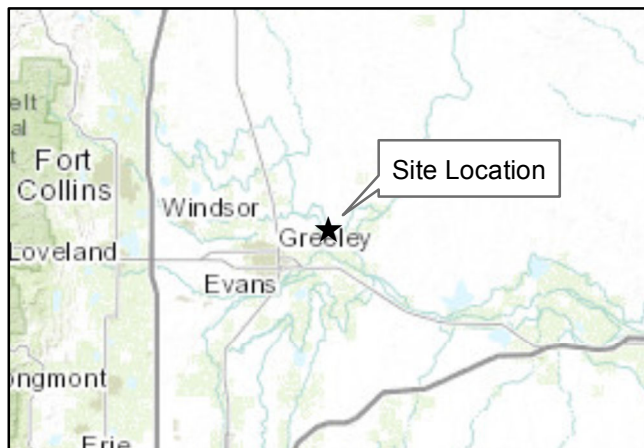


1,500 750 0 1,500 Feet



### Figure 1

Site Location Map  
 Capehart 1, 31, 42-29  
 SWNE S29 T6N R64W  
 Weld County, Colorado

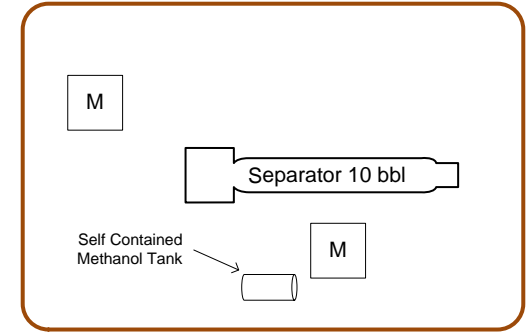
Drawn By: DBA  
 Date: 08/21/2013





Surface  
Drainage

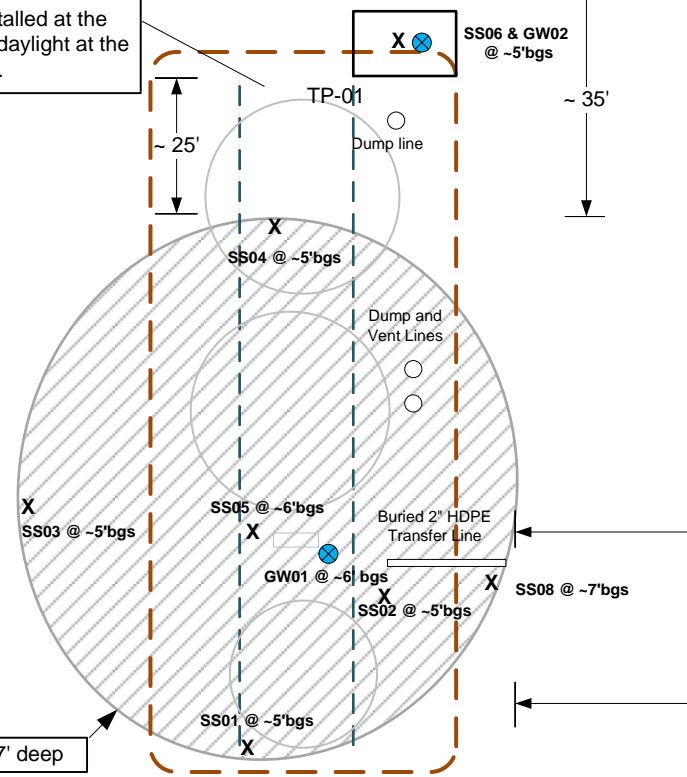
Access Road



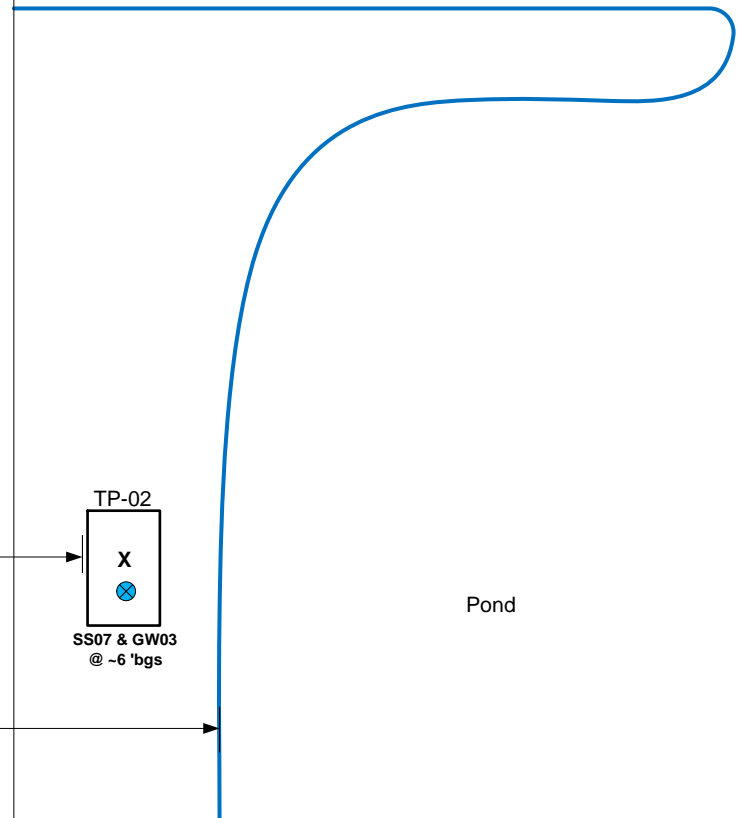
Drainage Flow →

SW01

Horizontal remediation pipes installed at the base of the excavation. Both lines daylight at the north and south ends.



Excavation extents ~ 36' x 22' x 7' deep



DRAWN BY: BDH  
DATE: 03/16/2012

**Facility Diagram**  
PDC Energy – DJ Basin  
Capehart 1, 31, 42-29  
SWNE S29 T6N R64W  
Weld County, CO



5690 Webster Street  
Arvada, CO 80002  
(720) 988-2024

LEGEND

	Earthen Berm
	Former Secondary Containment Location
	Approximate Extent of Excavation
	Soil Sample Location
	Groundwater Sample Location
	Surface Water Sample Location
	Meter Shed

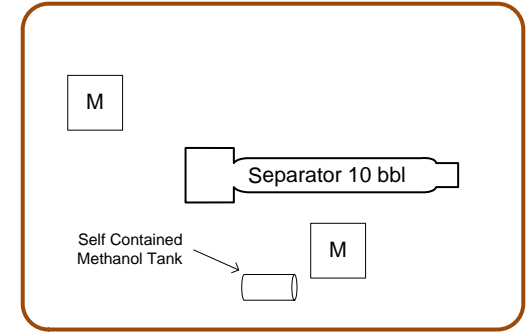
FIGURE 2

Not to Scale



Surface  
Drainage

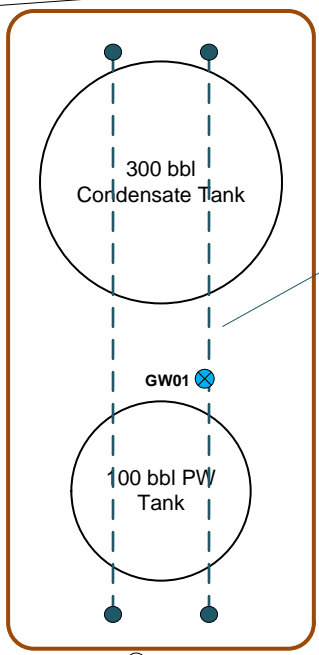
Access Road



Drainage Flow →

SW01

BH01		
Compound (ug/L)	5/2/2013	7/26/2013
Benzene	<1.0	<1.0
Toluene	<1.0	<1.0
Ethylbenzene	<1.0	<1.0
Total Xylenes	<1.0	<1.0



Horizontal  
Remediation Pipes  
Installed at 7' bgs

SURFACE		
Compound (ug/L)	5/2/2013	7/26/2013
Benzene	<1.0	<1.0
Toluene	<1.0	<1.0
Ethylbenzene	<1.0	<1.0
Total Xylenes	<1.0	<1.0

Pond

BH03		
Compound (ug/L)	5/2/2013	7/26/2013
Benzene	<1.0	<1.0
Toluene	<1.0	<1.0
Ethylbenzene	<1.0	<1.0
Total Xylenes	<1.0	<1.0

BH02		
Compound (ug/L)	5/2/2013	7/26/2013
Benzene	<1.0	<1.0
Toluene	<1.0	<1.0
Ethylbenzene	<1.0	<1.0
Total Xylenes	<1.0	<1.0

Note: Surface drainage is estimated based on site topography and is not related to regional topography.

DRAWN BY: ESS  
DATE: 8/14/2013

**Facility Diagram**  
PDC Energy – DJ Basin  
Capehart 1, 31, 42-29  
SWNE S29 T6N R64W  
Weld County, CO



6899 Pecos Street  
Unit C  
Denver, CO 80221

- LEGEND
- Earthen Berm
  - Temporary Monitoring Well
  - Groundwater Sample Collected During Excavation Activities
  - Surface Water Sample Collected During Excavation Activities
  - Quarterly Monitoring Surface Water Sample Location

FIGURE 3  
GROUNDWATER ANALYTICAL RESULTS  
Not to Scale

**TABLE 1**  
**CAPEHART 1, 31, 42-29**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	PID Readings (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzne (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH <sup>(2)</sup> (mg/kg)
SS01	3/12/2012	0.0	0.037	0.15	0.01	0.107	<0.005	0.94
SS02	3/12/2012	1,050	<b>5.8</b>	21	3.9	31.3	0.46	<b>1130</b>
SS03	3/12/2012	0	<0.005	<0.005	<0.005	<0.010	<0.005	<50
SS04	3/12/2012	0	<0.005	0.013	<0.005	0.0279	0.033	2.2
SS05	3/12/2012	0	<0.005	0.0058	<0.005	<0.010	<0.005	0.63
SS06	3/12/2012	0	<0.005	<0.005	<0.005	<0.010	<0.005	<50
SS07	3/12/2012	0	<0.005	<0.005	<0.005	<0.010	<0.005	<50
SS08	3/12/2012	0	<0.005	<0.005	<0.005	<0.010	<0.005	<50
<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>

Notes:

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

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

GRO - Gasoline range organics.

DRO - Diesel range organics.

mg/kg= Milligrams per kilogram.

ppm - Parts per million

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

**TABLE 2**  
**CAPEHART 1, 31, 42-29**  
**GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (feet)
GW01	3/13/2012	<b>100</b>	280	16	175	NM
GW02	3/14/2012	<b>12</b>	14	<1.0	5.2	NM
GW03	3/14/2012	<1.0	<1.0	<1.0	<1.0	NM
BH01	8/15/2012	<1.0	<1.0	<1.0	<2.0	NM
BH01	10/1/2012	<1.0	<1.0	<1.0	<1.0	5.61
BH01	1/28/2013	<1.0	<1.0	<1.0	<1.0	5.62
BH01	5/2/2013	<1.0	<1.0	<1.0	<1.0	4.63
BH01	7/26/2013	<1.0	<1.0	<1.0	<1.0	4.52
BH02	8/15/2012	<1.0	<1.0	<1.0	<2.0	NM
BH02	10/1/2012	<1.0	<1.0	<1.0	<1.0	7.93
BH02	1/28/2013	<1.0	<1.0	<1.0	<1.0	8.12
BH02	5/2/2013	<1.0	<1.0	<1.0	<1.0	7.41
BH02	7/26/2013	<1.0	<1.0	<1.0	<1.0	6.99
BH03	8/15/2012	<1.0	<1.0	<1.0	<2.0	NM
BH03	10/1/2012	<1.0	<1.0	<1.0	<1.0	6.70
BH03	1/28/2013	<1.0	<1.0	<1.0	<1.0	4.83
BH03	5/2/2013	<1.0	<1.0	<1.0	<1.0	4.06
BH03	7/26/2013	<1.0	<1.0	<1.0	<1.0	3.74
<b>COGCC standards for groundwater (ug/L) <sup>(1)</sup></b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	

Notes:

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

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

Sample locations are shown on Figure 2.

ug/L= Micrograms per liter.

NM = Not Measured

**TABLE 3**  
**CAPEHART 1, 31, 42-29**  
**SURFACE WATER ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (feet)
SW01	3/16/2012	<1.0	<1.0	<1.0	<1.0	NM
SURFACE	1/28/2013	<1.0	<1.0	<1.0	<1.0	NM
SURFACE	5/2/2013	<1.0	<1.0	<1.0	<1.0	NM
SURFACE	7/26/2013	<1.0	<1.0	<1.0	<1.0	NM
<b>WQCC Basic Standards for Organic Chemicals (ug/L) <sup>(1)</sup></b>		<b>2.3</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	

Notes:

1). The environmental cleanup standards for surface water that are applicable to this site were referenced from the Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Commission (WQCC) Basic Standards for Organic Chemicals Table (Table). Regulation 31, 5 CCR 1002-31. Note that where there are two standards listed on the Table, the lower standard has been referenced.

\* Surface water confirmation samples were requested by the COGCC on December 3, 2012. Consequently, samples were not collected prior to the first quarter 2013.

**Bold** red values indicate an exceedance of the WQCC Standards for surface water.

Sample locations are shown on Figure 2.

ug/L= Micrograms per liter.

NM = Not Measured

**TABLE 4**  
**CAPEHART 1, 31, 42-29**  
**EFR OPERATIONAL SUMMARY TABLE**

<b>Date</b>	<b>EFR Wells</b>	<b>Total EFR Duration (hours)</b>	<b>Approximate Gallons Extracted</b>
4/10/2012	H01 & H02	8	42
7/4/2012	H01 & H02	8	294

**ATTACHMENT A**

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

March 14, 2012

Brian Humphrey  
Tasman Geosciences  
5690 Webster Street  
Arvada, CO 80002

RE: PDC - Cape Hart 1,31,42-29

Enclosed are the results of analyses for samples received by Summit Scientific on 03/13/12 18:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury For Ben Shrewsbury  
President / Laboratory Director



Tasman Geosciences  
5690 Webster Street  
Arvada CO, 80002

Project: PDC - Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brian Humphrey

Reported:  
03/14/12 07:29

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW01	R203089-01	Water	03/13/12 16:15	03/13/12 18:30

Summit Scientific 203089

5:

741 Corporate Circle, Suite 1 • Golden, Colorado 80401  
303-277-9510 • 303-277-9531 Fax

Page 1 of 1

Client: Tasman Geosciences  
Address: 5690 Webster Street  
City/State/Zip: Arvada, CO 80002  
Phone: (720) 988-2024 Fax:  
Project Manager: Brian Humphrey  
E-Mail: bhumph@pdc.com  
Project Name: Cape Hart 1,31,42-29  
Project Number:

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For				Special Instructions			
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Soil	Groundwater	Air - Canister Serial #	Other (Specify)	Other (Specify)	Other (Specify)	Other (Specify)	Other (Specify)				
GW01	3/13/12 16:15	3	3	X															

Retinquished by: <u>BH</u>	Date/Time: <u>3/13/12-1830</u>	Received by: <u>[Signature]</u>	Date/Time: <u>3/13/12 1830</u>	Turn Around Time (Check):	72 Hours <input type="checkbox"/>	Standard <input checked="" type="checkbox"/>	Notes:
Retinquished by: <u>[Signature]</u>	Date/Time:	Received by:	Date/Time:	Same Day <input checked="" type="checkbox"/>	24 Hours <input type="checkbox"/>	48 Hours <input type="checkbox"/>	
Retinquished by:	Date/Time:	Received in Lab by:	Date/Time:	Sample Integrity:	Temperature Receipt: <u>5.2</u>	Intact: <u>Yes</u> <input type="checkbox"/> <u>No</u> <input checked="" type="checkbox"/>	

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Tasman Geosciences  
5690 Webster Street  
Arvada CO, 80002

Project: PDC - Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brian Humphrey

**Reported:**  
03/14/12 07:29

**GW01**  
**R203089-01 (Water)**

**Summit Scientific**

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

Date Sampled: **03/13/12 16:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>100</b>	1.0	ug/l	1	2031308	03/13/12	03/14/12	EPA 8260B	
<b>Toluene</b>	<b>280</b>	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>16</b>	1.0	"	"	"	"	"	"	
<b>m,p-Xylene</b>	<b>120</b>	2.0	"	"	"	"	"	"	
<b>o-Xylene</b>	<b>55</b>	1.0	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>7.8</b>	1.0	"	"	"	"	"	"	

Date Sampled: **03/13/12 16:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		122 %	57.9-139		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		106 %	83.1-115		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		101 %	80.8-120		"	"	"	"	

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.*



Tasman Geosciences  
5690 Webster Street  
Arvada CO, 80002

Project: PDC - Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brian Humphrey

**Reported:**  
03/14/12 07:29

### Volatile Organic Compounds by EPA Method 8260B - Quality Control

#### Summit Scientific

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

#### Batch 2031308 - EPA 5030 Water MS

##### Blank (2031308-BLK1)

Prepared: 03/13/12 Analyzed: 03/14/12

Benzene	ND	1.0	ug/l								
Toluene	ND	1.0	"								
Ethylbenzene	ND	1.0	"								
m,p-Xylene	ND	2.0	"								
o-Xylene	ND	1.0	"								
Naphthalene	ND	1.0	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>14.5</i>		<i>"</i>	<i>13.2</i>		<i>109</i>	<i>57.9-139</i>				
<i>Surrogate: Toluene-d8</i>	<i>13.8</i>		<i>"</i>	<i>13.3</i>		<i>104</i>	<i>83.1-115</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>12.6</i>		<i>"</i>	<i>13.3</i>		<i>94.8</i>	<i>80.8-120</i>				

##### LCS (2031308-BS1)

Prepared: 03/13/12 Analyzed: 03/14/12

Benzene	26.3	1.0	ug/l	33.3	78.8	60.1-131		10.9
Toluene	28.8	1.0	"	33.3	86.3	65.9-127		11.3
Ethylbenzene	24.6	1.0	"	33.3	73.9	65.1-129		20
m,p-Xylene	52.4	2.0	"	66.7	78.6	66.8-127		20
o-Xylene	27.1	1.0	"	33.3	81.3	61.2-120		20
Naphthalene	ND	1.0	"			85-126		20
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>15.5</i>		<i>"</i>	<i>13.2</i>	<i>117</i>	<i>57.9-139</i>		
<i>Surrogate: Toluene-d8</i>	<i>13.8</i>		<i>"</i>	<i>13.3</i>	<i>103</i>	<i>83.1-115</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>14.0</i>		<i>"</i>	<i>13.3</i>	<i>105</i>	<i>80.8-120</i>		

##### LCS Dup (2031308-BSD1)

Prepared: 03/13/12 Analyzed: 03/14/12

Benzene	26.8	1.0	ug/l	33.3	80.6	60.1-131	2.18	10.9
Toluene	29.0	1.0	"	33.3	87.1	65.9-127	0.865	11.3
Ethylbenzene	25.7	1.0	"	33.3	77.2	65.1-129	4.41	20
m,p-Xylene	55.0	2.0	"	66.7	82.5	66.8-127	4.84	20
o-Xylene	28.6	1.0	"	33.3	85.8	61.2-120	5.42	20
Naphthalene	ND	1.0	"			85-126		20
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>15.9</i>		<i>"</i>	<i>13.2</i>	<i>120</i>	<i>57.9-139</i>		
<i>Surrogate: Toluene-d8</i>	<i>14.6</i>		<i>"</i>	<i>13.3</i>	<i>109</i>	<i>83.1-115</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>14.4</i>		<i>"</i>	<i>13.3</i>	<i>108</i>	<i>80.8-120</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.



Tasman Geosciences  
5690 Webster Street  
Arvada CO, 80002

Project: PDC - Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brian Humphrey

**Reported:**  
03/14/12 07:29

### 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

---

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.*

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

March 15, 2012

Brandon Bruns  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Cape Hart 1,31,42-29

Enclosed are the results of analyses for samples received by Summit Scientific on 03/14/12 11:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury For Ben Shrewsbury  
President / Laboratory Director



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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
03/15/12 07:30

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01	R203093-01	Soil	03/14/12 08:25	03/14/12 11:30
SS02	R203093-02	Soil	03/14/12 08:35	03/14/12 11:30
SS03	R203093-03	Soil	03/14/12 08:49	03/14/12 11:30
SS04	R203093-04	Soil	03/14/12 08:55	03/14/12 11:30
SS05	R203093-05	Soil	03/14/12 09:00	03/14/12 11:30
SS06	R203093-06	Soil	03/14/12 09:10	03/14/12 11:30
SS07	R203093-07	Soil	03/14/12 09:15	03/14/12 11:30
GW02	R203093-08	Water	03/14/12 09:30	03/14/12 11:30
GW03	R203093-09	Water	03/14/12 09:40	03/14/12 11:30

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: Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
03/15/12 07:30

203093

Summit Scientific

S:

711 Corporate Circle Suite 1 Golden, Colorado 80401  
303-277-9310 • 303-277-9531 Fax

Client: PDC Energy  
Address: 1775 Sherman St Suite 3000  
City/State/Zip: Denver, CO 80203  
Phone: (303) 900-5800  
Project Manager: Brandon Bruns  
E-Mail: bbruns@pdc.com  
Project Name: Cape Hart 1,31,42-29  
Project Number: [blank]  
Sampler Name: Brian Hays  
Page 1 of 1

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analyze For:	Special Instructions	
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Air - Canister Serial #	Soil	Groundwater			Other (Specify)
5501	3/14/12	0825	1	X	X	X		X					
5502		0835	1	X	X	X		X					
5503		0849	1	X	X	X		X					
5504		0855	1	X	X	X		X					
5505		0900	1	X	X	X		X					
5506		0910	1	X	X	X		X					
5507		0915	1	X	X	X		X					
6002		0920	3	X	X	X		X					
6003		0940	3	X	X	X		X					

Turn Around Time (Check):  Same Day  24 Hours  48 Hours  72 Hours  Standard  
 Sample Integrity:  Yes  No  
 Temperature upon Receipt: 5°C

Retransmitted by: [Signature] Date Time: 3/14/12 11:33  
 Received by: [Signature] Date Time: 3/14/12 130  
 Retransmitted by: [Signature] Date Time: [blank]  
 Received in Lab by: [Signature] Date Time: [blank]

Notes:

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
03/15/12 07:30

**SS01**  
**R203093-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 03/14/12 08:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2031405	03/14/12	03/14/12	8015 Full Carbon Chain	

Date Sampled: 03/14/12 08:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		97.2 %	80-124		"	"	"	"	

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

Date Sampled: 03/14/12 08:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2031404	03/14/12	03/15/12	EPA 8260B	
<b>Benzene</b>	<b>0.037</b>	0.0050	"	"	"	"	"	"	
<b>Toluene</b>	<b>0.15</b>	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.010</b>	0.0050	"	"	"	"	"	"	
<b>m,p-Xylene</b>	<b>0.080</b>	0.010	"	"	"	"	"	"	
<b>o-Xylene</b>	<b>0.027</b>	0.0050	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.94</b>	0.50	"	"	"	"	"	"	

Date Sampled: 03/14/12 08:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		90.5 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		112 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	78.4-125		"	"	"	"	

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
03/15/12 07:30

**SS02**  
**R203093-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/14/12 08:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>270</b>	50	mg/kg	1	2031405	03/14/12	03/14/12	8015 Full Carbon Chain	

Date Sampled: **03/14/12 08:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		98.5 %	80-124		"	"	"	"	

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

Date Sampled: **03/14/12 08:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Naphthalene</b>	<b>0.46</b>	0.0050	mg/kg	1	2031404	03/14/12	03/15/12	EPA 8260B	
<b>Benzene</b>	<b>5.8</b>	0.050	"	10	"	"	"	"	
<b>Toluene</b>	<b>21</b>	0.050	"	"	"	"	"	"	E
<b>Ethylbenzene</b>	<b>3.9</b>	0.050	"	"	"	"	"	"	
<b>m,p-Xylene</b>	<b>22</b>	0.10	"	"	"	"	"	"	E
<b>o-Xylene</b>	<b>9.3</b>	0.050	"	"	"	"	"	"	E
<b>Gasoline Range Hydrocarbons</b>	<b>860</b>	5.0	"	"	"	"	"	"	E

Date Sampled: **03/14/12 08:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		100 %	67.4-143		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		107 %	77.3-114		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		103 %	78.4-125		"	"	"	"	

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
03/15/12 07:30

**SS03**  
**R203093-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/14/12 08:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2031405	03/14/12	03/14/12	8015 Full Carbon Chain	

Date Sampled: **03/14/12 08:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		97.9 %	80-124		"	"	"	"	

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

Date Sampled: **03/14/12 08:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2031404	03/14/12	03/15/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
m,p-Xylene	ND	0.010	"	"	"	"	"	"	
o-Xylene	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/14/12 08:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		132 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		106 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	78.4-125		"	"	"	"	

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
03/15/12 07:30

**SS04**  
**R203093-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/14/12 08:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2031405	03/14/12	03/14/12	8015 Full Carbon Chain	

Date Sampled: **03/14/12 08:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		98.9 %	80-124		"	"	"	"	

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

Date Sampled: **03/14/12 08:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Naphthalene</b>	<b>0.033</b>	0.0050	mg/kg	1	2031404	03/14/12	03/15/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
<b>Toluene</b>	<b>0.013</b>	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>m,p-Xylene</b>	<b>0.021</b>	0.010	"	"	"	"	"	"	
<b>o-Xylene</b>	<b>0.0069</b>	0.0050	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>2.2</b>	0.50	"	"	"	"	"	"	

Date Sampled: **03/14/12 08:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		99.2 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	78.4-125		"	"	"	"	

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
03/15/12 07:30

**SS05**  
**R203093-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/14/12 09:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2031405	03/14/12	03/14/12	8015 Full Carbon Chain	

Date Sampled: **03/14/12 09:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		99.1 %	80-124		"	"	"	"	

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

Date Sampled: **03/14/12 09:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2031404	03/14/12	03/15/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
<b>Toluene</b>	<b>0.0058</b>	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
m,p-Xylene	ND	0.010	"	"	"	"	"	"	
o-Xylene	ND	0.0050	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.63</b>	0.50	"	"	"	"	"	"	

Date Sampled: **03/14/12 09:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		127 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		106 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	78.4-125		"	"	"	"	

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
03/15/12 07:30

**SS06**  
**R203093-06 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/14/12 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2031405	03/14/12	03/14/12	8015 Full Carbon Chain	

Date Sampled: **03/14/12 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		100 %	80-124		"	"	"	"	

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

Date Sampled: **03/14/12 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2031404	03/14/12	03/15/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
m,p-Xylene	ND	0.010	"	"	"	"	"	"	
o-Xylene	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/14/12 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		131 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		104 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	78.4-125		"	"	"	"	

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
03/15/12 07:30

**SS07**  
**R203093-07 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/14/12 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2031405	03/14/12	03/14/12	8015 Full Carbon Chain	

Date Sampled: **03/14/12 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		102 %	80-124		"	"	"	"	

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

Date Sampled: **03/14/12 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2031404	03/14/12	03/15/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
m,p-Xylene	ND	0.010	"	"	"	"	"	"	
o-Xylene	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/14/12 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		142 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		113 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	78.4-125		"	"	"	"	

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
 Project Manager: Brandon Brunns

**Reported:**  
 03/15/12 07:30

**GW02**  
**R203093-08 (Water)**

**Summit Scientific**

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

Date Sampled: **03/14/12 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>12</b>	1.0	ug/l	1	2031407	03/14/12	03/15/12	EPA 8260B	
<b>Toluene</b>	<b>14</b>	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
<b>m,p-Xylene</b>	<b>3.6</b>	2.0	"	"	"	"	"	"	
<b>o-Xylene</b>	<b>1.6</b>	1.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/14/12 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		116 %	57.9-139		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		99.8 %	83.1-115		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		100 %	80.8-120		"	"	"	"	

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
 Project Manager: Brandon Brunns

**Reported:**  
 03/15/12 07:30

**GW03**  
**R203093-09 (Water)**

**Summit Scientific**

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

Date Sampled: **03/14/12 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2031407	03/14/12	03/15/12	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	ND	1.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/14/12 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		116 %	57.9-139		"	"	"	"	
Surrogate: Toluene-d8		103 %	83.1-115		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.9 %	80.8-120		"	"	"	"	

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
 Project Manager: Brandon Brunns

**Reported:**  
 03/15/12 07:30

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 2031405 - EPA 3550A**

<b>Blank (2031405-BLK1)</b>				Prepared: 03/14/12 Analyzed: 03/15/12						
C10-C28 (DRO)	ND	50	mg/kg							
<i>Surrogate: o-Terphenyl</i>	<i>13.0</i>		<i>"</i>	<i>12.5</i>		<i>104</i>	<i>80-124</i>			
<b>LCS (2031405-BS1)</b>				Prepared: 03/14/12 Analyzed: 03/15/12						
C10-C28 (DRO)	520	50	mg/kg	501		104	81.4-129		9.26	
<b>LCS Dup (2031405-BSD1)</b>				Prepared: 03/14/12 Analyzed: 03/15/12						
C10-C28 (DRO)	565	50	mg/kg	501		113	81.4-129	8.35	9.26	
<b>Matrix Spike (2031405-MS1)</b>				Source: R203093-01 Prepared: 03/14/12 Analyzed: 03/15/12						
C10-C28 (DRO)	536	50	mg/kg	501	15.0	104	77.8-133		8.48	
<b>Matrix Spike Dup (2031405-MSD1)</b>				Source: R203093-01 Prepared: 03/14/12 Analyzed: 03/15/12						
C10-C28 (DRO)	513	50	mg/kg	501	15.0	99.4	77.8-133	4.32	8.48	

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
03/15/12 07:30

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

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

**Batch 2031404 - EPA 5030 Soil MS**

**Blank (2031404-BLK1)**

Prepared: 03/14/12 Analyzed: 03/15/12

Naphthalene	ND	0.0050	mg/kg							
Benzene	ND	0.0050	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
m,p-Xylene	ND	0.010	"							
o-Xylene	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0416</i>		<i>"</i>	<i>0.0397</i>		<i>105</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0409</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0401</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>78.4-125</i>			

**LCS (2031404-BS1)**

Prepared: 03/14/12 Analyzed: 03/15/12

Naphthalene	ND	0.0050	mg/kg				67.8-151		20	
Benzene	0.0815	0.0050	"	0.100		81.5	61-139	4.46	11.1	
Toluene	0.0976	0.0050	"	0.100		97.6	64-132	2.58	10.9	
Ethylbenzene	0.102	0.0050	"	0.100		102	68.7-135		20	
m,p-Xylene	0.206	0.010	"	0.200		103	70.4-129		20	
o-Xylene	0.0988	0.0050	"	0.100		98.8	66.9-126		20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0342</i>		<i>"</i>	<i>0.0397</i>		<i>86.2</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0398</i>		<i>"</i>	<i>0.0400</i>		<i>99.6</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0395</i>		<i>"</i>	<i>0.0400</i>		<i>98.8</i>	<i>78.4-125</i>			

**LCS Dup (2031404-BSD1)**

Prepared: 03/14/12 Analyzed: 03/15/12

Naphthalene	ND	0.0050	mg/kg				67.8-151		20	
Benzene	0.0853	0.0050	"	0.100		85.3	61-139	4.46	11.1	
Toluene	0.0951	0.0050	"	0.100		95.1	64-132	2.58	10.9	
Ethylbenzene	0.0905	0.0050	"	0.100		90.5	68.7-135		20	
m,p-Xylene	0.184	0.010	"	0.200		91.8	70.4-129		20	
o-Xylene	0.0882	0.0050	"	0.100		88.2	66.9-126		20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0410</i>		<i>"</i>	<i>0.0397</i>		<i>103</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0445</i>		<i>"</i>	<i>0.0400</i>		<i>111</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>78.4-125</i>			

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
03/15/12 07:30

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

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

**Batch 2031404 - EPA 5030 Soil MS**

<b>Matrix Spike (2031404-MS1)</b>	<b>Source: R203093-01</b>			Prepared: 03/14/12		Analyzed: 03/15/12				
Naphthalene	ND	0.0050	mg/kg	0.00	0.00	26.4	144	20		
Benzene	0.113	0.0050	"	0.100	0.0374	76.0	42.9-137	17.9		
Toluene	0.158	0.0050	"	0.100	0.146	12.7	42.6-130	11.9	QM-07	
Ethylbenzene	0.103	0.0050	"	0.100	0.0100	93.2	39-133	20		
m,p-Xylene	0.236	0.010	"	0.200	0.0798	77.9	34.7-134	20		
o-Xylene	0.114	0.0050	"	0.100	0.0274	86.5	41.3-126	20		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0449</i>		"	<i>0.0397</i>		<i>113</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0399</i>		"	<i>0.0400</i>		<i>99.8</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0400</i>		"	<i>0.0400</i>		<i>99.9</i>	<i>78.4-125</i>			

<b>Matrix Spike Dup (2031404-MSD1)</b>	<b>Source: R203093-01</b>			Prepared: 03/14/12		Analyzed: 03/15/12				
Naphthalene	ND	0.0050	mg/kg	0.00	0.00	26.4	144	20		
Benzene	0.124	0.0050	"	0.100	0.0374	86.5	42.9-137	8.90	17.9	
Toluene	0.220	0.0050	"	0.100	0.146	74.4	42.6-130	32.6	11.9	QM-07
Ethylbenzene	0.0980	0.0050	"	0.100	0.0100	88.0	39-133	5.22	20	
m,p-Xylene	0.251	0.010	"	0.200	0.0798	85.4	34.7-134	6.18	20	
o-Xylene	0.113	0.0050	"	0.100	0.0274	85.6	41.3-126	0.820	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0438</i>		"	<i>0.0397</i>		<i>110</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0398</i>		"	<i>0.0400</i>		<i>99.6</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0397</i>		"	<i>0.0400</i>		<i>99.2</i>	<i>78.4-125</i>			

**Batch 2031407 - EPA 5030 Water MS**

<b>Blank (2031407-BLK1)</b>				Prepared: 03/14/12		Analyzed: 03/15/12				
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
m,p-Xylene	ND	2.0	"							
o-Xylene	ND	1.0	"							
Naphthalene	ND	1.0	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>15.7</i>		"	<i>13.2</i>		<i>119</i>	<i>57.9-139</i>			
<i>Surrogate: Toluene-d8</i>	<i>13.4</i>		"	<i>13.3</i>		<i>101</i>	<i>83.1-115</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>14.2</i>		"	<i>13.3</i>		<i>107</i>	<i>80.8-120</i>			

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
03/15/12 07:30

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

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

**Batch 2031407 - EPA 5030 Water MS**

**LCS (2031407-BS1)**

Prepared: 03/14/12 Analyzed: 03/15/12

Benzene	23.9	1.0	ug/l	33.3		71.6	60.1-131		10.9	
Toluene	24.4	1.0	"	33.3		73.2	65.9-127		11.3	
Ethylbenzene	22.8	1.0	"	33.3		68.3	65.1-129		20	
m,p-Xylene	47.4	2.0	"	66.7		71.1	66.8-127		20	
o-Xylene	24.6	1.0	"	33.3		73.9	61.2-120		20	
Naphthalene	ND	1.0	"				85-126		20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>15.5</i>		<i>"</i>	<i>13.2</i>		<i>117</i>	<i>57.9-139</i>			
<i>Surrogate: Toluene-d8</i>	<i>14.2</i>		<i>"</i>	<i>13.3</i>		<i>107</i>	<i>83.1-115</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>15.0</i>		<i>"</i>	<i>13.3</i>		<i>112</i>	<i>80.8-120</i>			

**LCS Dup (2031407-BSD1)**

Prepared: 03/14/12 Analyzed: 03/15/12

Benzene	24.3	1.0	ug/l	33.3		73.0	60.1-131	1.91	10.9	
Toluene	25.0	1.0	"	33.3		74.9	65.9-127	2.27	11.3	
Ethylbenzene	24.6	1.0	"	33.3		73.7	65.1-129	7.48	20	
m,p-Xylene	50.8	2.0	"	66.7		76.1	66.8-127	6.82	20	
o-Xylene	26.5	1.0	"	33.3		79.6	61.2-120	7.43	20	
Naphthalene	ND	1.0	"				85-126		20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>15.0</i>		<i>"</i>	<i>13.2</i>		<i>113</i>	<i>57.9-139</i>			
<i>Surrogate: Toluene-d8</i>	<i>14.1</i>		<i>"</i>	<i>13.3</i>		<i>106</i>	<i>83.1-115</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>14.5</i>		<i>"</i>	<i>13.3</i>		<i>109</i>	<i>80.8-120</i>			

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
03/15/12 07:30

### 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.
- 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

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# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

March 17, 2012

Brandon Bruns  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Cape Hart 1,31,42-29

Enclosed are the results of analyses for samples received by Summit Scientific on 03/16/12 15:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury For Ben Shrewsbury  
President / Laboratory Director



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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
03/17/12 23:12

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS08	R203121-01	Soil	03/16/12 09:30	03/16/12 15:00
SW01	R203121-02	Water	03/16/12 09:45	03/16/12 15:00

Summit Scientific

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
03/17/12 23:12

**SS08**  
**R203121-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/16/12 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2031609	03/16/12	03/17/12	8015 Full Carbon Chain	

Date Sampled: **03/16/12 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		98.8 %	80-124		"	"	"	"	

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

Date Sampled: **03/16/12 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2031608	03/16/12	03/17/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
m,p-Xylene	ND	0.010	"	"	"	"	"	"	
<i>o</i> -Xylene	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/16/12 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		124 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		80.4 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	78.4-125		"	"	"	"	

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
 Project Manager: Brandon Brunns

**Reported:**  
 03/17/12 23:12

**SW01**  
**R203121-02 (Water)**

**Summit Scientific**

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

Date Sampled: **03/16/12 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2031606	03/16/12	03/17/12	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	ND	1.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/16/12 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		137 %	57.9-139		"	"	"	"	
Surrogate: Toluene-d8		105 %	83.1-115		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	80.8-120		"	"	"	"	

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
 Project Manager: Brandon Brunns

**Reported:**  
 03/17/12 23:12

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 2031609 - EPA 3550A**

<b>Blank (2031609-BLK1)</b>				Prepared & Analyzed: 03/16/12							
C10-C28 (DRO)	ND	50	mg/kg								
<i>Surrogate: o-Terphenyl</i>	12.2		"	12.5		97.3	80-124				
<b>LCS (2031609-BS1)</b>				Prepared & Analyzed: 03/16/12							
C10-C28 (DRO)	520	50	mg/kg	501		104	81.4-129			9.26	
<b>LCS Dup (2031609-BSD1)</b>				Prepared: 03/16/12 Analyzed: 03/17/12							
C10-C28 (DRO)	513	50	mg/kg	501		102	81.4-129	1.47		9.26	
<b>Matrix Spike (2031609-MS1)</b>				Source: R203126-01 Prepared: 03/16/12 Analyzed: 03/17/12							
C10-C28 (DRO)	552	50	mg/kg	501	17.6	107	77.8-133			8.48	
<b>Matrix Spike Dup (2031609-MSD1)</b>				Source: R203126-01 Prepared: 03/16/12 Analyzed: 03/17/12							
C10-C28 (DRO)	523	50	mg/kg	501	17.6	101	77.8-133	5.33		8.48	

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
03/17/12 23:12

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

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

**Batch 2031606 - EPA 5030 Water MS**

**Blank (2031606-BLK1)**

Prepared & Analyzed: 03/16/12

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
m,p-Xylene	ND	2.0	"							
o-Xylene	ND	1.0	"							
Naphthalene	ND	1.0	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>18.3</i>		<i>"</i>	<i>13.2</i>		<i>138</i>	<i>57.9-139</i>			
<i>Surrogate: Toluene-d8</i>	<i>14.2</i>		<i>"</i>	<i>13.3</i>		<i>106</i>	<i>83.1-115</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>11.5</i>		<i>"</i>	<i>13.3</i>		<i>86.3</i>	<i>80.8-120</i>			

**LCS (2031606-BS1)**

Prepared & Analyzed: 03/16/12

Benzene	27.2	1.0	ug/l	33.3		81.7	60.1-131	3.96	10.9	
Toluene	28.6	1.0	"	33.3		85.8	65.9-127	3.74	11.3	
Ethylbenzene	24.3	1.0	"	33.3		72.9	65.1-129	8.81	20	
m,p-Xylene	50.4	2.0	"	66.7		75.6	66.8-127	8.31	20	
o-Xylene	26.6	1.0	"	33.3		80.0	61.2-120	7.82	20	
Naphthalene	ND	1.0	"				85-126		20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>17.4</i>		<i>"</i>	<i>13.2</i>		<i>132</i>	<i>57.9-139</i>			
<i>Surrogate: Toluene-d8</i>	<i>14.3</i>		<i>"</i>	<i>13.3</i>		<i>107</i>	<i>83.1-115</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>14.2</i>		<i>"</i>	<i>13.3</i>		<i>107</i>	<i>80.8-120</i>			

**LCS Dup (2031606-BSD1)**

Prepared & Analyzed: 03/16/12

Benzene	28.3	1.0	ug/l	33.3		85.0	60.1-131	3.96	10.9	
Toluene	29.7	1.0	"	33.3		89.1	65.9-127	3.74	11.3	
Ethylbenzene	26.6	1.0	"	33.3		79.7	65.1-129	8.81	20	
m,p-Xylene	54.8	2.0	"	66.7		82.2	66.8-127	8.31	20	
o-Xylene	28.8	1.0	"	33.3		86.5	61.2-120	7.82	20	
Naphthalene	ND	1.0	"				85-126		20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>18.2</i>		<i>"</i>	<i>13.2</i>		<i>138</i>	<i>57.9-139</i>			
<i>Surrogate: Toluene-d8</i>	<i>15.4</i>		<i>"</i>	<i>13.3</i>		<i>115</i>	<i>83.1-115</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>15.3</i>		<i>"</i>	<i>13.3</i>		<i>115</i>	<i>80.8-120</i>			

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
03/17/12 23:12

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

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

**Batch 2031606 - EPA 5030 Water MS**

<b>Matrix Spike (2031606-MS1)</b>	<b>Source: R203072-01</b>			<b>Prepared &amp; Analyzed: 03/16/12</b>						
Benzene	27.1	1.0	ug/l	33.3	ND	81.4	52.7-130			19.3
Toluene	28.9	1.0	"	33.3	ND	86.8	57-127			18.7
Ethylbenzene	25.1	1.0	"	33.3	ND	75.4	59.2-127			20
m,p-Xylene	51.6	2.0	"	66.7	ND	77.4	53.2-132			20
o-Xylene	27.2	1.0	"	33.3	ND	81.6	56.3-117			20
Naphthalene	ND	1.0	"		ND		73.9-135			20
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>17.0</i>		<i>"</i>	<i>13.2</i>		<i>129</i>	<i>57.9-139</i>			
<i>Surrogate: Toluene-d8</i>	<i>14.2</i>		<i>"</i>	<i>13.3</i>		<i>106</i>	<i>83.1-115</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>14.5</i>		<i>"</i>	<i>13.3</i>		<i>109</i>	<i>80.8-120</i>			

<b>Matrix Spike Dup (2031606-MSD1)</b>	<b>Source: R203072-01</b>			<b>Prepared: 03/16/12 Analyzed: 03/17/12</b>						
Benzene	29.7	1.0	ug/l	33.3	ND	89.1	52.7-130	9.04		19.3
Toluene	31.3	1.0	"	33.3	ND	93.9	57-127	7.90		18.7
Ethylbenzene	28.8	1.0	"	33.3	ND	86.4	59.2-127	13.5		20
m,p-Xylene	59.8	2.0	"	66.7	ND	89.7	53.2-132	14.7		20
o-Xylene	31.3	1.0	"	33.3	ND	94.0	56.3-117	14.1		20
Naphthalene	ND	1.0	"		ND		73.9-135			20
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>17.2</i>		<i>"</i>	<i>13.2</i>		<i>130</i>	<i>57.9-139</i>			
<i>Surrogate: Toluene-d8</i>	<i>14.4</i>		<i>"</i>	<i>13.3</i>		<i>108</i>	<i>83.1-115</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>15.0</i>		<i>"</i>	<i>13.3</i>		<i>113</i>	<i>80.8-120</i>			

**Batch 2031608 - EPA 5030 Soil MS**

<b>Blank (2031608-BLK1)</b>	<b>Prepared &amp; Analyzed: 03/16/12</b>									
Naphthalene	ND	0.0050	mg/kg							
Benzene	ND	0.0050	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
m,p-Xylene	ND	0.010	"							
o-Xylene	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0482</i>		<i>"</i>	<i>0.0397</i>		<i>121</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0407</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0436</i>		<i>"</i>	<i>0.0400</i>		<i>109</i>	<i>78.4-125</i>			

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
03/17/12 23:12

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

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

**Batch 2031608 - EPA 5030 Soil MS**

**LCS (2031608-BS1)**

Prepared & Analyzed: 03/16/12

Naphthalene	ND	0.0050	mg/kg				67.8-151		20	
Benzene	0.102	0.0050	"	0.100		102	61-139		11.1	
Toluene	0.0941	0.0050	"	0.100		94.1	64-132		10.9	
Ethylbenzene	0.106	0.0050	"	0.100		106	68.7-135		20	
m,p-Xylene	0.202	0.010	"	0.200		101	70.4-129		20	
o-Xylene	0.0970	0.0050	"	0.100		97.0	66.9-126		20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0507</i>		<i>"</i>	<i>0.0397</i>		<i>128</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0411</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0466</i>		<i>"</i>	<i>0.0400</i>		<i>116</i>	<i>78.4-125</i>			

**LCS Dup (2031608-BSD1)**

Prepared & Analyzed: 03/16/12

Naphthalene	ND	0.0050	mg/kg				67.8-151		20	
Benzene	0.102	0.0050	"	0.100		102	61-139	0.00	11.1	
Toluene	0.0935	0.0050	"	0.100		93.5	64-132	0.608	10.9	
Ethylbenzene	0.107	0.0050	"	0.100		107	68.7-135	1.07	20	
m,p-Xylene	0.204	0.010	"	0.200		102	70.4-129	1.36	20	
o-Xylene	0.0975	0.0050	"	0.100		97.5	66.9-126	0.463	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0505</i>		<i>"</i>	<i>0.0397</i>		<i>127</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0403</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0458</i>		<i>"</i>	<i>0.0400</i>		<i>115</i>	<i>78.4-125</i>			

**Matrix Spike (2031608-MS1)**

Source: R203126-01

Prepared & Analyzed: 03/16/12

Naphthalene	ND	0.0050	mg/kg		0.00		26.4-144		20	
Benzene	0.105	0.0050	"	0.100	0.00	105	42.9-137		17.9	
Toluene	0.0951	0.0050	"	0.100	0.00	95.1	42.6-130		11.9	
Ethylbenzene	0.106	0.0050	"	0.100	0.00	106	39-133		20	
m,p-Xylene	0.201	0.010	"	0.200	0.00	100	34.7-134		20	
o-Xylene	0.0976	0.0050	"	0.100	0.00	97.6	41.3-126		20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0550</i>		<i>"</i>	<i>0.0397</i>		<i>139</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0407</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0471</i>		<i>"</i>	<i>0.0400</i>		<i>118</i>	<i>78.4-125</i>			

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
 Project Manager: Brandon Brunns

**Reported:**  
 03/17/12 23:12

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

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

**Batch 2031608 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (2031608-MSD1)</b>	<b>Source: R203126-01</b>			<b>Prepared &amp; Analyzed: 03/16/12</b>						
Naphthalene	ND	0.0050	mg/kg	0.00	0.00	103	26.4-144		2.31	20
Benzene	0.103	0.0050	"	0.100	0.00	92.3	42.9-137		3.04	17.9
Toluene	0.0923	0.0050	"	0.100	0.00	106	42.6-130		0.0568	11.9
Ethylbenzene	0.106	0.0050	"	0.100	0.00	100	39-133		0.179	20
m,p-Xylene	0.201	0.010	"	0.200	0.00	96.5	34.7-134		1.05	20
o-Xylene	0.0965	0.0050	"	0.100	0.00	137	41.3-126			20
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0545</i>		<i>"</i>	<i>0.0397</i>		<i>101</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0405</i>		<i>"</i>	<i>0.0400</i>		<i>117</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0467</i>		<i>"</i>	<i>0.0400</i>			<i>78.4-125</i>			

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
03/17/12 23:12

### 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

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# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

August 02, 2013

Brandon Bruns  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Cape Hart 1,31,42-29

Enclosed are the results of analyses for samples received by Summit Scientific on 07/26/13 15:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Joseph J Egry IV  
Laboratory Director

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
08/02/13 09:20

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	R307275-01	Water	07/26/13 13:10	07/26/13 15:15
BH02	R307275-02	Water	07/26/13 13:15	07/26/13 15:15
BH03	R307275-03	Water	07/26/13 13:20	07/26/13 15:15
SURFACE	R307275-04	Water	07/26/13 13:25	07/26/13 15:15

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
 Project Manager: Brandon Brunns

**Reported:**  
 08/02/13 09:20

**BH01**  
**R307275-01 (Water)**

**Summit Scientific**

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

Date Sampled: **07/26/13 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	3073119	08/01/13	08/01/13	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **07/26/13 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.4 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	45-146		"	"	"	"	

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
 Project Manager: Brandon Brunns

**Reported:**  
 08/02/13 09:20

**BH02**  
**R307275-02 (Water)**

**Summit Scientific**

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

Date Sampled: **07/26/13 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	3073119	08/01/13	08/01/13	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **07/26/13 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.8 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	45-146		"	"	"	"	

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
 Project Manager: Brandon Brunns

**Reported:**  
 08/02/13 09:20

**BH03**  
**R307275-03 (Water)**

**Summit Scientific**

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

Date Sampled: **07/26/13 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	3073119	08/01/13	08/01/13	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **07/26/13 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.4 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	45-146		"	"	"	"	

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
 Project Manager: Brandon Brunns

**Reported:**  
 08/02/13 09:20

**SURFACE**  
**R307275-04 (Water)**

**Summit Scientific**

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

Date Sampled: **07/26/13 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	3073119	08/01/13	08/01/13	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **07/26/13 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		98.4 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	45-146		"	"	"	"	

Summit Scientific

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brandon Brunns

Reported:  
08/02/13 09:20

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

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

**Batch 3073119 - EPA 5030 Water MS**

**Blank (3073119-BLK1)**

Prepared & Analyzed: 07/31/13

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>15.1</i>		<i>"</i>	<i>13.2</i>		<i>114</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>12.9</i>		<i>"</i>	<i>13.3</i>		<i>96.9</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>13.9</i>		<i>"</i>	<i>13.3</i>		<i>104</i>	<i>45-146</i>			

**Blank (3073119-BLK2)**

Prepared & Analyzed: 07/31/13

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>14.7</i>		<i>"</i>	<i>13.2</i>		<i>111</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>13.1</i>		<i>"</i>	<i>13.3</i>		<i>98.2</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>13.8</i>		<i>"</i>	<i>13.3</i>		<i>103</i>	<i>45-146</i>			

**LCS (3073119-BS1)**

Prepared & Analyzed: 07/31/13

Benzene	25.5	1.0	ug/l	33.3		76.6	51-132			
Toluene	26.5	1.0	"	33.3		79.6	51-138			
Ethylbenzene	27.1	1.0	"	33.3		81.2	58-146			
m,p-Xylene	54.5	2.0	"	66.7		81.7	57-144			
o-Xylene	26.6	1.0	"	33.3		79.9	53-146			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>14.7</i>		<i>"</i>	<i>13.2</i>		<i>111</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>13.0</i>		<i>"</i>	<i>13.3</i>		<i>97.8</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>13.5</i>		<i>"</i>	<i>13.3</i>		<i>101</i>	<i>45-146</i>			

**LCS (3073119-BS2)**

Prepared & Analyzed: 07/31/13

Benzene	24.2	1.0	ug/l	33.3		72.6	51-132			
Toluene	25.2	1.0	"	33.3		75.7	51-138			
Ethylbenzene	25.9	1.0	"	33.3		77.8	58-146			
m,p-Xylene	51.8	2.0	"	66.7		77.8	57-144			
o-Xylene	25.6	1.0	"	33.3		77.0	53-146			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>15.0</i>		<i>"</i>	<i>13.2</i>		<i>114</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>13.1</i>		<i>"</i>	<i>13.3</i>		<i>98.6</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>13.7</i>		<i>"</i>	<i>13.3</i>		<i>102</i>	<i>45-146</i>			

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brandon Brunns

Reported:  
08/02/13 09:20

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

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

**Batch 3073119 - EPA 5030 Water MS**

**LCS Dup (3073119-BSD1)**

Prepared & Analyzed: 07/31/13

Benzene	23.4	1.0	ug/l	33.3	70.2	51-132	8.71	17
Toluene	24.4	1.0	"	33.3	73.1	51-138	8.45	17
Ethylbenzene	24.8	1.0	"	33.3	74.4	58-146	8.76	16
m,p-Xylene	50.9	2.0	"	66.7	76.4	57-144	6.76	16
o-Xylene	24.6	1.0	"	33.3	73.7	53-146	8.08	15
Surrogate: 1,2-Dichloroethane-d4	15.3		"	13.2	116	37-154		
Surrogate: Toluene-d8	13.2		"	13.3	99.2	45-149		
Surrogate: 4-Bromofluorobenzene	13.8		"	13.3	103	45-146		

**LCS Dup (3073119-BSD2)**

Prepared & Analyzed: 07/31/13

Benzene	20.8	1.0	ug/l	33.3	62.4	51-132	15.0	17
Toluene	21.9	1.0	"	33.3	65.8	51-138	14.0	17
Ethylbenzene	22.5	1.0	"	33.3	67.5	58-146	14.1	16
m,p-Xylene	44.9	2.0	"	66.7	67.4	57-144	14.3	16
o-Xylene	22.2	1.0	"	33.3	66.6	53-146	14.4	15
Surrogate: 1,2-Dichloroethane-d4	14.6		"	13.2	110	37-154		
Surrogate: Toluene-d8	13.2		"	13.3	98.6	45-149		
Surrogate: 4-Bromofluorobenzene	13.5		"	13.3	101	45-146		

**Matrix Spike (3073119-MS1)**

Source: R307274-01

Prepared & Analyzed: 07/31/13

Benzene	25.3	1.0	ug/l	33.3	ND	75.8	34-141
Toluene	26.4	1.0	"	33.3	ND	79.3	27-151
Ethylbenzene	28.4	1.0	"	33.3	ND	85.1	29-160
m,p-Xylene	56.3	2.0	"	66.7	ND	84.5	20-166
o-Xylene	27.5	1.0	"	33.3	ND	82.4	33-159
Surrogate: 1,2-Dichloroethane-d4	13.5		"	13.2		102	37-154
Surrogate: Toluene-d8	12.9		"	13.3		97.1	45-149
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.0	45-146

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

Project: Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brandon Brunns

Reported:  
08/02/13 09:20

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

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

**Batch 3073119 - EPA 5030 Water MS**

<b>Matrix Spike (3073119-MS2)</b>	<b>Source: R307274-02</b>			<b>Prepared &amp; Analyzed: 07/31/13</b>						
Benzene	27.3	1.0	ug/l	33.3	1.60	77.0	34-141			
Toluene	26.3	1.0	"	33.3	ND	78.9	27-151			
Ethylbenzene	28.0	1.0	"	33.3	ND	83.9	29-160			
m,p-Xylene	56.1	2.0	"	66.7	ND	84.1	20-166			
o-Xylene	27.4	1.0	"	33.3	ND	82.3	33-159			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>14.3</i>		<i>"</i>	<i>13.2</i>		<i>108</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>13.2</i>		<i>"</i>	<i>13.3</i>		<i>98.9</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>13.8</i>		<i>"</i>	<i>13.3</i>		<i>104</i>	<i>45-146</i>			

<b>Matrix Spike Dup (3073119-MSD1)</b>	<b>Source: R307274-01</b>			<b>Prepared &amp; Analyzed: 07/31/13</b>						
Benzene	21.7	1.0	ug/l	33.3	ND	65.0	34-141	15.3	32	
Toluene	22.8	1.0	"	33.3	ND	68.4	27-151	14.8	25	
Ethylbenzene	24.5	1.0	"	33.3	ND	73.4	29-160	14.7	50	
m,p-Xylene	49.1	2.0	"	66.7	ND	73.7	20-166	13.7	36	
o-Xylene	24.0	1.0	"	33.3	ND	72.0	33-159	13.4	26	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>13.9</i>		<i>"</i>	<i>13.2</i>		<i>105</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>12.9</i>		<i>"</i>	<i>13.3</i>		<i>97.1</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>13.7</i>		<i>"</i>	<i>13.3</i>		<i>103</i>	<i>45-146</i>			

<b>Matrix Spike Dup (3073119-MSD2)</b>	<b>Source: R307274-02</b>			<b>Prepared &amp; Analyzed: 07/31/13</b>						
Benzene	27.8	1.0	ug/l	33.3	1.60	78.5	34-141	1.71	32	
Toluene	26.9	1.0	"	33.3	ND	80.6	27-151	2.22	25	
Ethylbenzene	28.0	1.0	"	33.3	ND	83.9	29-160	0.107	50	
m,p-Xylene	56.1	2.0	"	66.7	ND	84.1	20-166	0.0535	36	
o-Xylene	27.2	1.0	"	33.3	ND	81.7	33-159	0.805	26	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>14.1</i>		<i>"</i>	<i>13.2</i>		<i>106</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>13.0</i>		<i>"</i>	<i>13.3</i>		<i>97.3</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>13.4</i>		<i>"</i>	<i>13.3</i>		<i>101</i>	<i>45-146</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  
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Project: Cape Hart 1,31,42-29

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
08/02/13 09:20

### 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