: 04/07/15							
Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0340		"	0.0396		85.8	23-173			
Surrogate: Toluene-d8	0.0387		"	0.0400		96.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0437		"	0.0400		109	21-167			

LCS (1504062-BS1)			Prepared & Analyzed: 04/07/15							
Naphthalene	ND	0.010	mg/kg							
Benzene	0.0907	0.0020	"	0.100		90.7	58-130			
Toluene	0.0882	0.0050	"	0.100		88.2	61-134			
Ethylbenzene	0.0961	0.0050	"	0.0992		96.9	74-139			
m,p-Xylene	0.194	0.010	"	0.200		97.1	73-137			
o-Xylene	0.0923	0.0050	"	0.0984		93.8	73-141			
Surrogate: 1,2-Dichloroethane-d4	0.0364		"	0.0396		92.0	23-173			
Surrogate: Toluene-d8	0.0385		"	0.0400		96.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0424		"	0.0400		106	21-167			

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: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/09/15 14:16

**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 1504062 - EPA 5030 Soil MS**

**Matrix Spike (1504062-MS1)**

**Source: 1504052-03**

Prepared & Analyzed: 04/07/15

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0904	0.0020	"	0.0982	ND	92.1	30-131			
Toluene	0.0877	0.0050	"	0.0982	ND	89.3	30-134			
Ethylbenzene	0.0938	0.0050	"	0.0974	ND	96.3	22-153			
m,p-Xylene	0.190	0.010	"	0.196	ND	97.0	10-159			
o-Xylene	0.0913	0.0050	"	0.0967	ND	94.5	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0354		"	0.0389		91.1	23-173			
Surrogate: Toluene-d8	0.0391		"	0.0393		99.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0393		102	21-167			

**Matrix Spike Dup (1504062-MSD1)**

**Source: 1504052-03**

Prepared & Analyzed: 04/07/15

Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0873	0.0020	"	0.0952	ND	91.7	30-131	3.52	34	
Toluene	0.0864	0.0050	"	0.0952	ND	90.7	30-134	1.46	30	
Ethylbenzene	0.0919	0.0050	"	0.0945	ND	97.3	22-153	2.03	24	
m,p-Xylene	0.184	0.010	"	0.190	ND	96.8	10-159	3.27	68	
o-Xylene	0.0869	0.0050	"	0.0937	ND	92.7	31-151	4.98	38	
Surrogate: 1,2-Dichloroethane-d4	0.0358		"	0.0377		95.0	23-173			
Surrogate: Toluene-d8	0.0381		"	0.0381		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0381		105	21-167			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/09/15 14:16

### Notes and Definitions

S-02      The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

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 'Brandon Bruns', written over a horizontal line.

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

April 12, 2015

Brandon Bruns  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 04/10/15 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury  
President



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/12/15 19:55

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH11@3-4'	1504106-01	Soil	04/10/15 09:45	04/10/15 17:30
BH12@6-7'	1504106-02	Soil	04/10/15 10:30	04/10/15 17:30
SB01@2'	1504106-03	Soil	04/10/15 11:10	04/10/15 17:30
SB01@5'	1504106-04	Soil	04/10/15 11:15	04/10/15 17:30
BH11	1504106-05	Water	04/10/15 10:22	04/10/15 17:30
BH12	1504106-06	Water	04/10/15 11:40	04/10/15 17:30
BH13	1504106-07	Water	04/10/15 11:30	04/10/15 17:30
BH14	1504106-08	Water	04/10/15 12:15	04/10/15 17:30

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: Ursula 2

Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
04/12/15 19:55

# Summit Scientific *15041660*

*S<sub>2</sub>*

741 Corporate Circle, Suite J&K ♦ Golden, Colorado 80401  
303-277-9310 ♦ 303-374-5933

Page *1* of *1*

Client: *PDC/Tasman* Project Manager: *Brandon Bruns*  
Address: E-Mail:  
City/State/Zip:  
Phone: Fax: Project Name: *Ursula #2*  
Sampler Name: *Eric Sigel* Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions
					HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	8015 DRO	8260 GIBEN	8260 BTEX		
1	BH11 e3-4'	4/10/15	945	1			X			X			X	X			
2	BH12 e6-7'		1030	1			X			X			X	X			
3	SB01 e2'		1110	1			X			X			X	X			
4	SB01 e5'		1115	1			X			X			X	X			
5	BH11		1022	3	X				X						X		
6	BH12		1140	2			X		X						X		
7	BH13		1130	3	X				X						X		
8	BH14	↓	1215	3	X				X						X		
9																	
10																	

Relinquished by: <i>E. A. Sigel</i>	Date/Time: <i>4/10/15</i>	Received by: <i>[Signature]</i>	Date/Time: <i>4/10/15 1655</i>	Turn Around Time (Check)	Notes:
Relinquished by: <i>[Signature]</i>	Date/Time: <i>4/10/15 1730</i>	Received by: <i>[Signature]</i>	Date/Time: <i>4-10 1730</i>	Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input checked="" type="checkbox"/> Standard <input type="checkbox"/> 48 hours <input type="checkbox"/>	<i>on ice</i>
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity: Temperature Upon Receipt: <i>3.6°C</i> Intact: <input checked="" type="checkbox"/> Yes No	

www.s2scientific.com

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Brunns

Reported:  
04/12/15 19:55

**BH11@3-4'**  
**1504106-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/10/15 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1504109	04/10/15	04/10/15	8015M	

Date Sampled: **04/10/15 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		114 %	70-130		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/10/15 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1504110	04/10/15	04/10/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.55</b>	0.50	"	"	"	"	"	"	

Date Sampled: **04/10/15 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.8 %	21-167		"	"	"	"	

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
04/12/15 19:55

**BH12@6-7'**  
**1504106-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/10/15 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1504109	04/10/15	04/10/15	8015M	

Date Sampled: **04/10/15 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		112 %	70-130		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/10/15 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1504110	04/10/15	04/10/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/10/15 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.8 %	21-167		"	"	"	"	

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Brunns

Reported:  
04/12/15 19:55

**SB01@2'**  
**1504106-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/10/15 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	610	50	mg/kg	1	1504109	04/10/15	04/10/15	8015M	

Date Sampled: **04/10/15 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		123 %	70-130		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/10/15 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.39	0.010	mg/kg	1	1504110	04/10/15	04/10/15	EPA 8260B	
Benzene	0.027	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.38	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.056	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	56	0.50	"	"	"	"	"	"	

Date Sampled: **04/10/15 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		96.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		45.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		260 %	21-167		"	"	"	"	S-02

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
04/12/15 19:55

**SB01@5'**  
**1504106-04 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/10/15 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>730</b>	50	mg/kg	1	1504109	04/10/15	04/10/15	8015M	

Date Sampled: **04/10/15 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		114 %	70-130		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/10/15 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Naphthalene</b>	<b>4.8</b>	1.0	mg/kg	100	1504110	04/10/15	04/10/15	EPA 8260B	
<b>Benzene</b>	<b>0.15</b>	0.0020	"	1	"	"	04/11/15	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>7.2</b>	0.50	"	100	"	"	04/10/15	"	
<b>Xylenes (total)</b>	<b>15</b>	1.0	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>2300</b>	50	"	"	"	"	"	"	

Date Sampled: **04/10/15 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		91.6 %	23-173		"	"	04/11/15	"	
<i>Surrogate: Toluene-d8</i>		1780 %	20-170		"	"	"	"	S-02
<i>Surrogate: 4-Bromofluorobenzene</i>		1580 %	21-167		"	"	"	"	S-02

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
04/12/15 19:55

**BH11**  
**1504106-05 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/10/15 10:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	1504123	04/11/15	04/11/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/10/15 10:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		106 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		95.6 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	45-146		"	"	"	"	

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
04/12/15 19:55

**BH12**  
**1504106-06 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/10/15 11:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	1504123	04/11/15	04/11/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/10/15 11:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		98.7 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.0 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	45-146		"	"	"	"	

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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: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
04/12/15 19:55

**BH13**  
**1504106-07 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/10/15 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	1504123	04/11/15	04/11/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/10/15 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		98.1 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.1 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	45-146		"	"	"	"	

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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: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/12/15 19:55

**BH14**  
**1504106-08 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/10/15 12:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	1504123	04/11/15	04/11/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/10/15 12:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		103 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		94.4 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	45-146		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
04/12/15 19:55

**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 1504109 - EPA 3550A**

**Blank (1504109-BLK1)**

Prepared & Analyzed: 04/10/15

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

Surrogate: o-Terphenyl	15.0	"	12.2	123	70-130
------------------------	------	---	------	-----	--------

**LCS (1504109-BS1)**

Prepared & Analyzed: 04/10/15

C10-C28 (DRO)	493	50	mg/kg	501	98.3	50-150
Surrogate: o-Terphenyl	13.9	"	12.2	114	70-130	

**Matrix Spike (1504109-MS1)**

Source: 1504081-01

Prepared & Analyzed: 04/10/15

C10-C28 (DRO)	519	50	mg/kg	495	11.5	102	50-150
Surrogate: o-Terphenyl	14.0	"	12.1	116	70-130		

**Matrix Spike Dup (1504109-MSD1)**

Source: 1504081-01

Prepared & Analyzed: 04/10/15

C10-C28 (DRO)	486	50	mg/kg	490	11.5	96.8	50-150	6.45	20
Surrogate: o-Terphenyl	13.3	"	11.9	111	70-130				

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: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Brunns

Reported:  
04/12/15 19:55

**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 1504110 - EPA 5030 Soil MS**

**Blank (1504110-BLK1)**

Prepared & Analyzed: 04/10/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0372		"	0.0396	93.9	23-173				
Surrogate: Toluene-d8	0.0382		"	0.0400	95.6	20-170				
Surrogate: 4-Bromofluorobenzene	0.0368		"	0.0400	92.0	21-167				

**LCS (1504110-BS1)**

Prepared & Analyzed: 04/10/15

Naphthalene	ND	0.010	mg/kg			66-138				
Benzene	0.0935	0.0020	"	0.100	93.5	58-130				
Toluene	0.103	0.0050	"	0.100	103	61-134				
Ethylbenzene	0.107	0.0050	"	0.0992	108	74-139				
m,p-Xylene	0.223	0.010	"	0.200	112	73-137				
o-Xylene	0.115	0.0050	"	0.0984	117	73-141				
Surrogate: 1,2-Dichloroethane-d4	0.0382		"	0.0396	96.6	23-173				
Surrogate: Toluene-d8	0.0388		"	0.0400	96.9	20-170				
Surrogate: 4-Bromofluorobenzene	0.0367		"	0.0400	91.6	21-167				

**Matrix Spike (1504110-MS1)**

Source: 1504057-01

Prepared & Analyzed: 04/10/15

Naphthalene	ND	0.010	mg/kg		ND	10-158				
Benzene	0.0951	0.0020	"	0.0977	ND	97.4	30-131			
Toluene	0.102	0.0050	"	0.0977	ND	104	30-134			
Ethylbenzene	0.0970	0.0050	"	0.0969	ND	100	22-153			
m,p-Xylene	0.204	0.010	"	0.195	0.00776	101	10-159			
o-Xylene	0.105	0.0050	"	0.0961	ND	109	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0397		"	0.0387		103	23-173			
Surrogate: Toluene-d8	0.0383		"	0.0391		98.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0356		"	0.0391		91.0	21-167			

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: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
04/12/15 19:55

**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 1504110 - EPA 5030 Soil MS**

**Matrix Spike Dup (1504110-MSD1)**

Source: 1504057-01

Prepared & Analyzed: 04/10/15

Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0896	0.0020	"	0.0952	ND	94.1	30-131	5.95	34	
Toluene	0.0933	0.0050	"	0.0952	ND	97.9	30-134	8.79	30	
Ethylbenzene	0.0870	0.0050	"	0.0945	ND	92.1	22-153	10.8	24	
m,p-Xylene	0.185	0.010	"	0.190	0.00776	93.2	10-159	9.84	68	
o-Xylene	0.0936	0.0050	"	0.0937	ND	99.9	31-151	11.6	38	
Surrogate: 1,2-Dichloroethane-d4	0.0381		"	0.0377		101	23-173			
Surrogate: Toluene-d8	0.0371		"	0.0381		97.3	20-170			
Surrogate: 4-Bromofluorobenzene	0.0355		"	0.0381		93.1	21-167			

**Batch 1504123 - EPA 5030 Water MS**

**Blank (1504123-BLK1)**

Prepared & Analyzed: 04/11/15

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	12.9		"	13.2		97.4	37-154			
Surrogate: Toluene-d8	13.0		"	13.3		97.7	45-149			
Surrogate: 4-Bromofluorobenzene	12.6		"	13.3		94.3	45-146			

**LCS (1504123-BS1)**

Prepared & Analyzed: 04/11/15

Benzene	46.1	1.0	ug/l	50.0		92.2	51-132			
Toluene	47.2	1.0	"	50.0		94.5	51-138			
Ethylbenzene	47.4	1.0	"	50.0		94.9	58-146			
m,p-Xylene	96.8	2.0	"	100		96.8	57-144			
o-Xylene	48.6	1.0	"	50.0		97.1	53-146			
Surrogate: 1,2-Dichloroethane-d4	11.8		"	13.2		89.8	37-154			
Surrogate: Toluene-d8	13.2		"	13.3		98.7	45-149			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.6	45-146			

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: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Brunns

Reported:  
04/12/15 19:55

**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 1504123 - EPA 5030 Water MS**

Matrix Spike (1504123-MS1)				Source: 1504047-01		Prepared & Analyzed: 04/11/15				
Benzene	47.2	1.0	ug/l	50.0	ND	94.3	34-141			
Toluene	48.0	1.0	"	50.0	ND	95.9	27-151			
Ethylbenzene	48.7	1.0	"	50.0	ND	97.4	29-160			
m,p-Xylene	99.3	2.0	"	100	ND	99.3	20-166			
o-Xylene	50.1	1.0	"	50.0	ND	100	33-159			
Surrogate: 1,2-Dichloroethane-d4	11.7		"	13.2		88.9	37-154			
Surrogate: Toluene-d8	13.2		"	13.3		99.2	45-149			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.1	45-146			
Matrix Spike Dup (1504123-MSD1)				Source: 1504047-01		Prepared & Analyzed: 04/11/15				
Benzene	48.3	1.0	ug/l	50.0	ND	96.7	34-141	2.47	32	
Toluene	49.6	1.0	"	50.0	ND	99.3	27-151	3.46	25	
Ethylbenzene	49.8	1.0	"	50.0	ND	99.7	29-160	2.29	50	
m,p-Xylene	101	2.0	"	100	ND	101	20-166	1.96	36	
o-Xylene	51.5	1.0	"	50.0	ND	103	33-159	2.72	26	
Surrogate: 1,2-Dichloroethane-d4	11.9		"	13.2		90.5	37-154			
Surrogate: Toluene-d8	13.2		"	13.3		99.0	45-149			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.3	45-146			

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: Ursula 2  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/12/15 19:55

### Notes and Definitions

S-02      The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

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

*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.*

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

October 27, 2015

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 10/20/15 17:05. 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  
President



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/27/15 15:28

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@5'	1510140-01	Soil	10/20/15 11:30	10/20/15 17:05
SS02@5'	1510140-02	Soil	10/20/15 13:07	10/20/15 17:05

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/27/15 15:28

**SS01@5'**  
**1510140-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 10/20/15 11:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1400	50	mg/kg	1	1510178	10/21/15	10/27/15	8015M	

Date Sampled: 10/20/15 11:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		123 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 10/20/15 11:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	4.1	1.0	mg/kg	100	1510176	10/21/15	10/22/15	EPA 8260B	
Benzene	0.53	0.20	"	"	"	"	"	"	
Toluene	1.2	0.50	"	"	"	"	"	"	
Ethylbenzene	12	0.50	"	"	"	"	"	"	
Xylenes (total)	17	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2400	50	"	"	"	"	"	"	

Date Sampled: 10/20/15 11:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		64.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		159 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/27/15 15:28

**SS02@5'**  
**1510140-02 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/20/15 13:07

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1100	50	mg/kg	1	1510178	10/21/15	10/27/15	8015M	

Date Sampled: 10/20/15 13:07

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		113 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/20/15 13:07

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	4.6	1.0	mg/kg	100	1510176	10/21/15	10/22/15	EPA 8260B	
Benzene	0.46	0.20	"	"	"	"	"	"	
Toluene	1.1	0.50	"	"	"	"	"	"	
Ethylbenzene	9.0	0.50	"	"	"	"	"	"	
Xylenes (total)	35	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2500	50	"	"	"	"	"	"	

Date Sampled: 10/20/15 13:07

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		70.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		172 %	21-167		"	"	"	"	S-02

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/27/15 15:28

**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 1510178 - EPA 3550A**

**Blank (1510178-BLK1)**

Prepared & Analyzed: 10/21/15

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 12.8 " 12.2 105 30-150

**LCS (1510178-BS1)**

Prepared & Analyzed: 10/21/15

C10-C28 (DRO) 599 50 mg/kg 499 120 73-134

Surrogate: o-Terphenyl 13.4 " 12.2 110 30-150

**Matrix Spike (1510178-MS1)**

Source: 1510142-02

Prepared & Analyzed: 10/21/15

C10-C28 (DRO) 569 50 mg/kg 499 46.3 105 50-148

Surrogate: o-Terphenyl 13.2 " 12.2 109 30-150

**Matrix Spike Dup (1510178-MSD1)**

Source: 1510142-02

Prepared & Analyzed: 10/21/15

C10-C28 (DRO) 596 50 mg/kg 499 46.3 110 50-148 4.61 13

Surrogate: o-Terphenyl 14.1 " 12.2 115 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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/27/15 15:28

**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 1510176 - EPA 5030 Soil MS**

**Blank (1510176-BLK1)**

Prepared & Analyzed: 10/21/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0442</i>		<i>"</i>	<i>0.0396</i>		<i>112</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0398</i>		<i>"</i>	<i>0.0400</i>		<i>99.5</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0429</i>		<i>"</i>	<i>0.0400</i>		<i>107</i>	<i>21-167</i>			

**LCS (1510176-BS1)**

Prepared & Analyzed: 10/21/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0982	0.0020	"	0.100		98.2	58-130			
Toluene	0.0937	0.0050	"	0.100		93.7	61-134			
Ethylbenzene	0.110	0.0050	"	0.0992		111	74-139			
m,p-Xylene	0.205	0.010	"	0.200		103	73-137			
o-Xylene	0.0992	0.0050	"	0.0984		101	73-141			
Xylenes (total)	0.304	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.16	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0451</i>		<i>"</i>	<i>0.0396</i>		<i>114</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0410</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0379</i>		<i>"</i>	<i>0.0400</i>		<i>94.6</i>	<i>21-167</i>			

**Matrix Spike (1510176-MS1)**

Source: 1510124-01

Prepared & Analyzed: 10/21/15

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0948	0.0020	"	0.0980	ND	96.7	30-131			
Toluene	0.0898	0.0050	"	0.0980	ND	91.6	30-134			
Ethylbenzene	0.104	0.0050	"	0.0973	ND	107	22-153			
m,p-Xylene	0.193	0.010	"	0.196	ND	98.6	10-159			
o-Xylene	0.0936	0.0050	"	0.0965	ND	97.0	31-151			
Xylenes (total)	0.286	0.010	"		0.00		30-160			
Gasoline Range Hydrocarbons	2.04	0.50	"		ND		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0438</i>		<i>"</i>	<i>0.0388</i>		<i>113</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0400</i>		<i>"</i>	<i>0.0392</i>		<i>102</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0372</i>		<i>"</i>	<i>0.0392</i>		<i>94.9</i>	<i>21-167</i>			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/27/15 15:28

**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 1510176 - EPA 5030 Soil MS**

Matrix Spike Dup (1510176-MSD1)		Source: 1510124-01			Prepared & Analyzed: 10/21/15					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0903	0.0020	"	0.0940	ND	96.1	30-131	4.88	34	
Toluene	0.0857	0.0050	"	0.0940	ND	91.2	30-134	4.62	30	
Ethylbenzene	0.0996	0.0050	"	0.0932	ND	107	22-153	4.42	24	
m,p-Xylene	0.187	0.010	"	0.188	ND	99.9	10-159	2.86	68	
o-Xylene	0.0902	0.0050	"	0.0925	ND	97.6	31-151	3.66	38	
Xylenes (total)	0.278	0.010	"		0.00		30-160	3.12	30	
Gasoline Range Hydrocarbons	1.91	0.50	"		ND		30-160	6.61	30	
Surrogate: 1,2-Dichloroethane-d4	0.0424		"	0.0372		114	23-173			
Surrogate: Toluene-d8	0.0382		"	0.0376		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0367		"	0.0376		97.6	21-167			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/27/15 15:28

### Notes and Definitions

S-02      The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

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

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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.*

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

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 25, 2015

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 10/23/15 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 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury  
President





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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/25/15 13:23

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CS01	1510162-01	Soil	10/23/15 09:49	10/23/15 16:30
CS02	1510162-02	Soil	10/23/15 13:30	10/23/15 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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/25/15 13:23

**CS01**  
**1510162-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 10/23/15 09:49

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	66	50	mg/kg	1	1510199	10/23/15	10/23/15	8015M	

Date Sampled: 10/23/15 09:49

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: 10/23/15 09:49

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.029	0.010	mg/kg	1	1510198	10/23/15	10/24/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	10/23/15	"	
Ethylbenzene	ND	0.0050	"	"	"	"	10/24/15	"	
Xylenes (total)	0.21	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	900	50	"	100	"	"	10/23/15	"	

Date Sampled: 10/23/15 09:49

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	10/24/15	"	
Surrogate: Toluene-d8		181 %	20-170		"	"	"	"	S-02
Surrogate: 4-Bromofluorobenzene		349 %	21-167		"	"	"	"	S-02

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
10/25/15 13:23

**CS02**  
**1510162-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 10/23/15 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	91	50	mg/kg	1	1510199	10/23/15	10/23/15	8015M	

Date Sampled: 10/23/15 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		106 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 10/23/15 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.020	0.010	mg/kg	1	1510198	10/23/15	10/24/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.055	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	470	5.0	"	10	"	"	10/23/15	"	

Date Sampled: 10/23/15 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	10/24/15	"	
Surrogate: Toluene-d8		173 %	20-170		"	"	"	"	S-02
Surrogate: 4-Bromofluorobenzene		151 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/25/15 13:23

**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 1510199 - EPA 3550A**

**Blank (1510199-BLK1)**

Prepared & Analyzed: 10/23/15

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 13.6 " 12.2 111 30-150

**LCS (1510199-BS1)**

Prepared & Analyzed: 10/23/15

C10-C28 (DRO) 565 50 mg/kg 499 113 73-134

Surrogate: o-Terphenyl 14.3 " 12.2 117 30-150

**Matrix Spike (1510199-MS1)**

Source: 1510162-02

Prepared & Analyzed: 10/23/15

C10-C28 (DRO) 546 50 mg/kg 499 90.7 91.2 50-148

Surrogate: o-Terphenyl 13.2 " 12.2 108 30-150

**Matrix Spike Dup (1510199-MSD1)**

Source: 1510162-02

Prepared & Analyzed: 10/23/15

C10-C28 (DRO) 546 50 mg/kg 499 90.7 91.3 50-148 0.0676 13

Surrogate: o-Terphenyl 13.0 " 12.2 107 30-150

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
10/25/15 13:23

**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 1510198 - EPA 5030 Soil MS**

**Blank (1510198-BLK1)**

Prepared & Analyzed: 10/23/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0428</i>		<i>"</i>	<i>0.0396</i>		<i>108</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0404</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0424</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>21-167</i>			

**LCS (1510198-BS1)**

Prepared & Analyzed: 10/23/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.108	0.0020	"	0.100		108	58-130			
Toluene	0.0982	0.0050	"	0.100		98.2	61-134			
Ethylbenzene	0.114	0.0050	"	0.0992		114	74-139			
m,p-Xylene	0.222	0.010	"	0.200		111	73-137			
o-Xylene	0.118	0.0050	"	0.0984		120	73-141			
Xylenes (total)	0.340	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.25	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0428</i>		<i>"</i>	<i>0.0396</i>		<i>108</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0422</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0432</i>		<i>"</i>	<i>0.0400</i>		<i>108</i>	<i>21-167</i>			

**Matrix Spike (1510198-MS1)**

Source: 1510162-02

Prepared & Analyzed: 10/23/15

Naphthalene	0.00765	0.010	mg/kg		0.0200		10-158			
Benzene	0.112	0.0020	"	0.100	ND	112	30-131			
Toluene	0.104	0.0050	"	0.100	ND	104	30-134			
Ethylbenzene	0.121	0.0050	"	0.0992	ND	122	22-153			
m,p-Xylene	0.260	0.010	"	0.200	0.0360	112	10-159			
o-Xylene	0.137	0.0050	"	0.0984	0.0190	120	31-151			
Xylenes (total)	0.397	0.010	"		0.0550		30-160			
Gasoline Range Hydrocarbons	3.36	0.50	"		470		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0471</i>		<i>"</i>	<i>0.0396</i>		<i>119</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0422</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0433</i>		<i>"</i>	<i>0.0400</i>		<i>108</i>	<i>21-167</i>			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/25/15 13:23

**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 1510198 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (1510198-MSD1)</b>	<b>Source: 1510162-02</b>			<b>Prepared &amp; Analyzed: 10/23/15</b>						
Naphthalene	0.0115	0.010	mg/kg		0.0200		10-158	40.4	42	
Benzene	0.114	0.0020	"	0.100	ND	114	30-131	1.49	34	
Toluene	0.106	0.0050	"	0.100	ND	106	30-134	1.28	30	
Ethylbenzene	0.123	0.0050	"	0.0992	ND	124	22-153	1.99	24	
m,p-Xylene	0.273	0.010	"	0.200	0.0360	119	10-159	4.73	68	
o-Xylene	0.142	0.0050	"	0.0984	0.0190	125	31-151	3.95	38	
Xylenes (total)	0.415	0.010	"		0.0550		30-160	4.46	30	
Gasoline Range Hydrocarbons	4.16	0.50	"		470		30-160	21.2	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0470</i>		<i>"</i>	<i>0.0396</i>		<i>119</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0419</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0424</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>21-167</i>			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/25/15 13:23

### Notes and Definitions

S-02      The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

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

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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.*

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



# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 29, 2015

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 10/28/15 19:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury  
President



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/15 06:58

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS03@5'	1510195-01	Soil	10/28/15 14:25	10/28/15 19:30
SS04@5'	1510195-02	Soil	10/28/15 14:41	10/28/15 19:30
CS03	1510195-03	Soil	10/28/15 16:30	10/28/15 19:30
CS04	1510195-04	Soil	10/28/15 16:35	10/28/15 19:30
CS05	1510195-05	Soil	10/28/15 16:45	10/28/15 19:30
CS06	1510195-06	Soil	10/28/15 16:50	10/28/15 19:30

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
10/29/15 06:58

SS03@5'  
1510195-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/28/15 14:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1510246	10/28/15	10/28/15	8015M	

Date Sampled: 10/28/15 14:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		115 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/28/15 14:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1510245	10/28/15	10/28/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 10/28/15 14:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.8 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/15 06:58

**SS04@5'**  
**1510195-02 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/28/15 14:41

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1510246	10/28/15	10/28/15	8015M	

Date Sampled: 10/28/15 14:41

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		107 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/28/15 14:41

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1510245	10/28/15	10/28/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>39</b>	0.50	"	"	"	"	"	"	

Date Sampled: 10/28/15 14:41

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		128 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/15 06:58

**CS03**  
**1510195-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 10/28/15 16:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	72	50	mg/kg	1	1510246	10/28/15	10/28/15	8015M	

Date Sampled: 10/28/15 16:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		109 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 10/28/15 16:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.041	0.010	mg/kg	1	1510245	10/28/15	10/28/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.25	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	590	5.0	"	10	"	"	10/28/15	"	

Date Sampled: 10/28/15 16:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.6 %	23-173		"	"	10/28/15	"	
Surrogate: Toluene-d8		122 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		146 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/15 06:58

**CS04**  
**1510195-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 10/28/15 16:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	73	50	mg/kg	1	1510246	10/28/15	10/28/15	8015M	

Date Sampled: 10/28/15 16:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		109 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 10/28/15 16:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.028	0.010	mg/kg	1	1510245	10/28/15	10/28/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.14	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	570	5.0	"	10	"	"	10/28/15	"	

Date Sampled: 10/28/15 16:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	10/28/15	"	
Surrogate: Toluene-d8		117 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		139 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/15 06:58

**CS05**  
**1510195-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 10/28/15 16:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	55	50	mg/kg	1	1510246	10/28/15	10/28/15	8015M	

Date Sampled: 10/28/15 16:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		108 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 10/28/15 16:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.051	0.010	mg/kg	1	1510245	10/28/15	10/28/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	10/28/15	"	
Xylenes (total)	3.1	0.10	"	10	"	"	10/28/15	"	
Gasoline Range Hydrocarbons	780	5.0	"	"	"	"	10/28/15	"	

Date Sampled: 10/28/15 16:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	10/28/15	"	
Surrogate: Toluene-d8		132 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		162 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/15 06:58

**CS06**  
**1510195-06 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 10/28/15 16:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	80	50	mg/kg	1	1510246	10/28/15	10/28/15	8015M	

Date Sampled: 10/28/15 16:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		108 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 10/28/15 16:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.31	0.010	mg/kg	1	1510245	10/28/15	10/29/15	EPA 8260B	
Benzene	0.0050	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.22	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.97	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	860	5.0	"	10	"	"	10/28/15	"	

Date Sampled: 10/28/15 16:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		96.1 %	23-173		"	"	10/29/15	"	
Surrogate: Toluene-d8		134 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		165 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/15 06:58

**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 1510246 - EPA 3550A**

**Blank (1510246-BLK1)**

Prepared & Analyzed: 10/28/15

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	13.2		"	12.2		109	30-150			

**LCS (1510246-BS1)**

Prepared & Analyzed: 10/28/15

C10-C28 (DRO)	429	50	mg/kg	499		85.9	73-134			
Surrogate: o-Terphenyl	14.2		"	12.2		117	30-150			

**Matrix Spike (1510246-MS1)**

Source: 1510192-02

Prepared & Analyzed: 10/28/15

C10-C28 (DRO)	507	50	mg/kg	499	42.5	93.2	50-148			
Surrogate: o-Terphenyl	13.6		"	12.2		111	30-150			

**Matrix Spike Dup (1510246-MSD1)**

Source: 1510192-02

Prepared & Analyzed: 10/28/15

C10-C28 (DRO)	497	50	mg/kg	499	42.5	91.2	50-148	2.02	13	
Surrogate: o-Terphenyl	13.7		"	12.2		112	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
10/29/15 06:58

**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 1510245 - EPA 5030 Soil MS**

**Blank (1510245-BLK1)**

Prepared & Analyzed: 10/28/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0492</i>		<i>"</i>	<i>0.0396</i>		<i>124</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0392</i>		<i>"</i>	<i>0.0400</i>		<i>98.1</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0386</i>		<i>"</i>	<i>0.0400</i>		<i>96.4</i>	<i>21-167</i>			

**LCS (1510245-BS1)**

Prepared & Analyzed: 10/28/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0776	0.0020	"	0.100		77.6	58-130			
Toluene	0.0856	0.0050	"	0.100		85.6	61-134			
Ethylbenzene	0.101	0.0050	"	0.0992		101	74-139			
m,p-Xylene	0.198	0.010	"	0.200		99.0	73-137			
o-Xylene	0.0999	0.0050	"	0.0984		102	73-141			
Xylenes (total)	0.298	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.66	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0472</i>		<i>"</i>	<i>0.0396</i>		<i>119</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0391</i>		<i>"</i>	<i>0.0400</i>		<i>97.7</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0377</i>		<i>"</i>	<i>0.0400</i>		<i>94.4</i>	<i>21-167</i>			

**Matrix Spike (1510245-MS1)**

Source: 1510192-02

Prepared & Analyzed: 10/28/15

Naphthalene	0.0353	0.010	mg/kg		0.0632		10-158			
Benzene	0.0800	0.0020	"	0.100	ND	80.0	30-131			
Toluene	0.0923	0.0050	"	0.100	0.00382	88.5	30-134			
Ethylbenzene	0.103	0.0050	"	0.0992	ND	104	22-153			
m,p-Xylene	0.295	0.010	"	0.200	0.143	76.4	10-159			
o-Xylene	0.156	0.0050	"	0.0984	0.0868	70.8	31-151			
Xylenes (total)	0.452	0.010	"		0.229		30-160			
Gasoline Range Hydrocarbons	4.04	0.50	"		12.9		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0480</i>		<i>"</i>	<i>0.0396</i>		<i>121</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0398</i>		<i>"</i>	<i>0.0400</i>		<i>99.4</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0393</i>		<i>"</i>	<i>0.0400</i>		<i>98.2</i>	<i>21-167</i>			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/15 06:58

**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 1510245 - EPA 5030 Soil MS**

Matrix Spike Dup (1510245-MSD1)		Source: 1510192-02			Prepared & Analyzed: 10/28/15						
Naphthalene	0.0824	0.010	mg/kg		0.0632		10-158	80.1	42		QM-07
Benzene	0.0802	0.0020	"	0.100	ND	80.2	30-131	0.337	34		
Toluene	0.0927	0.0050	"	0.100	0.00382	88.9	30-134	0.454	30		
Ethylbenzene	0.104	0.0050	"	0.0992	ND	105	22-153	0.899	24		
m,p-Xylene	0.413	0.010	"	0.200	0.143	135	10-159	33.2	68		
o-Xylene	0.226	0.0050	"	0.0984	0.0868	141	31-151	36.2	38		
Xylenes (total)	0.638	0.010	"		0.229		30-160	34.2	30		QM-07
Gasoline Range Hydrocarbons	4.92	0.50	"		12.9		30-160	19.6	30		
Surrogate: 1,2-Dichloroethane-d4	0.0492		"	0.0396		124	23-173				
Surrogate: Toluene-d8	0.0422		"	0.0400		105	20-170				
Surrogate: 4-Bromofluorobenzene	0.0428		"	0.0400		107	21-167				

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/15 06:58

### 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

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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.*

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

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 30, 2015

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 10/29/15 17:45. 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  
President



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/30/15 06:37

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW01	1510205-01	Water	10/29/15 08:45	10/29/15 17:45
GW02	1510205-02	Water	10/29/15 09:01	10/29/15 17:45

Summit Scientific

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

*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.*

Page 2 of 7





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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/30/15 06:37

**GW01**  
**1510205-01 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 10/29/15 08:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>1.1</b>	1.0	ug/l	1	1510254	10/29/15	10/29/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>27</b>	1.0	"	"	"	"	"	"	

Date Sampled: 10/29/15 08:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		128 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		100 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	45-146		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/30/15 06:37

**GW02**  
**1510205-02 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/29/15 09:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>3.2</b>	1.0	ug/l	1	1510254	10/29/15	10/29/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>16</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>180</b>	1.0	"	"	"	"	"	"	

Date Sampled: **10/29/15 09:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		114 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		106 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.5 %	45-146		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/30/15 06:37

## 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 1510254 - EPA 5030 Water MS

##### Blank (1510254-BLK1)

Prepared & Analyzed: 10/29/15

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	15.1		"	13.2		115	37-154			
Surrogate: Toluene-d8	12.7		"	13.3		95.5	45-149			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.0	45-146			

##### LCS (1510254-BS1)

Prepared & Analyzed: 10/29/15

Benzene	34.6	1.0	ug/l	33.3		104	51-132			
Toluene	32.8	1.0	"	33.3		98.3	51-138			
Ethylbenzene	37.8	1.0	"	33.1		114	58-146			
m,p-Xylene	71.3	2.0	"	66.5		107	57-144			
o-Xylene	35.2	1.0	"	32.8		107	53-146			
Surrogate: 1,2-Dichloroethane-d4	15.2		"	13.2		115	37-154			
Surrogate: Toluene-d8	13.0		"	13.3		97.2	45-149			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.2	45-146			

##### Matrix Spike (1510254-MS1)

Source: 1510196-01

Prepared & Analyzed: 10/29/15

Benzene	35.0	1.0	ug/l	33.3	ND	105	34-141			
Toluene	33.0	1.0	"	33.3	ND	98.9	27-151			
Ethylbenzene	39.4	1.0	"	33.1	ND	119	29-160			
m,p-Xylene	74.1	2.0	"	66.5	ND	111	20-166			
o-Xylene	36.6	1.0	"	32.8	ND	112	33-159			
Surrogate: 1,2-Dichloroethane-d4	14.8		"	13.2		112	37-154			
Surrogate: Toluene-d8	12.7		"	13.3		95.6	45-149			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.0	45-146			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
10/30/15 06:37

**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 1510254 - EPA 5030 Water MS**

Matrix Spike Dup (1510254-MSD1)	Source: 1510196-01			Prepared & Analyzed: 10/29/15						
Benzene	35.4	1.0	ug/l	33.3	ND	106	34-141	1.22	32	
Toluene	33.4	1.0	"	33.3	ND	100	27-151	1.30	25	
Ethylbenzene	39.0	1.0	"	33.1	ND	118	29-160	1.25	50	
m,p-Xylene	73.7	2.0	"	66.5	ND	111	20-166	0.595	36	
o-Xylene	35.9	1.0	"	32.8	ND	109	33-159	1.93	26	
Surrogate: 1,2-Dichloroethane-d4	15.1		"	13.2		115	37-154			
Surrogate: Toluene-d8	12.9		"	13.3		96.9	45-149			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.6	45-146			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/30/15 06:37

### 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

*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.*

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

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

November 04, 2015

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 11/03/15 18:00. 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  
President



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/04/15 07:57

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS05@5'	1511012-01	Soil	11/03/15 13:20	11/03/15 18:00
CS01-R	1511012-02	Soil	11/03/15 13:25	11/03/15 18:00
CS02-R	1511012-03	Soil	11/03/15 13:40	11/03/15 18:00
CS03-R	1511012-04	Soil	11/03/15 13:35	11/03/15 18:00
CS04-R	1511012-05	Soil	11/03/15 13:30	11/03/15 18:00

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/04/15 07:57

SS05@5'  
1511012-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 11/03/15 13:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	400	50	mg/kg	1	1511028	11/03/15	11/03/15	8015M	

Date Sampled: 11/03/15 13:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.4 %	70-130		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 11/03/15 13:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	2.8	1.0	mg/kg	100	1511027	11/03/15	11/04/15	EPA 8260B	
Benzene	0.0046	0.0020	"	1	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	11/04/15	"	
Ethylbenzene	0.27	0.0050	"	"	"	"	11/04/15	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1700	50	"	100	"	"	11/04/15	"	

Date Sampled: 11/03/15 13:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	11/04/15	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/04/15 07:57

**CS01-R**  
**1511012-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/03/15 13:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511028	11/03/15	11/03/15	8015M	

Date Sampled: 11/03/15 13:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		103 %	70-130		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/03/15 13:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.031	0.010	mg/kg	1	1511027	11/03/15	11/03/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.069	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	140	0.50	"	"	"	"	"	"	E

Date Sampled: 11/03/15 13:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		146 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		247 %	21-167		"	"	"	"	S-02

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/04/15 07:57

**CS02-R**  
**1511012-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/03/15 13:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511028	11/03/15	11/03/15	8015M	

Date Sampled: 11/03/15 13:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.8 %	70-130		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/03/15 13:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.030	0.010	mg/kg	1	1511027	11/03/15	11/04/15	EPA 8260B	
Benzene	0.0029	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.23	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	170	0.50	"	"	"	"	"	"	E

Date Sampled: 11/03/15 13:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		162 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		245 %	21-167		"	"	"	"	S-02

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/04/15 07:57

**CS03-R**  
**1511012-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/03/15 13:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511028	11/03/15	11/03/15	8015M	

Date Sampled: 11/03/15 13:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		96.3 %	70-130		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/03/15 13:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.015	0.010	mg/kg	1	1511027	11/03/15	11/04/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.024	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	140	0.50	"	"	"	"	"	"	E

Date Sampled: 11/03/15 13:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		145 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		212 %	21-167		"	"	"	"	S-02

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/04/15 07:57

**CS04-R**  
**1511012-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/03/15 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511028	11/03/15	11/04/15	8015M	

Date Sampled: 11/03/15 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		102 %	70-130		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/03/15 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.049	0.010	mg/kg	1	1511027	11/03/15	11/04/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0050	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.18	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	670	5.0	"	10	"	"	11/04/15	"	

Date Sampled: 11/03/15 13:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	11/04/15	"	
Surrogate: Toluene-d8		145 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		137 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/04/15 07:57

**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 1511028 - EPA 3550A**

**Blank (1511028-BLK1)**

Prepared: 11/03/15 Analyzed: 11/04/15

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 11.8 " 12.2 96.4 70-130

**LCS (1511028-BS1)**

Prepared: 11/03/15 Analyzed: 11/04/15

C10-C28 (DRO) 497 50 mg/kg 499 99.5 50-150

Surrogate: o-Terphenyl 11.8 " 12.2 96.7 70-130

**Matrix Spike (1511028-MS1)**

**Source: 1511010-01**

Prepared: 11/03/15 Analyzed: 11/04/15

C10-C28 (DRO) 537 50 mg/kg 462 124 89.4 50-150

Surrogate: o-Terphenyl 11.6 " 11.3 103 70-130

**Matrix Spike Dup (1511028-MSD1)**

**Source: 1511010-01**

Prepared: 11/03/15 Analyzed: 11/04/15

C10-C28 (DRO) 507 50 mg/kg 459 124 83.5 50-150 5.74 20

Surrogate: o-Terphenyl 11.0 " 11.2 98.2 70-130

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/04/15 07:57

**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 1511027 - EPA 5030 Soil MS**

**Blank (1511027-BLK1)**

Prepared & Analyzed: 11/03/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0479</i>		<i>"</i>	<i>0.0396</i>		<i>121</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0392</i>		<i>"</i>	<i>0.0400</i>		<i>97.9</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0393</i>		<i>"</i>	<i>0.0400</i>		<i>98.2</i>	<i>21-167</i>			

**LCS (1511027-BS1)**

Prepared & Analyzed: 11/03/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0770	0.0020	"	0.100		77.0	58-130			
Toluene	0.0863	0.0050	"	0.100		86.3	61-134			
Ethylbenzene	0.104	0.0050	"	0.0992		104	74-139			
m,p-Xylene	0.204	0.010	"	0.200		102	73-137			
o-Xylene	0.103	0.0050	"	0.0984		105	73-141			
Xylenes (total)	0.308	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.70	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0472</i>		<i>"</i>	<i>0.0396</i>		<i>119</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0388</i>		<i>"</i>	<i>0.0400</i>		<i>97.0</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0386</i>		<i>"</i>	<i>0.0400</i>		<i>96.6</i>	<i>21-167</i>			

**Matrix Spike (1511027-MS1)**

Source: 1511010-01

Prepared: 11/03/15 Analyzed: 11/04/15

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0775	0.0020	"	0.0956	ND	81.1	30-131			
Toluene	0.0857	0.0050	"	0.0956	ND	89.6	30-134			
Ethylbenzene	0.103	0.0050	"	0.0948	ND	108	22-153			
m,p-Xylene	0.202	0.010	"	0.191	ND	106	10-159			
o-Xylene	0.101	0.0050	"	0.0941	ND	107	31-151			
Xylenes (total)	0.303	0.010	"		0.00		30-160			
Gasoline Range Hydrocarbons	2.34	0.50	"		0.604		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0468</i>		<i>"</i>	<i>0.0379</i>		<i>124</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0371</i>		<i>"</i>	<i>0.0382</i>		<i>97.0</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0364</i>		<i>"</i>	<i>0.0382</i>		<i>95.2</i>	<i>21-167</i>			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/04/15 07:57

**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 1511027 - EPA 5030 Soil MS**

Matrix Spike Dup (1511027-MSD1)		Source: 1511010-01			Prepared: 11/03/15		Analyzed: 11/04/15			
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0895	0.0020	"	0.113	ND	79.3	30-131	14.4	34	
Toluene	0.101	0.0050	"	0.113	ND	89.1	30-134	15.9	30	
Ethylbenzene	0.119	0.0050	"	0.112	ND	106	22-153	14.9	24	
m,p-Xylene	0.234	0.010	"	0.225	ND	104	10-159	14.7	68	
o-Xylene	0.118	0.0050	"	0.111	ND	106	31-151	15.9	38	
Xylenes (total)	0.352	0.010	"		0.00		30-160	15.1	30	
Gasoline Range Hydrocarbons	2.29	0.50	"		0.604		30-160	2.03	30	
Surrogate: 1,2-Dichloroethane-d4	0.0575		"	0.0447		129	23-173			
Surrogate: Toluene-d8	0.0445		"	0.0451		98.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0432		"	0.0451		95.8	21-167			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/04/15 07:57

### Notes and Definitions

S-02      The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

E          The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.

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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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

November 05, 2015

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 11/04/15 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury  
President



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/05/15 15:59

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CS04R2	1511028-01	Soil	11/04/15 11:05	11/04/15 17:30
CS05R	1511028-02	Soil	11/04/15 11:15	11/04/15 17:30
CS06R	1511028-03	Soil	11/04/15 11:25	11/04/15 17:30
CS07R	1511028-04	Soil	11/04/15 11:35	11/04/15 17:30

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/05/15 15:59

**CS04R2**  
**1511028-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/04/15 11:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511045	11/04/15	11/04/15	8015M	

Date Sampled: 11/04/15 11:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		117 %	70-130		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/04/15 11:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.12	0.010	mg/kg	1	1511043	11/04/15	11/04/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.028	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.66	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	250	5.0	"	10	"	"	11/04/15	"	

Date Sampled: 11/04/15 11:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	11/04/15	"	
Surrogate: Toluene-d8		68.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		192 %	21-167		"	"	"	"	S-02

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/05/15 15:59

**CS05R**  
**1511028-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/04/15 11:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511045	11/04/15	11/04/15	8015M	

Date Sampled: 11/04/15 11:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		118 %	70-130		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/04/15 11:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.037	0.010	mg/kg	1	1511043	11/04/15	11/04/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.12	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	240	5.0	"	10	"	"	11/04/15	"	

Date Sampled: 11/04/15 11:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	11/04/15	"	
Surrogate: Toluene-d8		70.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		215 %	21-167		"	"	"	"	S-02

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/05/15 15:59

**CS06R**  
**1511028-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/04/15 11:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511045	11/04/15	11/04/15	8015M	

Date Sampled: 11/04/15 11:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		115 %	70-130		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/04/15 11:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.060	0.010	mg/kg	1	1511043	11/04/15	11/04/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.012	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.30	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	250	5.0	"	10	"	"	11/04/15	"	

Date Sampled: 11/04/15 11:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	11/04/15	"	
Surrogate: Toluene-d8		69.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		225 %	21-167		"	"	"	"	S-02

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/05/15 15:59

**CS07R**  
**1511028-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/04/15 11:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511045	11/04/15	11/04/15	8015M	

Date Sampled: 11/04/15 11:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		114 %	70-130		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/04/15 11:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.034	0.010	mg/kg	1	1511043	11/04/15	11/04/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.14	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	230	5.0	"	10	"	"	11/04/15	"	

Date Sampled: 11/04/15 11:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	11/04/15	"	
Surrogate: Toluene-d8		74.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		212 %	21-167		"	"	"	"	S-02

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/05/15 15:59

**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 1511045 - EPA 3550A**

**Blank (1511045-BLK1)**

Prepared: 11/04/15 Analyzed: 11/05/15

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

Surrogate: o-Terphenyl	14.1	"	12.2	115	70-130
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**LCS (1511045-BS1)**

Prepared: 11/04/15 Analyzed: 11/05/15

C10-C28 (DRO)	484	50	mg/kg
Surrogate: o-Terphenyl	14.2	"	12.2

				117	70-130
--	--	--	--	-----	--------

**Matrix Spike (1511045-MS1)**

**Source: 1511028-01**

Prepared: 11/04/15 Analyzed: 11/05/15

C10-C28 (DRO)	495	50	mg/kg
Surrogate: o-Terphenyl	12.9	"	11.3

				114	70-130
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**Matrix Spike Dup (1511045-MSD1)**

**Source: 1511028-01**

Prepared: 11/04/15 Analyzed: 11/05/15

C10-C28 (DRO)	510	50	mg/kg	460	47.0	101	50-150	2.97	20
Surrogate: o-Terphenyl	13.1	"	11.3			117	70-130		

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/05/15 15:59

**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 1511043 - EPA 5030 Soil MS**

**Blank (1511043-BLK1)**

Prepared: 11/04/15 Analyzed: 11/05/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0499</i>		<i>"</i>	<i>0.0396</i>		<i>126</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0395</i>		<i>"</i>	<i>0.0400</i>		<i>98.7</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0384</i>		<i>"</i>	<i>0.0400</i>		<i>95.9</i>	<i>21-167</i>			

**LCS (1511043-BS1)**

Prepared: 11/04/15 Analyzed: 11/05/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0815	0.0020	"	0.100		81.5	58-130			
Toluene	0.0904	0.0050	"	0.100		90.4	61-134			
Ethylbenzene	0.105	0.0050	"	0.0992		105	74-139			
m,p-Xylene	0.205	0.010	"	0.200		103	73-137			
o-Xylene	0.103	0.0050	"	0.0984		104	73-141			
Xylenes (total)	0.308	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.74	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0495</i>		<i>"</i>	<i>0.0396</i>		<i>125</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0399</i>		<i>"</i>	<i>0.0400</i>		<i>99.8</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0386</i>		<i>"</i>	<i>0.0400</i>		<i>96.4</i>	<i>21-167</i>			

**Matrix Spike (1511043-MS1)**

Source: 1511028-01

Prepared: 11/04/15 Analyzed: 11/05/15

Naphthalene	0.0112	0.010	mg/kg		0.123		10-158			
Benzene	0.0719	0.0020	"	0.0907	ND	79.2	30-131			
Toluene	0.0741	0.0050	"	0.0907	ND	81.7	30-134			
Ethylbenzene	0.0858	0.0050	"	0.0900	0.0281	64.1	22-153			
m,p-Xylene	0.184	0.010	"	0.181	0.646	NR	10-159			
o-Xylene	0.0974	0.0050	"	0.0893	0.0149	92.4	31-151			
Xylenes (total)	0.282	0.010	"		0.661		30-160			
Gasoline Range Hydrocarbons	56.3	0.50	"		247		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0430</i>		<i>"</i>	<i>0.0359</i>		<i>120</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0522</i>		<i>"</i>	<i>0.0363</i>		<i>144</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0202</i>		<i>"</i>	<i>0.0363</i>		<i>55.6</i>	<i>21-167</i>			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/05/15 15:59

**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 1511043 - EPA 5030 Soil MS**

Matrix Spike Dup (1511043-MSD1)		Source: 1511028-01			Prepared: 11/04/15		Analyzed: 11/05/15			
Naphthalene	0.0145	0.010	mg/kg		0.123		10-158	25.5	42	
Benzene	0.0673	0.0020	"	0.0859	ND	78.4	30-131	6.58	34	
Toluene	0.0691	0.0050	"	0.0859	ND	80.5	30-134	6.95	30	
Ethylbenzene	0.0816	0.0050	"	0.0852	0.0281	62.8	22-153	5.03	24	
m,p-Xylene	0.193	0.010	"	0.171	0.646	NR	10-159	4.64	68	
o-Xylene	0.0930	0.0050	"	0.0845	0.0149	92.4	31-151	4.64	38	
Xylenes (total)	0.286	0.010	"		0.661		30-160	1.52	30	
Gasoline Range Hydrocarbons	66.8	0.50	"		247		30-160	17.0	30	
Surrogate: 1,2-Dichloroethane-d4	0.0405		"	0.0340		119	23-173			
Surrogate: Toluene-d8	0.0516		"	0.0344		150	20-170			
Surrogate: 4-Bromofluorobenzene	0.0154		"	0.0344		44.9	21-167			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/05/15 15:59

### Notes and Definitions

S-02      The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

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'.

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

November 07, 2015

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 11/05/15 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  
President



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/07/15 16:07

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CS08	1511037-01	Soil	11/05/15 15:25	11/05/15 17:00
CS09	1511037-02	Soil	11/05/15 15:45	11/05/15 17:00

Summit Scientific

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

*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.*

Page 2 of 8



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/07/15 16:07

**CS08**  
**1511037-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/05/15 15:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511051	11/05/15	11/05/15	8015M	

Date Sampled: 11/05/15 15:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		110 %	70-130		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/05/15 15:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.14	0.010	mg/kg	1	1511050	11/05/15	11/05/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.090	0.0050	"	"	"	"	"	"	
Xylenes (total)	1.0	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	200	5.0	"	10	"	"	11/05/15	"	

Date Sampled: 11/05/15 15:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		120 %	23-173		"	"	11/05/15	"	
Surrogate: Toluene-d8		144 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		116 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/07/15 16:07

**CS09**  
**1511037-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/05/15 15:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	150	50	mg/kg	1	1511051	11/05/15	11/05/15	8015M	

Date Sampled: 11/05/15 15:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		101 %	70-130		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/05/15 15:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	2.7	0.10	mg/kg	10	1511050	11/05/15	11/05/15	EPA 8260B	
Benzene	0.21	0.0020	"	1	"	"	"	"	
Toluene	0.36	0.0050	"	"	"	"	"	"	
Ethylbenzene	1.1	0.050	"	10	"	"	11/05/15	"	
Xylenes (total)	0.31	0.010	"	1	"	"	11/05/15	"	
Gasoline Range Hydrocarbons	390	50	"	100	"	"	11/05/15	"	

Date Sampled: 11/05/15 15:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		94.8 %	23-173		"	"	11/05/15	"	
Surrogate: Toluene-d8		119 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/07/15 16:07

**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 1511051 - EPA 3550A**

**Blank (1511051-BLK1)**

Prepared: 11/05/15 Analyzed: 11/06/15

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

Surrogate: o-Terphenyl	13.5	"	12.2	111	70-130
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**LCS (1511051-BS1)**

Prepared: 11/05/15 Analyzed: 11/06/15

C10-C28 (DRO)	497	50	mg/kg
Surrogate: o-Terphenyl	13.6	"	12.2

				111	70-130
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**Matrix Spike (1511051-MS1)**

**Source: 1511037-01**

Prepared: 11/05/15 Analyzed: 11/06/15

C10-C28 (DRO)	534	50	mg/kg
Surrogate: o-Terphenyl	14.3	"	11.8

				121	70-130
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**Matrix Spike Dup (1511051-MSD1)**

**Source: 1511037-01**

Prepared: 11/05/15 Analyzed: 11/06/15

C10-C28 (DRO)	492	50	mg/kg	472	43.0	95.3	50-150	8.15	20
Surrogate: o-Terphenyl	11.6	"	11.5	101	70-130				

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/07/15 16:07

**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 1511050 - EPA 5030 Soil MS**

**Blank (1511050-BLK1)**

Prepared: 11/05/15 Analyzed: 11/06/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0380		"	0.0396	95.8	23-173				
Surrogate: Toluene-d8	0.0376		"	0.0400	94.1	20-170				
Surrogate: 4-Bromofluorobenzene	0.0380		"	0.0400	95.0	21-167				

**LCS (1511050-BS1)**

Prepared: 11/05/15 Analyzed: 11/06/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.191	0.0020	"	0.175	109	58-130				
Toluene	0.180	0.0050	"	0.175	103	61-134				
Ethylbenzene	0.194	0.0050	"	0.174	112	74-139				
m,p-Xylene	0.368	0.010	"	0.349	105	73-137				
o-Xylene	0.185	0.0050	"	0.172	108	73-141				
Xylenes (total)	0.553	0.010	"			0-200				
Gasoline Range Hydrocarbons	4.30	0.50	"			30-150				
Surrogate: 1,2-Dichloroethane-d4	0.0405		"	0.0396	102	23-173				
Surrogate: Toluene-d8	0.0397		"	0.0400	99.2	20-170				
Surrogate: 4-Bromofluorobenzene	0.0385		"	0.0400	96.2	21-167				

**Matrix Spike (1511050-MS1)**

Source: 1511037-01

Prepared: 11/05/15 Analyzed: 11/06/15

Naphthalene	0.115	0.010	mg/kg		0.137		10-158			
Benzene	0.166	0.0020	"	0.161	ND	103	30-131			
Toluene	0.139	0.0050	"	0.161	ND	86.3	30-134			
Ethylbenzene	0.114	0.0050	"	0.160	0.0898	15.3	22-153			S-02
m,p-Xylene	0.804	0.010	"	0.322	1.04	NR	10-159			S-02
o-Xylene	0.174	0.0050	"	0.159	0.00555	106	31-151			
Xylenes (total)	0.978	0.010	"		1.05		30-160			
Gasoline Range Hydrocarbons	116	0.50	"		195		30-160			E
Surrogate: 1,2-Dichloroethane-d4	0.0357		"	0.0365	97.8	23-173				
Surrogate: Toluene-d8	0.0477		"	0.0369	129	20-170				
Surrogate: 4-Bromofluorobenzene	0.0247		"	0.0369	67.0	21-167				

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/07/15 16:07

**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 1511050 - EPA 5030 Soil MS**

Matrix Spike Dup (1511050-MSD1)			Source: 1511037-01		Prepared: 11/05/15		Analyzed: 11/06/15			
Naphthalene	0.154	0.010	mg/kg		0.137		10-158	28.8	42	
Benzene	0.182	0.0020	"	0.171	ND	107	30-131	9.47	34	
Toluene	0.157	0.0050	"	0.171	ND	91.9	30-134	12.0	30	
Ethylbenzene	0.140	0.0050	"	0.170	0.0898	29.8	22-153	20.5	24	
m,p-Xylene	0.977	0.010	"	0.341	1.04	NR	10-159	19.4	68	S-02
o-Xylene	0.189	0.0050	"	0.168	0.00555	109	31-151	8.47	38	
Xylenes (total)	1.17	0.010	"		1.05		30-160	17.6	30	
Gasoline Range Hydrocarbons	126	0.50	"		195		30-160	8.86	30	E
Surrogate: 1,2-Dichloroethane-d4	0.0393		"	0.0387		102	23-173			
Surrogate: Toluene-d8	0.0518		"	0.0391		133	20-170			
Surrogate: 4-Bromofluorobenzene	0.0248		"	0.0391		63.5	21-167			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/07/15 16:07

### Notes and Definitions

S-02      The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

E          The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.

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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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

November 10, 2015

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 11/09/15 07:50. 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  
President





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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/10/15 06:02

**CS09-R**  
**1511062-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/09/15 07:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	940	50	mg/kg	1	1511084	11/09/15	11/09/15	8015M	

Date Sampled: 11/09/15 07:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		107 %	70-130		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/09/15 07:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.018	0.010	mg/kg	1	1511083	11/09/15	11/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0086	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.014	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	150	5.0	"	10	"	"	11/09/15	"	

Date Sampled: 11/09/15 07:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	11/09/15	"	
Surrogate: Toluene-d8		121 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		145 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/10/15 06:02

**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 1511084 - EPA 3550A**

**Blank (1511084-BLK1)**

Prepared & Analyzed: 11/09/15

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

Surrogate: o-Terphenyl	12.5	"	12.2	102	70-130
------------------------	------	---	------	-----	--------

**LCS (1511084-BS1)**

Prepared & Analyzed: 11/09/15

C10-C28 (DRO)	526	50	mg/kg	499	105	50-150
Surrogate: o-Terphenyl	12.9	"	12.2	106	70-130	

**Matrix Spike (1511084-MS1)**

Source: 1511065-03

Prepared & Analyzed: 11/09/15

C10-C28 (DRO)	493	50	mg/kg	482	41.9	93.7	50-150
Surrogate: o-Terphenyl	11.8	"	11.8	100	70-130		

**Matrix Spike Dup (1511084-MSD1)**

Source: 1511065-03

Prepared & Analyzed: 11/09/15

C10-C28 (DRO)	481	50	mg/kg	477	41.9	92.0	50-150	2.62	20
Surrogate: o-Terphenyl	11.6	"	11.7	99.4	70-130				

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/10/15 06:02

**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 1511083 - EPA 5030 Soil MS**

**Blank (1511083-BLK1)**

Prepared & Analyzed: 11/09/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0456</i>		<i>"</i>	<i>0.0396</i>		<i>115</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0389</i>		<i>"</i>	<i>0.0400</i>		<i>97.2</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0394</i>		<i>"</i>	<i>0.0400</i>		<i>98.6</i>	<i>21-167</i>			

**LCS (1511083-BS1)**

Prepared & Analyzed: 11/09/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0796	0.0020	"	0.100		79.6	58-130			
Toluene	0.0884	0.0050	"	0.100		88.4	61-134			
Ethylbenzene	0.105	0.0050	"	0.0992		106	74-139			
m,p-Xylene	0.204	0.010	"	0.200		102	73-137			
o-Xylene	0.102	0.0050	"	0.0984		104	73-141			
Xylenes (total)	0.306	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.73	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0455</i>		<i>"</i>	<i>0.0396</i>		<i>115</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0386</i>		<i>"</i>	<i>0.0400</i>		<i>96.6</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0379</i>		<i>"</i>	<i>0.0400</i>		<i>94.7</i>	<i>21-167</i>			

**Matrix Spike (1511083-MS1)**

Source: 1511065-03

Prepared & Analyzed: 11/09/15

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0762	0.0020	"	0.0933	ND	81.7	30-131			
Toluene	0.0871	0.0050	"	0.0933	0.00444	88.6	30-134			
Ethylbenzene	0.0999	0.0050	"	0.0925	ND	108	22-153			
m,p-Xylene	0.198	0.010	"	0.186	0.00801	102	10-159			
o-Xylene	0.0988	0.0050	"	0.0918	ND	108	31-151			
Xylenes (total)	0.297	0.010	"		0.00801		30-160			
Gasoline Range Hydrocarbons	2.53	0.50	"		0.257		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0466</i>		<i>"</i>	<i>0.0369</i>		<i>126</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0362</i>		<i>"</i>	<i>0.0373</i>		<i>96.9</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0364</i>		<i>"</i>	<i>0.0373</i>		<i>97.6</i>	<i>21-167</i>			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/10/15 06:02

**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 1511083 - EPA 5030 Soil MS**

Matrix Spike Dup (1511083-MSD1)		Source: 1511065-03			Prepared & Analyzed: 11/09/15					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0744	0.0020	"	0.0933	ND	79.7	30-131	2.49	34	
Toluene	0.0841	0.0050	"	0.0933	0.00444	85.4	30-134	3.56	30	
Ethylbenzene	0.0978	0.0050	"	0.0925	ND	106	22-153	2.09	24	
m,p-Xylene	0.194	0.010	"	0.186	0.00801	99.9	10-159	1.87	68	
o-Xylene	0.0981	0.0050	"	0.0918	ND	107	31-151	0.767	38	
Xylenes (total)	0.292	0.010	"		0.00801		30-160	1.50	30	
Gasoline Range Hydrocarbons	2.56	0.50	"		0.257		30-160	0.883	30	
Surrogate: 1,2-Dichloroethane-d4	0.0457		"	0.0369		124	23-173			
Surrogate: Toluene-d8	0.0359		"	0.0373		96.3	20-170			
Surrogate: 4-Bromofluorobenzene	0.0362		"	0.0373		97.0	21-167			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/10/15 06:02

### 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

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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.*

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

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

November 10, 2015

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 11/09/15 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury  
President





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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/10/15 06:56

SS06@5'  
1511064-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 11/09/15 08:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	320	50	mg/kg	1	1511084	11/09/15	11/09/15	8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 11/09/15 08:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		99.0 %	70-130		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 11/09/15 08:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.93	0.10	mg/kg	10	1511083	11/09/15	11/09/15	EPA 8260B	
Benzene	ND	0.0020	"	1	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	11/09/15	"	
Ethylbenzene	0.021	0.0050	"	"	"	"	11/09/15	"	
Xylenes (total)	0.020	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	460	5.0	"	10	"	"	11/09/15	"	

Date Sampled: 11/09/15 08:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	11/09/15	"	
Surrogate: Toluene-d8		112 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/10/15 06:56

**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 1511084 - EPA 3550A**

**Blank (1511084-BLK1)**

Prepared & Analyzed: 11/09/15

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

Surrogate: o-Terphenyl	12.5	"	12.2	102	70-130
------------------------	------	---	------	-----	--------

**LCS (1511084-BS1)**

Prepared & Analyzed: 11/09/15

C10-C28 (DRO)	526	50	mg/kg	499	105	50-150
Surrogate: o-Terphenyl	12.9	"	12.2	106	70-130	

**Matrix Spike (1511084-MS1)**

Source: 1511065-03

Prepared & Analyzed: 11/09/15

C10-C28 (DRO)	493	50	mg/kg	482	41.9	93.7	50-150
Surrogate: o-Terphenyl	11.8	"	11.8	100	70-130		

**Matrix Spike Dup (1511084-MSD1)**

Source: 1511065-03

Prepared & Analyzed: 11/09/15

C10-C28 (DRO)	481	50	mg/kg	477	41.9	92.0	50-150	2.62	20
Surrogate: o-Terphenyl	11.6	"	11.7	99.4	70-130				

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/10/15 06:56

**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 1511083 - EPA 5030 Soil MS**

**Blank (1511083-BLK1)**

Prepared & Analyzed: 11/09/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0456</i>		<i>"</i>	<i>0.0396</i>		<i>115</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0389</i>		<i>"</i>	<i>0.0400</i>		<i>97.2</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0394</i>		<i>"</i>	<i>0.0400</i>		<i>98.6</i>	<i>21-167</i>			

**LCS (1511083-BS1)**

Prepared & Analyzed: 11/09/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0796	0.0020	"	0.100		79.6	58-130			
Toluene	0.0884	0.0050	"	0.100		88.4	61-134			
Ethylbenzene	0.105	0.0050	"	0.0992		106	74-139			
m,p-Xylene	0.204	0.010	"	0.200		102	73-137			
o-Xylene	0.102	0.0050	"	0.0984		104	73-141			
Xylenes (total)	0.306	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.73	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0455</i>		<i>"</i>	<i>0.0396</i>		<i>115</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0386</i>		<i>"</i>	<i>0.0400</i>		<i>96.6</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0379</i>		<i>"</i>	<i>0.0400</i>		<i>94.7</i>	<i>21-167</i>			

**Matrix Spike (1511083-MS1)**

Source: 1511065-03

Prepared & Analyzed: 11/09/15

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0762	0.0020	"	0.0933	ND	81.7	30-131			
Toluene	0.0871	0.0050	"	0.0933	0.00444	88.6	30-134			
Ethylbenzene	0.0999	0.0050	"	0.0925	ND	108	22-153			
m,p-Xylene	0.198	0.010	"	0.186	0.00801	102	10-159			
o-Xylene	0.0988	0.0050	"	0.0918	ND	108	31-151			
Xylenes (total)	0.297	0.010	"		0.00801		30-160			
Gasoline Range Hydrocarbons	2.53	0.50	"		0.257		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0466</i>		<i>"</i>	<i>0.0369</i>		<i>126</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0362</i>		<i>"</i>	<i>0.0373</i>		<i>96.9</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0364</i>		<i>"</i>	<i>0.0373</i>		<i>97.6</i>	<i>21-167</i>			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/10/15 06:56

**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 1511083 - EPA 5030 Soil MS**

Matrix Spike Dup (1511083-MSD1)		Source: 1511065-03			Prepared & Analyzed: 11/09/15					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0744	0.0020	"	0.0933	ND	79.7	30-131	2.49	34	
Toluene	0.0841	0.0050	"	0.0933	0.00444	85.4	30-134	3.56	30	
Ethylbenzene	0.0978	0.0050	"	0.0925	ND	106	22-153	2.09	24	
m,p-Xylene	0.194	0.010	"	0.186	0.00801	99.9	10-159	1.87	68	
o-Xylene	0.0981	0.0050	"	0.0918	ND	107	31-151	0.767	38	
Xylenes (total)	0.292	0.010	"		0.00801		30-160	1.50	30	
Gasoline Range Hydrocarbons	2.56	0.50	"		0.257		30-160	0.883	30	
Surrogate: 1,2-Dichloroethane-d4	0.0457		"	0.0369		124	23-173			
Surrogate: Toluene-d8	0.0359		"	0.0373		96.3	20-170			
Surrogate: 4-Bromofluorobenzene	0.0362		"	0.0373		97.0	21-167			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/10/15 06:56

### 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

*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.*

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

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

November 16, 2015

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 11/13/15 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 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury  
President



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/16/15 10:04

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW-03	1511101-01	Water	11/13/15 09:35	11/13/15 16:30
SS07@6'	1511101-02	Soil	11/13/15 08:45	11/13/15 16:30
CS10	1511101-03	Soil	11/13/15 13:35	11/13/15 16:30
CS11	1511101-04	Soil	11/13/15 13:40	11/13/15 16:30
CS12	1511101-05	Soil	11/13/15 13:45	11/13/15 16:30
CS13	1511101-06	Soil	11/13/15 13:50	11/13/15 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.*

Page 2 of 13



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/16/15 10:04

**GW-03**  
**1511101-01 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/13/15 09:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>21</b>	1.0	ug/l	1	1511141	11/13/15	11/13/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>260</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>3600</b>	100	"	100	"	"	11/13/15	"	

Date Sampled: 11/13/15 09:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		96.7 %	37-154		"	"	11/13/15	"	
Surrogate: Toluene-d8		61.2 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		225 %	45-146		"	"	"	"	S-02

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/16/15 10:04

**SS07@6'**  
**1511101-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/13/15 08:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511138	11/13/15	11/13/15	8015M	

Date Sampled: 11/13/15 08:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		102 %	70-130		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/13/15 08:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1511137	11/13/15	11/13/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.92</b>	0.50	"	"	"	"	"	"	

Date Sampled: 11/13/15 08:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/16/15 10:04

**CS10**  
**1511101-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/13/15 13:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511138	11/13/15	11/13/15	8015M	

Date Sampled: 11/13/15 13:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		109 %	70-130		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/13/15 13:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.083	0.010	mg/kg	1	1511137	11/13/15	11/13/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0078	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.37	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	120	5.0	"	10	"	"	"	"	

Date Sampled: 11/13/15 13:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		142 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		189 %	21-167		"	"	"	"	S-02

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/16/15 10:04

**CS11**  
**1511101-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/13/15 13:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	75	50	mg/kg	1	1511138	11/13/15	11/13/15	8015M	

Date Sampled: 11/13/15 13:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		107 %	70-130		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/13/15 13:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.097	0.010	mg/kg	1	1511137	11/13/15	11/13/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.010	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.54	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	120	5.0	"	10	"	"	"	"	

Date Sampled: 11/13/15 13:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		120 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		147 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		189 %	21-167		"	"	"	"	S-02

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/16/15 10:04

**CS12**  
**1511101-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/13/15 13:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511138	11/13/15	11/13/15	8015M	

Date Sampled: 11/13/15 13:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		119 %	70-130		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/13/15 13:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.043	0.010	mg/kg	1	1511137	11/13/15	11/13/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0062	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.20	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	91	5.0	"	10	"	"	"	"	

Date Sampled: 11/13/15 13:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		96.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		129 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		149 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/16/15 10:04

**CS13**  
**1511101-06 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/13/15 13:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511138	11/13/15	11/13/15	8015M	

Date Sampled: 11/13/15 13:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		120 %	70-130		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/13/15 13:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.079	0.010	mg/kg	1	1511137	11/13/15	11/13/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.016	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.37	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	86	0.50	"	"	"	"	"	"	

Date Sampled: 11/13/15 13:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		97.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		121 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		147 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/16/15 10:04

**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 1511138 - EPA 3550A**

**Blank (1511138-BLK1)**

Prepared & Analyzed: 11/13/15

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	12.8		"	12.2		105	70-130			

**LCS (1511138-BS1)**

Prepared & Analyzed: 11/13/15

C10-C28 (DRO)	484	50	mg/kg	499		97.0	50-150			
Surrogate: o-Terphenyl	12.3		"	12.2		100	70-130			

**Matrix Spike (1511138-MS1)**

Source: 1511101-02

Prepared & Analyzed: 11/13/15

C10-C28 (DRO)	455	45	mg/kg	452	ND	101	50-150			
Surrogate: o-Terphenyl	11.2		"	11.1		101	70-130			

**Matrix Spike Dup (1511138-MSD1)**

Source: 1511101-02

Prepared & Analyzed: 11/13/15

C10-C28 (DRO)	457	50	mg/kg	456	ND	100	50-150	0.505	20	
Surrogate: o-Terphenyl	11.3		"	11.2		101	70-130			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/16/15 10:04

**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 1511137 - EPA 5030 Soil MS**

**Blank (1511137-BLK1)**

Prepared & Analyzed: 11/13/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0374</i>		<i>"</i>	<i>0.0396</i>		<i>94.3</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0381</i>		<i>"</i>	<i>0.0400</i>		<i>95.3</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0367</i>		<i>"</i>	<i>0.0400</i>		<i>91.7</i>	<i>21-167</i>			

**LCS (1511137-BS1)**

Prepared & Analyzed: 11/13/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.102	0.0020	"	0.100		102	58-130			
Toluene	0.0994	0.0050	"	0.100		99.4	61-134			
Ethylbenzene	0.114	0.0050	"	0.0992		115	74-139			
m,p-Xylene	0.216	0.010	"	0.200		108	73-137			
o-Xylene	0.104	0.0050	"	0.0984		106	73-141			
Xylenes (total)	0.320	0.010	"				0-200			
Gasoline Range Hydrocarbons	ND	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0368</i>		<i>"</i>	<i>0.0396</i>		<i>93.0</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0386</i>		<i>"</i>	<i>0.0400</i>		<i>96.6</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0373</i>		<i>"</i>	<i>0.0400</i>		<i>93.2</i>	<i>21-167</i>			

**Matrix Spike (1511137-MS1)**

Source: 1511101-02

Prepared & Analyzed: 11/13/15

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.104	0.0020	"	0.0982	ND	106	30-131			
Toluene	0.101	0.0050	"	0.0982	ND	102	30-134			
Ethylbenzene	0.113	0.0050	"	0.0974	ND	116	22-153			
m,p-Xylene	0.213	0.010	"	0.196	ND	108	10-159			
o-Xylene	0.103	0.0050	"	0.0967	ND	107	31-151			
Xylenes (total)	0.316	0.010	"		0.00		30-160			
Gasoline Range Hydrocarbons	ND	0.50	"		0.918		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0390</i>		<i>"</i>	<i>0.0389</i>		<i>100</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0379</i>		<i>"</i>	<i>0.0393</i>		<i>96.5</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0368</i>		<i>"</i>	<i>0.0393</i>		<i>93.6</i>	<i>21-167</i>			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/16/15 10:04

**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 1511137 - EPA 5030 Soil MS**

**Matrix Spike Dup (1511137-MSD1)**

Source: 1511101-02

Prepared & Analyzed: 11/13/15

Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.105	0.0020	"	0.0967	ND	109	30-131	1.29	34	
Toluene	0.102	0.0050	"	0.0967	ND	106	30-134	1.50	30	
Ethylbenzene	0.112	0.0050	"	0.0959	ND	116	22-153	1.48	24	
m,p-Xylene	0.212	0.010	"	0.193	ND	110	10-159	0.456	68	
o-Xylene	0.102	0.0050	"	0.0952	ND	108	31-151	0.735	38	
Xylenes (total)	0.314	0.010	"		0.00		30-160	0.547	30	
Gasoline Range Hydrocarbons	ND	0.50	"		0.918		30-160		30	
Surrogate: 1,2-Dichloroethane-d4	0.0393		"	0.0383		103	23-173			
Surrogate: Toluene-d8	0.0378		"	0.0387		97.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0358		"	0.0387		92.6	21-167			

**Batch 1511141 - EPA 5030 Water MS**

**Blank (1511141-BLK1)**

Prepared & Analyzed: 11/13/15

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	18.9		"	13.2		143	37-154			
Surrogate: Toluene-d8	13.0		"	13.3		97.5	45-149			
Surrogate: 4-Bromofluorobenzene	13.7		"	13.3		103	45-146			

**LCS (1511141-BS1)**

Prepared & Analyzed: 11/13/15

Benzene	28.1	1.0	ug/l	33.3		84.4	51-132			
Toluene	30.4	1.0	"	33.3		91.1	51-138			
Ethylbenzene	34.5	1.0	"	33.1		104	58-146			
m,p-Xylene	67.9	2.0	"	66.5		102	57-144			
o-Xylene	34.4	1.0	"	32.8		105	53-146			
Surrogate: 1,2-Dichloroethane-d4	19.2		"	13.2		146	37-154			
Surrogate: Toluene-d8	13.1		"	13.3		98.0	45-149			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.1	45-146			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/16/15 10:04

**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 1511141 - EPA 5030 Water MS**

<b>Matrix Spike (1511141-MS1)</b>		<b>Source: 1511100-10</b>			<b>Prepared &amp; Analyzed: 11/13/15</b>					
Benzene	95.9	1.0	ug/l	33.3	51.2	134	34-141			
Toluene	117	1.0	"	33.3	58.6	174	27-151			QM-07
Ethylbenzene	44.5	1.0	"	33.1	5.91	117	29-160			
m,p-Xylene	142	2.0	"	66.5	46.5	144	20-166			
o-Xylene	54.2	1.0	"	32.8	13.0	126	33-159			
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	19.5		"	13.2		148	37-154			
Surrogate: Toluene-d8	13.6		"	13.3		102	45-149			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.7	45-146			

<b>Matrix Spike Dup (1511141-MSD1)</b>		<b>Source: 1511100-10</b>			<b>Prepared &amp; Analyzed: 11/14/15</b>					
Benzene	93.8	1.0	ug/l	33.3	51.2	128	34-141	2.18	32	
Toluene	113	1.0	"	33.3	58.6	164	27-151	2.96	25	QM-07
Ethylbenzene	45.3	1.0	"	33.1	5.91	119	29-160	1.76	50	
m,p-Xylene	145	2.0	"	66.5	46.5	148	20-166	1.97	36	
o-Xylene	55.0	1.0	"	32.8	13.0	128	33-159	1.48	26	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	19.4		"	13.2		147	37-154			
Surrogate: Toluene-d8	13.3		"	13.3		99.8	45-149			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.0	45-146			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/16/15 10:04

### Notes and Definitions

S-02      The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

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

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

November 17, 2015

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 11/16/15 18:00. 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  
President



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/17/15 06:30

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CS14	1511128-01	Soil	11/16/15 11:26	11/16/15 18:00
CS15	1511128-02	Soil	11/16/15 11:31	11/16/15 18:00
SS08@6'	1511128-03	Soil	11/16/15 14:31	11/16/15 18:00

Summit Scientific

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Page 2 of 9



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/17/15 06:30

**CS14**  
**1511128-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/16/15 11:26

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511162	11/16/15	11/16/15	8015M	

Date Sampled: 11/16/15 11:26

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: 11/16/15 11:26

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1511161	11/16/15	11/16/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>19</b>	0.50	"	"	"	"	"	"	

Date Sampled: 11/16/15 11:26

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/17/15 06:30

**CS15**  
**1511128-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/16/15 11:31

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511162	11/16/15	11/16/15	8015M	

Date Sampled: 11/16/15 11:31

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: 11/16/15 11:31

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1511161	11/16/15	11/16/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	36	0.50	"	"	"	"	"	"	

Date Sampled: 11/16/15 11:31

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		112 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		116 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/17/15 06:30

**SS08@6'**  
**1511128-03 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 11/16/15 14:31

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511162	11/16/15	11/17/15	8015M	

Date Sampled: 11/16/15 14:31

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		103 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 11/16/15 14:31

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1511161	11/16/15	11/16/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>1.7</b>	<b>0.50</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	

Date Sampled: 11/16/15 14:31

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.9 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/17/15 06:30

**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 1511162 - EPA 3550A**

**Blank (1511162-BLK1)**

Prepared & Analyzed: 11/16/15

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	12.2		"	12.2		100	30-150			

**LCS (1511162-BS1)**

Prepared & Analyzed: 11/16/15

C10-C28 (DRO)	572	50	mg/kg	499		115	73-134			
Surrogate: o-Terphenyl	12.5		"	12.2		103	30-150			

**Matrix Spike (1511162-MS1)**

Source: 1511126-01

Prepared & Analyzed: 11/16/15

C10-C28 (DRO)	556	50	mg/kg	486	55.7	103	50-148			
Surrogate: o-Terphenyl	12.1		"	11.9		101	30-150			

**Matrix Spike Dup (1511162-MSD1)**

Source: 1511126-01

Prepared & Analyzed: 11/16/15

C10-C28 (DRO)	569	50	mg/kg	490	55.7	105	50-148	2.39	13	
Surrogate: o-Terphenyl	12.3		"	12.0		103	30-150			

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/17/15 06:30

**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 1511161 - EPA 5030 Soil MS**

**Blank (1511161-BLK1)**

Prepared & Analyzed: 11/16/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0384</i>		<i>"</i>	<i>0.0396</i>		<i>97.0</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0397</i>		<i>"</i>	<i>0.0400</i>		<i>99.2</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0380</i>		<i>"</i>	<i>0.0400</i>		<i>95.0</i>	<i>21-167</i>			

**LCS (1511161-BS1)**

Prepared & Analyzed: 11/16/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0987	0.0020	"	0.100		98.7	58-130			
Toluene	0.0906	0.0050	"	0.100		90.6	61-134			
Ethylbenzene	0.0958	0.0050	"	0.0992		96.6	74-139			
m,p-Xylene	0.180	0.010	"	0.200		90.0	73-137			
o-Xylene	0.0871	0.0050	"	0.0984		88.5	73-141			
Xylenes (total)	0.267	0.010	"				0-200			
Gasoline Range Hydrocarbons	1.91	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0385</i>		<i>"</i>	<i>0.0396</i>		<i>97.3</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0407</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0376</i>		<i>"</i>	<i>0.0400</i>		<i>93.9</i>	<i>21-167</i>			

**Matrix Spike (1511161-MS1)**

Source: 1511126-01

Prepared & Analyzed: 11/16/15

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0973	0.0020	"	0.0911	ND	107	30-131			
Toluene	0.0889	0.0050	"	0.0911	ND	97.6	30-134			
Ethylbenzene	0.0966	0.0050	"	0.0903	ND	107	22-153			
m,p-Xylene	0.182	0.010	"	0.182	ND	100	10-159			
o-Xylene	0.0884	0.0050	"	0.0896	ND	98.6	31-151			
Xylenes (total)	0.270	0.010	"		0.00		30-160			
Gasoline Range Hydrocarbons	ND	0.50	"		6.57		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0363</i>		<i>"</i>	<i>0.0361</i>		<i>101</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0369</i>		<i>"</i>	<i>0.0364</i>		<i>101</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0348</i>		<i>"</i>	<i>0.0364</i>		<i>95.5</i>	<i>21-167</i>			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/17/15 06:30

**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 1511161 - EPA 5030 Soil MS**

Matrix Spike Dup (1511161-MSD1)		Source: 1511126-01			Prepared & Analyzed: 11/16/15					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0964	0.0020	"	0.0899	ND	107	30-131	0.959	34	
Toluene	0.0896	0.0050	"	0.0899	ND	99.6	30-134	0.772	30	
Ethylbenzene	0.0999	0.0050	"	0.0892	ND	112	22-153	3.38	24	
m,p-Xylene	0.188	0.010	"	0.179	ND	105	10-159	3.48	68	
o-Xylene	0.0908	0.0050	"	0.0885	ND	103	31-151	2.67	38	
Xylenes (total)	0.279	0.010	"		0.00		30-160	3.22	30	
Gasoline Range Hydrocarbons	ND	0.50	"		6.57		30-160		30	
Surrogate: 1,2-Dichloroethane-d4	0.0365		"	0.0356		102	23-173			
Surrogate: Toluene-d8	0.0346		"	0.0360		96.3	20-170			
Surrogate: 4-Bromofluorobenzene	0.0336		"	0.0360		93.5	21-167			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/17/15 06:30

### 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

*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.*

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

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

November 18, 2015

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 11/17/15 17:45. 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  
President



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/18/15 06:23

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS09@6'	1511142-01	Soil	11/17/15 15:40	11/17/15 17:45
SS10@6'	1511142-02	Soil	11/17/15 15:50	11/17/15 17:45

Summit Scientific

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

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/18/15 06:23

**SS09@6'**  
**1511142-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/17/15 15:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511175	11/17/15	11/17/15	8015M	

Date Sampled: 11/17/15 15:40

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: 11/17/15 15:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1511174	11/17/15	11/17/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 11/17/15 15:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		118 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/18/15 06:23

**SS10@6'**  
**1511142-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/17/15 15:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511175	11/17/15	11/17/15	8015M	

Date Sampled: 11/17/15 15:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.2 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/17/15 15:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1511174	11/17/15	11/17/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 11/17/15 15:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		122 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/18/15 06:23

**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 1511175 - EPA 3550A**

**Blank (1511175-BLK1)**

Prepared & Analyzed: 11/17/15

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	12.0		"	12.2		98.0	30-150			

**LCS (1511175-BS1)**

Prepared & Analyzed: 11/17/15

C10-C28 (DRO)	556	50	mg/kg	499		111	73-134			
Surrogate: o-Terphenyl	12.1		"	12.2		99.6	30-150			

**Matrix Spike (1511175-MS1)**

Source: 1511140-01

Prepared & Analyzed: 11/17/15

C10-C28 (DRO)	461	50	mg/kg	455	35.5	93.5	50-148			
Surrogate: o-Terphenyl	10.9		"	11.1		98.3	30-150			

**Matrix Spike Dup (1511175-MSD1)**

Source: 1511140-01

Prepared & Analyzed: 11/17/15

C10-C28 (DRO)	480	50	mg/kg	468	35.5	95.0	50-148	4.02	13	
Surrogate: o-Terphenyl	11.4		"	11.4		99.5	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/18/15 06:23

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

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

**Batch 1511174 - EPA 5030 Soil MS**

**Blank (1511174-BLK1)**

Prepared & Analyzed: 11/17/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0375</i>		<i>"</i>	<i>0.0400</i>		<i>93.8</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0387</i>		<i>"</i>	<i>0.0400</i>		<i>96.8</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0380</i>		<i>"</i>	<i>0.0400</i>		<i>95.1</i>	<i>21-167</i>			

**LCS (1511174-BS1)**

Prepared & Analyzed: 11/17/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0982	0.0020	"	0.100		98.2	58-130			
Toluene	0.0963	0.0050	"	0.100		96.3	61-134			
Ethylbenzene	0.108	0.0050	"	0.0992		109	74-139			
m,p-Xylene	0.205	0.010	"	0.200		103	73-137			
o-Xylene	0.0995	0.0050	"	0.0984		101	73-141			
Xylenes (total)	0.304	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.17	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0378</i>		<i>"</i>	<i>0.0400</i>		<i>94.6</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0393</i>		<i>"</i>	<i>0.0400</i>		<i>98.3</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0380</i>		<i>"</i>	<i>0.0400</i>		<i>94.9</i>	<i>21-167</i>			

**Matrix Spike (1511174-MS1)**

Source: 1511140-01

Prepared & Analyzed: 11/17/15

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0964	0.0020	"	0.0960	ND	100	30-131			
Toluene	0.0955	0.0050	"	0.0960	ND	99.5	30-134			
Ethylbenzene	0.107	0.0050	"	0.0952	ND	113	22-153			
m,p-Xylene	0.204	0.010	"	0.192	ND	106	10-159			
o-Xylene	0.0996	0.0050	"	0.0944	ND	105	31-151			
Xylenes (total)	0.303	0.010	"		0.00		30-160			
Gasoline Range Hydrocarbons	1.79	0.50	"		0.337		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0382</i>		<i>"</i>	<i>0.0384</i>		<i>99.6</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0376</i>		<i>"</i>	<i>0.0384</i>		<i>97.9</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0365</i>		<i>"</i>	<i>0.0384</i>		<i>95.2</i>	<i>21-167</i>			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/18/15 06:23

**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 1511174 - EPA 5030 Soil MS**

Matrix Spike Dup (1511174-MSD1)		Source: 1511140-01			Prepared & Analyzed: 11/17/15					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.100	0.0020	"	0.0982	ND	102	30-131	4.05	34	
Toluene	0.0980	0.0050	"	0.0982	ND	99.8	30-134	2.66	30	
Ethylbenzene	0.113	0.0050	"	0.0974	ND	116	22-153	5.16	24	
m,p-Xylene	0.214	0.010	"	0.196	ND	109	10-159	4.81	68	
o-Xylene	0.105	0.0050	"	0.0967	ND	109	31-151	5.49	38	
Xylenes (total)	0.319	0.010	"		0.00		30-160	5.04	30	
Gasoline Range Hydrocarbons	1.76	0.50	"		0.337		30-160	1.86	30	
Surrogate: 1,2-Dichloroethane-d4	0.0394		"	0.0393		100	23-173			
Surrogate: Toluene-d8	0.0383		"	0.0393		97.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0375		"	0.0393		95.3	21-167			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/18/15 06:23

### 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

*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.*

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

November 19, 2015

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 11/18/15 17:31. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury  
President



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/19/15 06:28

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CS16	1511153-01	Soil	11/18/15 09:05	11/18/15 17:31
CS17	1511153-02	Soil	11/18/15 09:20	11/18/15 17:31
GW03-R	1511153-03	Water	11/18/15 13:05	11/18/15 17:31
GW04	1511153-04	Water	11/18/15 12:10	11/18/15 17:31

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/19/15 06:28

**CS16**  
**1511153-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/18/15 09:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511180	11/18/15	11/18/15	8015M	

Date Sampled: 11/18/15 09:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		107 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/18/15 09:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1511181	11/18/15	11/18/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	11	0.50	"	"	"	"	"	"	

Date Sampled: 11/18/15 09:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		93.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.9 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/19/15 06:28

**CS17**  
**1511153-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/18/15 09:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511180	11/18/15	11/18/15	8015M	

Date Sampled: 11/18/15 09:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.1 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/18/15 09:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1511181	11/18/15	11/18/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	6.4	0.50	"	"	"	"	"	"	

Date Sampled: 11/18/15 09:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		93.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.8 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/19/15 06:28

**GW03-R**  
**1511153-03 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/18/15 13:05

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1511183	11/18/15	11/18/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>11</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>61</b>	1.0	"	"	"	"	"	"	

Date Sampled: 11/18/15 13:05

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		120 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		110 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.6 %	45-146		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/19/15 06:28

**GW04**  
**1511153-04 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/18/15 12:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1511183	11/18/15	11/18/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>2.6</b>	1.0	"	"	"	"	"	"	

Date Sampled: 11/18/15 12:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		118 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.5 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.9 %	45-146		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/19/15 06:28

**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 1511180 - EPA 3550A**

**Blank (1511180-BLK1)**

Prepared & Analyzed: 11/18/15

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	12.8		"	12.2	105	30-150				

**LCS (1511180-BS1)**

Prepared & Analyzed: 11/18/15

C10-C28 (DRO)	511	50	mg/kg	499	102	73-134				
Surrogate: o-Terphenyl	12.5		"	12.2	102	30-150				

**Matrix Spike (1511180-MS1)**

Source: 1511150-01

Prepared & Analyzed: 11/18/15

C10-C28 (DRO)	512	50	mg/kg	495	ND	103	50-148			
Surrogate: o-Terphenyl	11.6		"	12.1	96.1	30-150				

**Matrix Spike Dup (1511180-MSD1)**

Source: 1511150-01

Prepared & Analyzed: 11/18/15

C10-C28 (DRO)	461	50	mg/kg	484	ND	95.1	50-148	10.5	13	
Surrogate: o-Terphenyl	11.5		"	11.8	97.0	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/19/15 06:28

**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 1511181 - EPA 5030 Soil MS**

**Blank (1511181-BLK1)**

Prepared & Analyzed: 11/18/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0374</i>		<i>"</i>	<i>0.0396</i>		<i>94.4</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0380</i>		<i>"</i>	<i>0.0400</i>		<i>94.9</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0376</i>		<i>"</i>	<i>0.0400</i>		<i>94.1</i>	<i>21-167</i>			

**LCS (1511181-BS1)**

Prepared & Analyzed: 11/18/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.104	0.0020	"	0.100		104	58-130			
Toluene	0.103	0.0050	"	0.100		103	61-134			
Ethylbenzene	0.114	0.0050	"	0.0992		115	74-139			
m,p-Xylene	0.218	0.010	"	0.200		109	73-137			
o-Xylene	0.104	0.0050	"	0.0984		106	73-141			
Xylenes (total)	0.322	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.44	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0370</i>		<i>"</i>	<i>0.0396</i>		<i>93.3</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0385</i>		<i>"</i>	<i>0.0400</i>		<i>96.2</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0375</i>		<i>"</i>	<i>0.0400</i>		<i>93.7</i>	<i>21-167</i>			

**Matrix Spike (1511181-MS1)**

Source: 1511151-01

Prepared & Analyzed: 11/18/15

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.102	0.0020	"	0.0969	ND	105	30-131			
Toluene	0.100	0.0050	"	0.0969	ND	103	30-134			
Ethylbenzene	0.111	0.0050	"	0.0961	ND	116	22-153			
m,p-Xylene	0.209	0.010	"	0.193	ND	108	10-159			
o-Xylene	0.102	0.0050	"	0.0953	ND	107	31-151			
Xylenes (total)	0.311	0.010	"		0.00		30-160			
Gasoline Range Hydrocarbons	0.453	0.50	"		5.64		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0367</i>		<i>"</i>	<i>0.0384</i>		<i>95.5</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0377</i>		<i>"</i>	<i>0.0388</i>		<i>97.3</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0358</i>		<i>"</i>	<i>0.0388</i>		<i>92.3</i>	<i>21-167</i>			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/19/15 06:28

**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 1511181 - EPA 5030 Soil MS**

**Matrix Spike Dup (1511181-MSD1)**

Source: 1511151-01

Prepared & Analyzed: 11/18/15

Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.101	0.0020	"	0.0973	ND	104	30-131	0.501	34	
Toluene	0.0996	0.0050	"	0.0973	ND	102	30-134	0.603	30	
Ethylbenzene	0.113	0.0050	"	0.0965	ND	117	22-153	1.50	24	
m,p-Xylene	0.214	0.010	"	0.194	ND	110	10-159	2.32	68	
o-Xylene	0.104	0.0050	"	0.0957	ND	109	31-151	1.94	38	
Xylenes (total)	0.318	0.010	"		0.00		30-160	2.19	30	
Gasoline Range Hydrocarbons	0.435	0.50	"		5.64		30-160	4.04	30	
Surrogate: 1,2-Dichloroethane-d4	0.0381		"	0.0385		98.9	23-173			
Surrogate: Toluene-d8	0.0374		"	0.0389		96.1	20-170			
Surrogate: 4-Bromofluorobenzene	0.0362		"	0.0389		93.0	21-167			

**Batch 1511183 - EPA 5030 Water MS**

**Blank (1511183-BLK1)**

Prepared & Analyzed: 11/18/15

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	15.8		"	13.3		119	37-154			
Surrogate: Toluene-d8	13.1		"	13.3		98.4	45-149			
Surrogate: 4-Bromofluorobenzene	13.5		"	13.3		101	45-146			

**LCS (1511183-BS1)**

Prepared & Analyzed: 11/18/15

Benzene	28.3	1.0	ug/l	33.3		85.0	51-132			
Toluene	30.4	1.0	"	33.3		91.2	51-138			
Ethylbenzene	34.3	1.0	"	33.1		104	58-146			
m,p-Xylene	66.7	2.0	"	66.5		100	57-144			
o-Xylene	30.5	1.0	"	32.8		92.9	53-146			
Surrogate: 1,2-Dichloroethane-d4	16.1		"	13.3		121	37-154			
Surrogate: Toluene-d8	13.0		"	13.3		97.9	45-149			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.7	45-146			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/19/15 06:28

**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 1511183 - EPA 5030 Water MS**

<b>Matrix Spike (1511183-MS1)</b>		<b>Source: 1511151-03</b>			<b>Prepared &amp; Analyzed: 11/18/15</b>					
Benzene	29.4	1.0	ug/l	33.3	ND	88.1	34-141			
Toluene	31.2	1.0	"	33.3	ND	93.7	27-151			
Ethylbenzene	35.4	1.0	"	33.1	ND	107	29-160			
m,p-Xylene	72.4	2.0	"	66.5	3.94	103	20-166			
o-Xylene	33.1	1.0	"	32.8	1.34	96.8	33-159			
Surrogate: 1,2-Dichloroethane-d4	16.1		"	13.3		121	37-154			
Surrogate: Toluene-d8	13.0		"	13.3		97.6	45-149			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.3	45-146			
<b>Matrix Spike Dup (1511183-MSD1)</b>		<b>Source: 1511151-03</b>			<b>Prepared &amp; Analyzed: 11/18/15</b>					
Benzene	29.0	1.0	ug/l	33.3	ND	87.1	34-141	1.16	32	
Toluene	30.9	1.0	"	33.3	ND	92.7	27-151	1.09	25	
Ethylbenzene	34.7	1.0	"	33.1	ND	105	29-160	1.88	50	
m,p-Xylene	70.2	2.0	"	66.5	3.94	99.5	20-166	3.17	36	
o-Xylene	32.3	1.0	"	32.8	1.34	94.5	33-159	2.32	26	
Surrogate: 1,2-Dichloroethane-d4	17.2		"	13.3		129	37-154			
Surrogate: Toluene-d8	12.8		"	13.3		96.2	45-149			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.5	45-146			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/19/15 06:28

### 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

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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.*

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



# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

November 24, 2015

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 11/19/15 17:10. 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  
President



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/24/15 09:09

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS11@5'	1511160-01	Soil	11/19/15 10:30	11/19/15 17:10
SS12@5'	1511160-02	Soil	11/19/15 15:34	11/19/15 17:10

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/24/15 09:09

SS11@5'  
1511160-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 11/19/15 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511193	11/19/15	11/19/15	8015M	

Date Sampled: 11/19/15 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.7 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 11/19/15 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1511191	11/19/15	11/19/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 11/19/15 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		119 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.5 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/24/15 09:09

**SS12@5'**  
**1511160-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/19/15 15:34

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511193	11/19/15	11/19/15	8015M	

Date Sampled: 11/19/15 15:34

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.8 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/19/15 15:34

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1511191	11/19/15	11/19/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 11/19/15 15:34

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		123 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/24/15 09:09

**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 1511193 - EPA 3550A**

**Blank (1511193-BLK1)**

Prepared & Analyzed: 11/19/15

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	11.5		"	12.2		94.3	30-150			

**LCS (1511193-BS1)**

Prepared & Analyzed: 11/19/15

C10-C28 (DRO)	605	50	mg/kg	499		121	73-134			
Surrogate: o-Terphenyl	12.6		"	12.2		103	30-150			

**Matrix Spike (1511193-MS1)**

Source: 1511160-01

Prepared & Analyzed: 11/19/15

C10-C28 (DRO)	459	50	mg/kg	464	13.3	96.1	50-148			
Surrogate: o-Terphenyl	11.0		"	11.3		97.3	30-150			

**Matrix Spike Dup (1511193-MSD1)**

Source: 1511160-01

Prepared & Analyzed: 11/19/15

C10-C28 (DRO)	465	50	mg/kg	470	13.3	96.1	50-148	1.22	13	
Surrogate: o-Terphenyl	11.1		"	11.5		96.4	30-150			

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/24/15 09:09

**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 1511191 - EPA 5030 Soil MS**

**Blank (1511191-BLK1)**

Prepared: 11/19/15 Analyzed: 11/20/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0419</i>		<i>"</i>	<i>0.0396</i>		<i>106</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0380</i>		<i>"</i>	<i>0.0400</i>		<i>94.9</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0389</i>		<i>"</i>	<i>0.0400</i>		<i>97.2</i>	<i>21-167</i>			

**LCS (1511191-BS1)**

Prepared: 11/19/15 Analyzed: 11/20/15

Naphthalene	0.159	0.010	mg/kg	0.150		106	66-138			
Benzene	0.136	0.0020	"	0.150		90.8	58-130			
Toluene	0.140	0.0050	"	0.150		93.5	61-134			
Ethylbenzene	0.147	0.0050	"	0.150		97.9	74-139			
m,p-Xylene	0.289	0.010	"	0.300		96.4	73-137			
o-Xylene	0.143	0.0050	"	0.150		95.4	73-141			
Xylenes (total)	0.432	0.010	"				0-200			
Gasoline Range Hydrocarbons	11.2	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0408</i>		<i>"</i>	<i>0.0396</i>		<i>103</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0396</i>		<i>"</i>	<i>0.0400</i>		<i>98.9</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0412</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>21-167</i>			

**Matrix Spike (1511191-MS1)**

Source: 1511159-01

Prepared: 11/19/15 Analyzed: 11/20/15

Naphthalene	0.150	0.010	mg/kg	0.144	ND	104	10-158			
Benzene	0.128	0.0020	"	0.144	ND	89.3	30-131			
Toluene	0.136	0.0050	"	0.144	ND	94.7	30-134			
Ethylbenzene	0.137	0.0050	"	0.144	ND	95.5	22-153			
m,p-Xylene	0.269	0.010	"	0.287	ND	93.4	10-159			
o-Xylene	0.133	0.0050	"	0.144	ND	92.3	31-151			
Xylenes (total)	0.401	0.010	"		0.00		30-160			
Gasoline Range Hydrocarbons	10.2	0.50	"		ND		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0424</i>		<i>"</i>	<i>0.0379</i>		<i>112</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0389</i>		<i>"</i>	<i>0.0383</i>		<i>102</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0386</i>		<i>"</i>	<i>0.0383</i>		<i>101</i>	<i>21-167</i>			

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/24/15 09:09

**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 1511191 - EPA 5030 Soil MS**

Matrix Spike Dup (1511191-MSD1)		Source: 1511159-01			Prepared: 11/19/15		Analyzed: 11/20/15			
Naphthalene	0.152	0.010	mg/kg	0.147	ND	104	10-158	1.82	42	
Benzene	0.133	0.0020	"	0.147	ND	90.5	30-131	3.51	34	
Toluene	0.141	0.0050	"	0.147	ND	95.7	30-134	3.26	30	
Ethylbenzene	0.144	0.0050	"	0.147	ND	97.9	22-153	4.61	24	
m,p-Xylene	0.284	0.010	"	0.294	ND	96.6	10-159	5.51	68	
o-Xylene	0.138	0.0050	"	0.147	ND	93.9	31-151	3.85	38	
Xylenes (total)	0.422	0.010	"		0.00		30-160	4.96	30	
Gasoline Range Hydrocarbons	10.7	0.50	"		ND		30-160	4.55	30	
Surrogate: 1,2-Dichloroethane-d4	0.0410		"	0.0387		106	23-173			
Surrogate: Toluene-d8	0.0397		"	0.0391		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0391		100	21-167			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/24/15 09:09

### 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

November 23, 2015

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 11/22/15 16:00. 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  
President



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/23/15 06:47

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CS18	1511170-01	Soil	11/22/15 13:45	11/22/15 16:00
CS19	1511170-02	Soil	11/22/15 13:50	11/22/15 16:00
CS20	1511170-03	Soil	11/22/15 13:55	11/22/15 16:00
GW05	1511170-04	Water	11/22/15 14:00	11/22/15 16:00

Summit Scientific

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

Project: Ursula 2

Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/23/15 06:47

# Summit Scientific

S<sub>2</sub>

741 Corporate Circle, Suite J ♦ Golden, Colorado 80401  
303-277-9310 ♦ 303-374-5933

1511170

Page 1 of 1

Client: PDC Project Manager: Mark Longhurst  
Address: E-Mail: mark.longhurst@PDC.com  
City/State/Zip: Project Name: URSULA 2  
Phone: Fax: Project Number:  
Sampler Name: Mgt P

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions
					HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	LOTEX (800)	DRG (8015)	STE X		
1	CS18	11/22/15	13:45	1			X			X			X	X			
2	CS19		13:50	1			X			X			X	X			
3	CS20		13:55	1			X			X			X	X			
4	GW-05	11/22/15	14:00	3	X				X					X			
5																	
6																	
7																	
8																	
9																	
10																	

Relinquished by:	Date/Time: 11/22/15	Received by:	Date/Time: 11/22/15	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input type="checkbox"/> 48 hours <input type="checkbox"/>	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity: Temperature Upon Receipt: 5-5 Intact: Yes No	
Relinquished by:	Date/Time:	Received by:	Date/Time:		

www.s2scientific.com

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/23/15 06:47

**CS18**  
**1511170-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/22/15 13:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>54</b>	50	mg/kg	1	1511211	11/22/15	11/22/15	8015M	

Date Sampled: 11/22/15 13:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		96.5 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/22/15 13:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Naphthalene</b>	<b>0.11</b>	0.010	mg/kg	1	1511213	11/22/15	11/22/15	EPA 8260B	
<b>Benzene</b>	<b>0.0030</b>	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.035</b>	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.14</b>	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>340</b>	5.0	"	10	"	"	11/22/15	"	

Date Sampled: 11/22/15 13:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		87.0 %	23-173		"	"	11/22/15	"	
<i>Surrogate: Toluene-d8</i>		147 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		104 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/23/15 06:47

**CS19**  
**1511170-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/22/15 13:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511211	11/22/15	11/22/15	8015M	

Date Sampled: 11/22/15 13:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.8 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/22/15 13:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.018	0.010	mg/kg	1	1511213	11/22/15	11/22/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.011	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	52	0.50	"	"	"	"	"	"	

Date Sampled: 11/22/15 13:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		89.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		112 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		130 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/23/15 06:47

**CS20**  
**1511170-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/22/15 13:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511211	11/22/15	11/22/15	8015M	

Date Sampled: 11/22/15 13:55

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: 11/22/15 13:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.021	0.010	mg/kg	1	1511213	11/22/15	11/22/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0053	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.019	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	88	0.50	"	"	"	"	"	"	

Date Sampled: 11/22/15 13:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		96.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		130 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		162 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/23/15 06:47

**GW05**  
**1511170-04 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/22/15 14:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>3.3</b>	1.0	ug/l	1	1511212	11/22/15	11/22/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>55</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>250</b>	1.0	"	"	"	"	"	"	

Date Sampled: 11/22/15 14:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		85.8 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		126 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.1 %	45-146		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/23/15 06:47

**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 1511211 - EPA 3550A**

**Blank (1511211-BLK1)**

Prepared & Analyzed: 11/22/15

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	11.8		"	12.2		96.6	30-150			

**LCS (1511211-BS1)**

Prepared & Analyzed: 11/22/15

C10-C28 (DRO)	466	50	mg/kg	499		93.4	73-134			
Surrogate: o-Terphenyl	11.8		"	12.2		97.0	30-150			

**Matrix Spike (1511211-MS1)**

Source: 1511170-01

Prepared & Analyzed: 11/22/15

C10-C28 (DRO)	600	50	mg/kg	499	54.2	109	50-148			
Surrogate: o-Terphenyl	12.7		"	12.2		104	30-150			

**Matrix Spike Dup (1511211-MSD1)**

Source: 1511170-01

Prepared & Analyzed: 11/22/15

C10-C28 (DRO)	540	50	mg/kg	499	54.2	97.3	50-148	10.6	13	
Surrogate: o-Terphenyl	11.7		"	12.2		95.7	30-150			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/23/15 06:47

**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 1511212 - EPA 5030 Water MS**

**Blank (1511212-BLK1)**

Prepared & Analyzed: 11/22/15

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	11.6		"	13.2		87.6	37-154			
Surrogate: Toluene-d8	12.5		"	13.3		94.1	45-149			
Surrogate: 4-Bromofluorobenzene	12.6		"	13.3		94.4	45-146			

**LCS (1511212-BS1)**

Prepared & Analyzed: 11/22/15

Benzene	33.7	1.0	ug/l	33.3		101	51-132			
Toluene	32.7	1.0	"	33.3		98.2	51-138			
Ethylbenzene	34.5	1.0	"	33.1		104	58-146			
m,p-Xylene	66.1	2.0	"	66.5		99.3	57-144			
o-Xylene	32.3	1.0	"	32.8		98.6	53-146			
Surrogate: 1,2-Dichloroethane-d4	12.0		"	13.2		91.3	37-154			
Surrogate: Toluene-d8	13.6		"	13.3		102	45-149			
Surrogate: 4-Bromofluorobenzene	12.3		"	13.3		92.3	45-146			

**Matrix Spike (1511212-MS1)**

Source: 1511170-04

Prepared & Analyzed: 11/22/15

Benzene	34.6	1.0	ug/l	33.3	3.29	94.0	34-141			
Toluene	31.4	1.0	"	33.3	ND	94.3	27-151			
Ethylbenzene	62.2	1.0	"	33.1	55.0	21.8	29-160			QM-07
m,p-Xylene	184	2.0	"	66.5	239	NR	20-166			QM-07
o-Xylene	37.1	1.0	"	32.8	7.79	89.4	33-159			
Surrogate: 1,2-Dichloroethane-d4	10.9		"	13.2		82.7	37-154			
Surrogate: Toluene-d8	16.4		"	13.3		123	45-149			
Surrogate: 4-Bromofluorobenzene	14.3		"	13.3		107	45-146			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/23/15 06:47

**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 1511212 - EPA 5030 Water MS**

Matrix Spike Dup (1511212-MSD1)				Source: 1511170-04		Prepared & Analyzed: 11/23/15				
Benzene	35.7	1.0	ug/l	33.3	3.29	97.4	34-141	3.21	32	
Toluene	33.2	1.0	"	33.3	ND	99.5	27-151	5.36	25	
Ethylbenzene	65.2	1.0	"	33.1	55.0	30.8	29-160	4.66	50	
m,p-Xylene	192	2.0	"	66.5	239	NR	20-166	3.79	36	QM-07
o-Xylene	39.5	1.0	"	32.8	7.79	96.6	33-159	6.14	26	
Surrogate: 1,2-Dichloroethane-d4	10.9		"	13.2		82.9	37-154			
Surrogate: Toluene-d8	14.2		"	13.3		107	45-149			
Surrogate: 4-Bromofluorobenzene	13.3		"	13.3		99.5	45-146			

**Batch 1511213 - EPA 5030 Soil MS**

Blank (1511213-BLK1)				Prepared & Analyzed: 11/22/15						
Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0343		"	0.0396		86.5	23-173			
Surrogate: Toluene-d8	0.0378		"	0.0400		94.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0375		"	0.0400		93.8	21-167			
LCS (1511213-BS1)				Prepared & Analyzed: 11/22/15						
Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.102	0.0020	"	0.100		102	58-130			
Toluene	0.101	0.0050	"	0.100		101	61-134			
Ethylbenzene	0.112	0.0050	"	0.0992		113	74-139			
m,p-Xylene	0.212	0.010	"	0.200		106	73-137			
o-Xylene	0.101	0.0050	"	0.0984		103	73-141			
Xylenes (total)	0.314	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.06	0.50	"				30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0349		"	0.0396		88.2	23-173			
Surrogate: Toluene-d8	0.0387		"	0.0400		96.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0373		"	0.0400		93.2	21-167			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/23/15 06:47

**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 1511213 - EPA 5030 Soil MS**

**Matrix Spike (1511213-MS1)**

Source: 1511170-02

Prepared: 11/22/15 Analyzed: 11/23/15

Naphthalene	0.00624	0.010	mg/kg		0.0181		10-158			
Benzene	0.102	0.0020	"	0.100	ND	102	30-131			
Toluene	0.0970	0.0050	"	0.100	ND	97.0	30-134			
Ethylbenzene	0.107	0.0050	"	0.0992	0.00396	104	22-153			
m,p-Xylene	0.206	0.010	"	0.200	0.0106	98.0	10-159			
o-Xylene	0.102	0.0050	"	0.0984	ND	104	31-151			
Xylenes (total)	0.308	0.010	"		0.0106		30-160			
Gasoline Range Hydrocarbons	76.4	0.50	"		52.2		30-160			
Surrogate: 1,2-Dichloroethane-d4	0.0384		"	0.0396		97.0	23-173			
Surrogate: Toluene-d8	0.0477		"	0.0400		119	20-170			
Surrogate: 4-Bromofluorobenzene	0.0593		"	0.0400		148	21-167			

**Matrix Spike Dup (1511213-MSD1)**

Source: 1511170-02

Prepared: 11/22/15 Analyzed: 11/23/15

Naphthalene	0.00624	0.010	mg/kg		0.0181		10-158	0.00	42	
Benzene	0.104	0.0020	"	0.100	ND	104	30-131	1.83	34	
Toluene	0.0990	0.0050	"	0.100	ND	99.0	30-134	1.96	30	
Ethylbenzene	0.111	0.0050	"	0.0992	0.00396	108	22-153	3.69	24	
m,p-Xylene	0.213	0.010	"	0.200	0.0106	101	10-159	3.28	68	
o-Xylene	0.106	0.0050	"	0.0984	ND	108	31-151	4.03	38	
Xylenes (total)	0.320	0.010	"		0.0106		30-160	3.53	30	
Gasoline Range Hydrocarbons	84.6	0.50	"		52.2		30-160	10.2	30	
Surrogate: 1,2-Dichloroethane-d4	0.0371		"	0.0396		93.6	23-173			
Surrogate: Toluene-d8	0.0499		"	0.0400		125	20-170			
Surrogate: 4-Bromofluorobenzene	0.0631		"	0.0400		158	21-167			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/23/15 06:47

### 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

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

November 29, 2015

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 11/25/15 12:50. 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  
President



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/29/15 19:36

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CS21	1511199-01	Soil	11/25/15 08:30	11/25/15 12:50
CS22	1511199-02	Soil	11/25/15 08:35	11/25/15 12:50
CS23	1511199-03	Soil	11/25/15 08:40	11/25/15 12:50
CS24	1511199-04	Soil	11/25/15 08:45	11/25/15 12:50

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/29/15 19:36

**CS21**  
**1511199-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/25/15 08:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511243	11/25/15	11/25/15	8015M	

Date Sampled: 11/25/15 08:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.0 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/25/15 08:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1511246	11/25/15	11/25/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.015</b>	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>100</b>	0.50	"	"	"	"	"	"	

Date Sampled: 11/25/15 08:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		91.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		121 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		151 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/29/15 19:36

**CS22**  
**1511199-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/25/15 08:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	53	50	mg/kg	1	1511243	11/25/15	11/25/15	8015M	

Date Sampled: 11/25/15 08:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		97.7 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/25/15 08:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1511246	11/25/15	11/25/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	81	0.50	"	"	"	"	"	"	

Date Sampled: 11/25/15 08:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		91.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		116 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		152 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/29/15 19:36

**CS23**  
**1511199-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/25/15 08:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511243	11/25/15	11/25/15	8015M	

Date Sampled: 11/25/15 08:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		92.9 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/25/15 08:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1511246	11/25/15	11/25/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.019	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	50	0.50	"	"	"	"	"	"	

Date Sampled: 11/25/15 08:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		94.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		126 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/29/15 19:36

**CS24**  
**1511199-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 11/25/15 08:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1511243	11/25/15	11/25/15	8015M	

Date Sampled: 11/25/15 08:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.0 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 11/25/15 08:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1511246	11/25/15	11/25/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0057	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.019	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	50	0.50	"	"	"	"	"	"	

Date Sampled: 11/25/15 08:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		89.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		130 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/29/15 19:36

**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 1511243 - EPA 3550A**

**Blank (1511243-BLK1)**

Prepared & Analyzed: 11/25/15

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	11.6		"	12.2		94.7	30-150			

**LCS (1511243-BS1)**

Prepared & Analyzed: 11/25/15

C10-C28 (DRO)	522	50	mg/kg	499		105	73-134			
Surrogate: o-Terphenyl	12.3		"	12.2		101	30-150			

**Matrix Spike (1511243-MS1)**

Source: 1511195-01

Prepared & Analyzed: 11/25/15

C10-C28 (DRO)	444	50	mg/kg	457	27.9	91.1	50-148			
Surrogate: o-Terphenyl	10.8		"	11.2		97.1	30-150			

**Matrix Spike Dup (1511243-MSD1)**

Source: 1511195-01

Prepared & Analyzed: 11/25/15

C10-C28 (DRO)	490	50	mg/kg	459	27.9	101	50-148	9.82	13	
Surrogate: o-Terphenyl	11.6		"	11.2		103	30-150			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/29/15 19:36

**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 1511246 - EPA 5030 Soil MS**

**Blank (1511246-BLK1)**

Prepared & Analyzed: 11/25/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0348</i>		<i>"</i>	<i>0.0396</i>		<i>87.9</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0370</i>		<i>"</i>	<i>0.0400</i>		<i>92.6</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0367</i>		<i>"</i>	<i>0.0400</i>		<i>91.6</i>	<i>21-167</i>			

**LCS (1511246-BS1)**

Prepared & Analyzed: 11/25/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0917	0.0020	"	0.100		91.7	58-130			
Toluene	0.0897	0.0050	"	0.100		89.7	61-134			
Ethylbenzene	0.108	0.0050	"	0.0992		109	74-139			
m,p-Xylene	0.205	0.010	"	0.200		103	73-137			
o-Xylene	0.0991	0.0050	"	0.0984		101	73-141			
Xylenes (total)	0.304	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.23	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0333</i>		<i>"</i>	<i>0.0396</i>		<i>84.0</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0366</i>		<i>"</i>	<i>0.0400</i>		<i>91.6</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0368</i>		<i>"</i>	<i>0.0400</i>		<i>91.9</i>	<i>21-167</i>			

**Matrix Spike (1511246-MS1)**

Source: 1511195-01

Prepared & Analyzed: 11/25/15

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0954	0.0020	"	0.100	ND	95.4	30-131			
Toluene	0.0943	0.0050	"	0.100	ND	94.3	30-134			
Ethylbenzene	0.109	0.0050	"	0.0992	ND	110	22-153			
m,p-Xylene	0.207	0.010	"	0.200	ND	104	10-159			
o-Xylene	0.0994	0.0050	"	0.0984	ND	101	31-151			
Xylenes (total)	0.307	0.010	"		0.00		30-160			
Gasoline Range Hydrocarbons	2.30	0.50	"		ND		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0346</i>		<i>"</i>	<i>0.0396</i>		<i>87.4</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0376</i>		<i>"</i>	<i>0.0400</i>		<i>94.1</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0369</i>		<i>"</i>	<i>0.0400</i>		<i>92.3</i>	<i>21-167</i>			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/29/15 19:36

**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 1511246 - EPA 5030 Soil MS**

Matrix Spike Dup (1511246-MSD1)		Source: 1511195-01			Prepared & Analyzed: 11/25/15					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.103	0.0020	"	0.100	ND	103	30-131	7.62	34	
Toluene	0.0963	0.0050	"	0.100	ND	96.3	30-134	2.08	30	
Ethylbenzene	0.110	0.0050	"	0.0992	ND	111	22-153	0.850	24	
m,p-Xylene	0.210	0.010	"	0.200	ND	105	10-159	1.44	68	
o-Xylene	0.101	0.0050	"	0.0984	ND	103	31-151	2.00	38	
Xylenes (total)	0.312	0.010	"		0.00		30-160	1.62	30	
Gasoline Range Hydrocarbons	2.36	0.50	"		ND		30-160	2.70	30	
Surrogate: 1,2-Dichloroethane-d4	0.0372		"	0.0396		93.9	23-173			
Surrogate: Toluene-d8	0.0383		"	0.0400		95.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0357		"	0.0400		89.2	21-167			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/29/15 19:36

### 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

*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.*

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



# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 02, 2015

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 12/01/15 17:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury  
President

Page 1 of 5



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/02/15 06:42

**GW06**  
**1512002-01 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/01/15 07:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1512008	12/01/15	12/01/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>42</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>8.2</b>	1.0	"	"	"	"	"	"	

Date Sampled: 12/01/15 07:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		91.4 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		110 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		113 %	45-146		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/02/15 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 1512008 - EPA 5030 Water MS

##### Blank (1512008-BLK1)

Prepared & Analyzed: 12/01/15

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	12.2		"	13.3		91.7	37-154			
Surrogate: Toluene-d8	12.7		"	13.3		95.1	45-149			
Surrogate: 4-Bromofluorobenzene	12.4		"	13.3		92.8	45-146			

##### LCS (1512008-BS1)

Prepared & Analyzed: 12/01/15

Benzene	33.3	1.0	ug/l	33.3		99.8	51-132			
Toluene	32.3	1.0	"	33.3		96.8	51-138			
Ethylbenzene	35.2	1.0	"	33.1		106	58-146			
m,p-Xylene	67.5	2.0	"	66.5		101	57-144			
o-Xylene	33.4	1.0	"	32.8		102	53-146			
Surrogate: 1,2-Dichloroethane-d4	11.3		"	13.3		84.8	37-154			
Surrogate: Toluene-d8	12.9		"	13.3		97.1	45-149			
Surrogate: 4-Bromofluorobenzene	12.4		"	13.3		93.2	45-146			

##### Matrix Spike (1512008-MS1)

Source: 1511206-21

Prepared & Analyzed: 12/01/15

Benzene	33.5	1.0	ug/l	33.3	ND	101	34-141			
Toluene	32.3	1.0	"	33.3	ND	96.8	27-151			
Ethylbenzene	35.5	1.0	"	33.1	ND	107	29-160			
m,p-Xylene	68.2	2.0	"	66.5	ND	103	20-166			
o-Xylene	33.4	1.0	"	32.8	ND	102	33-159			
Surrogate: 1,2-Dichloroethane-d4	12.0		"	13.3		89.8	37-154			
Surrogate: Toluene-d8	12.8		"	13.3		96.4	45-149			
Surrogate: 4-Bromofluorobenzene	12.3		"	13.3		92.6	45-146			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/02/15 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 1512008 - EPA 5030 Water MS**

<b>Matrix Spike Dup (1512008-MSD1)</b>	<b>Source: 1511206-21</b>			<b>Prepared &amp; Analyzed: 12/01/15</b>						
Benzene	33.9	1.0	ug/l	33.3	ND	102	34-141	1.25	32	
Toluene	33.0	1.0	"	33.3	ND	98.9	27-151	2.12	25	
Ethylbenzene	36.8	1.0	"	33.1	ND	111	29-160	3.68	50	
m,p-Xylene	70.5	2.0	"	66.5	ND	106	20-166	3.32	36	
o-Xylene	35.1	1.0	"	32.8	ND	107	33-159	5.02	26	
Surrogate: 1,2-Dichloroethane-d4	11.8		"	13.3		88.1	37-154			
Surrogate: Toluene-d8	12.7		"	13.3		95.3	45-149			
Surrogate: 4-Bromofluorobenzene	11.9		"	13.3		89.1	45-146			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/02/15 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

*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.*

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

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 03, 2015

Christine Wasko  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 12/02/15 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  
President



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Christine Wasko

**Reported:**  
12/03/15 07:05

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CS25	1512011-01	Soil	12/02/15 07:45	12/02/15 17:00
CS26	1512011-02	Soil	12/02/15 07:55	12/02/15 17:00
CS27	1512011-03	Soil	12/02/15 11:05	12/02/15 17:00
CS28	1512011-04	Soil	12/02/15 11:15	12/02/15 17:00

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: Ursula 2  
Project Number: [none]  
Project Manager: Christine Wasko

Reported:  
12/03/15 07:05

**CS25**  
**1512011-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/02/15 07:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	69	50	mg/kg	1	1512023	12/02/15	12/02/15	8015M	

Date Sampled: 12/02/15 07:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		101 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/02/15 07:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.25	0.010	mg/kg	1	1512022	12/02/15	12/02/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.073	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.096	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	250	5.0	"	10	"	"	12/02/15	"	

Date Sampled: 12/02/15 07:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		90.0 %	23-173		"	"	12/02/15	"	
Surrogate: Toluene-d8		160 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.0 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Christine Wasko

Reported:  
12/03/15 07:05

**CS26**  
**1512011-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/02/15 07:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	50	50	mg/kg	1	1512023	12/02/15	12/02/15	8015M	

Date Sampled: 12/02/15 07:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.8 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/02/15 07:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.068	0.010	mg/kg	1	1512022	12/02/15	12/02/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0051	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.050	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	710	5.0	"	10	"	"	12/02/15	"	

Date Sampled: 12/02/15 07:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		84.9 %	23-173		"	"	12/02/15	"	
Surrogate: Toluene-d8		134 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		132 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Christine Wasko

**Reported:**  
12/03/15 07:05

**CS27**  
**1512011-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/02/15 11:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1512023	12/02/15	12/02/15	8015M	

Date Sampled: 12/02/15 11:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		101 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/02/15 11:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.050	0.010	mg/kg	1	1512022	12/02/15	12/02/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.014	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.026	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	290	5.0	"	10	"	"	12/02/15	"	

Date Sampled: 12/02/15 11:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		88.0 %	23-173		"	"	12/02/15	"	
Surrogate: Toluene-d8		117 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		149 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Christine Wasko

**Reported:**  
12/03/15 07:05

**CS28**  
**1512011-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/02/15 11:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1512023	12/02/15	12/02/15	8015M	

Date Sampled: 12/02/15 11:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.2 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/02/15 11:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.27	0.010	mg/kg	1	1512022	12/02/15	12/02/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.084	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.062	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	85	0.50	"	"	"	"	"	"	

Date Sampled: 12/02/15 11:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		87.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		116 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		135 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Christine Wasko

**Reported:**  
12/03/15 07:05

**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 1512023 - EPA 3550A**

**Blank (1512023-BLK1)**

Prepared & Analyzed: 12/02/15

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	12.0		"	12.5		95.9	30-150			

**LCS (1512023-BS1)**

Prepared & Analyzed: 12/02/15

C10-C28 (DRO)	466	50	mg/kg	499		93.3	73-134			
Surrogate: o-Terphenyl	12.2		"	12.5		97.3	30-150			

**Matrix Spike (1512023-MS1)**

Source: 1512011-01

Prepared & Analyzed: 12/02/15

C10-C28 (DRO)	503	50	mg/kg	480	69.1	90.5	50-148			
Surrogate: o-Terphenyl	11.6		"	12.0		96.4	30-150			

**Matrix Spike Dup (1512023-MSD1)**

Source: 1512011-01

Prepared & Analyzed: 12/02/15

C10-C28 (DRO)	501	50	mg/kg	474	69.1	91.0	50-148	0.534	13	
Surrogate: o-Terphenyl	11.3		"	11.9		95.3	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: Ursula 2  
Project Number: [none]  
Project Manager: Christine Wasko

**Reported:**  
12/03/15 07:05

**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 1512022 - EPA 5030 Soil MS**

**Blank (1512022-BLK1)**

Prepared & Analyzed: 12/02/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0434</i>		<i>"</i>	<i>0.0400</i>		<i>109</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0386</i>		<i>"</i>	<i>0.0400</i>		<i>96.6</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0399</i>		<i>"</i>	<i>0.0400</i>		<i>99.7</i>	<i>21-167</i>			

**LCS (1512022-BS1)**

Prepared & Analyzed: 12/02/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0890	0.0020	"	0.100		89.0	58-130			
Toluene	0.0970	0.0050	"	0.100		97.0	61-134			
Ethylbenzene	0.110	0.0050	"	0.0992		111	74-139			
m,p-Xylene	0.213	0.010	"	0.200		107	73-137			
o-Xylene	0.0992	0.0050	"	0.0984		101	73-141			
Xylenes (total)	0.312	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.90	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0453</i>		<i>"</i>	<i>0.0400</i>		<i>113</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0386</i>		<i>"</i>	<i>0.0400</i>		<i>96.6</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0374</i>		<i>"</i>	<i>0.0400</i>		<i>93.4</i>	<i>21-167</i>			

**Matrix Spike (1512022-MS1)**

Source: 1512011-01

Prepared & Analyzed: 12/02/15

Naphthalene	0.403	0.010	mg/kg		0.252		10-158			
Benzene	0.0816	0.0020	"	0.0917	ND	88.9	30-131			
Toluene	0.0817	0.0050	"	0.0917	ND	89.0	30-134			
Ethylbenzene	0.228	0.0050	"	0.0910	0.0726	170	22-153			QM-07
m,p-Xylene	0.269	0.010	"	0.183	0.0960	94.4	10-159			
o-Xylene	0.0924	0.0050	"	0.0903	ND	102	31-151			
Xylenes (total)	0.361	0.010	"		0.0960		30-160			
Gasoline Range Hydrocarbons	57.3	0.50	"		253		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0410</i>		<i>"</i>	<i>0.0367</i>		<i>112</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0432</i>		<i>"</i>	<i>0.0367</i>		<i>118</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0569</i>		<i>"</i>	<i>0.0367</i>		<i>155</i>	<i>21-167</i>			

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: Ursula 2  
Project Number: [none]  
Project Manager: Christine Wasko

**Reported:**  
12/03/15 07:05

**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 1512022 - EPA 5030 Soil MS**

Matrix Spike Dup (1512022-MSD1)		Source: 1512011-01			Prepared & Analyzed: 12/02/15						
Naphthalene	0.220	0.010	mg/kg		0.252		10-158	58.6	42		QM-07
Benzene	0.0795	0.0020	"	0.0887	ND	89.6	30-131	2.62	34		
Toluene	0.0797	0.0050	"	0.0887	ND	89.9	30-134	2.45	30		
Ethylbenzene	0.176	0.0050	"	0.0879	0.0726	118	22-153	25.5	24		QM-07
m,p-Xylene	0.233	0.010	"	0.177	0.0960	77.7	10-159	14.1	68		
o-Xylene	0.0917	0.0050	"	0.0872	ND	105	31-151	0.841	38		
Xylenes (total)	0.325	0.010	"		0.0960		30-160	10.5	30		
Gasoline Range Hydrocarbons	45.1	0.50	"		253		30-160	23.9	30		
Surrogate: 1,2-Dichloroethane-d4	0.0402		"	0.0355		113	23-173				
Surrogate: Toluene-d8	0.0406		"	0.0355		114	20-170				
Surrogate: 4-Bromofluorobenzene	0.0520		"	0.0355		147	21-167				

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: Ursula 2  
Project Number: [none]  
Project Manager: Christine Wasko

**Reported:**  
12/03/15 07:05

### 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

---

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.*

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

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 08, 2015

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 12/07/15 17:45. 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  
President



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/08/15 06:29

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS13@5'	1512044-01	Soil	12/07/15 10:00	12/07/15 17:45
SS14@5'	1512044-02	Soil	12/07/15 13:40	12/07/15 17:45
SS15@5'	1512044-03	Soil	12/07/15 13:45	12/07/15 17:45
SS16@5'	1512044-04	Soil	12/07/15 14:05	12/07/15 17:45
SS17@5'	1512044-05	Soil	12/07/15 15:30	12/07/15 17:45

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/08/15 06:29

SS13@5'  
1512044-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/07/15 10:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1512061	12/07/15	12/07/15	8015M	

Date Sampled: 12/07/15 10:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		92.7 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/07/15 10:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1512060	12/07/15	12/07/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/07/15 10:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		84.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		93.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.2 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/08/15 06:29

SS14@5'  
1512044-02 (Soil)

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/07/15 13:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	100	50	mg/kg	1	1512061	12/07/15	12/07/15	8015M	

Date Sampled: 12/07/15 13:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		96.0 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/07/15 13:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1512060	12/07/15	12/07/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	8.7	0.50	"	"	"	"	"	"	

Date Sampled: 12/07/15 13:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		85.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.2 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/08/15 06:29

SS15@5'  
1512044-03 (Soil)

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/07/15 13:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	780	50	mg/kg	1	1512061	12/07/15	12/07/15	8015M	

Date Sampled: 12/07/15 13:45

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

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/07/15 13:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.091	0.010	mg/kg	1	1512060	12/07/15	12/07/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	12/07/15	"	
Ethylbenzene	0.016	0.0050	"	"	"	"	12/07/15	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	540	50	"	100	"	"	12/07/15	"	

Date Sampled: 12/07/15 13:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		83.2 %	23-173		"	"	12/07/15	"	
Surrogate: Toluene-d8		122 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.1 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/08/15 06:29

**SS16@5'**  
**1512044-04 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/07/15 14:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1512061	12/07/15	12/07/15	8015M	

Date Sampled: 12/07/15 14:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		91.7 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/07/15 14:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1512060	12/07/15	12/07/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/07/15 14:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		82.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		93.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.8 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/08/15 06:29

**SS17@5'**  
**1512044-05 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/07/15 15:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1700	50	mg/kg	1	1512061	12/07/15	12/07/15	8015M	

Date Sampled: 12/07/15 15:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.5 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/07/15 15:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	3.8	1.0	mg/kg	100	1512060	12/07/15	12/08/15	EPA 8260B	
Benzene	0.092	0.0020	"	1	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	12/07/15	"	
Ethylbenzene	2.3	0.50	"	100	"	"	12/08/15	"	
Xylenes (total)	1.5	0.010	"	1	"	"	"	"	
Gasoline Range Hydrocarbons	240	50	"	100	"	"	12/07/15	"	

Date Sampled: 12/07/15 15:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		78.4 %	23-173		"	"	12/08/15	"	
Surrogate: Toluene-d8		117 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/08/15 06:29

**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 1512061 - EPA 3550A**

**Blank (1512061-BLK1)**

Prepared & Analyzed: 12/07/15

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	14.0		"	12.5		112	30-150			

**LCS (1512061-BS1)**

Prepared & Analyzed: 12/07/15

C10-C28 (DRO)	478	50	mg/kg	499		95.8	73-134			
Surrogate: o-Terphenyl	12.5		"	12.5		100	30-150			

**Matrix Spike (1512061-MS1)**

Source: 1512043-01

Prepared & Analyzed: 12/07/15

C10-C28 (DRO)	457	50	mg/kg	465	25.3	93.0	50-148			
Surrogate: o-Terphenyl	11.3		"	11.6		96.7	30-150			

**Matrix Spike Dup (1512061-MSD1)**

Source: 1512043-01

Prepared & Analyzed: 12/07/15

C10-C28 (DRO)	474	50	mg/kg	490	25.3	91.4	50-148	3.50	13	
Surrogate: o-Terphenyl	11.8		"	12.3		96.1	30-150			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/08/15 06:29

**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 1512060 - EPA 5030 Soil MS**

**Blank (1512060-BLK1)**

Prepared & Analyzed: 12/07/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0319</i>		<i>"</i>	<i>0.0400</i>		<i>79.7</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0370</i>		<i>"</i>	<i>0.0400</i>		<i>92.5</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0354</i>		<i>"</i>	<i>0.0400</i>		<i>88.6</i>	<i>21-167</i>			

**LCS (1512060-BS1)**

Prepared & Analyzed: 12/07/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0858	0.0020	"	0.100		85.8	58-130			
Toluene	0.0868	0.0050	"	0.100		86.8	61-134			
Ethylbenzene	0.0981	0.0050	"	0.0992		89.9	74-139			
m,p-Xylene	0.187	0.010	"	0.200		93.5	73-137			
o-Xylene	0.0910	0.0050	"	0.0984		92.4	73-141			
Xylenes (total)	0.278	0.010	"				0-200			
Gasoline Range Hydrocarbons	1.91	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0311</i>		<i>"</i>	<i>0.0400</i>		<i>77.8</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0387</i>		<i>"</i>	<i>0.0400</i>		<i>96.8</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0364</i>		<i>"</i>	<i>0.0400</i>		<i>91.0</i>	<i>21-167</i>			

**Matrix Spike (1512060-MS1)**

Source: 1512043-01

Prepared & Analyzed: 12/07/15

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0886	0.0020	"	0.0969	ND	91.4	30-131			
Toluene	0.0879	0.0050	"	0.0969	ND	90.7	30-134			
Ethylbenzene	0.102	0.0050	"	0.0961	ND	106	22-153			
m,p-Xylene	0.196	0.010	"	0.193	ND	101	10-159			
o-Xylene	0.0951	0.0050	"	0.0953	ND	99.8	31-151			
Xylenes (total)	0.291	0.010	"		0.00		30-160			
Gasoline Range Hydrocarbons	2.11	0.50	"		ND		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0311</i>		<i>"</i>	<i>0.0388</i>		<i>80.2</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0365</i>		<i>"</i>	<i>0.0388</i>		<i>94.2</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0355</i>		<i>"</i>	<i>0.0388</i>		<i>91.5</i>	<i>21-167</i>			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/08/15 06:29

**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 1512060 - EPA 5030 Soil MS**

Matrix Spike Dup (1512060-MSD1)		Source: 1512043-01			Prepared & Analyzed: 12/07/15					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0923	0.0020	"	0.0969	ND	95.2	30-131	4.11	34	
Toluene	0.0926	0.0050	"	0.0969	ND	95.6	30-134	5.28	30	
Ethylbenzene	0.104	0.0050	"	0.0961	ND	109	22-153	2.28	24	
m,p-Xylene	0.198	0.010	"	0.193	ND	103	10-159	1.48	68	
o-Xylene	0.0965	0.0050	"	0.0953	ND	101	31-151	1.43	38	
Xylenes (total)	0.295	0.010	"		0.00		30-160	1.46	30	
Gasoline Range Hydrocarbons	2.19	0.50	"		ND		30-160	3.84	30	
Surrogate: 1,2-Dichloroethane-d4	0.0322		"	0.0388		82.9	23-173			
Surrogate: Toluene-d8	0.0379		"	0.0388		97.7	20-170			
Surrogate: 4-Bromofluorobenzene	0.0349		"	0.0388		90.1	21-167			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/08/15 06:29

### 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'.

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 09, 2015

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 12/08/15 17:45. 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  
President



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/09/15 06:51

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS18@5'	1512063-01	Soil	12/08/15 11:00	12/08/15 17:45
SS19@5'	1512063-02	Soil	12/08/15 10:25	12/08/15 17:45
SS20@5'	1512063-03	Soil	12/08/15 10:20	12/08/15 17:45

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/09/15 06:51

SS18@5'  
1512063-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/08/15 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	760	50	mg/kg	1	1512078	12/08/15	12/08/15	8015M	

Date Sampled: 12/08/15 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		96.3 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/08/15 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.13	0.010	mg/kg	1	1512077	12/08/15	12/08/15	EPA 8260B	
Benzene	0.034	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	12/08/15	"	
Ethylbenzene	0.11	0.0050	"	"	"	"	12/08/15	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	530	50	"	100	"	"	12/08/15	"	

Date Sampled: 12/08/15 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		96.8 %	23-173		"	"	12/08/15	"	
Surrogate: Toluene-d8		156 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/09/15 06:51

**SS19@5'**  
**1512063-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/08/15 10:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1512078	12/08/15	12/08/15	8015M	

Date Sampled: 12/08/15 10:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.7 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/08/15 10:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1512077	12/08/15	12/08/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/08/15 10:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/09/15 06:51

**SS20@5'**  
**1512063-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/08/15 10:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1512078	12/08/15	12/08/15	8015M	

Date Sampled: 12/08/15 10:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		100 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/08/15 10:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1512077	12/08/15	12/08/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/08/15 10:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/09/15 06:51

**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 1512078 - EPA 3550A**

**Blank (1512078-BLK1)**

Prepared & Analyzed: 12/08/15

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	12.4		"	12.5		98.9	30-150			

**LCS (1512078-BS1)**

Prepared & Analyzed: 12/08/15

C10-C28 (DRO)	552	50	mg/kg	499		111	73-134			
Surrogate: o-Terphenyl	13.2		"	12.5		105	30-150			

**Matrix Spike (1512078-MS1)**

Source: 1512063-02

Prepared & Analyzed: 12/08/15

C10-C28 (DRO)	502	50	mg/kg	488	34.0	95.9	50-148			
Surrogate: o-Terphenyl	11.9		"	12.2		97.0	30-150			

**Matrix Spike Dup (1512078-MSD1)**

Source: 1512063-02

Prepared & Analyzed: 12/08/15

C10-C28 (DRO)	500	50	mg/kg	492	34.0	94.8	50-148	0.386	13	
Surrogate: o-Terphenyl	11.8		"	12.3		95.9	30-150			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/09/15 06:51

**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 1512077 - EPA 5030 Soil MS**

**Blank (1512077-BLK1)**

Prepared & Analyzed: 12/08/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0391</i>		<i>"</i>	<i>0.0400</i>		<i>97.6</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0408</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>21-167</i>			

**LCS (1512077-BS1)**

Prepared & Analyzed: 12/08/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0782	0.0020	"	0.100		78.2	58-130			
Toluene	0.0822	0.0050	"	0.100		82.2	61-134			
Ethylbenzene	0.0964	0.0050	"	0.0992		97.1	74-139			
m,p-Xylene	0.184	0.010	"	0.200		92.4	73-137			
o-Xylene	0.0884	0.0050	"	0.0984		89.8	73-141			
Xylenes (total)	0.273	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.22	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0405</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0394</i>		<i>"</i>	<i>0.0400</i>		<i>98.6</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0382</i>		<i>"</i>	<i>0.0400</i>		<i>95.5</i>	<i>21-167</i>			

**Matrix Spike (1512077-MS1)**

Source: 1512063-03

Prepared & Analyzed: 12/08/15

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0764	0.0020	"	0.0975	ND	78.4	30-131			
Toluene	0.0804	0.0050	"	0.0975	ND	82.5	30-134			
Ethylbenzene	0.0962	0.0050	"	0.0967	ND	99.5	22-153			
m,p-Xylene	0.185	0.010	"	0.195	ND	94.9	10-159			
o-Xylene	0.0886	0.0050	"	0.0959	ND	92.4	31-151			
Xylenes (total)	0.273	0.010	"		0.00		30-160			
Gasoline Range Hydrocarbons	2.17	0.50	"		ND		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0398</i>		<i>"</i>	<i>0.0390</i>		<i>102</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0380</i>		<i>"</i>	<i>0.0390</i>		<i>97.4</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0380</i>		<i>"</i>	<i>0.0390</i>		<i>97.3</i>	<i>21-167</i>			

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/09/15 06:51

**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 1512077 - EPA 5030 Soil MS**

Matrix Spike Dup (1512077-MSD1)		Source: 1512063-03			Prepared & Analyzed: 12/08/15					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0737	0.0020	"	0.0945	ND	78.0	30-131	3.65	34	
Toluene	0.0781	0.0050	"	0.0945	ND	82.6	30-134	2.93	30	
Ethylbenzene	0.0931	0.0050	"	0.0938	ND	99.3	22-153	3.25	24	
m,p-Xylene	0.180	0.010	"	0.189	ND	95.5	10-159	2.44	68	
o-Xylene	0.0857	0.0050	"	0.0930	ND	92.2	31-151	3.34	38	
Xylenes (total)	0.266	0.010	"		0.00		30-160	2.73	30	
Gasoline Range Hydrocarbons	2.06	0.50	"		ND		30-160	5.08	30	
Surrogate: 1,2-Dichloroethane-d4	0.0390		"	0.0378		103	23-173			
Surrogate: Toluene-d8	0.0369		"	0.0378		97.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0376		"	0.0378		99.4	21-167			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/09/15 06:51

### 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

December 10, 2015

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 12/09/15 17:25. 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  
President





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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/10/15 06:38

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS21@5'	1512078-01	Soil	12/09/15 08:45	12/09/15 17:25
GW07	1512078-02	Water	12/09/15 08:15	12/09/15 17:25

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/10/15 06:38

# Summit Scientific 15/2078

S<sub>2</sub>

741 Corporate Circle, Suite J&K ♦ Golden, Colorado 80401  
303-277-9310 ♦ 303-374-5933

Page 1 of 1

Client: PDC Project Manager: Mark Longhurst  
Address: E-Mail: mark.longhurst@pdc.com  
City/State/Zip: Project Name: URSULA 2  
Phone: Fax: Project Number:  
Sampler Name: M.H. P

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions
					HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	GBEN	DEO	BTEX		
1	SS21ES	12/9/15	8:45	1													
2	GW07		8:15	3	X				X				X	X			
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Relinquished by:	Date/Time: 12/9/15 17:00	Received by:	Date/Time: 12/9/15 1700	Turn Around Time (Check)	Notes:
Relinquished by:	Date/Time: 12/9/15 1725	Received by:	Date/Time: 12-9-15 1725	Same Day <input checked="" type="checkbox"/> 72 hours <input type="checkbox"/>	on ice
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours <input type="checkbox"/> Standard <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	48 hours <input type="checkbox"/>	
Sample Integrity: Temperature Upon Receipt: 5.5°C				Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/10/15 06:38

SS21@5'  
1512078-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/09/15 08:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1512090	12/09/15	12/09/15	8015M	

Date Sampled: 12/09/15 08:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.3 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/09/15 08:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1512089	12/09/15	12/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/09/15 08:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/10/15 06:38

**GW07**  
**1512078-02 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/09/15 08:15

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1512086	12/09/15	12/09/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>1.3</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>3.2</b>	1.0	"	"	"	"	"	"	

Date Sampled: 12/09/15 08:15

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		84.9 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		99.4 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.6 %	45-146		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/10/15 06:38

**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 1512090 - EPA 3550A**

**Blank (1512090-BLK1)**

Prepared & Analyzed: 12/09/15

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	11.8		"	12.5		94.0	30-150			

**LCS (1512090-BS1)**

Prepared & Analyzed: 12/09/15

C10-C28 (DRO)	485	50	mg/kg	499		97.3	73-134			
Surrogate: o-Terphenyl	11.8		"	12.5		94.7	30-150			

**Matrix Spike (1512090-MS1)**

Source: 1512078-01

Prepared & Analyzed: 12/09/15

C10-C28 (DRO)	509	50	mg/kg	459	24.1	106	50-148			
Surrogate: o-Terphenyl	11.7		"	11.5		102	30-150			

**Matrix Spike Dup (1512090-MSD1)**

Source: 1512078-01

Prepared & Analyzed: 12/09/15

C10-C28 (DRO)	484	50	mg/kg	470	24.1	97.9	50-148	5.10	13	
Surrogate: o-Terphenyl	11.2		"	11.8		95.3	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/10/15 06:38

**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 1512086 - EPA 5030 Water MS**

**Blank (1512086-BLK1)**

Prepared & Analyzed: 12/09/15

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.0		"	13.3		97.4	37-154			
Surrogate: Toluene-d8	12.9		"	13.3		96.5	45-149			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.5	45-146			

**LCS (1512086-BS1)**

Prepared & Analyzed: 12/09/15

Benzene	28.5	1.0	ug/l	50.0		57.0	51-132			
Toluene	29.9	1.0	"	50.0		59.8	51-138			
Ethylbenzene	32.6	1.0	"	50.0		65.2	58-146			
m,p-Xylene	62.4	2.0	"	100		62.4	57-144			
o-Xylene	30.4	1.0	"	50.0		60.8	53-146			
Surrogate: 1,2-Dichloroethane-d4	14.4		"	13.3		108	37-154			
Surrogate: Toluene-d8	13.3		"	13.3		99.9	45-149			
Surrogate: 4-Bromofluorobenzene	12.7		"	13.3		95.6	45-146			

**Matrix Spike (1512086-MS1)**

Source: 1512077-01

Prepared & Analyzed: 12/09/15

Benzene	30.5	1.0	ug/l	50.0	ND	61.0	34-141			
Toluene	32.0	1.0	"	50.0	ND	63.9	27-151			
Ethylbenzene	34.3	1.0	"	50.0	ND	68.7	29-160			
m,p-Xylene	64.9	2.0	"	100	ND	64.9	20-166			
o-Xylene	31.8	1.0	"	50.0	ND	63.6	33-159			
Surrogate: 1,2-Dichloroethane-d4	13.6		"	13.3		102	37-154			
Surrogate: Toluene-d8	13.5		"	13.3		101	45-149			
Surrogate: 4-Bromofluorobenzene	12.3		"	13.3		92.3	45-146			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/10/15 06:38

**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 1512086 - EPA 5030 Water MS**

Matrix Spike Dup (1512086-MSD1)				Source: 1512077-01		Prepared & Analyzed: 12/09/15				
Benzene	29.0	1.0	ug/l	50.0	ND	58.0	34-141	4.98	32	
Toluene	30.5	1.0	"	50.0	ND	61.0	27-151	4.67	25	
Ethylbenzene	34.0	1.0	"	50.0	ND	68.0	29-160	1.02	50	
m,p-Xylene	64.8	2.0	"	100	ND	64.8	20-166	0.0617	36	
o-Xylene	31.4	1.0	"	50.0	ND	62.9	33-159	1.14	26	
Surrogate: 1,2-Dichloroethane-d4	13.8		"	13.3		104	37-154			
Surrogate: Toluene-d8	13.2		"	13.3		99.0	45-149			
Surrogate: 4-Bromofluorobenzene	12.5		"	13.3		94.1	45-146			

**Batch 1512089 - EPA 5030 Soil MS**

Blank (1512089-BLK1)				Prepared & Analyzed: 12/09/15						
Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0394		"	0.0400		98.6	23-173			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		99.9	21-167			

LCS (1512089-BS1)				Prepared & Analyzed: 12/09/15						
Naphthalene	ND	0.010	mg/kg							
Benzene	0.0783	0.0020	"	0.100		78.3	58-130			
Toluene	0.0827	0.0050	"	0.100		82.7	61-134			
Ethylbenzene	0.0988	0.0050	"	0.0992		99.6	74-139			
m,p-Xylene	0.190	0.010	"	0.200		95.4	73-137			
o-Xylene	0.0911	0.0050	"	0.0984		92.6	73-141			
Xylenes (total)	0.281	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.20	0.50	"				30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0397		"	0.0400		99.2	23-173			
Surrogate: Toluene-d8	0.0396		"	0.0400		99.1	20-170			
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0400		98.9	21-167			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/10/15 06:38

**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 1512089 - EPA 5030 Soil MS**

**Matrix Spike (1512089-MS1)**

**Source: 1512078-01**

**Prepared & Analyzed: 12/09/15**

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0767	0.0020	"	0.0977	ND	78.5	30-131			
Toluene	0.0816	0.0050	"	0.0977	ND	83.6	30-134			
Ethylbenzene	0.0961	0.0050	"	0.0969	ND	99.2	22-153			
m,p-Xylene	0.185	0.010	"	0.195	ND	94.8	10-159			
o-Xylene	0.0887	0.0050	"	0.0961	ND	92.3	31-151			
Xylenes (total)	0.273	0.010	"		0.00		30-160			
Gasoline Range Hydrocarbons	2.17	0.50	"		ND		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0394</i>		<i>"</i>	<i>0.0391</i>		<i>101</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0387</i>		<i>"</i>	<i>0.0391</i>		<i>99.2</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0386</i>		<i>"</i>	<i>0.0391</i>		<i>98.8</i>	<i>21-167</i>			

**Matrix Spike Dup (1512089-MSD1)**

**Source: 1512078-01**

**Prepared & Analyzed: 12/09/15**

Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0755	0.0020	"	0.0982	ND	76.9	30-131	1.57	34	
Toluene	0.0810	0.0050	"	0.0982	ND	82.4	30-134	0.822	30	
Ethylbenzene	0.0953	0.0050	"	0.0974	ND	97.8	22-153	0.855	24	
m,p-Xylene	0.183	0.010	"	0.196	ND	93.4	10-159	0.898	68	
o-Xylene	0.0890	0.0050	"	0.0967	ND	92.1	31-151	0.290	38	
Xylenes (total)	0.272	0.010	"		0.00		30-160	0.511	30	
Gasoline Range Hydrocarbons	2.18	0.50	"		ND		30-160	0.593	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0393</i>		<i>"</i>	<i>0.0393</i>		<i>99.9</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0383</i>		<i>"</i>	<i>0.0393</i>		<i>97.3</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0379</i>		<i>"</i>	<i>0.0393</i>		<i>96.5</i>	<i>21-167</i>			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/10/15 06:38

### 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

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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.*

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

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 11, 2015

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 12/10/15 18:15. 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  
President



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/11/15 06:00

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS22@5'	1512089-01	Soil	12/10/15 09:45	12/10/15 18:15
SS23@5'	1512089-02	Soil	12/10/15 09:50	12/10/15 18:15

Summit Scientific

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

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/11/15 06:00

# Summit Scientific *15/2087*

S<sub>2</sub>

741 Corporate Circle, Suite J ♦ Golden, Colorado 80401  
303-277-9310 ♦ 303-374-5933

Page 1 of 1

Client: *PDC* Project Manager: *Mark Longhurst*  
Address: E-Mail: *Mark.Longhurst@PDC.com*  
City/State/Zip:  
Phone: Fax: Project Name: *URSULA 2*  
Sampler Name: *Matt P* Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions
					HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	6855A (250)	6855B (500)	6855C (1000)	6855D (2000)	
1	<i>SS22e5'</i>	<i>12/10/15</i>	<i>9:45</i>	<i>1</i>			<i>x</i>			<i>x</i>			<i>x</i>	<i>x</i>			
2	<i>SS23e5'</i>		<i>9:50</i>	<i>1</i>			<i>x</i>			<i>x</i>			<i>x</i>	<i>x</i>			
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Relinquished by: <i>[Signature]</i>	Date/Time: <i>12/10/15 17:00</i>	Received by: <i>[Signature]</i>	Date/Time: <i>12-10-15 16:00</i>	Turn Around Time (Check)	Notes:
Relinquished by: <i>[Signature]</i>	Date/Time: <i>12-10-15 18:15</i>	Received by:	Date/Time:	Same Day <input checked="" type="checkbox"/> 72 hours —	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours — Standard —	
Relinquished by:	Date/Time:	Received by:	Date/Time:	48 hours —	
Sample Integrity:				Temperature Upon Receipt: <i>6.2</i>	
Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No					

www.s2scientific.com

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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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/11/15 06:00

SS22@5'  
1512089-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/10/15 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	330	50	mg/kg	1	1512099	12/10/15	12/10/15	8015M	

Date Sampled: 12/10/15 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		112 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/10/15 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.86	0.010	mg/kg	1	1512100	12/10/15	12/10/15	EPA 8260B	
Benzene	4.1	0.20	"	100	"	"	12/10/15	"	
Toluene	1.3	0.50	"	"	"	"	"	"	
Ethylbenzene	25	0.50	"	"	"	"	"	"	
Xylenes (total)	160	1.0	"	"	"	"	12/10/15	"	
Gasoline Range Hydrocarbons	4600	50	"	"	"	"	12/10/15	"	

Date Sampled: 12/10/15 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		122 %	23-173		"	"	12/10/15	"	
Surrogate: Toluene-d8		138 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		168 %	21-167		"	"	"	"	S-02

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/11/15 06:00

**SS23@5'**  
**1512089-02 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/10/15 09:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	140	50	mg/kg	1	1512099	12/10/15	12/10/15	8015M	

Date Sampled: 12/10/15 09:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		114 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/10/15 09:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.94	0.010	mg/kg	1	1512100	12/10/15	12/10/15	EPA 8260B	
Benzene	0.084	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	12/10/15	"	
Ethylbenzene	2.0	0.50	"	100	"	"	"	"	
Xylenes (total)	0.93	0.010	"	1	"	"	12/10/15	"	
Gasoline Range Hydrocarbons	990	50	"	100	"	"	12/10/15	"	

Date Sampled: 12/10/15 09:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		84.4 %	23-173		"	"	12/10/15	"	
Surrogate: Toluene-d8		117 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/11/15 06:00

**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 1512099 - EPA 3550A**

**Blank (1512099-BLK1)**

Prepared & Analyzed: 12/10/15

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	12.3		"	12.5		98.5	30-150			

**LCS (1512099-BS1)**

Prepared & Analyzed: 12/10/15

C10-C28 (DRO)	491	50	mg/kg	499		98.5	73-134			
Surrogate: o-Terphenyl	11.7		"	12.5		94.0	30-150			

**Matrix Spike (1512099-MS1)**

Source: 1512083-01

Prepared & Analyzed: 12/10/15

C10-C28 (DRO)	1940	50	mg/kg	485	3040	NR	50-148			QM-4X
Surrogate: o-Terphenyl	12.4		"	12.2		102	30-150			

**Matrix Spike Dup (1512099-MSD1)**

Source: 1512083-01

Prepared & Analyzed: 12/10/15

C10-C28 (DRO)	2960	50	mg/kg	484	3040	NR	50-148	41.8	13	QM-4X
Surrogate: o-Terphenyl	13.4		"	12.1		110	30-150			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/11/15 06:00

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

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

**Batch 1512100 - EPA 5030 Soil MS**

**Blank (1512100-BLK1)**

Prepared & Analyzed: 12/10/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0381</i>		<i>"</i>	<i>0.0400</i>		<i>95.3</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0394</i>		<i>"</i>	<i>0.0400</i>		<i>98.4</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0404</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>21-167</i>			

**LCS (1512100-BS1)**

Prepared & Analyzed: 12/10/15

Naphthalene	ND	0.010	mg/kg							
Benzene	0.0762	0.0020	"	0.100		76.2	58-130			
Toluene	0.0805	0.0050	"	0.100		80.5	61-134			
Ethylbenzene	0.0972	0.0050	"	0.0992		98.0	74-139			
m,p-Xylene	0.188	0.010	"	0.200		94.4	73-137			
o-Xylene	0.0908	0.0050	"	0.0984		92.3	73-141			
Xylenes (total)	0.279	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.22	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0387</i>		<i>"</i>	<i>0.0400</i>		<i>96.8</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0385</i>		<i>"</i>	<i>0.0400</i>		<i>96.3</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0391</i>		<i>"</i>	<i>0.0400</i>		<i>97.7</i>	<i>21-167</i>			

**Matrix Spike (1512100-MS1)**

Source: 1512053-01

Prepared & Analyzed: 12/10/15

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0708	0.0020	"	0.0931	ND	76.1	30-131			
Toluene	0.0764	0.0050	"	0.0931	ND	82.0	30-134			
Ethylbenzene	0.0907	0.0050	"	0.0924	ND	98.2	22-153			
m,p-Xylene	0.173	0.010	"	0.186	ND	92.9	10-159			
o-Xylene	0.0846	0.0050	"	0.0916	ND	92.3	31-151			
Xylenes (total)	0.257	0.010	"		0.00		30-160			
Gasoline Range Hydrocarbons	2.04	0.50	"		ND		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0370</i>		<i>"</i>	<i>0.0372</i>		<i>99.4</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0358</i>		<i>"</i>	<i>0.0372</i>		<i>96.2</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0358</i>		<i>"</i>	<i>0.0372</i>		<i>96.2</i>	<i>21-167</i>			

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/11/15 06:00

**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 1512100 - EPA 5030 Soil MS**

Matrix Spike Dup (1512100-MSD1)		Source: 1512053-01			Prepared & Analyzed: 12/10/15					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0722	0.0020	"	0.0940	ND	76.8	30-131	1.92	34	
Toluene	0.0772	0.0050	"	0.0940	ND	82.1	30-134	1.05	30	
Ethylbenzene	0.0921	0.0050	"	0.0932	ND	98.8	22-153	1.52	24	
m,p-Xylene	0.175	0.010	"	0.188	ND	93.5	10-159	1.60	68	
o-Xylene	0.0845	0.0050	"	0.0925	ND	91.3	31-151	0.127	38	
Xylenes (total)	0.260	0.010	"		0.00		30-160	1.03	30	
Gasoline Range Hydrocarbons	2.04	0.50	"		ND		30-160	0.0803	30	
Surrogate: 1,2-Dichloroethane-d4	0.0375		"	0.0376		99.7	23-173			
Surrogate: Toluene-d8	0.0363		"	0.0376		96.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0370		"	0.0376		98.6	21-167			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/11/15 06:00

### Notes and Definitions

S-02      The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

QM-4X    The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.

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

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 13, 2015

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 12/11/15 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  
President



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/13/15 20:17

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS24@5'	1512101-01	Soil	12/11/15 08:35	12/11/15 17:00
SS25@5'	1512101-02	Soil	12/11/15 11:15	12/11/15 17:00
SS26@5'	1512101-03	Soil	12/11/15 12:45	12/11/15 17:00
SS27@5'	1512101-04	Soil	12/11/15 12:05	12/11/15 17:00

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/13/15 20:17

SS24@5'  
1512101-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/11/15 08:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1512114	12/11/15	12/11/15	8015M	

Date Sampled: 12/11/15 08:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.9 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/11/15 08:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.072	0.010	mg/kg	1	1512113	12/11/15	12/11/15	EPA 8260B	
Benzene	0.041	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.041	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.18	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2.6	0.50	"	"	"	"	"	"	

Date Sampled: 12/11/15 08:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		82.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		92.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.7 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/13/15 20:17

**SS25@5'**  
**1512101-02 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/11/15 11:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	510	50	mg/kg	1	1512114	12/11/15	12/11/15	8015M	

Date Sampled: 12/11/15 11:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.6 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/11/15 11:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	2.2	1.0	mg/kg	100	1512113	12/11/15	12/11/15	EPA 8260B	
Benzene	0.47	0.0020	"	1	"	"	"	"	
Toluene	1.3	0.50	"	100	"	"	"	"	
Ethylbenzene	3.9	0.50	"	"	"	"	"	"	
Xylenes (total)	77	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2500	50	"	"	"	"	"	"	

Date Sampled: 12/11/15 11:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		85.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/13/15 20:17

**SS26@5'**  
**1512101-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/11/15 12:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1512114	12/11/15	12/11/15	8015M	

Date Sampled: 12/11/15 12:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.9 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/11/15 12:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1512113	12/11/15	12/11/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/11/15 12:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		81.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		91.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.1 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/13/15 20:17

**SS27@5'**  
**1512101-04 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/11/15 12:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1512114	12/11/15	12/11/15	8015M	

Date Sampled: 12/11/15 12:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.6 %	30-150		"	"	"	"	

#### Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/11/15 12:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1512113	12/11/15	12/11/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/11/15 12:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		87.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.5 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/13/15 20:17

**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 1512114 - EPA 3550A**

**Blank (1512114-BLK1)**

Prepared & Analyzed: 12/11/15

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	11.8		"	12.5		94.3	30-150			

**LCS (1512114-BS1)**

Prepared & Analyzed: 12/11/15

C10-C28 (DRO)	476	50	mg/kg	499		95.4	73-134			
Surrogate: o-Terphenyl	11.8		"	12.5		94.4	30-150			

**Matrix Spike (1512114-MS1)**

Source: 1512101-04

Prepared & Analyzed: 12/11/15

C10-C28 (DRO)	436	50	mg/kg	446	29.4	91.3	50-148			
Surrogate: o-Terphenyl	10.6		"	11.2		95.2	30-150			

**Matrix Spike Dup (1512114-MSD1)**

Source: 1512101-04

Prepared & Analyzed: 12/11/15

C10-C28 (DRO)	432	50	mg/kg	448	29.4	89.9	50-148	0.891	13	
Surrogate: o-Terphenyl	10.6		"	11.2		94.2	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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/13/15 20:17

**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 1512113 - EPA 5030 Soil MS**

**LCS (1512113-BS1)**

Prepared & Analyzed: 12/11/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0941	0.0020	"	0.100		94.1	58-130			
Toluene	0.0928	0.0050	"	0.100		92.8	61-134			
Ethylbenzene	0.105	0.0050	"	0.0992		106	74-139			
m,p-Xylene	0.203	0.010	"	0.200		102	73-137			
o-Xylene	0.0994	0.0050	"	0.0984		101	73-141			
Xylenes (total)	0.303	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.17	0.50	"				30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0328		"	0.0400		82.1	23-173			
Surrogate: Toluene-d8	0.0374		"	0.0400		93.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0357		"	0.0400		89.2	21-167			

**Matrix Spike (1512113-MS1)**

Source: 1512101-04

Prepared & Analyzed: 12/11/15

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0864	0.0020	"	0.0923	ND	93.7	30-131			
Toluene	0.0866	0.0050	"	0.0923	ND	93.8	30-134			
Ethylbenzene	0.0992	0.0050	"	0.0915	ND	108	22-153			
m,p-Xylene	0.194	0.010	"	0.184	ND	105	10-159			
o-Xylene	0.0944	0.0050	"	0.0908	ND	104	31-151			
Xylenes (total)	0.288	0.010	"		0.00		30-160			
Gasoline Range Hydrocarbons	2.09	0.50	"		ND		30-160			
Surrogate: 1,2-Dichloroethane-d4	0.0301		"	0.0369		81.4	23-173			
Surrogate: Toluene-d8	0.0339		"	0.0369		91.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0329		"	0.0369		89.2	21-167			

**Matrix Spike Dup (1512113-MSD1)**

Source: 1512101-04

Prepared & Analyzed: 12/11/15

Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0901	0.0020	"	0.0969	ND	93.0	30-131	4.18	34	
Toluene	0.0934	0.0050	"	0.0969	ND	96.4	30-134	7.56	30	
Ethylbenzene	0.105	0.0050	"	0.0961	ND	110	22-153	6.08	24	
m,p-Xylene	0.206	0.010	"	0.193	ND	106	10-159	5.87	68	
o-Xylene	0.0993	0.0050	"	0.0953	ND	104	31-151	5.00	38	
Xylenes (total)	0.305	0.010	"		0.00		30-160	5.58	30	
Gasoline Range Hydrocarbons	2.19	0.50	"		ND		30-160	4.51	30	
Surrogate: 1,2-Dichloroethane-d4	0.0308		"	0.0388		79.3	23-173			
Surrogate: Toluene-d8	0.0355		"	0.0388		91.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0345		"	0.0388		88.9	21-167			

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.

Page 8 of 9



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/13/15 20:17

### 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

*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.*

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

December 16, 2015

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 12/14/15 18:12. 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  
President



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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/16/15 10:26

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS28@5	1512118-01	Soil	12/14/15 08:30	12/14/15 18:12
SS29@5	1512118-02	Soil	12/14/15 11:40	12/14/15 18:12
SS30@5	1512118-03	Soil	12/14/15 11:55	12/14/15 18:12
SS31@5	1512118-04	Soil	12/14/15 14:05	12/14/15 18:12
CS29	1512118-05	Soil	12/14/15 15:45	12/14/15 18:12
CS09-R(2)	1512118-06	Soil	12/14/15 15:50	12/14/15 18:12
CS26-R	1512118-07	Soil	12/14/15 16:00	12/14/15 18:12

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/16/15 10:26

SS28@5  
1512118-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/14/15 08:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1512136	12/14/15	12/14/15	8015M	

Date Sampled: 12/14/15 08:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.1 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/14/15 08:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1512135	12/14/15	12/14/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/14/15 08:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		86.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.8 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/16/15 10:26

**SS29@5**  
**1512118-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/14/15 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1512136	12/14/15	12/14/15	8015M	

Date Sampled: 12/14/15 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		91.8 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/14/15 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1512135	12/14/15	12/14/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/14/15 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		82.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		92.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.2 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/16/15 10:26

**SS30@5**  
**1512118-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/14/15 11:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	350	50	mg/kg	1	1512136	12/14/15	12/14/15	8015M	

Date Sampled: 12/14/15 11:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.2 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/14/15 11:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	4.0	1.0	mg/kg	100	1512135	12/14/15	12/14/15	EPA 8260B	
Benzene	2.4	0.20	"	"	"	"	"	"	
Toluene	1.3	0.50	"	"	"	"	12/14/15	"	
Ethylbenzene	9.2	0.50	"	"	"	"	12/14/15	"	
Xylenes (total)	55	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	3800	50	"	"	"	"	12/14/15	"	

Date Sampled: 12/14/15 11:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		90.1 %	23-173		"	"	12/14/15	"	
Surrogate: Toluene-d8		116 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		120 %	21-167		"	"	"	"	

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/16/15 10:26

**SS31@5**  
**1512118-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/14/15 14:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1512136	12/14/15	12/14/15	8015M	

Date Sampled: 12/14/15 14:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		99.3 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/14/15 14:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1512135	12/14/15	12/14/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/14/15 14:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.6 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/16/15 10:26

**CS29**  
**1512118-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/14/15 15:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1512136	12/14/15	12/14/15	8015M	

Date Sampled: 12/14/15 15:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		91.2 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/14/15 15:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1512135	12/14/15	12/15/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	77	0.50	"	"	"	"	"	"	

Date Sampled: 12/14/15 15:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		79.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		136 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/16/15 10:26

**CS09-R(2)**  
**1512118-06 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/14/15 15:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1512136	12/14/15	12/14/15	8015M	

Date Sampled: 12/14/15 15:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		92.7 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/14/15 15:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1512135	12/14/15	12/15/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	12/14/15	"	
Ethylbenzene	ND	0.0050	"	"	"	"	12/15/15	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>49</b>	<b>0.50</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	

Date Sampled: 12/14/15 15:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		90.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		112 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		128 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/16/15 10:26

**CS26-R**  
**1512118-07 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/14/15 16:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	51	50	mg/kg	1	1512136	12/14/15	12/15/15	8015M	

Date Sampled: 12/14/15 16:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.9 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/14/15 16:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1512135	12/14/15	12/15/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	12/14/15	"	
Ethylbenzene	ND	0.0050	"	"	"	"	12/15/15	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	56	0.50	"	"	"	"	"	"	

Date Sampled: 12/14/15 16:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		94.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		110 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		143 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/16/15 10:26

**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 1512136 - EPA 3550A**

**Blank (1512136-BLK1)**

Prepared & Analyzed: 12/14/15

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 12.1 " 12.5 96.6 30-150

**LCS (1512136-BS1)**

Prepared & Analyzed: 12/14/15

C10-C28 (DRO) 472 50 mg/kg 499 94.5 73-134

Surrogate: o-Terphenyl 12.1 " 12.5 96.7 30-150

**Matrix Spike (1512136-MS1)**

Source: 1512118-01

Prepared & Analyzed: 12/14/15

C10-C28 (DRO) 466 50 mg/kg 472 25.9 93.3 50-148

Surrogate: o-Terphenyl 11.3 " 11.8 95.8 30-150

**Matrix Spike Dup (1512136-MSD1)**

Source: 1512118-01

Prepared & Analyzed: 12/14/15

C10-C28 (DRO) 478 50 mg/kg 472 25.9 95.8 50-148 2.49 13

Surrogate: o-Terphenyl 11.8 " 11.8 99.6 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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/16/15 10:26

**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 1512135 - EPA 5030 Soil MS**

**Blank (1512135-BLK1)**

Prepared & Analyzed: 12/14/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0327</i>		<i>"</i>	<i>0.0400</i>		<i>81.7</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0374</i>		<i>"</i>	<i>0.0400</i>		<i>93.4</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0370</i>		<i>"</i>	<i>0.0400</i>		<i>92.4</i>	<i>21-167</i>			

**LCS (1512135-BS1)**

Prepared & Analyzed: 12/14/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0875	0.0020	"	0.100		87.5	58-130			
Toluene	0.0778	0.0050	"	0.100		77.8	61-134			
Ethylbenzene	0.0953	0.0050	"	0.0992		96.0	74-139			
m,p-Xylene	0.185	0.010	"	0.200		92.6	73-137			
o-Xylene	0.0884	0.0050	"	0.0984		89.8	73-141			
Xylenes (total)	0.273	0.010	"				0-200			
Gasoline Range Hydrocarbons	1.95	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0326</i>		<i>"</i>	<i>0.0400</i>		<i>81.4</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0344</i>		<i>"</i>	<i>0.0400</i>		<i>86.1</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0364</i>		<i>"</i>	<i>0.0400</i>		<i>91.0</i>	<i>21-167</i>			

**Matrix Spike (1512135-MS1)**

Source: 1512118-01

Prepared & Analyzed: 12/14/15

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0864	0.0020	"	0.0960	ND	90.1	30-131			
Toluene	0.0887	0.0050	"	0.0960	ND	92.4	30-134			
Ethylbenzene	0.101	0.0050	"	0.0952	ND	106	22-153			
m,p-Xylene	0.197	0.010	"	0.192	ND	103	10-159			
o-Xylene	0.0930	0.0050	"	0.0944	ND	98.5	31-151			
Xylenes (total)	0.290	0.010	"		0.00		30-160			
Gasoline Range Hydrocarbons	2.07	0.50	"		ND		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0311</i>		<i>"</i>	<i>0.0384</i>		<i>80.9</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0357</i>		<i>"</i>	<i>0.0384</i>		<i>92.9</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0346</i>		<i>"</i>	<i>0.0384</i>		<i>90.1</i>	<i>21-167</i>			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/16/15 10:26

**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 1512135 - EPA 5030 Soil MS**

Matrix Spike Dup (1512135-MSD1)		Source: 1512118-01			Prepared & Analyzed: 12/14/15					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0954	0.0020	"	0.0954	ND	100	30-131	9.85	34	
Toluene	0.0896	0.0050	"	0.0954	ND	93.9	30-134	1.07	30	
Ethylbenzene	0.104	0.0050	"	0.0947	ND	110	22-153	3.57	24	
m,p-Xylene	0.204	0.010	"	0.190	ND	107	10-159	3.72	68	
o-Xylene	0.0978	0.0050	"	0.0939	ND	104	31-151	4.99	38	
Xylenes (total)	0.302	0.010	"		0.00		30-160	4.13	30	
Gasoline Range Hydrocarbons	2.14	0.50	"		ND		30-160	3.34	30	
Surrogate: 1,2-Dichloroethane-d4	0.0334		"	0.0382		87.6	23-173			
Surrogate: Toluene-d8	0.0356		"	0.0382		93.3	20-170			
Surrogate: 4-Bromofluorobenzene	0.0337		"	0.0382		88.3	21-167			

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/16/15 10:26

### 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

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

*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.*

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 17, 2015

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Ursula 2

Enclosed are the results of analyses for samples received by Summit Scientific on 12/16/15 17:45. 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  
President





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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/17/15 06:09

**GW08**  
**1512135-01 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/16/15 09:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1512149	12/16/15	12/16/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>10</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>130</b>	1.0	"	"	"	"	"	"	

Date Sampled: 12/16/15 09:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		88.5 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.4 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.0 %	45-146		"	"	"	"	

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/17/15 06:09

## 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 1512149 - EPA 5030 Water MS

##### Blank (1512149-BLK1)

Prepared & Analyzed: 12/16/15

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	11.6		"	13.3		86.9	37-154			
Surrogate: Toluene-d8	12.2		"	13.3		91.5	45-149			
Surrogate: 4-Bromofluorobenzene	12.1		"	13.3		90.8	45-146			

##### LCS (1512149-BS1)

Prepared & Analyzed: 12/16/15

Benzene	32.6	1.0	ug/l	33.3		97.7	51-132			
Toluene	32.2	1.0	"	33.3		96.7	51-138			
Ethylbenzene	36.6	1.0	"	33.1		111	58-146			
m,p-Xylene	70.6	2.0	"	66.5		106	57-144			
o-Xylene	34.1	1.0	"	32.8		104	53-146			
Surrogate: 1,2-Dichloroethane-d4	11.8		"	13.3		88.2	37-154			
Surrogate: Toluene-d8	12.6		"	13.3		94.1	45-149			
Surrogate: 4-Bromofluorobenzene	12.1		"	13.3		90.8	45-146			

##### Matrix Spike (1512149-MS1)

Source: 1512103-01

Prepared & Analyzed: 12/16/15

Benzene	53.2	1.0	ug/l	33.3		160	34-141			
Toluene	31.6	1.0	"	33.3		94.9	27-151			
Ethylbenzene	38.1	1.0	"	33.1		115	29-160			
m,p-Xylene	73.4	2.0	"	66.5		110	20-166			
o-Xylene	35.2	1.0	"	32.8		107	33-159			
Surrogate: 1,2-Dichloroethane-d4	12.2		"	13.3		91.7	37-154			
Surrogate: Toluene-d8	12.0		"	13.3		89.8	45-149			
Surrogate: 4-Bromofluorobenzene	12.2		"	13.3		91.4	45-146			

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: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/17/15 06:09

**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 1512149 - EPA 5030 Water MS**

Matrix Spike Dup (1512149-MSD1)	Source: 1512103-01			Prepared & Analyzed: 12/16/15						
Benzene	52.0	1.0	ug/l	33.3	156	34-141	2.34	32		
Toluene	31.8	1.0	"	33.3	95.3	27-151	0.442	25		
Ethylbenzene	39.2	1.0	"	33.1	118	29-160	2.85	50		
m,p-Xylene	74.7	2.0	"	66.5	112	20-166	1.74	36		
o-Xylene	35.5	1.0	"	32.8	108	33-159	0.792	26		
Surrogate: 1,2-Dichloroethane-d4	11.6		"	13.3	87.4	37-154				
Surrogate: Toluene-d8	11.8		"	13.3	88.7	45-149				
Surrogate: 4-Bromofluorobenzene	12.5		"	13.3	94.0	45-146				

Summit Scientific

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

Project: Ursula 2  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/17/15 06:09

### 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

*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.*

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