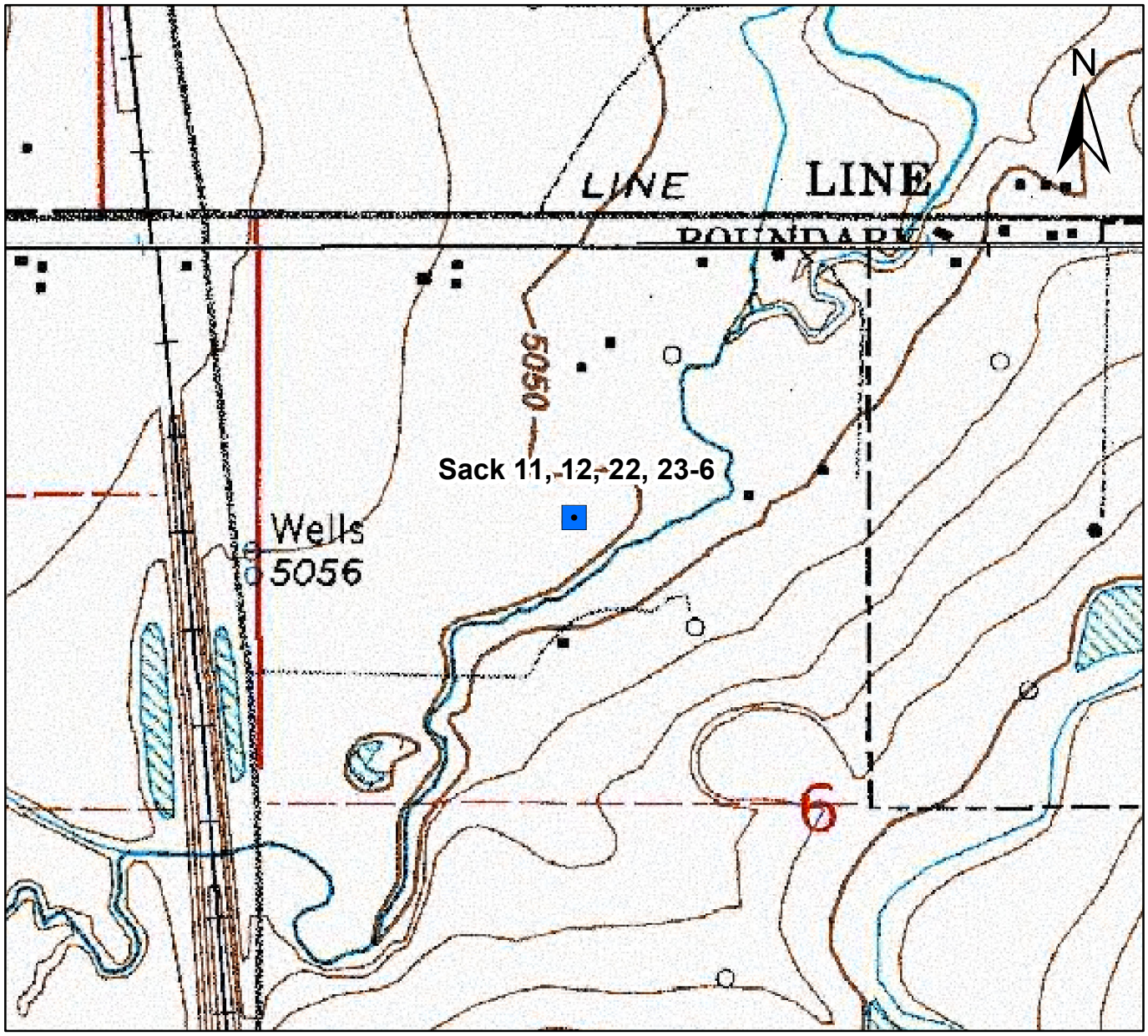


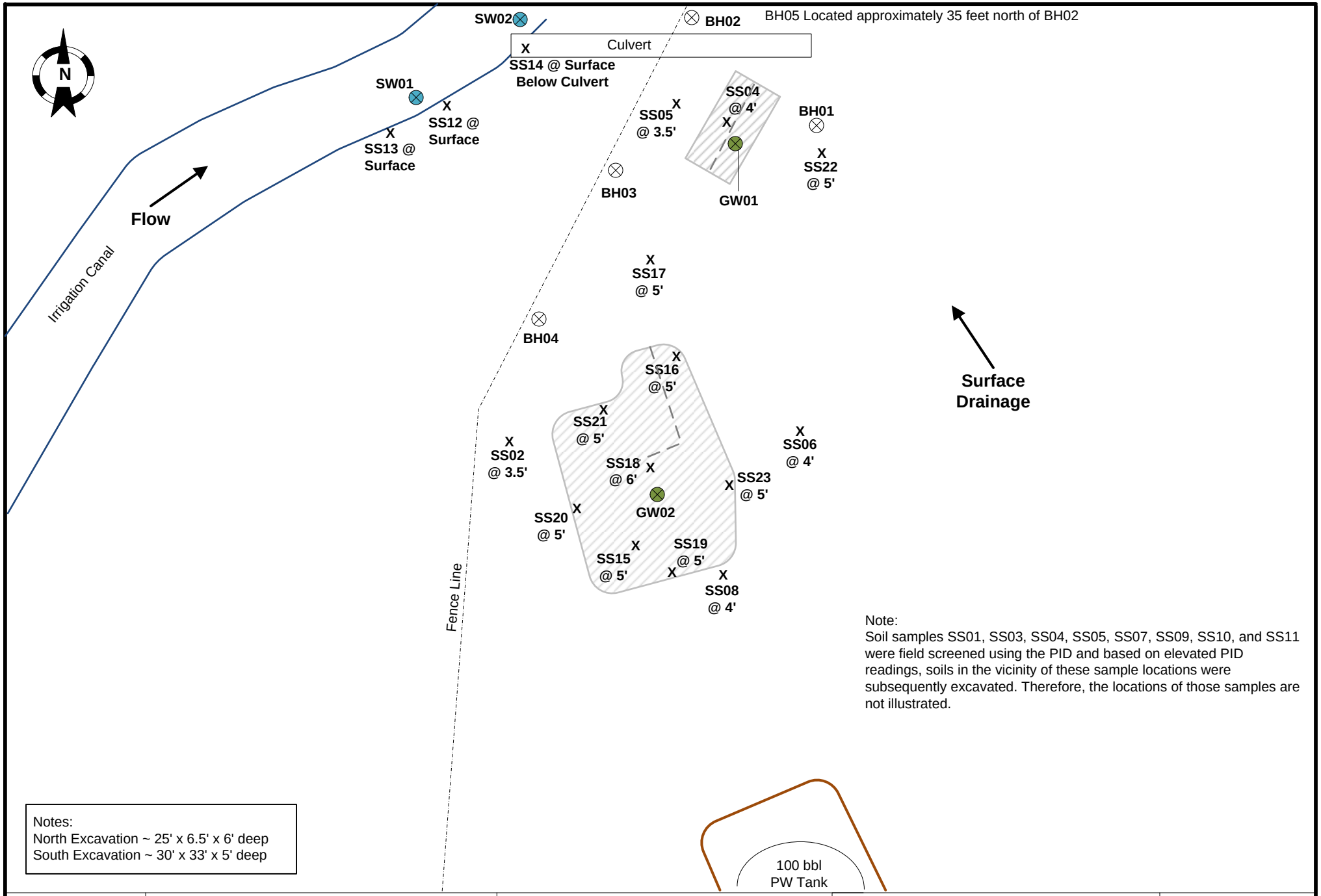
0 375 750 1,500 Feet

Figure 1

Site Location Map
Sack 11, 12, 22, 23-6
SENW S6 T1S R67W
Weld County, Colorado

Drawn By: CAW
Date: 01/18/2013

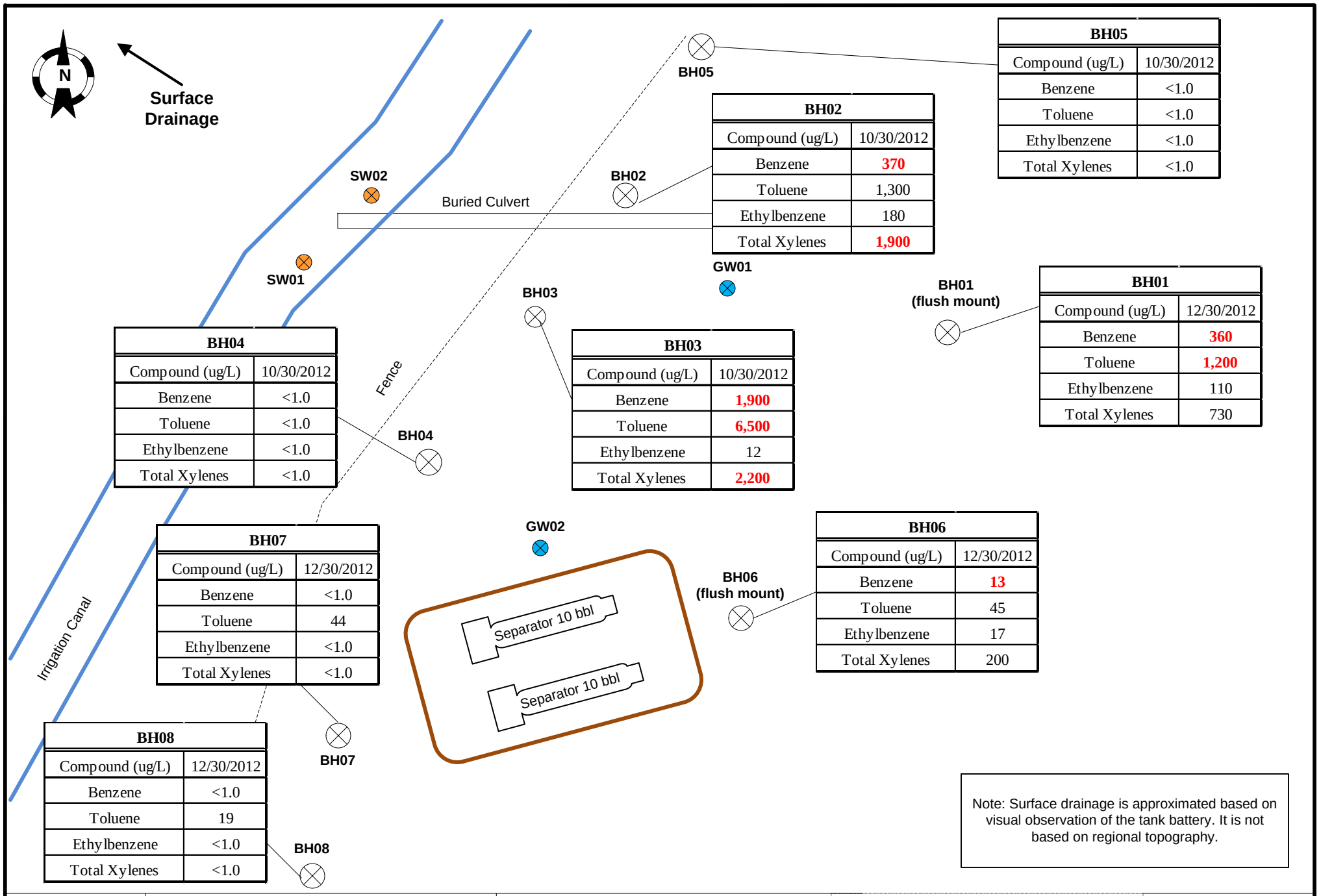
Tasman Geosciences



Note:
Soil samples SS01, SS03, SS04, SS05, SS07, SS09, SS10, and SS11 were field screened using the PID and based on elevated PID readings, soils in the vicinity of these sample locations were subsequently excavated. Therefore, the locations of those samples are not illustrated.

Notes:
North Excavation ~ 25' x 6.5' x 6' deep
South Excavation ~ 30' x 33' x 5' deep

PROJECT NO:	**Facility Diagram** PDC Energy – DJ Basin Sack 11, 12, 22, 23-6 SENW S6 T1S R67W Weld County, CO	Tasman Geosciences 5690 Webster Avenue Arvada CO 80002	LEGEND Earthen Berm X Soil Sample Location Surface Water Sample Location Groundwater Sample Location Approximate Extent of Excavation Location of Buried Flow Line and Line Repairs Temporary Monitoring Well Location	FIGURE 2
DRAWN BY: BDH				
DATE: 9/11/12				Not to Scale



BH05	
Compound (ug/L)	10/30/2012
Benzene	<1.0
Toluene	<1.0
Ethylbenzene	<1.0
Total Xylenes	<1.0

BH02	
Compound (ug/L)	10/30/2012
Benzene	**370**
Toluene	1,300
Ethylbenzene	180
Total Xylenes	**1,900**

BH01	
Compound (ug/L)	12/30/2012
Benzene	**360**
Toluene	**1,200**
Ethylbenzene	110
Total Xylenes	730

BH04	
Compound (ug/L)	10/30/2012
Benzene	<1.0
Toluene	<1.0
Ethylbenzene	<1.0
Total Xylenes	<1.0

BH03	
Compound (ug/L)	10/30/2012
Benzene	**1,900**
Toluene	**6,500**
Ethylbenzene	12
Total Xylenes	**2,200**

BH06	
Compound (ug/L)	12/30/2012
Benzene	**13**
Toluene	45
Ethylbenzene	17
Total Xylenes	200

BH07	
Compound (ug/L)	12/30/2012
Benzene	<1.0
Toluene	44
Ethylbenzene	<1.0
Total Xylenes	<1.0

BH08	
Compound (ug/L)	12/30/2012
Benzene	<1.0
Toluene	19
Ethylbenzene	<1.0
Total Xylenes	<1.0

Note: Surface drainage is approximated based on visual observation of the tank battery. It is not based on regional topography.

DRAWN BY: CAW

DATE: 1/16/2013

Facility Diagram
PDC Energy – DJ Basin
Sack 11, 12, 22, 23-6
SENW S6 T1S R67W
Weld County, CO

TASMAN GEOSCIENCES
6899 Pecos Street
Unit C
Denver, CO 80221

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

FIGURE 3

GROUNDWATER ANALYTICAL RESULTS

Not to Scale

TABLE 1
SACK 11, 12, 22, 23-6
SOIL ANALYTICAL RESULTS SUMMARY TABLE

Sample ID	Date Sampled	Depth (Feet bgs)	PID Readings (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH [(2)] (mg/kg)
SS01	9/9/2012	4	2,872	NS	NS	NS	NS	NS	NS
SS02	9/9/2012	3.5	279	<0.005	<0.005	0.015	<0.010	0.0087	<50
SS03	9/9/2012	4	1,911	NS	NS	NS	NS	NS	NS
SS04	9/9/2012	4	1,604	NS	NS	NS	NS	NS	NS
SS05	9/9/2012	3.5	1,591	NS	NS	NS	NS	NS	NS
SS06	9/9/2012	4	39.1	<0.005	<0.005	<0.005	<0.010	<0.005	<50
SS07	9/9/2012	4	2,030	NS	NS	NS	NS	NS	NS
SS08	9/9/2012	4	339	0.018	0.0052	0.01	0.28	0.011	98
SS09	9/10/2012	5	629	NS	NS	NS	NS	NS	NS
SS10	9/10/2012	6	2,495	NS	NS	NS	NS	NS	NS
SS11	9/10/2012	4	1,330	NS	NS	NS	NS	NS	NS
SS12	9/10/2012	Surface	1,576	**1.1**	4.4	0.28	5	0.0084	120
SS13	9/10/2012	Surface	2.3	<0.005	<0.005	<0.005	<0.010	<0.005	<50
SS14	9/10/2012	Surface	29.7	<0.005	<0.005	<0.005	<0.010	<0.005	50
SS15	9/10/2012	5	2,001	**0.29**	1.8	2.1	30	0.28	**1,024**
SS16	9/10/2012	5	380	<0.005	<0.005	0.012	<0.010	0.0066	<50
SS17	9/10/2012	5	7.3	<0.005	<0.005	<0.005	<0.010	<0.005	<50
SS18	9/11/2012	6	11.2	<0.005	<0.005	<0.005	<0.010	<0.005	<50
SS19	9/11/2012	5	0.0	<0.005	<0.005	<0.005	<0.010	<0.005	<50
SS20	9/11/2012	5	12.4	<0.005	<0.005	<0.005	<0.010	<0.005	<50
SS21	9/11/2012	5	40.2	<0.005	<0.005	<0.005	<0.010	<0.005	<50
SS22	9/11/2012	6	2,500	**6.7**	47	4.6	44	0.068	**1,100**

TABLE 1
SACK 11, 12, 22, 23-6
SOIL ANALYTICAL RESULTS SUMMARY TABLE

Sample ID	Date Sampled	Depth (Feet bgs)	PID Readings (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH [2] (mg/kg)
SS23	9/11/2012	4	560	**0.26**	0.69	0.027	<0.010	<0.005	<50
SS24	10/29/2012	8.5-10 (BH01)	16.8	<0.005	<0.005	<0.005	<0.01	<0.005	<42
SS25	10/29/2012	8-10 (BH02)	37.7	<0.005	<0.005	<0.005	<0.01	<0.005	<45
SS26	10/29/2012	6-10 (BH03)	23.3	<0.005	<0.005	<0.005	<0.01	<0.005	<44
SS27	10/29/2012	4-5 (BH04)	0.0	<0.005	<0.005	<0.005	<0.01	<0.005	<44
SS28	10/29/2012	6.5-8 (BH05)	0.0	<0.005	<0.005	<0.005	<0.01	<0.005	<43
COGCC standards for Soil (mg/kg) [1]				**0.17**	**85**	**100**	**175**	**23**	**500**

Notes:

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

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

GRO - Gasoline range organics

DRO - Diesel range organics

mg/kg= Milligrams per kilogram

NS = Not sampled

ppm - Parts per million

bgs - Below ground surface

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

TABLE 2
SACK 11, 12, 22, 23-6
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 (ft)
GW01	9/9/2012	**1,100**	**3,200**	140	**1,550**	NM
GW02	9/9/2012	**63**	7.5	<1.0	800	NM
BH01	12/30/2012	**360**	**1,200**	110	730	6.09
BH02	10/30/2012	**370**	**1,300**	180	**1,900**	8.07
BH03	10/30/2012	**1,900**	**6,500**	12	**2,200**	7.67
BH04	10/30/2012	<1.0	<1.0	<1.0	<1.0	7.70
BH05	10/30/2012	<1.0	<1.0	<1.0	<1.0	9.71
BH06	12/30/2012	**13**	45	17	200	5.58
BH07	12/30/2012	<1.0	44	<1.0	<1.0	5.65
BH08	12/30/2012	<1.0	19	<1.0	<1.0	6.08
COGCC standards for Groundwater (ug/L) (1)		**5**	**560**	**700**	**1,400**	

Notes:

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

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

Sample locations are shown on Figure 2.

ug/L= Micrograms per liter.

TABLE 3
SACK 11, 12, 22, 23-6
SURFACE WATER ANALYTICAL RESULTS SUMMARY TABLE

Sample ID	Date Sampled	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Naphthalene (ug/L)
SW01	9/10/2012	<1.0	<1.0	<1.0	<2.0	<1.0
SW02	9/10/2012	<1.0	<1.0	<1.0	<2.0	<1.0
WQCC Basic Standards for Organic Chemicals (ug/L) (1)		**2.3**	**560**	**700**	**1,400**	**140**

Notes:

1). The environmental cleanup standards for surface water that are applicable to this site were referenced from the Colorado Departemnt 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.

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.

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

September 10, 2012

Mike Lindstrom
Tasman Geosciences
5690 Webster Street
Arvada, CO 80002

RE: Sack 11,12,22,23-6

Enclosed are the results of analyses for samples received by Summit Scientific on 09/07/12 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Joseph J Egry IV For Ben Shrewsbury
President / Laboratory Director

Tasman Geosciences 5690 Webster Street Arvada CO, 80002	Project: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Mike Lindstrom	**Reported:** 09/10/12 09:22

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS02	R209031-01	Soil	09/07/12 14:14	09/07/12 17:30
SS06	R209031-02	Soil	09/07/12 14:20	09/07/12 17:30
SS08	R209031-03	Soil	09/07/12 14:30	09/07/12 17:30
GW01	R209031-04	Water	09/07/12 14:33	09/07/12 17:30
GW02	R209031-05	Water	09/07/12 14:36	09/07/12 17:30

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.

S2

Tasman Geosciences 5690 Webster Street Arvada CO, 80002	Project: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Mike Lindstrom	**Reported:** 09/10/12 09:22

Summit Scientific 229031

S2

741 Corporate Circle Suite I ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-274-5933 Fax

Page 1 of 1

Client: Tasman Geosciences
Address: 5690 Webster Street
City/State/Zip: Arvada, CO 80002
Phone: 720-633-2627
Sampler Name: Mike Lindstrom
Project Manager: Mike Lindstrom
E-Mail: mlindstrom@tasman-geo.com
Project Name: Sack 11,12,22,23-6
Fax:
Project Number:

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative: HCl	Preservative: HNO_3	Preservative: None	Preservative: Other (Specify)	Matrix: Groundwater	Matrix: Soil	Matrix: Air - Canister Serial #	Matrix: Other (Specify)	Analyze For: Gasoline	Analyze For: BTEX	Analyze For: Gasoline Grade	Special Instructions
5502	9/7/12	1414	2	1					X			X	X	X	
5506		1400	2						X			X	X	X	
5508		1450	2						X			X	X	X	
6W01		1455	3	X				X							
6W02		1476	3	X				X							

Relinquished by: Date/Time: 1730 9/7/12 — Received by: Date/Time:
Relinquished by: Date/Time: — Received by: Date/Time:
Relinquished by: Date/Time: — Received in Lab by: Date/Time: 9/10/12

Turn Around Time (Check): Same Day / 24 Hours / 48 Hours / 72 Hours / Standard (X)

Sample Integrity: Temperature Upon Receipt: Intact: Yes No

Notes:

www.s2scientific.com

Tasman Geosciences 5690 Webster Street Arvada CO, 80002	Project: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Mike Lindstrom	**Reported:** 09/10/12 09:22

SS02
R209031-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/07/12 14:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2090713	09/07/12	09/08/12	8015 Full Carbon Chain	

Date Sampled: **09/07/12 14:14**

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: **09/07/12 14:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	**0.0087**	0.0050	mg/kg	1	2090714	09/07/12	09/08/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	**0.015**	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**6.5**	0.50	"	"	"	"	"	"	

Date Sampled: **09/07/12 14:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*100 %*	*30-150*		"	"	"	"	
Surrogate: Toluene-d8		*98.7 %*	*30-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*106 %*	*30-150*		"	"	"	"	

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: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Mike Lindstrom	**Reported:** 09/10/12 09:22

SS06
R209031-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/07/12 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2090713	09/07/12	09/08/12	8015 Full Carbon Chain	

Date Sampled: **09/07/12 14:20**

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: **09/07/12 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2090714	09/07/12	09/07/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/07/12 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*105 %*	*30-150*		"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*30-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*95.5 %*	*30-150*		"	"	"	"	

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: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Mike Lindstrom	**Reported:** 09/10/12 09:22

SS08
R209031-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/07/12 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	**51**	50	mg/kg	1	2090713	09/07/12	09/08/12	8015 Full Carbon Chain	

Date Sampled: **09/07/12 14:30**

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: **09/07/12 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	**0.011**	0.0050	mg/kg	1	2090714	09/07/12	09/08/12	EPA 8260B	
Benzene	**0.018**	0.0050	"	"	"	"	"	"	
Toluene	**0.0052**	0.0050	"	"	"	"	"	"	
Ethylbenzene	**0.010**	0.0050	"	"	"	"	"	"	
Xylenes (total)	**0.28**	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**47**	0.50	"	"	"	"	"	"	

Date Sampled: **09/07/12 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*97.7 %*	*30-150*		"	"	"	"	
Surrogate: Toluene-d8		*92.7 %*	*30-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.6 %*	*30-150*		"	"	"	"	

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: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Mike Lindstrom	**Reported:** 09/10/12 09:22

GW01
R209031-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/07/12 14:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	**1100**	100	ug/l	100	2090715	09/07/12	09/08/12	EPA 8260B	
Toluene	**3200**	100	"	"	"	"	"	"	
Ethylbenzene	**140**	1.0	"	1	"	"	09/08/12	"	
m,p-Xylene	**1300**	200	"	100	"	"	09/08/12	"	
o-Xylene	**250**	1.0	"	1	"	"	09/08/12	"	
Naphthalene	**2.4**	1.0	"	"	"	"	"	"	

Date Sampled: **09/07/12 14:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*79.6 %*	*49.7-150*		"	"	"	"	
Surrogate: Toluene-d8		*124 %*	*51-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.3 %*	*50.1-150*		"	"	"	"	

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: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Mike Lindstrom	**Reported:** 09/10/12 09:22

GW02
R209031-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/07/12 14:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	**63**	1.0	ug/l	1	2090715	09/07/12	09/08/12	EPA 8260B	
Toluene	**7.5**	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	**590**	2.0	"	"	"	"	"	"	
o-Xylene	**210**	1.0	"	"	"	"	"	"	
Naphthalene	**4.9**	1.0	"	"	"	"	"	"	

Date Sampled: **09/07/12 14:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*88.0 %*	*49.7-150*		"	"	"	"	
Surrogate: Toluene-d8		*104 %*	*51-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*81.6 %*	*50.1-150*		"	"	"	"	

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.

Extractable Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2090713 - EPA 3550A										
Blank (2090713-BLK1)				Prepared & Analyzed: 09/07/12						
C10-C28 (DRO)	ND	50	mg/kg							
LCS (2090713-BS1)				Prepared & Analyzed: 09/07/12						
C10-C28 (DRO)	439	50	mg/kg	501		87.5	77-133			
LCS Dup (2090713-BSD1)				Prepared & Analyzed: 09/07/12						
C10-C28 (DRO)	443	50	mg/kg	501		88.4	77-133	0.990	11	
Matrix Spike (2090713-MS1)		**Source: R209030-01**		Prepared & Analyzed: 09/07/12						
C10-C28 (DRO)	564	50	mg/kg	501	205	71.7	68-141			
Matrix Spike Dup (2090713-MSD1)		**Source: R209030-01**		Prepared & Analyzed: 09/07/12						
C10-C28 (DRO)	570	50	mg/kg	501	205	72.9	68-141	1.07	25	

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.

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2090714 - EPA 5030 Soil MS										
Blank (2090714-BLK1)				Prepared & Analyzed: 09/07/12						
Naphthalene	ND	0.0050	mg/kg							
Benzene	ND	0.0050	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	*0.0383*		"	*0.0397*		*96.4*	*30-150*			
Surrogate: Toluene-d8	*0.0391*		"	*0.0400*		*97.7*	*30-150*			
Surrogate: 4-Bromofluorobenzene	*0.0380*		"	*0.0400*		*95.0*	*30-150*			
LCS (2090714-BS1)				Prepared & Analyzed: 09/07/12						
Naphthalene	ND	0.0050	mg/kg				64-139			
Benzene	0.115	0.0050	"	0.100		115	58-126			
Toluene	0.120	0.0050	"	0.100		120	60-132			
Ethylbenzene	0.131	0.0050	"	0.100		131	74-138			
m,p-Xylene	0.259	0.010	"	0.200		130	72-135			
o-Xylene	0.127	0.0050	"	0.100		127	73-139			
Surrogate: 1,2-Dichloroethane-d4	*0.0378*		"	*0.0397*		*95.1*	*30-150*			
Surrogate: Toluene-d8	*0.0396*		"	*0.0400*		*99.1*	*30-150*			
Surrogate: 4-Bromofluorobenzene	*0.0381*		"	*0.0400*		*95.3*	*30-150*			
LCS Dup (2090714-BSD1)				Prepared & Analyzed: 09/07/12						
Naphthalene	ND	0.0050	mg/kg				64-139		12	
Benzene	0.112	0.0050	"	0.100		112	58-126	2.06	13	
Toluene	0.116	0.0050	"	0.100		116	60-132	3.24	14	
Ethylbenzene	0.121	0.0050	"	0.100		121	74-138	7.86	13	
m,p-Xylene	0.239	0.010	"	0.200		120	72-135	8.04	14	
o-Xylene	0.117	0.0050	"	0.100		117	73-139	8.37	13	
Surrogate: 1,2-Dichloroethane-d4	*0.0380*		"	*0.0397*		*95.7*	*30-150*			
Surrogate: Toluene-d8	*0.0396*		"	*0.0400*		*99.1*	*30-150*			
Surrogate: 4-Bromofluorobenzene	*0.0380*		"	*0.0400*		*95.0*	*30-150*			

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: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Mike Lindstrom	**Reported:** 09/10/12 09:22

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2090714 - EPA 5030 Soil MS										
Matrix Spike (2090714-MS1)		**Source: R209031-02**		Prepared & Analyzed: 09/07/12						
Naphthalene	ND	0.0050	mg/kg		ND		15-161			
Benzene	0.0927	0.0050	"	0.0996	0.00	93.1	33-127			
Toluene	0.0982	0.0050	"	0.0996	0.00	98.6	32-131			
Ethylbenzene	0.0966	0.0050	"	0.0996	0.00	97.0	24-153			
m,p-Xylene	0.197	0.010	"	0.199	0.00792	95.1	12-157			
o-Xylene	0.0951	0.0050	"	0.0996	0.00	95.5	35-149			
Surrogate: 1,2-Dichloroethane-d4	*0.0399*		"	*0.0395*		*101*	*30-150*			
Surrogate: Toluene-d8	*0.0396*		"	*0.0398*		*99.4*	*30-150*			
Surrogate: 4-Bromofluorobenzene	*0.0376*		"	*0.0398*		*94.3*	*30-150*			
Matrix Spike Dup (2090714-MSD1)		**Source: R209031-02**		Prepared & Analyzed: 09/07/12						
Naphthalene	ND	0.0050	mg/kg		ND		15-161		44	
Benzene	0.0918	0.0050	"	0.0986	0.00	93.1	33-127	0.991	33	
Toluene	0.0896	0.0050	"	0.0986	0.00	90.9	32-131	9.16	31	
Ethylbenzene	0.0917	0.0050	"	0.0986	0.00	93.0	24-153	5.19	23	
m,p-Xylene	0.191	0.010	"	0.197	0.00792	92.7	12-157	3.41	67	
o-Xylene	0.0961	0.0050	"	0.0986	0.00	97.5	35-149	1.09	38	
Surrogate: 1,2-Dichloroethane-d4	*0.0389*		"	*0.0392*		*99.4*	*30-150*			
Surrogate: Toluene-d8	*0.0388*		"	*0.0394*		*98.4*	*30-150*			
Surrogate: 4-Bromofluorobenzene	*0.0386*		"	*0.0394*		*97.9*	*30-150*			
Batch 2090715 - EPA 5030 Water MS										
Blank (2090715-BLK1)				Prepared: 09/07/12 Analyzed: 09/09/12						
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	"							
Surrogate: 1,2-Dichloroethane-d4	*11.1*		"	*13.2*		*84.2*	*49.7-150*			
Surrogate: Toluene-d8	*12.6*		"	*13.3*		*94.8*	*51-150*			
Surrogate: 4-Bromofluorobenzene	*12.9*		"	*13.3*		*97.1*	*50.1-150*			

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: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Mike Lindstrom	**Reported:** 09/10/12 09:22

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2090715 - EPA 5030 Water MS										
LCS (2090715-BS1)				Prepared: 09/07/12 Analyzed: 09/09/12						
Benzene	30.2	1.0	ug/l	33.3		90.6	50-125			
Toluene	31.4	1.0	"	33.3		94.2	51-130			
Ethylbenzene	33.0	1.0	"	33.3		99.2	56-141			
m,p-Xylene	65.0	2.0	"	66.7		97.6	56-138			
o-Xylene	31.6	1.0	"	33.3		94.8	51-142			
Naphthalene	ND	1.0	"				74-130			
Surrogate: 1,2-Dichloroethane-d4	*11.8*		*"*	*13.2*		*89.2*	*49.7-150*			
Surrogate: Toluene-d8	*12.9*		*"*	*13.3*		*96.9*	*51-150*			
Surrogate: 4-Bromofluorobenzene	*11.9*		*"*	*13.3*		*89.6*	*50.1-150*			
LCS Dup (2090715-BSD1)				Prepared: 09/07/12 Analyzed: 09/09/12						
Benzene	29.5	1.0	ug/l	33.3		88.4	50-125	2.45	14.6	
Toluene	30.4	1.0	"	33.3		91.2	51-130	3.24	18.9	
Ethylbenzene	32.8	1.0	"	33.3		98.3	56-141	0.912	11.9	
m,p-Xylene	64.4	2.0	"	66.7		96.6	56-138	1.04	13.7	
o-Xylene	31.8	1.0	"	33.3		95.5	51-142	0.788	15	
Naphthalene	ND	1.0	"				74-130		9.87	
Surrogate: 1,2-Dichloroethane-d4	*12.3*		*"*	*13.2*		*92.8*	*49.7-150*			
Surrogate: Toluene-d8	*12.9*		*"*	*13.3*		*96.5*	*51-150*			
Surrogate: 4-Bromofluorobenzene	*12.7*		*"*	*13.3*		*95.5*	*50.1-150*			

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.

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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

September 11, 2012

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

RE: Sack 11,16,22,23-16

Enclosed are the results of analyses for samples received by Summit Scientific on 09/10/12 18:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Joseph J Egry IV For Ben Shrewsbury
President / Laboratory Director

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sack 11,16,22,23-16 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 09/11/12 09:21

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SW-01	R209046-01	Water	09/10/12 14:45	09/10/12 18:15
SW-02	R209046-02	Water	09/10/12 16:00	09/10/12 18:15
SS-12	R209046-03	Soil	09/10/12 14:00	09/10/12 18:15
SS-13	R209046-04	Soil	09/10/12 14:30	09/10/12 18:15
SS-14	R209046-05	Soil	09/10/12 14:15	09/10/12 18:15
SS-15	R209046-06	Soil	09/10/12 15:15	09/10/12 18:15
SS-16	R209046-07	Soil	09/10/12 15:45	09/10/12 18:15

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.

S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sack 11,16,22,23-16 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 09/11/12 09:21

R2090446

Summit Scientific

S2

741 Corporate Circle Suite I • Golden, Colorado 80401
303-277-9310 • 303-374-5933 Fax

Page 1 of 1

Client: [illegible]
Address: 5600 WESTPARK
City/State/Zip: [illegible] TX 85502
Phone: 720 988 0074 Fax:
Sampler Name: A. BEAKER
Project Manager: MIKE [illegible]
E-Mail: [illegible]
Project Name: SACK 11, 16, 22, 23-16
Project Number:

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative: HCl	HNO3	None	Other (Specify)	Matrix: Groundwater	Soil	Air - Canister Serial #	Other (Specify)	Analyze For: BTEX	[illegible]	8260 BTEX+NAPH	8015 DRO	Special Instructions
SW-01	9/10/12	1445	3	X								X				
SW-02	9/10/12	1430	3	X								X				
SS-11	9/10/12	1330	2													
SS-12		1400							X					X	X	
SS-13		1450							X							
SS-14		1415							X							
SS-15		1515							X							
SS-16		1545							X							

Relinquished by: [illegible] Date/Time: 9/10/12 0815
Received by: [illegible] Date/Time: 9-10-12 1845
Relinquished by: Date/Time:
Received by: Date/Time:
Relinquished by: Date/Time:
Received in Lab by: Date/Time:

Turn Around Time (Check): Same Day ☐ 24 Hours ☒ 48 Hours ☐ 72 Hours ☐ Standard ☐

Sample Integrity: Temperature Upon Receipt: 5.2 Intact: Yes No

Notes:

www.s2scientific.com

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sack 11,16,22,23-16 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 09/11/12 09:21

SW-01
R209046-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/10/12 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2091009	09/10/12	09/10/12	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: **09/10/12 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*87.8 %*	*49.7-150*		"	"	"	"	
Surrogate: Toluene-d8		*96.0 %*	*51-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*92.9 %*	*50.1-150*		"	"	"	"	

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sack 11,16,22,23-16 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 09/11/12 09:21

SW-02
R209046-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/10/12 16:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2091009	09/10/12	09/10/12	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: **09/10/12 16:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*85.2 %*	*49.7-150*		"	"	"	"	
Surrogate: Toluene-d8		*95.1 %*	*51-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*92.1 %*	*50.1-150*		"	"	"	"	

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PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sack 11,16,22,23-16 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 09/11/12 09:21

SS-12
R209046-03 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **09/10/12 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	44	mg/kg	1	2091014	09/10/12	09/11/12	8015 DRO	

Date Sampled: **09/10/12 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*74.9 %*	*30-150*		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/10/12 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	**0.0084**	0.0050	mg/kg	1	2091013	09/10/12	09/11/12	EPA 8260B	
Benzene	**1.1**	0.050	"	10	"	"	"	"	
Toluene	**4.4**	0.050	"	"	"	"	"	"	
Ethylbenzene	**0.28**	0.0050	"	1	"	"	"	"	
Xylenes (total)	**5.0**	0.10	"	10	"	"	"	"	
Gasoline Range Hydrocarbons	**120**	5.0	"	"	"	"	"	"	

Date Sampled: **09/10/12 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*96.6 %*	*30-150*		"	"	"	"	
Surrogate: Toluene-d8		*96.4 %*	*30-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*78.6 %*	*30-150*		"	"	"	"	

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: Sack 11,16,22,23-16 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 09/11/12 09:21

SS-13
R209046-04 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **09/10/12 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2091014	09/10/12	09/11/12	8015 DRO	

Date Sampled: **09/10/12 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*64.1 %*	*30-150*		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/10/12 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2091013	09/10/12	09/11/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/10/12 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*103 %*	*30-150*		"	"	"	"	
Surrogate: Toluene-d8		*95.3 %*	*30-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.0 %*	*30-150*		"	"	"	"	

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: Sack 11,16,22,23-16 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 09/11/12 09:21

SS-14
R209046-05 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **09/10/12 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2091014	09/10/12	09/11/12	8015 DRO	

Date Sampled: **09/10/12 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*62.4 %*	*30-150*		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/10/12 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2091013	09/10/12	09/11/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**50**	0.50	"	"	"	"	"	"	

Date Sampled: **09/10/12 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*106 %*	*30-150*		"	"	"	"	
Surrogate: Toluene-d8		*124 %*	*30-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*128 %*	*30-150*		"	"	"	"	

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: Sack 11,16,22,23-16 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 09/11/12 09:21

SS-15
R209046-06 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **09/10/12 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	**74**	45	mg/kg	1	2091014	09/10/12	09/11/12	8015 DRO	

Date Sampled: **09/10/12 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*86.1 %*	*30-150*		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/10/12 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	**0.28**	0.0050	mg/kg	1	2091013	09/10/12	09/11/12	EPA 8260B	
Benzene	**0.29**	0.0050	"	"	"	"	"	"	
Toluene	**1.8**	0.050	"	10	"	"	"	"	
Ethylbenzene	**2.1**	0.050	"	"	"	"	"	"	
Xylenes (total)	**30**	0.10	"	"	"	"	"	"	E
Gasoline Range Hydrocarbons	**950**	5.0	"	"	"	"	"	"	E

Date Sampled: **09/10/12 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*97.3 %*	*30-150*		"	"	"	"	
Surrogate: Toluene-d8		*93.5 %*	*30-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*94.1 %*	*30-150*		"	"	"	"	

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.

SS-16
R209046-07 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **09/10/12 15:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2091014	09/10/12	09/11/12	8015 DRO	

Date Sampled: **09/10/12 15:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*88.8 %*	*30-150*		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/10/12 15:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	**0.0066**	0.0050	mg/kg	1	2091013	09/10/12	09/11/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	**0.012**	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/10/12 15:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*102 %*	*30-150*		"	"	"	"	
Surrogate: Toluene-d8		*102 %*	*30-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*105 %*	*30-150*		"	"	"	"	

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.

Total Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2091014 - EPA 3550A										
Blank (2091014-BLK1)				Prepared: 09/10/12	Analyzed: 09/11/12					
C10-C28 (DRO)	ND	50	mg/kg							
LCS (2091014-BS1)				Prepared: 09/10/12	Analyzed: 09/11/12					
C10-C28 (DRO)	432	50	mg/kg	501		86.2	77-133			
LCS Dup (2091014-BSD1)				Prepared: 09/10/12	Analyzed: 09/11/12					
C10-C28 (DRO)	432	50	mg/kg	501		86.3	77-133	0.0708	11	
Matrix Spike (2091014-MS1)		**Source: R209045-01**		Prepared: 09/10/12	Analyzed: 09/11/12					**QM-07**
C10-C28 (DRO)	276	50	mg/kg	499	ND	55.2	68-141			
Matrix Spike Dup (2091014-MSD1)		**Source: R209045-01**		Prepared: 09/10/12	Analyzed: 09/11/12					**QM-07**
C10-C28 (DRO)	283	50	mg/kg	490	ND	57.7	68-141	2.66	25	

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: Sack 11,16,22,23-16 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 09/11/12 09:21

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2091009 - EPA 5030 Water MS										
Blank (2091009-BLK1)				Prepared & Analyzed: 09/10/12						
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	"							
Surrogate: 1,2-Dichloroethane-d4	*14.5*		*"*	*13.2*		*110*	*49.7-150*			
Surrogate: Toluene-d8	*13.3*		*"*	*13.3*		*99.8*	*51-150*			
Surrogate: 4-Bromofluorobenzene	*14.0*		*"*	*13.3*		*105*	*50.1-150*			
LCS (2091009-BS1)				Prepared & Analyzed: 09/10/12						
Benzene	27.4	1.0	ug/l	33.3		82.2	50-125			
Toluene	31.2	1.0	"	33.3		93.6	51-130			
Ethylbenzene	38.1	1.0	"	33.3		114	56-141			
m,p-Xylene	72.7	2.0	"	66.7		109	56-138			
o-Xylene	38.5	1.0	"	33.3		115	51-142			
Naphthalene	ND	1.0	"				74-130			
Surrogate: 1,2-Dichloroethane-d4	*13.7*		*"*	*13.2*		*104*	*49.7-150*			
Surrogate: Toluene-d8	*13.2*		*"*	*13.3*		*99.3*	*51-150*			
Surrogate: 4-Bromofluorobenzene	*13.1*		*"*	*13.3*		*98.0*	*50.1-150*			
LCS Dup (2091009-BSD1)				Prepared & Analyzed: 09/10/12						
Benzene	29.2	1.0	ug/l	33.3		87.5	50-125	6.26	14.6	
Toluene	31.0	1.0	"	33.3		93.0	51-130	0.707	18.9	
Ethylbenzene	39.3	1.0	"	33.3		118	56-141	3.23	11.9	
m,p-Xylene	73.6	2.0	"	66.7		110	56-138	1.19	13.7	
o-Xylene	39.2	1.0	"	33.3		117	51-142	1.78	15	
Naphthalene	ND	1.0	"				74-130		9.87	
Surrogate: 1,2-Dichloroethane-d4	*14.0*		*"*	*13.2*		*106*	*49.7-150*			
Surrogate: Toluene-d8	*12.9*		*"*	*13.3*		*96.5*	*51-150*			
Surrogate: 4-Bromofluorobenzene	*13.0*		*"*	*13.3*		*97.7*	*50.1-150*			

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.

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2091009 - EPA 5030 Water MS										
Matrix Spike (2091009-MS1)		**Source: R209033-01**		Prepared & Analyzed: 09/10/12						
Benzene	28.3	1.0	ug/l	33.3	ND	85.1	41-127			
Toluene	31.5	1.0	"	33.3	ND	94.6	32-140			
Ethylbenzene	40.4	1.0	"	33.3	ND	121	32-151			
m,p-Xylene	76.5	2.0	"	66.6	ND	115	29-153			
o-Xylene	39.4	1.0	"	33.3	ND	118	34-152			
Naphthalene	ND	1.0	"		2.19		78-127			
Surrogate: 1,2-Dichloroethane-d4	*13.3*		*"*	*13.2*		*101*	*49.7-150*			
Surrogate: Toluene-d8	*12.7*		*"*	*13.3*		*95.2*	*51-150*			
Surrogate: 4-Bromofluorobenzene	*13.3*		*"*	*13.3*		*100*	*50.1-150*			
Matrix Spike Dup (2091009-MSD1)		**Source: R209033-01**		Prepared & Analyzed: 09/10/12						
Benzene	28.8	1.0	ug/l	33.4	ND	86.0	41-127	1.45	21.3	
Toluene	31.1	1.0	"	33.4	ND	93.0	32-140	1.33	15.5	
Ethylbenzene	39.8	1.0	"	33.4	ND	119	32-151	1.57	17.4	
m,p-Xylene	75.3	2.0	"	66.8	ND	113	29-153	1.68	18.1	
o-Xylene	39.2	1.0	"	33.4	ND	117	34-152	0.618	15	
Naphthalene	ND	1.0	"		2.19		78-127		7.87	
Surrogate: 1,2-Dichloroethane-d4	*13.6*		*"*	*13.3*		*102*	*49.7-150*			
Surrogate: Toluene-d8	*12.7*		*"*	*13.4*		*95.0*	*51-150*			
Surrogate: 4-Bromofluorobenzene	*12.7*		*"*	*13.4*		*95.3*	*50.1-150*			
Batch 2091013 - EPA 5030 Soil MS										
Blank (2091013-BLK1)				Prepared & Analyzed: 09/10/12						
Naphthalene	ND	0.0050	mg/kg							
Benzene	ND	0.0050	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	*0.0383*		*"*	*0.0397*		*96.4*	*30-150*			
Surrogate: Toluene-d8	*0.0377*		*"*	*0.0400*		*94.4*	*30-150*			
Surrogate: 4-Bromofluorobenzene	*0.0389*		*"*	*0.0400*		*97.4*	*30-150*			

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.

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2091013 - EPA 5030 Soil MS										
LCS (2091013-BS1)				Prepared & Analyzed: 09/10/12						
Naphthalene	ND	0.0050	mg/kg				64-139			
Benzene	0.0836	0.0050	"	0.100		83.6	58-126			
Toluene	0.0954	0.0050	"	0.100		95.4	60-132			
Ethylbenzene	0.112	0.0050	"	0.100		112	74-138			
m,p-Xylene	0.214	0.010	"	0.200		107	72-135			
o-Xylene	0.116	0.0050	"	0.100		116	73-139			
Surrogate: 1,2-Dichloroethane-d4	*0.0378*		*"*	*0.0397*		*95.2*	*30-150*			
Surrogate: Toluene-d8	*0.0422*		*"*	*0.0400*		*106*	*30-150*			
Surrogate: 4-Bromofluorobenzene	*0.0376*		*"*	*0.0400*		*93.9*	*30-150*			
LCS Dup (2091013-BSD1)				Prepared & Analyzed: 09/10/12						
Naphthalene	ND	0.0050	mg/kg				64-139		12	
Benzene	0.0838	0.0050	"	0.100		83.8	58-126	0.215	13	
Toluene	0.0886	0.0050	"	0.100		88.6	60-132	7.34	14	
Ethylbenzene	0.114	0.0050	"	0.100		114	74-138	1.09	13	
m,p-Xylene	0.214	0.010	"	0.200		107	72-135	0.336	14	
o-Xylene	0.119	0.0050	"	0.100		119	73-139	2.22	13	
Surrogate: 1,2-Dichloroethane-d4	*0.0374*		*"*	*0.0397*		*94.3*	*30-150*			
Surrogate: Toluene-d8	*0.0378*		*"*	*0.0400*		*94.4*	*30-150*			
Surrogate: 4-Bromofluorobenzene	*0.0375*		*"*	*0.0400*		*93.8*	*30-150*			
Matrix Spike (2091013-MS1)		**Source: R209045-01**		Prepared & Analyzed: 09/10/12						
Naphthalene	ND	0.0050	mg/kg		ND		15-161			
Benzene	0.0848	0.0050	"	0.0982	0.00	86.3	33-127			
Toluene	0.0918	0.0050	"	0.0982	0.00	93.4	32-131			
Ethylbenzene	0.111	0.0050	"	0.0982	0.00	113	24-153			
m,p-Xylene	0.214	0.010	"	0.196	0.00	109	12-157			
o-Xylene	0.115	0.0050	"	0.0982	0.00	117	35-149			
Surrogate: 1,2-Dichloroethane-d4	*0.0388*		*"*	*0.0390*		*99.4*	*30-150*			
Surrogate: Toluene-d8	*0.0377*		*"*	*0.0393*		*95.9*	*30-150*			
Surrogate: 4-Bromofluorobenzene	*0.0360*		*"*	*0.0393*		*91.7*	*30-150*			

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Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2091013 - EPA 5030 Soil MS										
Matrix Spike Dup (2091013-MSD1)		**Source: R209045-01**		Prepared & Analyzed: 09/10/12						
Naphthalene	ND	0.0050	mg/kg		ND		15-161		44	
Benzene	0.0818	0.0050	"	0.0998	0.00	81.9	33-127	3.62	33	
Toluene	0.0935	0.0050	"	0.0998	0.00	93.7	32-131	1.87	31	
Ethylbenzene	0.112	0.0050	"	0.0998	0.00	112	24-153	0.0391	23	
m,p-Xylene	0.215	0.010	"	0.200	0.00	108	12-157	0.381	67	
o-Xylene	0.119	0.0050	"	0.0998	0.00	119	35-149	2.80	38	
Surrogate: 1,2-Dichloroethane-d4	*0.0403*		*"*	*0.0396*		*102*	*30-150*			
Surrogate: Toluene-d8	*0.0395*		*"*	*0.0399*		*98.9*	*30-150*			
Surrogate: 4-Bromofluorobenzene	*0.0373*		*"*	*0.0399*		*93.4*	*30-150*			

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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

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

September 12, 2012

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

RE: Sack 11,12,22,23-6

Enclosed are the results of analyses for samples received by Summit Scientific on 09/11/12 15:16. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Joseph J Egry IV For Ben Shrewsbury
President / Laboratory Director

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 09/12/12 14:17

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS18	R209057-01	Soil	09/11/12 08:57	09/11/12 15:16
SS19	R209057-02	Soil	09/11/12 09:05	09/11/12 15:16
SS20	R209057-03	Soil	09/11/12 11:30	09/11/12 15:16
SS21	R209057-04	Soil	09/11/12 11:45	09/11/12 15:16
SS22	R209057-05	Soil	09/11/12 12:25	09/11/12 15:16
SS23	R209057-06	Soil	09/11/12 13:31	09/11/12 15:16
SS17	R209057-07	Soil	09/10/12 16:00	09/11/12 15:16

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.

S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 09/12/12 14:17

R209057

Summit Scientific

S2

741 Corporate Circle Suite I • Golden, Colorado 80401

303-277-9310 • 303-374-5933 Fax

Page 1 of 1

Client: ~~Petroleum Development Corp~~ PDC Energy Inc

Address: 1775 Sherman St #3000 — Project Manager: Brandon Bruns

City/State/Zip: Denver, Co 80203 — E-Mail: Brandon.bruns@Pdce.com

Phone: — Fax: — Project Name: Sack 11, 12, 22, 23-6

Sampler Name: B. Humphrey, M. Weber — Project Number:

Sample Description	Date Sampled	Time Sampled	Number of Containers	HCl	HNO_3	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	Analyze For:	Special Instructions
SS18	9/11/12	0857	1			X			X				Please c. Murphy/c tusman-yap.com
SS19		0905											
SS20		1130											
SS21		1145											
SS22		1225											
SS23		1331	1			X			X				
SS17	9/10/12	1400	2			X			X				

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time (Check)	Notes:
Matt Weber	9/11/2012 @ 1516	[signature]	9/11/12 6:12	Same Day ☐ 72 Hours ☐ 24 Hours ☒ Standard ☐	
Relinquished by:	Date/Time:	Received by:	Date/Time:	48 Hours ☐	Sample Integrity:
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:		Temperature Upon Receipt: 4°C Intact: Yes / No

www.s2scientific.com

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 09/12/12 14:17

SS18
R209057-01 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **09/11/12 08:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2091104	09/11/12	09/12/12	8015 DRO	

Date Sampled: **09/11/12 08:57**

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: **09/11/12 08:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2091103	09/11/12	09/12/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/11/12 08:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*80.7 %*	*30-150*		"	"	"	"	
Surrogate: Toluene-d8		*99.5 %*	*30-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*94.0 %*	*30-150*		"	"	"	"	

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: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 09/12/12 14:17

SS19
R209057-02 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **09/11/12 09:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2091104	09/11/12	09/12/12	8015 DRO	

Date Sampled: **09/11/12 09:05**

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: **09/11/12 09:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2091103	09/11/12	09/12/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/11/12 09:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*102 %*	*30-150*		"	"	"	"	
Surrogate: Toluene-d8		*100 %*	*30-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.3 %*	*30-150*		"	"	"	"	

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: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 09/12/12 14:17

SS20
R209057-03 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **09/11/12 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2091104	09/11/12	09/12/12	8015 DRO	

Date Sampled: **09/11/12 11:30**

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: **09/11/12 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2091103	09/11/12	09/12/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/11/12 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*102 %*	*30-150*		"	"	"	"	
Surrogate: Toluene-d8		*100 %*	*30-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*101 %*	*30-150*		"	"	"	"	

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: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 09/12/12 14:17

SS21
R209057-04 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **09/11/12 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2091104	09/11/12	09/12/12	8015 DRO	

Date Sampled: **09/11/12 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*104 %*	*30-150*		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/11/12 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2091103	09/11/12	09/12/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/11/12 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*102 %*	*30-150*		"	"	"	"	
Surrogate: Toluene-d8		*103 %*	*30-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*99.4 %*	*30-150*		"	"	"	"	

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: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 09/12/12 14:17

SS22
R209057-05 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **09/11/12 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2091104	09/11/12	09/12/12	8015 DRO	

Date Sampled: **09/11/12 12:25**

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: **09/11/12 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	**0.068**	0.050	mg/kg	10	2091103	09/11/12	09/12/12	EPA 8260B	
Benzene	**6.7**	0.050	"	"	"	"	"	"	
Toluene	**47**	0.050	"	"	"	"	"	"	E
Ethylbenzene	**4.6**	0.050	"	"	"	"	"	"	
Xylenes (total)	**44**	0.10	"	"	"	"	"	"	E
Gasoline Range Hydrocarbons	**1100**	5.0	"	"	"	"	"	"	E

Date Sampled: **09/11/12 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*92.6 %*	*30-150*		"	"	"	"	
Surrogate: Toluene-d8		*90.6 %*	*30-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*82.0 %*	*30-150*		"	"	"	"	

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PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 09/12/12 14:17

SS23
R209057-06 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **09/11/12 13:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2091104	09/11/12	09/12/12	8015 DRO	

Date Sampled: **09/11/12 13:31**

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: **09/11/12 13:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2091103	09/11/12	09/12/12	EPA 8260B	
Benzene	**0.26**	0.0050	"	"	"	"	"	"	
Toluene	**0.69**	0.0050	"	"	"	"	"	"	
Ethylbenzene	**0.027**	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/11/12 13:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*101 %*	*30-150*		"	"	"	"	
Surrogate: Toluene-d8		*99.2 %*	*30-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.1 %*	*30-150*		"	"	"	"	

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: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 09/12/12 14:17

SS17
R209057-07 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **09/10/12 16:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2091104	09/11/12	09/12/12	8015 DRO	

Date Sampled: **09/10/12 16:00**

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: **09/10/12 16:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2091103	09/11/12	09/12/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/10/12 16:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*100 %*	*30-150*		"	"	"	"	
Surrogate: Toluene-d8		*99.5 %*	*30-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*96.5 %*	*30-150*		"	"	"	"	

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: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 09/12/12 14:17

Total Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2091104 - EPA 3550A										
Blank (2091104-BLK1)				Prepared: 09/11/12		Analyzed: 09/12/12				
C10-C28 (DRO)	ND	50	mg/kg							
LCS (2091104-BS1)				Prepared: 09/11/12		Analyzed: 09/12/12				
C10-C28 (DRO)	446	50	mg/kg	501		89.0	77-133			
LCS Dup (2091104-BSD1)				Prepared: 09/11/12		Analyzed: 09/12/12				
C10-C28 (DRO)	447	50	mg/kg	501		89.3	77-133	0.238	11	
Matrix Spike (2091104-MS1)		**Source: R209057-01**		Prepared: 09/11/12		Analyzed: 09/12/12				
C10-C28 (DRO)	394	50	mg/kg	481	ND	82.0	68-141			
Matrix Spike Dup (2091104-MSD1)		**Source: R209057-01**		Prepared: 09/11/12		Analyzed: 09/12/12				
C10-C28 (DRO)	403	50	mg/kg	477	ND	84.4	68-141	2.10	25	

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.

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2091103 - EPA 5030 Soil MS										
Blank (2091103-BLK1)				Prepared: 09/11/12	Analyzed: 09/12/12					
Naphthalene	ND	0.0050	mg/kg							
Benzene	ND	0.0050	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	*0.0364*		"	*0.0397*		*91.7*	*30-150*			
Surrogate: Toluene-d8	*0.0396*		"	*0.0400*		*99.0*	*30-150*			
Surrogate: 4-Bromofluorobenzene	*0.0388*		"	*0.0400*		*96.9*	*30-150*			
LCS (2091103-BS1)				Prepared: 09/11/12	Analyzed: 09/12/12					
Naphthalene	ND	0.0050	mg/kg				66-138			
Benzene	0.112	0.0050	"	0.100		112	58-130			
Toluene	0.119	0.0050	"	0.100		119	61-134			
Ethylbenzene	0.122	0.0050	"	0.100		122	74-139			
m,p-Xylene	0.241	0.010	"	0.200		121	73-137			
o-Xylene	0.120	0.0050	"	0.100		120	73-141			
Surrogate: 1,2-Dichloroethane-d4	*0.0358*		"	*0.0397*		*90.2*	*30-150*			
Surrogate: Toluene-d8	*0.0393*		"	*0.0400*		*98.2*	*30-150*			
Surrogate: 4-Bromofluorobenzene	*0.0388*		"	*0.0400*		*96.9*	*30-150*			
LCS Dup (2091103-BSD1)				Prepared: 09/11/12	Analyzed: 09/12/12					
Naphthalene	ND	0.0050	mg/kg				66-138		12	
Benzene	0.107	0.0050	"	0.100		107	58-130	4.89	13	
Toluene	0.113	0.0050	"	0.100		113	61-134	5.22	16	
Ethylbenzene	0.112	0.0050	"	0.100		112	74-139	9.03	12	
m,p-Xylene	0.222	0.010	"	0.200		111	73-137	8.21	14	
o-Xylene	0.109	0.0050	"	0.100		109	73-141	9.53	12	
Surrogate: 1,2-Dichloroethane-d4	*0.0379*		"	*0.0397*		*95.5*	*30-150*			
Surrogate: Toluene-d8	*0.0399*		"	*0.0400*		*99.8*	*30-150*			
Surrogate: 4-Bromofluorobenzene	*0.0378*		"	*0.0400*		*94.6*	*30-150*			

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PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 09/12/12 14:17

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2091103 - EPA 5030 Soil MS										
Matrix Spike (2091103-MS1)		**Source: R209057-01**		Prepared: 09/11/12		Analyzed: 09/12/12				
Naphthalene	ND	0.0050	mg/kg		ND		10-158			
Benzene	0.105	0.0050	"	0.0971	0.00	108	30-131			
Toluene	0.109	0.0050	"	0.0971	0.00	112	30-134			
Ethylbenzene	0.113	0.0050	"	0.0971	0.00	116	22-153			
m,p-Xylene	0.223	0.010	"	0.194	0.00	115	10-159			
o-Xylene	0.110	0.0050	"	0.0971	0.00	113	31-151			
Surrogate: 1,2-Dichloroethane-d4	*0.0380*		*"*	*0.0385*		*98.5*	*30-150*			
Surrogate: Toluene-d8	*0.0386*		*"*	*0.0388*		*99.4*	*30-150*			
Surrogate: 4-Bromofluorobenzene	*0.0378*		*"*	*0.0388*		*97.4*	*30-150*			
Matrix Spike Dup (2091103-MSD1)		**Source: R209057-01**		Prepared: 09/11/12		Analyzed: 09/12/12				
Naphthalene	ND	0.0050	mg/kg		ND		10-158		42	
Benzene	0.103	0.0050	"	0.0973	0.00	106	30-131	1.60	34	
Toluene	0.107	0.0050	"	0.0973	0.00	110	30-134	1.97	30	
Ethylbenzene	0.109	0.0050	"	0.0973	0.00	112	22-153	3.26	24	
m,p-Xylene	0.215	0.010	"	0.195	0.00	110	10-159	3.80	68	
o-Xylene	0.107	0.0050	"	0.0973	0.00	110	31-151	2.80	38	
Surrogate: 1,2-Dichloroethane-d4	*0.0392*		*"*	*0.0386*		*102*	*30-150*			
Surrogate: Toluene-d8	*0.0388*		*"*	*0.0389*		*99.7*	*30-150*			
Surrogate: 4-Bromofluorobenzene	*0.0376*		*"*	*0.0389*		*96.5*	*30-150*			

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Notes and Definitions

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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

November 02, 2012

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

RE: Sack 11,12,22,23-6

Enclosed are the results of analyses for samples received by Summit Scientific on 10/30/12 16:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Joseph J Egry IV
Laboratory Director

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 11/02/12 08:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS24	R210236-01	Soil	10/29/12 09:35	10/30/12 16:15
SS25	R210236-02	Soil	10/29/12 10:00	10/30/12 16:15
SS26	R210236-03	Soil	10/29/12 10:20	10/30/12 16:15
SS27	R210236-04	Soil	10/29/12 10:40	10/30/12 16:15
SS28	R210236-05	Soil	10/29/12 10:55	10/30/12 16:15

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.

S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 11/02/12 08:24

Summit Scientific 1210236

S2

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Page 1 of 1

Client: PDC Energy

Address: 1775 Sherman St Suite 3000

City/State/Zip: Denver, CO 80203

Phone: (303) 860-5800

Sampler Name: Brian Hammond

Project Manager: Brandon Bruns

E-Mail: bbruns@pedcl.com

Project Name: Sack 11,12, 22, 23-6

Fax:

Project Number:

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative: HCl	HNO3	None	Other (Specify)	Matrix: Groundwater	Soil	Air - Canister Serial #	Other (Specify)	Analyze For: 8260 Glycols * 8015 DRO	Special Instructions
S524	10/29/12	0935	1			X			X			X	
S525		1000										X	
S526		1020											
S527		1040											
S528		1055											

Relinquished by: Date/Time: 10-29-12 0730 Received by:

Relinquished by: Date/Time: Received by:

Relinquished by: Date/Time: 1615 10-30-12 Received by: Date/Time: 1615 10-30-12

Turn Around Time (Check): Same Day / 24 Hours / 48 Hours / 72 Hours / Standard X

Sample Integrity: Temperature Upon Receipt: 4.1 Intact: Yes No

Notes:

www.s2scientific.com

SS24
R210236-01 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **10/29/12 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	42	mg/kg	1	2103111	10/31/12	11/01/12	8015 DRO	

Date Sampled: **10/29/12 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*85.9 %*	*30-150*		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/29/12 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2103112	10/31/12	10/31/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/29/12 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*109 %*	*30-150*		"	"	"	"	
Surrogate: Toluene-d8		*95.8 %*	*30-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.6 %*	*30-150*		"	"	"	"	

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: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 11/02/12 08:24

SS25
R210236-02 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **10/29/12 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	45	mg/kg	1	2103111	10/31/12	11/01/12	8015 DRO	

Date Sampled: **10/29/12 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*91.1 %*	*30-150*		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/29/12 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2103112	10/31/12	10/31/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/29/12 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*115 %*	*30-150*		"	"	"	"	
Surrogate: Toluene-d8		*97.8 %*	*30-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.0 %*	*30-150*		"	"	"	"	

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: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 11/02/12 08:24

SS26
R210236-03 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **10/29/12 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	44	mg/kg	1	2103111	10/31/12	11/01/12	8015 DRO	

Date Sampled: **10/29/12 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*77.4 %*	*30-150*		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/29/12 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2103112	10/31/12	10/31/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/29/12 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*121 %*	*30-150*		"	"	"	"	
Surrogate: Toluene-d8		*100 %*	*30-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.1 %*	*30-150*		"	"	"	"	

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: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 11/02/12 08:24

SS27
R210236-04 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **10/29/12 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	44	mg/kg	1	2103111	10/31/12	11/01/12	8015 DRO	

Date Sampled: **10/29/12 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*85.7 %*	*30-150*		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/29/12 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2103112	10/31/12	10/31/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/29/12 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*116 %*	*30-150*		"	"	"	"	
Surrogate: Toluene-d8		*97.2 %*	*30-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.4 %*	*30-150*		"	"	"	"	

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: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 11/02/12 08:24

SS28
R210236-05 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **10/29/12 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	43	mg/kg	1	2103111	10/31/12	11/01/12	8015 DRO	

Date Sampled: **10/29/12 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*34.0 %*	*30-150*		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/29/12 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2103112	10/31/12	10/31/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/29/12 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*116 %*	*30-150*		"	"	"	"	
Surrogate: Toluene-d8		*98.0 %*	*30-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*96.4 %*	*30-150*		"	"	"	"	

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: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 11/02/12 08:24

Total Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2103111 - EPA 3550A										
Blank (2103111-BLK1)				Prepared: 10/31/12		Analyzed: 11/01/12				
C10-C28 (DRO)	ND	50	mg/kg							
LCS (2103111-BS1)				Prepared: 10/31/12		Analyzed: 11/01/12				
C10-C28 (DRO)	569	50	mg/kg	501		114	73-134			
LCS Dup (2103111-BSD1)				Prepared: 10/31/12		Analyzed: 11/01/12				
C10-C28 (DRO)	581	50	mg/kg	501		116	73-134	1.96	11	
Matrix Spike (2103111-MS1)		**Source: R210207-01**		Prepared: 10/31/12		Analyzed: 11/01/12				
C10-C28 (DRO)	564	50	mg/kg	495	31.0	108	50-148			
Matrix Spike Dup (2103111-MSD1)		**Source: R210207-01**		Prepared: 10/31/12		Analyzed: 11/01/12				
C10-C28 (DRO)	537	50	mg/kg	467	31.0	108	50-148	4.98	13	

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.

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2103112 - EPA 5030 Soil MS										
Blank (2103112-BLK1)				Prepared & Analyzed: 10/31/12						
Naphthalene	ND	0.0050	mg/kg							
Benzene	ND	0.0050	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	*0.0440*		*"*	*0.0397*		*111*	*30-150*			
Surrogate: Toluene-d8	*0.0400*		*"*	*0.0400*		*100*	*30-150*			
Surrogate: 4-Bromofluorobenzene	*0.0394*		*"*	*0.0400*		*98.4*	*30-150*			
LCS (2103112-BS1)				Prepared & Analyzed: 10/31/12						
Naphthalene	ND	0.0050	mg/kg				66-138			
Benzene	0.0728	0.0050	"	0.100		72.8	58-130			
Toluene	0.0771	0.0050	"	0.100		77.1	61-134			
Ethylbenzene	0.101	0.0050	"	0.100		101	74-139			
m,p-Xylene	0.186	0.010	"	0.200		92.9	73-137			
o-Xylene	0.101	0.0050	"	0.100		101	73-141			
Surrogate: 1,2-Dichloroethane-d4	*0.0433*		*"*	*0.0397*		*109*	*30-150*			
Surrogate: Toluene-d8	*0.0398*		*"*	*0.0400*		*99.4*	*30-150*			
Surrogate: 4-Bromofluorobenzene	*0.0362*		*"*	*0.0400*		*90.6*	*30-150*			
LCS Dup (2103112-BSD1)				Prepared & Analyzed: 10/31/12						
Naphthalene	ND	0.0050	mg/kg				66-138		12	
Benzene	0.0709	0.0050	"	0.100		70.9	58-130	2.55	13	
Toluene	0.0755	0.0050	"	0.100		75.5	61-134	2.08	16	
Ethylbenzene	0.103	0.0050	"	0.100		103	74-139	1.59	12	
m,p-Xylene	0.185	0.010	"	0.200		92.6	73-137	0.307	14	
o-Xylene	0.105	0.0050	"	0.100		105	73-141	3.69	12	
Surrogate: 1,2-Dichloroethane-d4	*0.0423*		*"*	*0.0397*		*106*	*30-150*			
Surrogate: Toluene-d8	*0.0387*		*"*	*0.0400*		*96.8*	*30-150*			
Surrogate: 4-Bromofluorobenzene	*0.0379*		*"*	*0.0400*		*94.6*	*30-150*			

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PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 11/02/12 08:24

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2103112 - EPA 5030 Soil MS										
Matrix Spike (2103112-MS1)		**Source: R210213-01**		Prepared & Analyzed: 10/31/12						
Naphthalene	ND	0.0050	mg/kg		ND		10-158			
Benzene	0.0723	0.0050	"	0.0988	0.00	73.2	30-131			
Toluene	0.0779	0.0050	"	0.0988	0.00	78.8	30-134			
Ethylbenzene	0.105	0.0050	"	0.0988	0.00	106	22-153			
m,p-Xylene	0.186	0.010	"	0.198	0.00	94.1	10-159			
o-Xylene	0.105	0.0050	"	0.0988	0.00	106	31-151			
Surrogate: 1,2-Dichloroethane-d4	*0.0445*		*"*	*0.0392*		*113*	*30-150*			
Surrogate: Toluene-d8	*0.0390*		*"*	*0.0395*		*98.8*	*30-150*			
Surrogate: 4-Bromofluorobenzene	*0.0374*		*"*	*0.0395*		*94.7*	*30-150*			
Matrix Spike Dup (2103112-MSD1)		**Source: R210213-01**		Prepared & Analyzed: 10/31/12						
Naphthalene	ND	0.0050	mg/kg		ND		10-158		42	
Benzene	0.0705	0.0050	"	0.0978	0.00	72.0	30-131	2.55	34	
Toluene	0.0773	0.0050	"	0.0978	0.00	79.0	30-134	0.717	30	
Ethylbenzene	0.102	0.0050	"	0.0978	0.00	104	22-153	2.38	24	
m,p-Xylene	0.183	0.010	"	0.196	0.00	93.4	10-159	1.70	68	
o-Xylene	0.103	0.0050	"	0.0978	0.00	106	31-151	1.18	38	
Surrogate: 1,2-Dichloroethane-d4	*0.0432*		*"*	*0.0388*		*111*	*30-150*			
Surrogate: Toluene-d8	*0.0389*		*"*	*0.0391*		*99.5*	*30-150*			
Surrogate: 4-Bromofluorobenzene	*0.0355*		*"*	*0.0391*		*90.6*	*30-150*			

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.

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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

November 05, 2012

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

RE: Sack 11,12,22,23-6

Enclosed are the results of analyses for samples received by Summit Scientific on 10/30/12 13:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Joseph J Egry IV
Laboratory Director

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 11/05/12 14:43

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH02	R210239-01	Water	10/30/12 12:30	10/30/12 13:45
BH03	R210239-02	Water	10/30/12 12:45	10/30/12 13:45
BH04	R210239-03	Water	10/30/12 12:40	10/30/12 13:45
BH05	R210239-04	Water	10/30/12 12:25	10/30/12 13:45

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.

S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 11/05/12 14:43

Summit Scientific 210239

S2

741 Corporate Circle Suite I • Golden, Colorado 80401
303-277-9310 • 303-277-9311 Fax

Page 1 of 1

Client: PDC Energy
Address: 1775 Sherman St Suite 3000
City/State/Zip: Denver, CO 80203
Phone: (303) 860-5800
Fax:
Sampler Name: [illegible]
Project Manager: Brandon Bruns
E-Mail: bbruns@pdc.com
Project Name: Sack 11 12 22 23-6
Project Number:

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative: HCl	HNO3	None	Other (Specify)	Matrix: Groundwater	Soil	Air - Canister Serial #	Other (Specify)	Analyze For: [illegible]	Special Instructions
[illegible]	10/30/12	1250	2	X				X					
[illegible]		1255											
[illegible]		1340											
[illegible]		1325											
[illegible]		1325											

Relinquished by: [illegible] Date/Time: 10/30/12 2:15
Received by: [illegible] Date/Time: 10/30 13:45
Relinquished by: Date/Time:
Received by: Date/Time:
Relinquished by: Date/Time:
Received in Lab by: Date/Time:

Turn Around Time (Check): Same Day ☐ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ Standard ☒

Sample Integrity: Temperature Upon Receipt: 5.6 Intact: Yes No

Notes: [illegible]

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PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 11/05/12 14:43

BH02

R210239-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	**370**	100	ug/l	100	2110217	11/02/12	11/03/12	EPA 8260B	
Toluene	**1300**	100	"	"	"	"	"	"	
Ethylbenzene	**180**	100	"	"	"	"	"	"	
Xylenes (total)	**1900**	100	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*91.9 %*	*49.7-150*		"	"	"	"	
Surrogate: Toluene-d8		*98.4 %*	*51-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*95.3 %*	*50.1-150*		"	"	"	"	

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: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 11/05/12 14:43

BH03

R210239-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/30/12 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	**1900**	100	ug/l	100	2110217	11/02/12	11/03/12	EPA 8260B	
Toluene	**6500**	100	"	"	"	"	"	"	
Ethylbenzene	**12**	1.0	"	1	"	"	"	"	
Xylenes (total)	**2200**	100	"	100	"	"	"	"	

Date Sampled: **10/30/12 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*89.0 %*	*49.7-150*		"	"	"	"	
Surrogate: Toluene-d8		*97.0 %*	*51-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*95.0 %*	*50.1-150*		"	"	"	"	

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: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 11/05/12 14:43

BH04

R210239-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/30/12 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2110217	11/02/12	11/03/12	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **10/30/12 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*91.9 %*	*49.7-150*		"	"	"	"	
Surrogate: Toluene-d8		*96.6 %*	*51-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*96.6 %*	*50.1-150*		"	"	"	"	

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: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 11/05/12 14:43

BH05

R210239-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/30/12 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2110217	11/02/12	11/03/12	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **10/30/12 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*92.1 %*	*49.7-150*		"	"	"	"	
Surrogate: Toluene-d8		*97.6 %*	*51-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*92.1 %*	*50.1-150*		"	"	"	"	

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: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 11/05/12 14:43

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2110217 - EPA 5030 Water MS										
Blank (2110217-BLK1)				Prepared: 11/02/12	Analyzed: 11/04/12					
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	*11.5*		*"*	*13.2*		*87.1*	*49.7-150*			
Surrogate: Toluene-d8	*12.9*		*"*	*13.3*		*96.6*	*51-150*			
Surrogate: 4-Bromofluorobenzene	*14.0*		*"*	*13.3*		*105*	*50.1-150*			
LCS (2110217-BS1)				Prepared: 11/02/12	Analyzed: 11/04/12					
Benzene	23.6	1.0	ug/l	33.3		70.7	51-132			
Toluene	25.3	1.0	"	33.3		75.8	51-138			
Ethylbenzene	27.4	1.0	"	33.3		82.4	58-146			
m,p-Xylene	57.3	2.0	"	66.7		85.9	57-144			
o-Xylene	27.5	1.0	"	33.3		82.6	53-146			
Surrogate: 1,2-Dichloroethane-d4	*11.3*		*"*	*13.2*		*85.3*	*49.7-150*			
Surrogate: Toluene-d8	*13.0*		*"*	*13.3*		*97.4*	*51-150*			
Surrogate: 4-Bromofluorobenzene	*13.4*		*"*	*13.3*		*100*	*50.1-150*			
LCS Dup (2110217-BSD1)				Prepared: 11/02/12	Analyzed: 11/04/12					
Benzene	26.0	1.0	ug/l	33.3		77.9	51-132	9.73	17	
Toluene	27.8	1.0	"	33.3		83.3	51-138	9.35	17	
Ethylbenzene	29.3	1.0	"	33.3		87.8	58-146	6.38	16	
m,p-Xylene	61.2	2.0	"	66.7		91.8	57-144	6.57	16	
o-Xylene	29.2	1.0	"	33.3		87.5	53-146	5.86	15	
Surrogate: 1,2-Dichloroethane-d4	*11.9*		*"*	*13.2*		*90.0*	*49.7-150*			
Surrogate: Toluene-d8	*13.1*		*"*	*13.3*		*98.4*	*51-150*			
Surrogate: 4-Bromofluorobenzene	*13.1*		*"*	*13.3*		*98.0*	*50.1-150*			

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Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2110217 - EPA 5030 Water MS										
Matrix Spike (2110217-MS1)		**Source: R211012-01**		Prepared: 11/02/12		Analyzed: 11/04/12				
Benzene	22.2	1.0	ug/l	33.3	ND	66.7	34-141			
Toluene	23.9	1.0	"	33.3	ND	71.6	27-151			
Ethylbenzene	25.5	1.0	"	33.3	ND	76.6	29-160			
m,p-Xylene	53.2	2.0	"	66.7	ND	79.8	20-166			
o-Xylene	25.4	1.0	"	33.3	ND	76.3	33-159			
Surrogate: 1,2-Dichloroethane-d4	*11.6*		*"*	*13.2*		*87.7*	*49.7-150*			
Surrogate: Toluene-d8	*13.2*		*"*	*13.3*		*98.6*	*51-150*			
Surrogate: 4-Bromofluorobenzene	*13.0*		*"*	*13.3*		*97.5*	*50.1-150*			
Matrix Spike Dup (2110217-MSD1)		**Source: R211012-01**		Prepared: 11/02/12		Analyzed: 11/04/12				
Benzene	25.4	1.0	ug/l	33.3	ND	76.1	34-141	13.2	32	
Toluene	27.2	1.0	"	33.3	ND	81.5	27-151	12.9	25	
Ethylbenzene	29.0	1.0	"	33.3	ND	87.0	29-160	12.8	50	
m,p-Xylene	60.7	2.0	"	66.7	ND	91.0	20-166	13.1	36	
o-Xylene	29.2	1.0	"	33.3	ND	87.6	33-159	13.8	26	
Surrogate: 1,2-Dichloroethane-d4	*11.6*		*"*	*13.2*		*87.3*	*49.7-150*			
Surrogate: Toluene-d8	*13.2*		*"*	*13.3*		*98.6*	*51-150*			
Surrogate: 4-Bromofluorobenzene	*13.3*		*"*	*13.3*		*100*	*50.1-150*			

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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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

January 07, 2013

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

RE: Sack 11,12,22,23-6

Enclosed are the results of analyses for samples received by Summit Scientific on 12/31/12 15:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Joseph J Egry IV For Ben Shrewsbury
President / Laboratory Manager

This report shall not be reproduced, except in its entirety, without the written approval of Summit Scientific. Test results relate only to samples analyzed.

Summit Scientific is the sole authority for authorizing edits or modifications to this document. Unauthorized modification of this report is strictly prohibited.

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 01/07/13 10:26

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	R212181-01	Water	12/30/12 09:30	12/31/12 15:00
BH06	R212181-02	Water	12/30/12 09:15	12/31/12 15:00
BH08	R212181-03	Water	12/30/12 10:00	12/31/12 15:00
BH07	R212181-04	Water	12/30/12 09:45	12/31/12 15:00

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S2

PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 01/07/13 10:26

Summit Scientific

S2

741 Corporate Circle Suite I ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-277-9531 Fax

R212181

Page 1 of 1

Client: PDC Energy
Address: 1775 Sherman St Suite 3000
City/State/Zip: Denver, CO 80203
Phone: (303) 860-5800
Fax:
Sampler Name: [illegible]
Project Manager: Brandon Bruns
E-Mail: bbruns@pecld.com
Project Name: Sack 11,12,22,23-6
Project Number:

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative: HCl	HNO3	None	Other (Specify)	Matrix: Groundwater	Soil	Air - Canister Serial #	Other (Specify)	Analyze For:	Special Instructions
[illegible]	12/31/12	9:20	3	X				X				X	
[illegible]		9:15											
[illegible]		10:00											
[illegible]		9:45											

Relinquished by: [illegible] Date/Time: 12/31/12 15:00 Received by: [illegible] Date/Time: 12/31/12 15:00

Relinquished by: Date/Time: Received by: Date/Time:

Relinquished by: Date/Time: Received in Lab by: Date/Time:

Notes:

Turn Around Time (Check): Same Day / 24 Hours / 48 Hours / 72 Hours / Standard (X)

Sample Integrity: Temperature Upon Receipt: 5.3 Intact: Yes No

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PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 01/07/13 10:26

BH01

R212181-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	**360**	100	ug/l	100	3010304	01/03/13	01/03/13	EPA 8260B	
Toluene	**1200**	100	"	"	"	"	"	"	
Ethylbenzene	**110**	1.0	"	1	"	"	"	"	
Xylenes (total)	**730**	1.0	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*95.5 %*		*37-154*	"	"	"	"	
Surrogate: Toluene-d8		*113 %*		*45-149*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*102 %*		*45-146*	"	"	"	"	

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: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 01/07/13 10:26

BH06

R212181-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/30/12 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	**13**	1.0	ug/l	1	3010304	01/03/13	01/03/13	EPA 8260B	
Toluene	**45**	1.0	"	"	"	"	"	"	
Ethylbenzene	**17**	1.0	"	"	"	"	"	"	
Xylenes (total)	**200**	1.0	"	"	"	"	"	"	

Date Sampled: **12/30/12 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*117 %*	*37-154*		"	"	"	"	
Surrogate: Toluene-d8		*100 %*	*45-149*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.9 %*	*45-146*		"	"	"	"	

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PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 01/07/13 10:26

BH08

R212181-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/30/12 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	3010304	01/03/13	01/03/13	EPA 8260B	
Toluene	**44**	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **12/30/12 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*114 %*		*37-154*	"	"	"	"	
Surrogate: Toluene-d8		*93.7 %*		*45-149*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*		*45-146*	"	"	"	"	

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PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 01/07/13 10:26

BH07

R212181-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/30/12 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	3010304	01/03/13	01/04/13	EPA 8260B	
Toluene	**19**	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **12/30/12 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*111 %*		*37-154*	"	"	"	"	
Surrogate: Toluene-d8		*95.5 %*		*45-149*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*		*45-146*	"	"	"	"	

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Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3010304 - EPA 5030 Water MS										
Blank (3010304-BLK1)				Prepared & Analyzed: 01/03/13						
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	*14.8*		*"*	*13.2*		*112*	*37-154*			
Surrogate: Toluene-d8	*12.6*		*"*	*13.3*		*94.4*	*45-149*			
Surrogate: 4-Bromofluorobenzene	*13.8*		*"*	*13.3*		*103*	*45-146*			
LCS (3010304-BS1)				Prepared & Analyzed: 01/03/13						
Benzene	22.7	1.0	ug/l	33.3		68.0	51-132			
Toluene	24.8	1.0	"	33.3		74.3	51-138			
Ethylbenzene	28.2	1.0	"	33.3		84.6	58-146			
m,p-Xylene	58.3	2.0	"	66.7		87.5	57-144			
o-Xylene	28.5	1.0	"	33.3		85.6	53-146			
Surrogate: 1,2-Dichloroethane-d4	*14.0*		*"*	*13.2*		*106*	*37-154*			
Surrogate: Toluene-d8	*12.5*		*"*	*13.3*		*94.1*	*45-149*			
Surrogate: 4-Bromofluorobenzene	*14.2*		*"*	*13.3*		*107*	*45-146*			
LCS Dup (3010304-BSD1)				Prepared & Analyzed: 01/03/13						
Benzene	23.4	1.0	ug/l	33.3		70.3	51-132	3.38	17	
Toluene	25.5	1.0	"	33.3		76.5	51-138	2.98	17	
Ethylbenzene	29.1	1.0	"	33.3		87.3	58-146	3.14	16	
m,p-Xylene	60.2	2.0	"	66.7		90.3	57-144	3.21	16	
o-Xylene	29.5	1.0	"	33.3		88.5	53-146	3.34	15	
Surrogate: 1,2-Dichloroethane-d4	*14.6*		*"*	*13.2*		*110*	*37-154*			
Surrogate: Toluene-d8	*12.1*		*"*	*13.3*		*90.8*	*45-149*			
Surrogate: 4-Bromofluorobenzene	*14.6*		*"*	*13.3*		*109*	*45-146*			

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PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Sack 11,12,22,23-6 Project Number: [none] Project Manager: Brandon Bruns	**Reported:** 01/07/13 10:26

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3010304 - EPA 5030 Water MS										
Matrix Spike (3010304-MS1)		**Source: R301006-02**		Prepared & Analyzed: 01/03/13						
Benzene	23.1	1.0	ug/l	33.3	ND	69.4	34-141			
Toluene	25.4	1.0	"	33.3	ND	76.2	27-151			
Ethylbenzene	27.4	1.0	"	33.3	ND	82.1	29-160			
m,p-Xylene	56.7	2.0	"	66.7	ND	85.1	20-166			
o-Xylene	27.6	1.0	"	33.3	ND	82.7	33-159			
Surrogate: 1,2-Dichloroethane-d4	*14.9*		*"*	*13.2*		*113*	*37-154*			
Surrogate: Toluene-d8	*12.9*		*"*	*13.3*		*97.1*	*45-149*			
Surrogate: 4-Bromofluorobenzene	*14.1*		*"*	*13.3*		*106*	*45-146*			
Matrix Spike Dup (3010304-MSD1)		**Source: R301006-02**		Prepared & Analyzed: 01/03/13						
Benzene	22.9	1.0	ug/l	33.3	ND	68.7	34-141	0.912	32	
Toluene	25.2	1.0	"	33.3	ND	75.6	27-151	0.830	25	
Ethylbenzene	27.0	1.0	"	33.3	ND	81.0	29-160	1.40	50	
m,p-Xylene	56.1	2.0	"	66.7	ND	84.2	20-166	1.05	36	
o-Xylene	26.9	1.0	"	33.3	ND	80.6	33-159	2.46	26	
Surrogate: 1,2-Dichloroethane-d4	*15.4*		*"*	*13.2*		*116*	*37-154*			
Surrogate: Toluene-d8	*13.1*		*"*	*13.3*		*98.3*	*45-149*			
Surrogate: 4-Bromofluorobenzene	*14.0*		*"*	*13.3*		*105*	*45-146*			

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