



**PDC Energy, Inc.**  
First Quarter 2015 Groundwater Monitoring Summary

April 1, 2015

Becker 5-1, 2, 14, 15 Tank Battery  
SE 1/4 Section 5 T3N R64W  
Weld County, API # 05-123-12297

This groundwater summary has been prepared by Tasman Geosciences for the Becker 5-1, 2, 14, 15 tank battery. On March 27, 2015 groundwater sampling was conducted at eight monitoring well locations. Groundwater samples were submitted for laboratory analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) by USEPA Method 8260B. Analytical results are summarized in Table 1 below and the complete lab report is included as Attachment A. Sample locations and corresponding analytical results are illustrated on Figure 1. First quarter analytical results indicate that BTEX concentrations are below applicable COGCC regulatory standards at all of the eight sample locations.

Tasman temporarily discontinued enhanced fluid recovery (EFR) and air sparge (AS) events at the site after the fourth quarter 2013 until additional remediation wells could be installed. EFR/AS activities were resumed during the second quarter 2014, and will remain the selected remediation strategy through the second quarter 2015. A summary of the EFR/AS operational data is provided in Table 2.

Second quarter 2015 groundwater sampling will be conducted in June 2015.

**TABLE 1**  
**BECKER 5-1, 2, 14, 15**  
**GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (feet)
GW01	11/29/2012	<b>3,100</b>	<b>610</b>	320	<b>3,700</b>	NM
BH01	12/20/2012	<b>97</b>	<1.0	180	1,200	13.24
BH01	3/19/2013	1.7	<1.0	4.9	48	13.27
BH01	6/21/2013	<1.0	<1.0	8.0	49	13.01
BH01	9/23/2013	<1.0	<1.0	<1.0	<1.0	12.52
BH01	12/18/2013	1.5	<1.0	<1.0	<1.0	12.80
BH01	3/28/2014	<1.0	1.9	<1.0	2.2	12.81
BH01	6/25/2014	<1.0	<1.0	15	8.9	11.44
BH01	9/17/2014	<1.0	<1.0	11	2.1	10.93
BH01	12/16/2014	<b>7.4</b>	<1.0	11	<1.0	11.45
BH01	3/27/2015	1.4	4.2	2.2	24	11.59
BH02	12/20/2012	<b>170</b>	1.6	490	<b>1,700</b>	10.20
BH02	3/19/2013	<1.0	<1.0	<1.0	2.8	10.44
BH02	6/21/2013	<b>82</b>	<1.0	66	410	9.85
BH02	9/23/2013	<b>35</b>	<1.0	39	39	9.31
BH02	12/18/2013	<b>550</b>	<1.0	1.4	110	9.74
BH02	3/28/2014	<b>660</b>	150	1.0	280	9.78
BH02	6/25/2014	<1.0	<1.0	<1.0	<1.0	8.12
BH02	9/17/2014	<b>110</b>	<1.0	120	24	7.78
BH02	12/16/2014	<1.0	<1.0	<1.0	<1.0	8.41
BH02	3/27/2015	<1.0	1.8	<1.0	6.5	8.76
BH03	12/20/2012	<1.0	<1.0	<1.0	<1.0	12.78
BH03	3/19/2013	<1.0	<1.0	<1.0	<1.0	12.60
BH03	6/21/2013	<1.0	<1.0	<1.0	<1.0	12.39
BH03	9/23/2013	<1.0	<1.0	<1.0	<1.0	12.18
BH03	12/18/2013	1.2	<1.0	<1.0	<1.0	12.09
BH03	3/28/2014	<1.0	<1.0	<1.0	<1.0	12.06
BH03	6/25/2014	<1.0	<1.0	<1.0	<1.0	10.92
BH03	9/17/2014	<1.0	<1.0	<1.0	<1.0	10.44
BH03	12/16/2014	<1.0	<1.0	<1.0	<1.0	10.79
BH03	3/27/2015	<1.0	<1.0	<1.0	<1.0	11.05

**TABLE 1**  
**BECKER 5-1, 2, 14, 15**  
**GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (feet)
BH04	6/25/2014	<b>18</b>	<1.0	53	130	8.72
BH04	9/17/2014	1.1	<1.0	<1.0	<1.0	8.13
BH04	12/16/2014	3.3	<1.0	6.0	21	8.73
BH04	3/27/2015	<1.0	<1.0	<1.0	20	8.88
BH05	6/25/2014	<1.0	<1.0	<1.0	<1.0	10.55
BH05	9/17/2014	<1.0	<1.0	<1.0	<1.0	10.70
BH05	12/16/2014	<1.0	<1.0	<1.0	<1.0	10.78
BH05	3/27/2015	<1.0	<1.0	<1.0	<1.0	10.92
BH06	6/25/2014	<1.0	<1.0	<1.0	<1.0	8.67
BH06	9/17/2014	<1.0	<1.0	<1.0	<1.0	8.12
BH06	12/16/2014	<1.0	<1.0	<1.0	<1.0	8.77
BH06	3/27/2015	<1.0	<1.0	<1.0	<1.0	9.14
BH07	6/25/2014	<1.0	<1.0	<1.0	<1.0	8.94
BH07	9/17/2014	<1.0	<1.0	<1.0	<1.0	8.40
BH07	12/16/2014	<1.0	<1.0	<1.0	<1.0	8.17
BH07	3/27/2015	<1.0	<1.0	<1.0	<1.0	9.42
BH08	6/25/2014	<1.0	<1.0	<1.0	<1.0	8.92
BH08	9/17/2014	<1.0	<1.0	<1.0	<1.0	8.40
BH08	12/16/2014	<1.0	<1.0	<1.0	<1.0	9.02
BH08	3/27/2015	<1.0	<1.0	<1.0	<1.0	9.39
<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

NM - Not Measured

**TABLE 2  
BECKER 5-1, 2, 14, 15  
AIR SPARGE / EFR OPERATIONAL SUMMARY TABLE**

Date	EFR Wells	Total EFR/AS Duration (hours)	Approximate Gallons Extracted	AS Wells	Air Injection Pressure (psi)	Average Air Flow Rate (cfm)
<b>First Quarter 2013</b>						
1/28/2013	BH01, BH02	6	4.5	BH01, BH02	10	
2/16/2013		5.5	16		10	
3/3/2013		6	0		10	
3/18/2013		6	7		10	
<b>Quarterly Totals</b>		23.5	27.5		-	
<b>Second Quarter 2013</b>						
4/15/2013	BH01, BH02	6	9	BH01, BH02	10	
5/3/2013		4	0		10	
5/20/2013		6	2		10	
<b>Quarterly Totals</b>		16	11		-	
<b>Third Quarter 2013</b>						
7/8/2013	BH01, BH02	6	7	BH01, BH02	10	
7/23/2013		6.25	0		10	
8/9/2013		6.25	2		15	
8/22/2013		6	0		Not Recorded	
9/9/2013		6	13		10	
9/17/2013		6	0		12	
9/24/2013		6	15		15	
<b>Quarterly Totals</b>		42.5	37		-	
<b>Fourth Quarter 2013</b>						
10/7/2013	BH01, BH02	6	1	BH01, BH02	10	
10/15/2013		6.25	5		10	
10/29/2013		6	0		10	
11/13/2013		6	0		10	
11/25/2013		6	0.5		10	
12/19/2013		6	0		10	
<b>Quarterly Totals</b>		36.25	6.5		-	

**TABLE 2  
BECKER 5-1, 2, 14, 15  
AIR SPARGE / EFR OPERATIONAL SUMMARY TABLE**

Date	EFR Wells	Total EFR/AS Duration (hours)	Approximate Gallons Extracted	AS Wells	Air Injection Pressure (psi)	Average Air Flow Rate (cfm)
Second Quarter 2014						
4/16/2014	BH02	6	0	BH02, BH04, BH05, BH06, BH07	10	10
5/1/2014		6	0		20	3
5/7/2014		6	0		10	16
5/21/2014		4.5	0		10	17.5
6//2014		6	0		10	14
6/19/2014		6	0		20	24
<b>Quarterly Totals</b>		34.5	0		-	
Third Quarter 2014						
7/9/2014	BH02	6	0	BH02, BH04, BH05, BH06, BH07	20	16
7/14/2014		6	0		20	15
8/5/2014		6	42		20	17
8/22/2014		6	0		20	12
9/11/2014		6	20		20	20
<b>Quarterly Totals</b>		30	62		-	
Fourth Quarter 2014						
10/1/2014	BH04, BH05, BH06, BH07	6	0	BH02, BH04, BH05, BH06, BH07	20	20
10/20/2014		6	50		20	19
11/3/2014		6	18		20	30
11/20/2014		6	0		20	30
12/8/2014		6	0		30	22.5
12/19/2014		6	10		30	29
<b>Quarterly Totals</b>		36	78		-	
First Quarter 2015						
1/8/2015	BH01, BH02, BH04, BH06	6	0	BH01, BH02, BH04, BH06	20	25
2/6/2015		6	0		20	18
2/19/2015		6	5		20	16.5
3/10/2015		6	25		20	15.5
3/23/2015		6	0		20	21.5
<b>Quarterly Totals</b>		30	30		-	



Surface  
Drainage



DCP Tank Battery

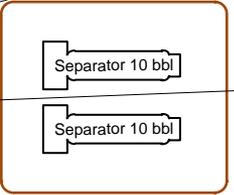
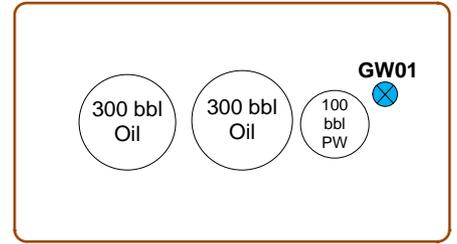
BH03		
Compound (ug/L)	12/16/2014	3/27/2015
Benzene	<1.0	<1.0
Toluene	<1.0	<1.0
Ethylbenzene	<1.0	<1.0
Total Xylenes	<1.0	<1.0

BH01		
Compound (ug/L)	12/16/2014	3/27/2015
Benzene	7.4	1.4
Toluene	<1.0	4.2
Ethylbenzene	11	2.2
Total Xylenes	<1.0	24

BH04		
Compound (ug/L)	12/16/2014	3/27/2015
Benzene	3.3	<1.0
Toluene	<1.0	<1.0
Ethylbenzene	6.0	<1.0
Total Xylenes	21	20

BH05		
Compound (ug/L)	12/16/2014	3/27/2015
Benzene	<1.0	<1.0
Toluene	<1.0	<1.0
Ethylbenzene	<1.0	<1.0
Total Xylenes	<1.0	<1.0

Property Fence



BH06		
Compound (ug/L)	12/16/2014	3/27/2015
Benzene	<1.0	<1.0
Toluene	<1.0	<1.0
Ethylbenzene	<1.0	<1.0
Total Xylenes	<1.0	<1.0

BH07		
Compound (ug/L)	12/16/2014	3/27/2015
Benzene	<1.0	<1.0
Toluene	<1.0	<1.0
Ethylbenzene	<1.0	<1.0
Total Xylenes	<1.0	<1.0

BH08		
Compound (ug/L)	12/16/2014	3/27/2015
Benzene	<1.0	<1.0
Toluene	<1.0	<1.0
Ethylbenzene	<1.0	<1.0
Total Xylenes	<1.0	<1.0

BH02		
Compound (ug/L)	12/16/2014	3/27/2015
Benzene	<1.0	<1.0
Toluene	<1.0	1.8
Ethylbenzene	<1.0	<1.0
Total Xylenes	<1.0	6.5

Buried Irrigation Line

County Road 36

Approximate Scale:  
1 inch equals 25 feet

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

DRAWN BY: ESS  
DATE: 4/1/2015

**Facility Diagram**  
PDC Energy – DJ Basin  
Becker 5-1, 2, 14, 15  
SE 1/4 S5 T3N R64W  
Weld County, CO



6899 Pecos Street  
Unit C  
Denver, CO 80221

LEGEND

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

**FIGURE 1**  
GROUNDWATER ANALYTICAL RESULTS

**ATTACHMENT A**

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

April 01, 2015

Brandon Bruns  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Becker 5-1,2,14,15

Enclosed are the results of analyses for samples received by Summit Scientific on 03/27/15 17:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury  
President



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

Project: Becker 5-1,2,14,15

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/01/15 11:18

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	1503243-01	Water	03/27/15 09:26	03/27/15 17:15
BH02	1503243-02	Water	03/27/15 09:37	03/27/15 17:15
BH03	1503243-03	Water	03/27/15 10:16	03/27/15 17:15
BH04	1503243-04	Water	03/27/15 10:37	03/27/15 17:15
BH05	1503243-05	Water	03/27/15 09:44	03/27/15 17:15
BH06	1503243-06	Water	03/27/15 10:25	03/27/15 17:15
BH07	1503243-07	Water	03/27/15 09:58	03/27/15 17:15
BH08	1503243-08	Water	03/27/15 10:08	03/27/15 17:15

Summit Scientific

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

Project: Becker 5-1,2,14,15

Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
04/01/15 11:18

# Summit Scientific 1503243

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

Page 1 of 1

Client: PDC Energy  
Address: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Sampler Name: Kate Forsmark

Project Manager: Brandon Bruns  
E-Mail: brandon.bruns@pdce.com  
Project Name: Becker 5-1,2,14,15  
Project Number: \_\_\_\_\_

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analyze For:				Special Instructions
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)				
B#01	3/27/15	926	3	X											
B#02		937	↓												
B#03		1016	↓												
B#04		1037	2												
B#05		944	3												
B#06		1025	↓												
B#07		958	↓												
B#08		1008	↓												

Relinquished by: <u>[Signature]</u>	Date/Time: <u>3/27/15 1330</u>	Received by: <u>[Signature]</u>	Date/Time: <u>3/27/15 1700</u>	<b>Turn Around Time (Check)</b> Same Day <input type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/> 72 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/>	<b>Notes:</b> <u>on ice</u>
Relinquished by: <u>[Signature]</u>	Date/Time: <u>3/27/15 1715</u>	Received by: <u>[Signature]</u>	Date/Time: <u>3/27 1715</u>		
Relinquished by: _____	Date/Time: _____	Received in Lab by: _____	Date/Time: _____		

Sample Integrity:  
Temperature Upon Receipt: 3.5°C  
Intact:  Yes  No

www.s2scie.com





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

Project: Becker 5-1,2,14,15

Project Number: [none]  
 Project Manager: Brandon Brunns

**Reported:**  
 04/01/15 11:18

**BH01**  
**1503243-01 (Water)**

**Summit Scientific**

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

Date Sampled: **03/27/15 09:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>1.4</b>	1.0	ug/l	1	1503340	03/31/15	03/31/15	EPA 8260B	
<b>Toluene</b>	<b>4.2</b>	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>2.2</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>24</b>	1.0	"	"	"	"	"	"	

Date Sampled: **03/27/15 09:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		97.7 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.6 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		112 %	45-146		"	"	"	"	

Summit Scientific

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

Project: Becker 5-1,2,14,15

Project Number: [none]  
 Project Manager: Brandon Bruns

**Reported:**  
 04/01/15 11:18

**BH02**  
**1503243-02 (Water)**

**Summit Scientific**

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

Date Sampled: **03/27/15 09:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1503340	03/31/15	03/31/15	EPA 8260B	
<b>Toluene</b>	<b>1.8</b>	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>6.5</b>	1.0	"	"	"	"	"	"	

Date Sampled: **03/27/15 09:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		95.6 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		96.3 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		109 %	45-146		"	"	"	"	

Summit Scientific

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

Project: Becker 5-1,2,14,15

Project Number: [none]  
 Project Manager: Brandon Brunns

**Reported:**  
 04/01/15 11:18

**BH03**  
**1503243-03 (Water)**

**Summit Scientific**

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

Date Sampled: **03/27/15 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1503340	03/31/15	03/31/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/27/15 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		99.2 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		96.5 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		111 %	45-146		"	"	"	"	

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

Project: Becker 5-1,2,14,15

Project Number: [none]  
 Project Manager: Brandon Brunns

**Reported:**  
 04/01/15 11:18

**BH04**  
**1503243-04 (Water)**

**Summit Scientific**

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

Date Sampled: **03/27/15 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1503340	03/31/15	03/31/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>20</b>	1.0	"	"	"	"	"	"	

Date Sampled: **03/27/15 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>114 %</i>	<i>37-154</i>		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		<i>101 %</i>	<i>45-149</i>		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>112 %</i>	<i>45-146</i>		"	"	"	"	

Summit Scientific

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

Project: Becker 5-1,2,14,15

Project Number: [none]  
 Project Manager: Brandon Bruns

**Reported:**  
 04/01/15 11:18

**BH05**  
**1503243-05 (Water)**

**Summit Scientific**

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

Date Sampled: **03/27/15 09:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1503340	03/31/15	03/31/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/27/15 09:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		94.7 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		97.1 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		108 %	45-146		"	"	"	"	

Summit Scientific

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

Project: Becker 5-1,2,14,15

Project Number: [none]  
 Project Manager: Brandon Bruns

**Reported:**  
 04/01/15 11:18

**BH06**  
**1503243-06 (Water)**

**Summit Scientific**

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

Date Sampled: **03/27/15 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1503340	03/31/15	03/31/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/27/15 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		93.0 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		95.0 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		113 %	45-146		"	"	"	"	

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

Project: Becker 5-1,2,14,15

Project Number: [none]  
 Project Manager: Brandon Bruns

**Reported:**  
 04/01/15 11:18

**BH07**  
**1503243-07 (Water)**

**Summit Scientific**

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

Date Sampled: **03/27/15 09:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1503340	03/31/15	03/31/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/27/15 09:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		96.9 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		95.7 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		113 %	45-146		"	"	"	"	

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 1775 Sherman St. STE. 3000  
 Denver CO, 80203

Project: Becker 5-1,2,14,15

Project Number: [none]  
 Project Manager: Brandon Brunns

**Reported:**  
 04/01/15 11:18

**BH08**  
**1503243-08 (Water)**

**Summit Scientific**

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

Date Sampled: **03/27/15 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1503340	03/31/15	03/31/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/27/15 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		95.2 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		97.1 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		114 %	45-146		"	"	"	"	

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1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Becker 5-1,2,14,15

Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
04/01/15 11:18

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

**Summit Scientific**

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

**Batch 1503340 - EPA 5030 Water MS**

**Blank (1503340-BLK1)**

Prepared & Analyzed: 03/31/15

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	12.6		"	13.2		95.8	37-154			
Surrogate: Toluene-d8	12.8		"	13.3		96.1	45-149			
Surrogate: 4-Bromofluorobenzene	14.8		"	13.3		111	45-146			

**LCS (1503340-BS1)**

Prepared & Analyzed: 03/31/15

Benzene	29.5	1.0	ug/l	33.3		88.5	51-132			
Toluene	28.2	1.0	"	33.3		84.7	51-138			
Ethylbenzene	30.7	1.0	"	33.1		92.8	58-146			
m,p-Xylene	62.3	2.0	"	66.5		93.7	57-144			
o-Xylene	30.2	1.0	"	32.8		92.0	53-146			
Surrogate: 1,2-Dichloroethane-d4	12.9		"	13.2		97.7	37-154			
Surrogate: Toluene-d8	13.0		"	13.3		97.6	45-149			
Surrogate: 4-Bromofluorobenzene	14.5		"	13.3		109	45-146			

**Matrix Spike (1503340-MS1)**

Source: 1503237-03

Prepared & Analyzed: 03/31/15

Benzene	42.6	1.0	ug/l	33.3	12.5	90.3	34-141			
Toluene	28.6	1.0	"	33.3	ND	85.7	27-151			
Ethylbenzene	36.7	1.0	"	33.1	5.59	94.2	29-160			
m,p-Xylene	63.6	2.0	"	66.5	ND	95.6	20-166			
o-Xylene	30.1	1.0	"	32.8	ND	91.9	33-159			
Surrogate: 1,2-Dichloroethane-d4	12.9		"	13.2		97.5	37-154			
Surrogate: Toluene-d8	12.8		"	13.3		95.7	45-149			
Surrogate: 4-Bromofluorobenzene	14.3		"	13.3		107	45-146			

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Project: Becker 5-1,2,14,15

Project Number: [none]  
 Project Manager: Brandon Brunns

**Reported:**  
 04/01/15 11:18

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

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

**Batch 1503340 - EPA 5030 Water MS**

<b>Matrix Spike Dup (1503340-MSD1)</b>	<b>Source: 1503237-03</b>			<b>Prepared &amp; Analyzed: 03/31/15</b>						
Benzene	40.2	1.0	ug/l	33.3	12.5	83.3	34-141	5.60	32	
Toluene	28.9	1.0	"	33.3	ND	86.8	27-151	1.29	25	
Ethylbenzene	36.7	1.0	"	33.1	5.59	94.0	29-160	0.163	50	
m,p-Xylene	64.9	2.0	"	66.5	ND	97.5	20-166	1.96	36	
o-Xylene	31.2	1.0	"	32.8	ND	95.1	33-159	3.49	26	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>14.2</i>		<i>"</i>	<i>13.2</i>		<i>108</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>12.9</i>		<i>"</i>	<i>13.3</i>		<i>96.8</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>14.7</i>		<i>"</i>	<i>13.3</i>		<i>110</i>	<i>45-146</i>			

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1775 Sherman St. STE. 3000  
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Project: Becker 5-1,2,14,15

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/01/15 11:18

### 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