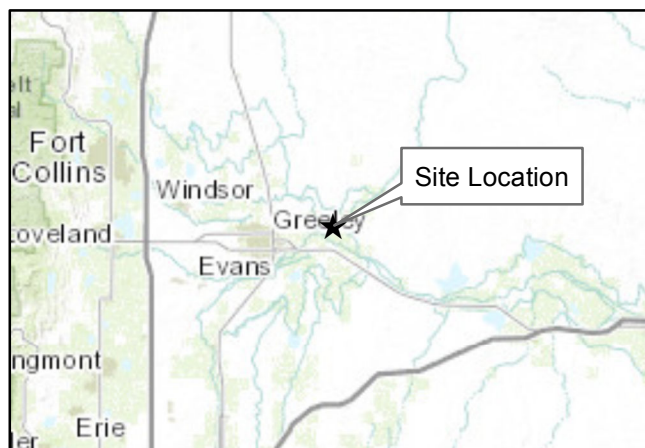


0 375 750 1,500  
Feet

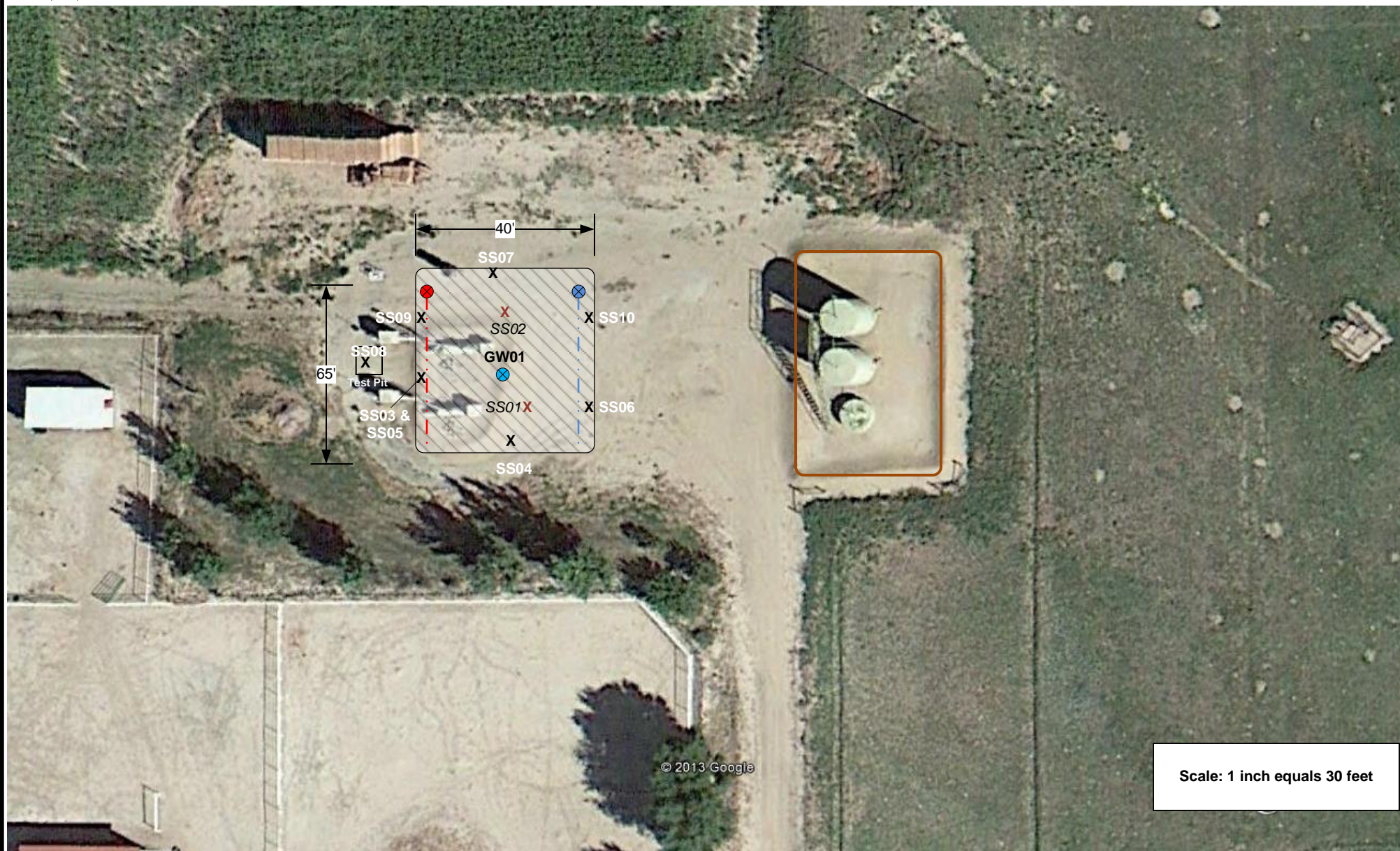


## Figure 1

Site Location Map  
Sitzman 1 & 32-4 / French 1, 5; 41-4  
SENW S4 T5N R65W  
Weld County, Colorado

Drawn By: DBA  
Date: 01/10/2014





Scale: 1 inch equals 30 feet

DRAWN BY: CAW

DATE: 1/24/2014

**Facility Diagram**  
PDC Energy – DJ Basin  
Sitzman 1 & 32-4 / French 1, 5; 41-1  
SENW S4 T5N R64W  
Weld County, CO



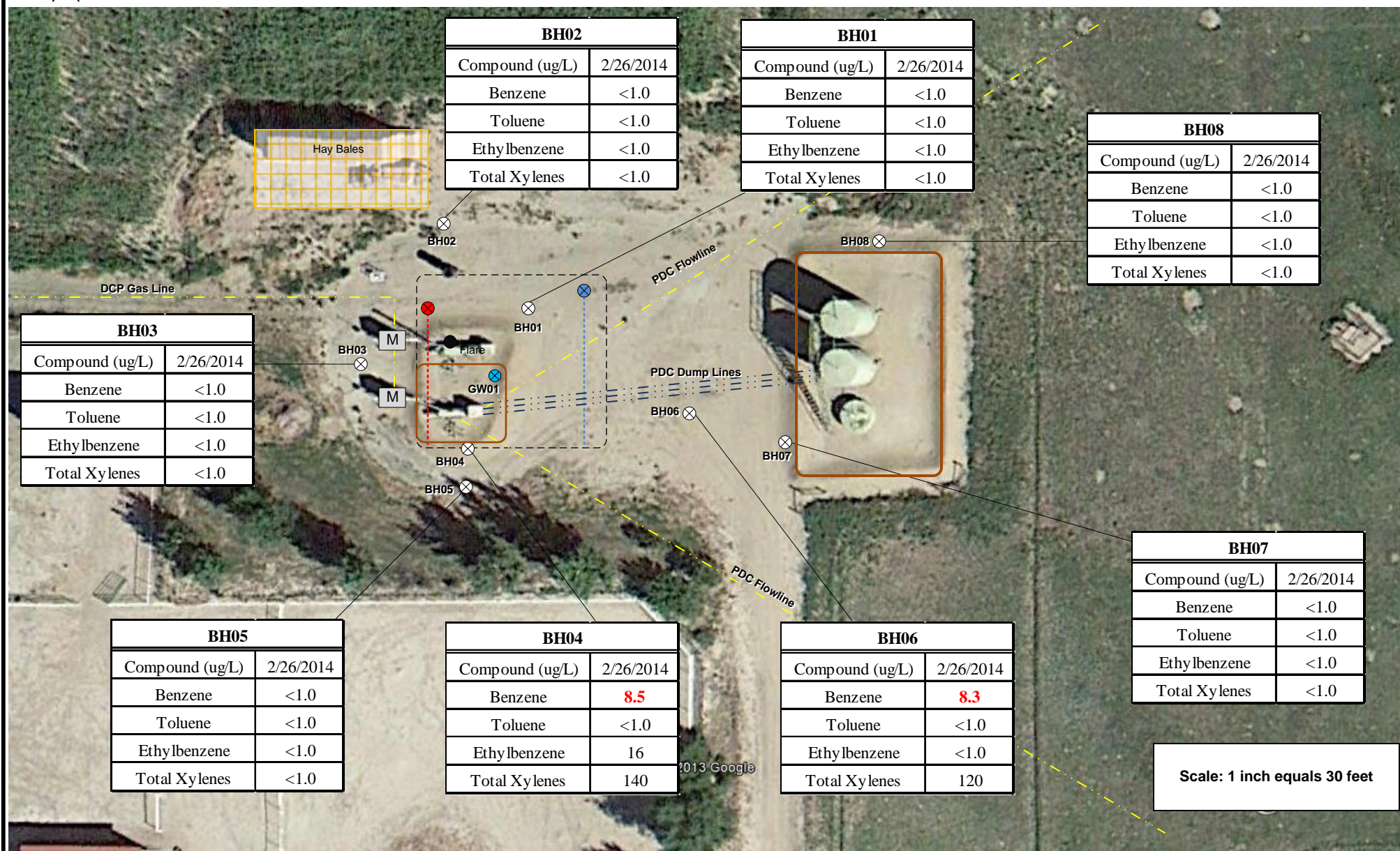
6899 Pecos Street  
Unit C  
Denver, CO 80221

**LEGEND**

- Approximate Area of Excavation
- Horizontal Remediation Pipe - AS
- Horizontal Remediation Pipe - SVE
- Soil Sample Location
- Groundwater Sample Location
- Soil Sample Location Subsequently Excavated
- Earthen Berm

FIGURE 2  
EXCAVATION  
SITE MAP





DRAWN BY: ESS

DATE: 3/7/2014

**Facility Diagram**  
PDC Energy - DJ Basin  
Sitzman 1 & 32-4 / French 1, 5; 41-1  
SENW S4 T5N R64W  
Weld County, CO



6899 Pecos Street  
Unit C  
Denver, CO 80221

**LEGEND**

- Approximate Area of Excavation
- Horizontal Remediation Pipe - AS
- Horizontal Remediation Pipe - SVE
- Groundwater Sample Location
- Temporary Monitoring Well Location
- Earthen Berm

**FIGURE 3**  
**GROUNDWATER**  
**ANALYTICAL RESULTS**

**TABLE 1**  
**SITZMAN 1 32-4 / FRENCH 1, 5; 41-1**  
**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 <sup>(2)</sup> (mg/kg)
SS01	12/20/2013	5	2,105	<0.002	<0.005	0.098	0.091	0.26	<b>5,270</b>
SS02	12/20/2013	6	1,950	0.0055	<0.005	0.13	1.1	0.088	<b>5,700</b>
SS03	12/20/2013	12	2,050	0.015	<0.005	0.83	21	0.39	<b>3,900</b>
SS04	12/20/2013	8	7.4	<0.002	<0.005	<0.005	<0.010	<0.010	2.1
SS05	12/23/2013	6	1,475	0.027	<0.005	1.2	7	0.38	<b>2,790</b>
SS06	12/23/2013	6	3.5	<0.002	<0.005	<0.005	<0.010	<0.010	<50
SS07	12/23/2013	6	4.1	<0.002	<0.005	<0.005	<0.010	0.012	<50
SS08	12/26/2013	6	2.6	<0.002	<0.005	<0.005	<0.010	<0.010	<50
SS09	12/27/2013	6	10.1	<0.002	<0.005	<0.005	<0.010	<0.010	<50
SS10	12/30/2013	6	8.4	<0.002	<0.005	<0.005	<0.010	<0.010	<50
<b>COGCC standards for soil (mg/kg) <sup>(1)</sup></b>				<b>0.17</b>	<b>85</b>	<b>100</b>	<b>175</b>	<b>23</b>	<b>500</b>

Notes:

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

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

GRO - Gasoline range organics.

DRO - Diesel range organics.

mg/kg - Milligrams per kilogram.

bgs - Below ground surface.

ppm - Parts per million

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

**TABLE 2**  
**SITZMAN 1, 32-4 / FRENCH 1, 5; 41-1**  
**GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)
GW01	12/30/2013	<b>5.7</b>	<1.0	56	520
GW02	1/2/2014	<b>38</b>	<1.0	62	480
BH01	2/26/2014	<1.0	<1.0	<1.0	<1.0
BH02	2/26/2014	<1.0	<1.0	<1.0	<1.0
BH03	2/26/2014	<1.0	<1.0	<1.0	<1.0
BH04	2/26/2014	<b>8.5</b>	<1.0	16	140
BH05	2/26/2014	<1.0	<1.0	<1.0	<1.0
BH06	2/26/2014	<b>8.3</b>	<1.0	<1.0	120
BH07	2/26/2014	<1.0	<1.0	<1.0	<1.0
BH08	2/26/2014	<1.0	<1.0	<1.0	<1.0
<b>COGCC standards for groundwater (ug/L) <sup>(1)</sup></b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>

Notes:

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

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

ug/L - Micrograms per liter.

## **ATTACHMENT A**

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 22, 2013

Brandon Bruns

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Stizman 1 & 32-4/French 1 & 41-4&5

Enclosed are the results of analyses for samples received by Summit Scientific on 12/20/13 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Ben Shrewsbury

President / Laboratory Manager



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

Project: Stizman 1 & 32-4/French 1 & 41-4&5

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
12/22/13 20:30

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@5' (E)	R312137-01	Soil	12/20/13 00:00	12/20/13 16:30
SS02@6' (N)	R312137-02	Soil	12/20/13 00:00	12/20/13 16:30
SS03@12' (W)	R312137-03	Soil	12/20/13 00:00	12/20/13 16:30
SS04@8' (S)	R312137-04	Soil	12/20/13 00:00	12/20/13 16:30

Summit Scientific

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







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

Project: Stizman 1 & 32-4/French 1 & 41-4&5

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
12/22/13 20:30

**SS01@5' (E)**  
**R312137-01 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/20/13 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>4800</b>	50	mg/kg	1	3122002	12/20/13	12/20/13	8015M	

Date Sampled: 12/20/13 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		127 %	30-150		"	"	"	"	

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

Date Sampled: 12/20/13 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Naphthalene</b>	<b>0.26</b>	0.010	mg/kg	1	3122003	12/20/13	12/20/13	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.098</b>	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.091</b>	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>470</b>	5.0	"	10	"	"	"	"	E

Date Sampled: 12/20/13 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		117 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		106 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		95.0 %	21-167		"	"	"	"	

Summit Scientific

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



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

Project: Stizman 1 & 32-4/French 1 & 41-4&5

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
12/22/13 20:30

**SS02@6' (N)**  
**R312137-02 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/20/13 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	4400	50	mg/kg	1	3122002	12/20/13	12/20/13	8015M	

Date Sampled: 12/20/13 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		119 %	30-150		"	"	"	"	

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

Date Sampled: 12/20/13 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.088	0.010	mg/kg	1	3122003	12/20/13	12/20/13	EPA 8260B	
Benzene	0.0055	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.13	0.0050	"	"	"	"	"	"	
Xylenes (total)	1.1	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1300	5.0	"	10	"	"	"	"	E

Date Sampled: 12/20/13 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		110 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		76.3 %	21-167		"	"	"	"	

Summit Scientific

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





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

Project: Stizman 1 & 32-4/French 1 & 41-4&5

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
12/22/13 20:30

**SS03@12' (W)**  
**R312137-03 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/20/13 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	2900	50	mg/kg	1	3122002	12/20/13	12/20/13	8015M	

Date Sampled: 12/20/13 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		132 %	30-150		"	"	"	"	

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

Date Sampled: 12/20/13 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.39	0.010	mg/kg	1	3122003	12/20/13	12/20/13	EPA 8260B	
Benzene	0.015	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.83	0.0050	"	"	"	"	"	"	
Xylenes (total)	21	0.10	"	10	"	"	"	"	E
Gasoline Range Hydrocarbons	1000	5.0	"	"	"	"	"	"	E

Date Sampled: 12/20/13 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		116 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		118 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Summit Scientific

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



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

Project: Stizman 1 & 32-4/French 1 & 41-4&5

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
12/22/13 20:30

**SS04@8' (S)**  
**R312137-04 (Soil)**

### Summit Scientific

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/20/13 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	3122002	12/20/13	12/20/13	8015M	

Date Sampled: 12/20/13 00:00

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

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

Date Sampled: 12/20/13 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	3122003	12/20/13	12/20/13	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>2.1</b>	<b>0.50</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	<b>"</b>	

Date Sampled: 12/20/13 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.0 %	21-167		"	"	"	"	

Summit Scientific

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



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

Project: Stizman 1 & 32-4/French 1 & 41-4&5  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
12/22/13 20:30

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

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

**Batch 3122002 - EPA 3550A**

**Blank (3122002-BLK1)**

Prepared & Analyzed: 12/20/13

C10-C28 (DRO) ND 50 mg/kg

**LCS (3122002-BS1)**

Prepared & Analyzed: 12/20/13

C10-C28 (DRO) 532 50 mg/kg 501 106 73-134

**Matrix Spike (3122002-MS1)**

**Source: R312137-04**

Prepared & Analyzed: 12/20/13

C10-C28 (DRO) 697 50 mg/kg 501 ND 139 50-148

**Matrix Spike Dup (3122002-MSD1)**

**Source: R312137-04**

Prepared & Analyzed: 12/20/13

C10-C28 (DRO) 717 50 mg/kg 501 ND 143 50-148 2.90 13

Summit Scientific

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





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

Project: Stizman 1 & 32-4/French 1 & 41-4&5  
Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
12/22/13 20:30

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

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

**Batch 3122003 - EPA 5030 Soil MS**

**Blank (3122003-BLK1)**

Prepared: 12/20/13 Analyzed: 12/21/13

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0438		"	0.0396	111	23-173				
Surrogate: Toluene-d8	0.0399		"	0.0400	99.8	20-170				
Surrogate: 4-Bromofluorobenzene	0.0409		"	0.0400	102	21-167				

**LCS (3122003-BS1)**

Prepared: 12/20/13 Analyzed: 12/21/13

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0934	0.0020	"	0.100	93.4	58-130				
Toluene	0.0980	0.0050	"	0.100	98.0	61-134				
Ethylbenzene	0.0980	0.0050	"	0.100	98.0	74-139				
m,p-Xylene	0.188	0.010	"	0.200	94.2	73-137				
o-Xylene	0.0928	0.0050	"	0.100	92.8	73-141				
Surrogate: 1,2-Dichloroethane-d4	0.0446		"	0.0396	113	23-173				
Surrogate: Toluene-d8	0.0412		"	0.0400	103	20-170				
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0400	99.0	21-167				

**Matrix Spike (3122003-MS1)**

Source: R312137-04

Prepared: 12/20/13 Analyzed: 12/21/13

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0919	0.0020	"	0.100	ND	91.9	30-131			
Toluene	0.0944	0.0050	"	0.100	ND	94.4	30-134			
Ethylbenzene	0.101	0.0050	"	0.100	ND	101	22-153			
m,p-Xylene	0.196	0.010	"	0.200	ND	97.9	10-159			
o-Xylene	0.0942	0.0050	"	0.100	ND	94.2	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0442		"	0.0396	112	23-173				
Surrogate: Toluene-d8	0.0391		"	0.0400	97.7	20-170				
Surrogate: 4-Bromofluorobenzene	0.0389		"	0.0400	97.3	21-167				

Summit Scientific

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



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

Project: Stizman 1 & 32-4/French 1 & 41-4&5  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
12/22/13 20:30

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

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

**Batch 3122003 - EPA 5030 Soil MS**

Matrix Spike Dup (3122003-MSD1)		Source: R312137-04			Prepared: 12/20/13		Analyzed: 12/21/13			
Naphthalene	ND	0.010	mg/kg		ND		10-158			42
Benzene	0.0925	0.0020	"	0.100	ND	92.5	30-131	0.683		34
Toluene	0.0946	0.0050	"	0.100	ND	94.6	30-134	0.317		30
Ethylbenzene	0.101	0.0050	"	0.100	ND	101	22-153	0.0297		24
m,p-Xylene	0.193	0.010	"	0.200	ND	96.4	10-159	1.47		68
o-Xylene	0.0942	0.0050	"	0.100	ND	94.2	31-151	0.00		38
Surrogate: 1,2-Dichloroethane-d4		0.0452	"	0.0396		114	23-173			
Surrogate: Toluene-d8		0.0392	"	0.0400		98.1	20-170			
Surrogate: 4-Bromofluorobenzene		0.0399	"	0.0400		99.8	21-167			

Summit Scientific

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



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

Project: Stizman 1 & 32-4/French 1 & 41-4&5

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
12/22/13 20:30

### 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

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



# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 23, 2013

Brandon Bruns

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Stizman 1 & 32-4/French 1 & 41-4&5

Enclosed are the results of analyses for samples received by Summit Scientific on 12/23/13 15:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to be 'BS' or 'Shrewsbury', written in a cursive style.

Ben Shrewsbury

President / Laboratory Manager



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

Project: Stizman 1 & 32-4/French 1 & 41-4&5

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
12/23/13 22:00

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS05@6'	R312151-01	Soil	12/23/13 10:30	12/23/13 15:00
SS06@6'	R312151-02	Soil	12/23/13 10:30	12/23/13 15:00
SS07@6'	R312151-03	Soil	12/23/13 10:30	12/23/13 15:00

Summit Scientific

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





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

Project: Stizman 1 & 32-4/French 1 & 41-4&5

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
12/23/13 22:00

**SS05@6'**  
**R312151-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/23/13 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>2000</b>	50	mg/kg	1	3122304	12/23/13	12/23/13	8015M	

Date Sampled: 12/23/13 10:30

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

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

Date Sampled: 12/23/13 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Naphthalene</b>	<b>0.38</b>	0.010	mg/kg	1	3122303	12/23/13	12/23/13	EPA 8260B	
<b>Benzene</b>	<b>0.027</b>	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>1.2</b>	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>7.0</b>	0.010	"	"	"	"	"	"	E
<b>Gasoline Range Hydrocarbons</b>	<b>790</b>	5.0	"	10	"	"	"	"	E

Date Sampled: 12/23/13 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		107 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		129 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		84.7 %	21-167		"	"	"	"	

Summit Scientific

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





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

Project: Stizman 1 & 32-4/French 1 & 41-4&5  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
12/23/13 22:00

**SS06@6'**  
**R312151-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/23/13 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	3122304	12/23/13	12/23/13	8015M	

Date Sampled: 12/23/13 10:30

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

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

Date Sampled: 12/23/13 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	3122303	12/23/13	12/23/13	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/23/13 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Summit Scientific

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



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

Project: Stizman 1 & 32-4/French 1 & 41-4&5  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
12/23/13 22:00

**SS07@6'**  
**R312151-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/23/13 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	3122304	12/23/13	12/23/13	8015M	

Date Sampled: 12/23/13 10:30

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

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

Date Sampled: 12/23/13 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	3122303	12/23/13	12/23/13	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.012</b>	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/23/13 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Summit Scientific

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



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

Project: Stizman 1 & 32-4/French 1 & 41-4&5  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
12/23/13 22:00

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

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

**Batch 3122304 - EPA 3550A**

**Blank (3122304-BLK1)**

Prepared & Analyzed: 12/23/13

C10-C28 (DRO) ND 50 mg/kg

**LCS (3122304-BS1)**

Prepared & Analyzed: 12/23/13

C10-C28 (DRO) 494 50 mg/kg 495 99.7 73-134

**Matrix Spike (3122304-MS1)**

**Source: R312151-02**

Prepared & Analyzed: 12/23/13

C10-C28 (DRO) 494 50 mg/kg 495 ND 99.7 50-148

**Matrix Spike Dup (3122304-MSD1)**

**Source: R312151-02**

Prepared & Analyzed: 12/23/13

C10-C28 (DRO) 484 50 mg/kg 492 ND 98.3 50-148 1.98 13

Summit Scientific

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



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

Project: Stizman 1 & 32-4/French 1 & 41-4&5  
Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
12/23/13 22:00

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

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

**Batch 3122303 - EPA 5030 Soil MS**

**Blank (3122303-BLK1)**

Prepared & Analyzed: 12/23/13

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0394</i>		<i>"</i>	<i>0.0387</i>		<i>102</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0377</i>		<i>"</i>	<i>0.0391</i>		<i>96.4</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0390</i>		<i>"</i>	<i>0.0391</i>		<i>99.9</i>	<i>21-167</i>			

**LCS (3122303-BS1)**

Prepared & Analyzed: 12/23/13

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0823	0.0020	"	0.0960		85.7	58-130			
Toluene	0.101	0.0050	"	0.0960		105	61-134			
Ethylbenzene	0.132	0.0050	"	0.0960		138	74-139			
m,p-Xylene	0.231	0.010	"	0.192		120	73-137			
o-Xylene	0.120	0.0050	"	0.0960		126	73-141			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0381</i>		<i>"</i>	<i>0.0380</i>		<i>100</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0379</i>		<i>"</i>	<i>0.0384</i>		<i>98.6</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0368</i>		<i>"</i>	<i>0.0384</i>		<i>95.8</i>	<i>21-167</i>			

**Matrix Spike (3122303-MS1)**

Source: R312151-02

Prepared & Analyzed: 12/23/13

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0851	0.0020	"	0.0960	ND	88.7	30-131			
Toluene	0.103	0.0050	"	0.0960	ND	107	30-134			
Ethylbenzene	0.133	0.0050	"	0.0960	ND	138	22-153			
m,p-Xylene	0.232	0.010	"	0.192	ND	121	10-159			
o-Xylene	0.123	0.0050	"	0.0960	ND	128	31-151			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0415</i>		<i>"</i>	<i>0.0380</i>		<i>109</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0385</i>		<i>"</i>	<i>0.0384</i>		<i>100</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0374</i>		<i>"</i>	<i>0.0384</i>		<i>97.5</i>	<i>21-167</i>			

Summit Scientific

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



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

Project: Stizman 1 & 32-4/French 1 & 41-4&5  
Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
12/23/13 22:00

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

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

**Batch 3122303 - EPA 5030 Soil MS**

Matrix Spike Dup (3122303-MSD1)		Source: R312151-02			Prepared & Analyzed: 12/23/13					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0852	0.0020	"	0.0978	ND	87.0	30-131	0.0599	34	
Toluene	0.104	0.0050	"	0.0978	ND	106	30-134	0.786	30	
Ethylbenzene	0.135	0.0050	"	0.0978	ND	138	22-153	1.89	24	
m,p-Xylene	0.238	0.010	"	0.196	ND	122	10-159	2.66	68	
o-Xylene	0.125	0.0050	"	0.0978	ND	127	31-151	1.16	38	
Surrogate: 1,2-Dichloroethane-d4	0.0414		"	0.0387		107	23-173			
Surrogate: Toluene-d8	0.0387		"	0.0391		98.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0391		97.7	21-167			

Summit Scientific

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





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

Project: Stizman 1 & 32-4/French 1 & 41-4&5

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
12/23/13 22:00

### 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

A handwritten signature in black ink, appearing to be 'J.M.' with a long, sweeping underline.

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 30, 2013

Brandon Bruns

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Stizman 1 & 32-4/French 1-41-4&#5

Enclosed are the results of analyses for samples received by Summit Scientific on 12/26/13 16:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Ben Shrewsbury

President / Laboratory Manager

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

Project: Stizman 1 & 32-4/French 1-41-4&#5

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
12/30/13 16:47

## ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS08@6'	R312164-01	Soil	12/26/13 11:00	12/26/13 16:45

R3/2/64

Summit Scientific

141 Corporate Circle Suite 1 • Golden, Colorado 80401  
303-277-9310 • 303-374-5933 Fax

Client: 104 Tasman Project Manager: Brandon Burns  
Address: \_\_\_\_\_ E-Mail: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_ Project Name: Sitzman / Ensign  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Sample Name: J. Burdick Project Number: \_\_\_\_\_

[illegible]

www.2scientific.com

Summit Scientific

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

*[Signature]*



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

Project: Stizman 1 & 32-4/French 1-41-4&#5

Project Number: [none]  
Project Manager: Brandon Brunns

Reported:  
12/30/13 16:47

**SS08@6'**  
**R312164-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/26/13 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	3122601	12/26/13	12/26/13	8015M	

Date Sampled: 12/26/13 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		111 %	30-150		"	"	"	"	

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

Date Sampled: 12/26/13 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	3122604	12/26/13	12/26/13	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/26/13 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.3 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Stizman 1 & 32-4/French 1-41-4&#5

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
12/30/13 16:47

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

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

**Batch 3122601 - EPA 3550A**

**Blank (3122601-BLK1)**

Prepared & Analyzed: 12/26/13

C10-C28 (DRO) ND 50 mg/kg

**LCS (3122601-BS1)**

Prepared & Analyzed: 12/26/13

C10-C28 (DRO) 497 50 mg/kg 501 99.1 73-134

**Matrix Spike (3122601-MS1)**

**Source: R312150-01**

Prepared & Analyzed: 12/26/13

C10-C28 (DRO) 504 50 mg/kg 466 33.6 101 50-148

**Matrix Spike Dup (3122601-MSD1)**

**Source: R312150-01**

Prepared & Analyzed: 12/26/13

C10-C28 (DRO) 490 50 mg/kg 462 33.6 98.8 50-148 2.72 13

Summit Scientific

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





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

Project: Stizman 1 & 32-4/French 1-41-4&#5  
Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
12/30/13 16:47

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

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

**Batch 3122604 - EPA 5030 Soil MS**

**Blank (3122604-BLK1)**

Prepared & Analyzed: 12/26/13

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0384		"	0.0392	98.0	23-173				
Surrogate: Toluene-d8	0.0383		"	0.0396	96.6	20-170				
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0396	100	21-167				

**LCS (3122604-BS1)**

Prepared & Analyzed: 12/26/13

Naphthalene	ND	0.010	mg/kg			66-138				
Benzene	0.0945	0.0020	"	0.0977	96.8	58-130				
Toluene	0.112	0.0050	"	0.0977	115	61-134				
Ethylbenzene	0.110	0.0050	"	0.0977	112	74-139				
m,p-Xylene	0.248	0.010	"	0.195	127	73-137				
o-Xylene	0.123	0.0050	"	0.0977	126	73-141				
Surrogate: 1,2-Dichloroethane-d4	0.0386		"	0.0387	99.8	23-173				
Surrogate: Toluene-d8	0.0391		"	0.0391	100	20-170				
Surrogate: 4-Bromofluorobenzene	0.0371		"	0.0391	94.9	21-167				

**Matrix Spike (3122604-MS1)**

Source: R312164-01

Prepared & Analyzed: 12/26/13

Naphthalene	ND	0.010	mg/kg		ND	10-158				
Benzene	0.0894	0.0020	"	0.0938	ND	30-131				
Toluene	0.106	0.0050	"	0.0938	ND	30-134				
Ethylbenzene	0.132	0.0050	"	0.0938	ND	22-153				
m,p-Xylene	0.237	0.010	"	0.188	ND	10-159				
o-Xylene	0.120	0.0050	"	0.0938	ND	31-151				
Surrogate: 1,2-Dichloroethane-d4	0.0404		"	0.0371	109	23-173				
Surrogate: Toluene-d8	0.0372		"	0.0375	99.1	20-170				
Surrogate: 4-Bromofluorobenzene	0.0355		"	0.0375	94.7	21-167				

Summit Scientific

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



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

Project: Stizman 1 & 32-4/French 1-41-4&#5  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
12/30/13 16:47

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

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

**Batch 3122604 - EPA 5030 Soil MS**

Matrix Spike Dup (3122604-MSD1)		Source: R312164-01			Prepared & Analyzed: 12/26/13					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0884	0.0020	"	0.0929	ND	95.1	30-131	1.09	34	
Toluene	0.105	0.0050	"	0.0929	ND	113	30-134	0.934	30	
Ethylbenzene	0.132	0.0050	"	0.0929	ND	142	22-153	0.00166	24	
m,p-Xylene	0.235	0.010	"	0.186	ND	126	10-159	0.732	68	
o-Xylene	0.118	0.0050	"	0.0929	ND	127	31-151	1.71	38	
Surrogate: 1,2-Dichloroethane-d4	0.0388		"	0.0368		105	23-173			
Surrogate: Toluene-d8	0.0361		"	0.0372		97.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0359		"	0.0372		96.6	21-167			

Summit Scientific

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



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

Project: Stizman 1 & 32-4/French 1-41-4&#5

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
12/30/13 16:47

### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

---

Summit Scientific

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

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

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 29, 2013

Brandon Bruns

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Stizman 1 & 32-4/French 1-41-4&#5

Enclosed are the results of analyses for samples received by Summit Scientific on 12/27/13 16:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Ben Shrewsbury

President / Laboratory Manager







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

Project: Stizman 1 & 32-4/French 1-41-4&#5

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
12/29/13 19:57

**SS09@6'**  
**R312173-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/27/13 09:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	3122715	12/27/13	12/28/13	8015M	

Date Sampled: 12/27/13 09:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		119 %	30-150		"	"	"	"	

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

Date Sampled: 12/27/13 09:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	3122714	12/27/13	12/27/13	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/27/13 09:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		96.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		93.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.8 %	21-167		"	"	"	"	

Summit Scientific

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



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

Project: Stizman 1 & 32-4/French 1-41-4&#5

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
12/29/13 19:57

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

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

**Batch 3122715 - EPA 3550A**

**Blank (3122715-BLK1)**

Prepared: 12/27/13 Analyzed: 12/28/13

C10-C28 (DRO) ND 50 mg/kg

**LCS (3122715-BS1)**

Prepared: 12/27/13 Analyzed: 12/28/13

C10-C28 (DRO) 508 50 mg/kg 488 104 73-134

**Matrix Spike (3122715-MS1)**

**Source: R312174-01**

Prepared: 12/27/13 Analyzed: 12/28/13

C10-C28 (DRO) 493 50 mg/kg 476 30.1 97.3 50-148

**Matrix Spike Dup (3122715-MSD1)**

**Source: R312174-01**

Prepared: 12/27/13 Analyzed: 12/28/13

C10-C28 (DRO) 466 50 mg/kg 468 30.1 93.0 50-148 5.84 13

Summit Scientific

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

Project: Stizman 1 & 32-4/French 1-41-4&#5  
Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
12/29/13 19:57

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

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

**Batch 3122714 - EPA 5030 Soil MS**

**Blank (3122714-BLK1)**

Prepared: 12/27/13 Analyzed: 12/28/13

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0364		"	0.0378	96.4	23-173				
Surrogate: Toluene-d8	0.0369		"	0.0382	96.8	20-170				
Surrogate: 4-Bromofluorobenzene	0.0381		"	0.0382	99.8	21-167				

**LCS (3122714-BS1)**

Prepared: 12/27/13 Analyzed: 12/28/13

Naphthalene	ND	0.010	mg/kg			66-138				
Benzene	0.0931	0.0020	"	0.0977	95.4	58-130				
Toluene	0.115	0.0050	"	0.0977	118	61-134				
Ethylbenzene	0.113	0.0050	"	0.0977	115	74-139				
m,p-Xylene	0.258	0.010	"	0.195	132	73-137				
o-Xylene	0.126	0.0050	"	0.0977	129	73-141				
Surrogate: 1,2-Dichloroethane-d4	0.0372		"	0.0387	96.1	23-173				
Surrogate: Toluene-d8	0.0401		"	0.0391	103	20-170				
Surrogate: 4-Bromofluorobenzene	0.0387		"	0.0391	99.0	21-167				

**Matrix Spike (3122714-MS1)**

Source: R312174-01

Prepared: 12/27/13 Analyzed: 12/28/13

Naphthalene	ND	0.010	mg/kg		ND	10-158				
Benzene	0.0924	0.0020	"	0.0982	ND	94.1	30-131			
Toluene	0.116	0.0050	"	0.0982	0.00341	114	30-134			
Ethylbenzene	0.139	0.0050	"	0.0982	ND	141	22-153			
m,p-Xylene	0.257	0.010	"	0.196	0.00572	128	10-159			
o-Xylene	0.124	0.0050	"	0.0982	ND	126	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0395		"	0.0389	102	23-173				
Surrogate: Toluene-d8	0.0396		"	0.0393	101	20-170				
Surrogate: 4-Bromofluorobenzene	0.0375		"	0.0393	95.5	21-167				

Summit Scientific

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



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

Project: Stizman 1 & 32-4/French 1-41-4&#5  
Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
12/29/13 19:57

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

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

**Batch 3122714 - EPA 5030 Soil MS**

Matrix Spike Dup (3122714-MSD1)				Source: R312174-01		Prepared: 12/27/13		Analyzed: 12/28/13		
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0974	0.0020	"	0.0998	ND	97.6	30-131	5.28	34	
Toluene	0.121	0.0050	"	0.0998	0.00341	117	30-134	4.33	30	
Ethylbenzene	0.146	0.0050	"	0.0998	ND	146	22-153	5.24	24	
m,p-Xylene	0.269	0.010	"	0.200	0.00572	132	10-159	4.60	68	
o-Xylene	0.131	0.0050	"	0.0998	ND	131	31-151	5.29	38	
Surrogate: 1,2-Dichloroethane-d4	0.0399		"	0.0395		101	23-173			
Surrogate: Toluene-d8	0.0395		"	0.0399		99.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0399		96.6	21-167			

Summit Scientific

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



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

Project: Stizman 1 & 32-4/French 1-41-4&#5

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
12/29/13 19:57

### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

---

Summit Scientific

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

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

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 30, 2013

Brandon Bruns

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Stizman 1 & 32-4/French 1-41-4&#5

Enclosed are the results of analyses for samples received by Summit Scientific on 12/30/13 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Ben Shrewsbury

President / Laboratory Manager





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

Project: Stizman 1 & 32-4/French 1-41-4&#5

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
12/30/13 22:43

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS10@6'	R312181-01	Soil	12/30/13 12:00	12/30/13 17:00
GW01	R312181-02	Water	12/30/13 12:00	12/30/13 17:00

Summit Scientific

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

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

Project: Stizman 1 & 32-4/French 1-41-4&#5

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
12/30/13 22:43

Summit Scientific 23/2(8)

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

Client: PAUL TIGSMAN Project Manager: Brian Burns Page 1 of 1

Address: \_\_\_\_\_ E-Mail: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_ Project Name: Strawman/Frank

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Project Number: \_\_\_\_\_

Sample Name: Frank

Page ( ) of ( )

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





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

Project: Stizman 1 & 32-4/French 1-41-4&#5

Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
12/30/13 22:43

**SS10@6'**  
**R312181-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/30/13 12:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	3123005	12/30/13	12/30/13	8015M	

Date Sampled: 12/30/13 12:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		96.5 %	30-150		"	"	"	"	

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

Date Sampled: 12/30/13 12:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	3123004	12/30/13	12/30/13	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/30/13 12:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		94.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.0 %	21-167		"	"	"	"	

Summit Scientific

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



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

Project: Stizman 1 & 32-4/French 1-41-4&#5

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
12/30/13 22:43

**GW01**  
**R312181-02 (Water)**

**Summit Scientific**

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

Date Sampled: 12/30/13 12:00

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Benzene</b>	<b>5.7</b>	1.0		ug/l	1	3123003	12/30/13	12/30/13	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>56</b>	1.0		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>520</b>	1.0		"	"	"	"	"	"	

Date Sampled: 12/30/13 12:00

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		105 %		37-154		"	"	"	"	
Surrogate: Toluene-d8		100 %		45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		84.2 %		45-146		"	"	"	"	

Summit Scientific

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



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

Project: Stizman 1 & 32-4/French 1-41-4&#5  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
12/30/13 22:43

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

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

**Batch 3123005 - EPA 3550A**

**Blank (3123005-BLK1)**

Prepared & Analyzed: 12/30/13

C10-C28 (DRO)	ND	50	mg/kg
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**LCS (3123005-BS1)**

Prepared & Analyzed: 12/30/13

C10-C28 (DRO)	482	50	mg/kg	495	97.4	73-134
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**Matrix Spike (3123005-MS1)**

**Source: R312182-01**

Prepared & Analyzed: 12/30/13

C10-C28 (DRO)	452	50	mg/kg	489	30.5	86.2	50-148
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**Matrix Spike Dup (3123005-MSD1)**

**Source: R312182-01**

Prepared & Analyzed: 12/30/13

C10-C28 (DRO)	459	50	mg/kg	488	30.5	87.7	50-148	1.35	13
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Summit Scientific

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

Project: Stizman 1 & 32-4/French 1-41-4&#5  
Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
12/30/13 22:43

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

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

**Batch 3123004 - EPA 5030 Soil MS**

**Blank (3123004-BLK1)**

Prepared & Analyzed: 12/30/13

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0442		"	0.0381		116	23-173			
Surrogate: Toluene-d8	0.0371		"	0.0384		96.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0381		"	0.0384		99.1	21-167			

**LCS (3123004-BS1)**

Prepared & Analyzed: 12/30/13

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0779	0.0020	"	0.0931		83.7	58-130			
Toluene	0.0837	0.0050	"	0.0931		89.8	61-134			
Ethylbenzene	0.0897	0.0050	"	0.0931		96.4	74-139			
m,p-Xylene	0.174	0.010	"	0.186		93.3	73-137			
o-Xylene	0.0836	0.0050	"	0.0931		89.8	73-141			
Surrogate: 1,2-Dichloroethane-d4	0.0388		"	0.0370		105	23-173			
Surrogate: Toluene-d8	0.0369		"	0.0372		99.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0363		"	0.0372		97.6	21-167			

**Matrix Spike (3123004-MS1)**

Source: R312182-01

Prepared & Analyzed: 12/30/13

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0821	0.0020	"	0.0965	ND	85.0	30-131			
Toluene	0.0872	0.0050	"	0.0965	ND	90.4	30-134			
Ethylbenzene	0.0931	0.0050	"	0.0965	ND	96.4	22-153			
m,p-Xylene	0.180	0.010	"	0.193	ND	93.1	10-159			
o-Xylene	0.0872	0.0050	"	0.0965	ND	90.3	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0422		"	0.0383		110	23-173			
Surrogate: Toluene-d8	0.0373		"	0.0386		96.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0379		"	0.0386		98.2	21-167			

Summit Scientific

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

Project: Stizman 1 & 32-4/French 1-41-4&#5  
Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
12/30/13 22:43

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

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

**Batch 3123004 - EPA 5030 Soil MS**

Matrix Spike Dup (3123004-MSD1)			Source: R312182-01		Prepared & Analyzed: 12/30/13					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0843	0.0020	"	0.0952	ND	88.6	30-131	2.70	34	
Toluene	0.0877	0.0050	"	0.0952	ND	92.1	30-134	0.598	30	
Ethylbenzene	0.0941	0.0050	"	0.0952	ND	98.8	22-153	1.06	24	
m,p-Xylene	0.182	0.010	"	0.190	ND	95.5	10-159	1.19	68	
o-Xylene	0.0882	0.0050	"	0.0952	ND	92.6	31-151	1.22	38	
Surrogate: 1,2-Dichloroethane-d4	0.0435		"	0.0378		115	23-173			
Surrogate: Toluene-d8	0.0379		"	0.0381		99.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0372		"	0.0381		97.6	21-167			

Summit Scientific

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



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

Project: Stizman 1 & 32-4/French 1-41-4&#5

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
12/30/13 22:43

### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

---

Summit Scientific

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

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



# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

January 03, 2014

Brandon Bruns

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Stizman 1 & 32-4/French 1-41-4&#5

Enclosed are the results of analyses for samples received by Summit Scientific on 01/02/14 17:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Ben Shrewsbury

President / Laboratory Manager

**Reported:**  
01/03/14 06:47

## ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW02	1401001-01	Water	01/02/14 12:00	01/02/14 17:20

10010h

Summit Scientific

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

Client: <u>Joe Fasihah</u>	Project Manager: <u>Brandon Evans</u>	Page <u>1</u> of <u>1</u>
Address _____	E-Mail: _____	
City/State/Zip: _____	Project Name: <u>Sitzman/French</u>	
Phone: _____	Project Number: _____	
Fax: _____		
Sample Name: <u>A ESUN</u>		

Page | of

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Summit Scientific

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

Project: Stizman 1 & 32-4/French 1-41-4&#5

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
01/03/14 06:47

**GW02**  
**1401001-01 (Water)**

**Summit Scientific**

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

Date Sampled: **01/02/14 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>38</b>	1.0	ug/l	1	1401002	01/02/14	01/02/14	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>62</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>480</b>	1.0	"	"	"	"	"	"	

Date Sampled: **01/02/14 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		97.4 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		90.0 %	45-146		"	"	"	"	

Summit Scientific

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



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

Project: Stizman 1 & 32-4/French 1-41-4&#5  
Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
01/03/14 06:47

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

### Summit Scientific

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

#### Batch 1401002 - EPA 5030 Water MS

##### Blank (1401002-BLK1)

Prepared & Analyzed: 01/03/14

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.3		"	13.2		100	37-154			
Surrogate: Toluene-d8	12.7		"	13.3		95.3	45-149			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.3	45-146			

##### LCS (1401002-BS1)

Prepared & Analyzed: 01/03/14

Benzene	29.2	1.0	ug/l	33.3		87.6	51-132			
Toluene	30.6	1.0	"	33.3		91.7	51-138			
Ethylbenzene	32.9	1.0	"	33.3		98.7	58-146			
m,p-Xylene	64.7	2.0	"	66.7		97.1	57-144			
o-Xylene	31.0	1.0	"	33.3		93.1	53-146			
Surrogate: 1,2-Dichloroethane-d4	13.9		"	13.2		105	37-154			
Surrogate: Toluene-d8	12.6		"	13.3		94.2	45-149			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.4	45-146			

##### Matrix Spike (1401002-MS1)

Source: 1401004-01

Prepared & Analyzed: 01/03/14

Benzene	30.4	1.0	ug/l	33.3	ND	91.1	34-141			
Toluene	31.8	1.0	"	33.3	ND	95.3	27-151			
Ethylbenzene	33.2	1.0	"	33.3	ND	99.7	29-160			
m,p-Xylene	66.1	2.0	"	66.7	ND	99.2	20-166			
o-Xylene	31.4	1.0	"	33.3	ND	94.2	33-159			
Surrogate: 1,2-Dichloroethane-d4	14.6		"	13.2		111	37-154			
Surrogate: Toluene-d8	13.0		"	13.3		97.7	45-149			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		98.6	45-146			

Summit Scientific

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



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

Project: Stizman 1 & 32-4/French 1-41-4&#5  
Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
01/03/14 06:47

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

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

**Batch 1401002 - EPA 5030 Water MS**

Matrix Spike Dup (1401002-MSD1)	Source: 1401004-01			Prepared & Analyzed: 01/03/14						
Benzene	29.7	1.0	ug/l	33.3	ND	89.1	34-141	2.23	32	
Toluene	31.3	1.0	"	33.3	ND	93.9	27-151	1.55	25	
Ethylbenzene	33.5	1.0	"	33.3	ND	100	29-160	0.750	50	
m,p-Xylene	65.4	2.0	"	66.7	ND	98.1	20-166	1.08	36	
o-Xylene	31.8	1.0	"	33.3	ND	95.3	33-159	1.14	26	
Surrogate: 1,2-Dichloroethane-d4	15.0		"	13.2		114	37-154			
Surrogate: Toluene-d8	12.9		"	13.3		96.8	45-149			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.1	45-146			

Summit Scientific

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



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

Project: Stizman 1 & 32-4/French 1-41-4&#5

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
01/03/14 06:47

### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

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

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

March 05, 2014

Brandon Bruns

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Sitzman 1&32-4/French 1,5;41-1

Enclosed are the results of analyses for samples received by Summit Scientific on 02/27/14 10:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to be 'BS' or 'Shrewsbury', written in a cursive style.

Ben Shrewsbury

President / Laboratory Manager



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

Project: Sitzman 1&32-4/French 1,5;41-1

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
03/05/14 12:26

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	1402164-01	Water	02/26/14 14:35	02/27/14 10:00
BH02	1402164-02	Water	02/26/14 14:40	02/27/14 10:00
BH03	1402164-03	Water	02/26/14 14:45	02/27/14 10:00
BH04	1402164-04	Water	02/26/14 14:50	02/27/14 10:00
BH05	1402164-05	Water	02/26/14 14:55	02/27/14 10:00
BH06	1402164-06	Water	02/26/14 15:00	02/27/14 10:00
BH07	1402164-07	Water	02/26/14 15:05	02/27/14 10:00
BH08	1402164-08	Water	02/26/14 15:10	02/27/14 10:00

Summit Scientific

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





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

Project: Sitzman 1&32-4/French 1,5;41-1

Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
03/05/14 12:26

Summit Scientific  
S<sub>2</sub>  
1402164

741 Corporate Circle, Suite 1A&K • Golden, Colorado 80401  
303-277-9510 • 303-374-5933

Client: PDC Energy  
Address: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Project Manager: Brandon Bruns  
E-Mail: \_\_\_\_\_  
Page 1 of 1

Phone: \_\_\_\_\_  
Project Name: Sitzman 1 + 32-4 French 1,5;41-1  
Fac: \_\_\_\_\_  
Project Number: \_\_\_\_\_

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested		Special Instructions
					HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)		
1	BH01	2/26/14	1435	3		X						X	4260 Brix	
2	BH02		1440	1		X								
3	BH03		1445	1		X								
4	BH04		1450	1		X								
5	BH05		1455	1		X								
6	BH06		1500	1		X								
7	BH07		1505	1		X								
8	BH08		1510	1		X								
9														
10														

Relinquished by: \_\_\_\_\_ Date/Time: 2/26/14 Received by: \_\_\_\_\_ Date/Time: 2/27/14  
Turn Around Time (Check): Same Day ☐ 24 hours ☐ 48 hours ☒ 72 hours ☐ Standard ☐ X  
Sample Integrity: \_\_\_\_\_  
Temperature Upon Receipt: \_\_\_\_\_  
Intact: Yes ☐ No ☒

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Sample Integrity: \_\_\_\_\_  
Temperature Upon Receipt: \_\_\_\_\_  
Intact: Yes ☐ No ☒

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Sample Integrity: \_\_\_\_\_  
Temperature Upon Receipt: \_\_\_\_\_  
Intact: Yes ☐ No ☒

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

Project: Sitzman 1&32-4/French 1,5;41-1  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
03/05/14 12:26

**BH01**  
**1402164-01 (Water)**

**Summit Scientific**

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

Date Sampled: **02/26/14 14:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1403002	03/03/14	03/03/14	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	1.0		"	"	"	"	"	"	

Date Sampled: **02/26/14 14:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		94.4 %		37-154		"	"	"	"	
Surrogate: Toluene-d8		93.8 %		45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.6 %		45-146		"	"	"	"	

Summit Scientific

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



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

Project: Sitzman 1&32-4/French 1,5;41-1  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
03/05/14 12:26

**BH02**  
**1402164-02 (Water)**

**Summit Scientific**

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

Date Sampled: **02/26/14 14:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1403002	03/03/14	03/03/14	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	1.0		"	"	"	"	"	"	

Date Sampled: **02/26/14 14:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		91.9 %		37-154		"	"	"	"	
Surrogate: Toluene-d8		93.9 %		45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.1 %		45-146		"	"	"	"	

Summit Scientific

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

Project: Sitzman 1&32-4/French 1,5;41-1  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
03/05/14 12:26

**BH03**  
**1402164-03 (Water)**

**Summit Scientific**

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

Date Sampled: **02/26/14 14:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	1403002	03/04/14	03/04/14	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **02/26/14 14:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		95.1 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		94.7 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.4 %	45-146		"	"	"	"	

Summit Scientific

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



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

Project: Sitzman 1&32-4/French 1,5;41-1  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
03/05/14 12:26

**BH04**  
**1402164-04 (Water)**

**Summit Scientific**

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

Date Sampled: **02/26/14 14:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Benzene</b>	<b>8.5</b>	1.0		ug/l	1	1403002	03/04/14	03/04/14	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>16</b>	1.0		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>140</b>	1.0		"	"	"	"	"	"	

Date Sampled: **02/26/14 14:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		93.8 %		37-154		"	"	"	"	
Surrogate: Toluene-d8		95.8 %		45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.6 %		45-146		"	"	"	"	

Summit Scientific

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

Project: Sitzman 1&32-4/French 1,5;41-1  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
03/05/14 12:26

**BH05**  
**1402164-05 (Water)**

**Summit Scientific**

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

Date Sampled: **02/26/14 14:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	1403002	03/04/14	03/04/14	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **02/26/14 14:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		96.2 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		93.9 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.9 %	45-146		"	"	"	"	

Summit Scientific

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



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

Project: Sitzman 1&32-4/French 1,5;41-1  
Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
03/05/14 12:26

**BH06**  
**1402164-06 (Water)**

**Summit Scientific**

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

Date Sampled: **02/26/14 15:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Benzene</b>	<b>8.3</b>	1.0		ug/l	1	1403002	03/04/14	03/04/14	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>120</b>	1.0		"	"	"	"	"	"	

Date Sampled: **02/26/14 15:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		97.2 %		37-154		"	"	"	"	
Surrogate: Toluene-d8		95.3 %		45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.6 %		45-146		"	"	"	"	

Summit Scientific

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



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

Project: Sitzman 1&32-4/French 1,5;41-1  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
03/05/14 12:26

**BH07**  
**1402164-07 (Water)**

**Summit Scientific**

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

Date Sampled: **02/26/14 15:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1403002	03/04/14	03/04/14	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	1.0		"	"	"	"	"	"	

Date Sampled: **02/26/14 15:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		93.8 %		37-154		"	"	"	"	
Surrogate: Toluene-d8		93.2 %		45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.2 %		45-146		"	"	"	"	

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





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

Project: Sitzman 1&32-4/French 1,5;41-1  
Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
03/05/14 12:26

**BH08**  
**1402164-08 (Water)**

**Summit Scientific**

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

Date Sampled: **02/26/14 15:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1403002	03/04/14	03/04/14	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	1.0		"	"	"	"	"	"	

Date Sampled: **02/26/14 15:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		93.7 %		37-154		"	"	"	"	
Surrogate: Toluene-d8		94.2 %		45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.5 %		45-146		"	"	"	"	

Summit Scientific

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



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

Project: Sitzman 1&32-4/French 1,5;41-1  
Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
03/05/14 12:26

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

### Summit Scientific

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

#### Batch 1403002 - EPA 5030 Water MS

##### Blank (1403002-BLK1)

Prepared & Analyzed: 03/01/14

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	12.6		"	13.2		94.8	37-154			
Surrogate: Toluene-d8	12.6		"	13.3		94.6	45-149			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.6	45-146			

##### LCS (1403002-BS1)

Prepared & Analyzed: 03/01/14

Benzene	29.5	1.0	ug/l	33.2		88.8	51-132			
Toluene	31.9	1.0	"	33.3		95.7	51-138			
Ethylbenzene	34.0	1.0	"	33.1		103	58-146			
m,p-Xylene	67.7	2.0	"	66.7		101	57-144			
o-Xylene	33.3	1.0	"	32.9		101	53-146			
Surrogate: 1,2-Dichloroethane-d4	12.6		"	13.2		95.4	37-154			
Surrogate: Toluene-d8	12.8		"	13.3		96.2	45-149			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.4	45-146			

##### LCS (1403002-BS2)

Prepared & Analyzed: 03/01/14

Benzene	29.7	1.0	ug/l	33.2		89.5	51-132			
Toluene	32.1	1.0	"	33.3		96.2	51-138			
Ethylbenzene	34.2	1.0	"	33.1		103	58-146			
m,p-Xylene	68.8	2.0	"	66.7		103	57-144			
o-Xylene	33.6	1.0	"	32.9		102	53-146			
Surrogate: 1,2-Dichloroethane-d4	12.8		"	13.2		97.0	37-154			
Surrogate: Toluene-d8	12.9		"	13.3		97.0	45-149			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.8	45-146			

Summit Scientific

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



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

Project: Sitzman 1&32-4/French 1,5;41-1  
Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
03/05/14 12:26

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

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

**Batch 1403002 - EPA 5030 Water MS**

Matrix Spike (1403002-MS1)		Source: 1402146-04			Prepared & Analyzed: 03/01/14					
Benzene	43.0	1.0	ug/l	33.2	15.2	83.7	34-141			
Toluene	31.9	1.0	"	33.3	ND	95.6	27-151			
Ethylbenzene	55.0	1.0	"	33.1	22.3	98.8	29-160			
m,p-Xylene	92.3	2.0	"	66.7	38.0	81.5	20-166			
o-Xylene	35.4	1.0	"	32.9	2.52	99.8	33-159			
Surrogate: 1,2-Dichloroethane-d4	12.0		"	13.2		90.5	37-154			
Surrogate: Toluene-d8	15.4		"	13.3		115	45-149			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.2	45-146			

Matrix Spike (1403002-MS2)		Source: 1402146-05			Prepared & Analyzed: 03/01/14					
Benzene	30.1	1.0	ug/l	33.2	ND	90.5	34-141			
Toluene	32.3	1.0	"	33.3	ND	96.8	27-151			
Ethylbenzene	33.6	1.0	"	33.1	ND	102	29-160			
m,p-Xylene	67.3	2.0	"	66.7	ND	101	20-166			
o-Xylene	33.3	1.0	"	32.9	ND	101	33-159			
Surrogate: 1,2-Dichloroethane-d4	13.0		"	13.2		98.1	37-154			
Surrogate: Toluene-d8	13.0		"	13.3		97.4	45-149			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.5	45-146			

Matrix Spike Dup (1403002-MSD1)		Source: 1402146-04			Prepared & Analyzed: 03/01/14					
Benzene	41.1	1.0	ug/l	33.2	15.2	77.8	34-141	4.61	32	
Toluene	32.3	1.0	"	33.3	ND	96.8	27-151	1.25	25	
Ethylbenzene	51.7	1.0	"	33.1	22.3	88.9	29-160	6.11	50	
m,p-Xylene	89.2	2.0	"	66.7	38.0	76.9	20-166	3.39	36	
o-Xylene	35.5	1.0	"	32.9	2.52	100	33-159	0.198	26	
Surrogate: 1,2-Dichloroethane-d4	13.0		"	13.2		97.9	37-154			
Surrogate: Toluene-d8	15.0		"	13.3		112	45-149			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		98.6	45-146			

Summit Scientific

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



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

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

**Batch 1403002 - EPA 5030 Water MS**

Matrix Spike Dup (1403002-MSD2)	Source: 1402146-05			Prepared & Analyzed: 03/01/14						
Benzene	29.2	1.0	ug/l	33.2	ND	87.7	34-141	3.04	32	
Toluene	31.4	1.0	"	33.3	ND	94.2	27-151	2.73	25	
Ethylbenzene	34.4	1.0	"	33.1	ND	104	29-160	2.50	50	
m,p-Xylene	68.3	2.0	"	66.7	ND	102	20-166	1.49	36	
o-Xylene	33.6	1.0	"	32.9	ND	102	33-159	0.837	26	
Surrogate: 1,2-Dichloroethane-d4	13.1		"	13.2		99.1	37-154			
Surrogate: Toluene-d8	12.7		"	13.3		95.2	45-149			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.6	45-146			

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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

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