

PDC Energy, Inc.
Third Quarter 2013 Groundwater Monitoring Summary

November 21, 2013

Wiedeman 21B, 24-21, 21-2 Tank Battery
NESW S21 T5N R67W
Weld County, API # 05-123-11427

This groundwater summary has been prepared by Tasman Geosciences, LLC for the Wiedeman 21B, 24-21, 21-2 tank battery. On August 27, 2013, groundwater sampling was conducted at five monitoring well locations. Groundwater samples were submitted for laboratory analysis of BTEX constituents using USEPA Method 8260B. Analytical results are summarized in Table 1 below and are illustrated on Figure 2. The laboratory analytical report is included as Attachment A. Evaluation of third quarter analytical results indicates that benzene concentrations were in exceedance of COGCC regulatory standards at well MW01. BTEX concentrations remained below laboratory detection limits at the remaining four monitoring well locations.

Chemical oxidant (chemox) injection activities were conducted during the first quarter 2013. Approximately 1,200 pounds of Persulfate and 240 gallons of 25% sodium hydroxide were injected into MW01. Groundwater monitoring will continue to assess the effectiveness of chemox injections at the site.

Fourth quarter 2013 groundwater sampling will be conducted during November 2013.

TABLE 1
WIEDEMAN 21B, 24-21, 21-2
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	6/29/2007	180	15	<1.0	740	NM
MW01	8/17/2007	210	<1.0	91	360	6.19
MW01	2/21/2008	30	<1.0	14	<1.0	12.65
MW01	5/6/2008	22	<1.0	<1.0	<1.0	12.72
MW01	8/27/2008	500	<1.0	110	290	6.68
MW01	11/12/2008	50	<1.0	63	180	9.63
MW01	2/9/2009	12	<1.0	5.1	3.1	11.90
MW01	5/8/2009	130	<1.0	18	6.5	10.98
MW01	8/28/2009	70	<1.0	77	81	6.18
MW01	11/11/2009	800	<1.0	71	210	9.06
MW01	2/25/2010	13	<1.0	2.1	5.0	11.70
MW01	5/18/2010	200	<1.0	48	100	NM
MW01	8/11/2010	310	<1.0	110	180	5.90
MW01	11/10/2010	10	<1.0	15	20	10.3
MW01	2/24/2011	33	<1.0	4.6	12	12.62
MW01	5/5/2011	17	<1.0	1.4	<1.0	NM
MW01	8/2/2011	170	<1.0	100	200	5.64
MW01	11/30/2011	7.2	<1.0	2.2	2.3	8.80
MW01	2/21/2012	200	<1.0	82	210	10.61
MW01	5/29/2012	180	<1.0	120	350	9.37
MW01	5/23/2013	NS	NS	NS	NS	DRY
MW01	8/27/2013	22	<1.0	2.6	3.4	4.24
MW02	8/17/2007	<1.0	<1.0	<1.0	<1.0	5.43
MW02	2/21/2008	7.4	<1.0	1.1	<1.0	12.20
MW02	5/6/2008	1.4	<1.0	<1.0	<1.0	12.47
MW02	8/27/2008	12	<1.0	1.6	<1.0	6.12
MW02	11/12/2008	59	<1.0	38	<1.0	9.38
MW02	2/9/2009	12	<1.0	10	<1.0	11.60
MW02	5/8/2009	8.2	<1.0	4.2	<1.0	10.42
MW02	8/28/2009	5.5	<1.0	<1.0	<1.0	5.53
MW02	11/11/2009	22	<1.0	37	<1.0	8.72
MW02	2/25/2010	<1.0	<1.0	1.3	<1.0	11.35
MW02	5/18/2010	8.7	<1.0	14	<1.0	NM
MW02	8/11/2010	<1.0	<1.0	<1.0	<1.0	5.26
MW02	11/10/2010	<1.0	<1.0	<1.0	<1.0	10.00
MW02	2/24/2011	<1.0	<1.0	<1.0	<1.0	12.22
MW02	5/5/2011	<1.0	<1.0	<1.0	<1.0	NM

TABLE 1
WIEDEMAN 21B, 24-21, 21-2
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)
MW02	8/2/2011	<1.0	<1.0	<1.0	<1.0	4.84
MW02	11/30/2011	<1.0	<1.0	5.9	<1.0	7.64
MW02	2/21/2012	1.1	<1.0	14	<1.0	10.23
MW02	5/29/2012	<1.0	<1.0	18	<1.0	8.84
MW02	5/23/2013	4.5	<1.0	20	74	11.83
MW02	8/27/2013	4.6	<1.0	13	11	5.77
MW03	8/17/2007	<1.0	<1.0	<1.0	<1.0	6.23
MW03	2/21/2008	<1.0	<1.0	<1.0	<1.0	13.08
MW03	5/6/2008	<1.0	<1.0	<1.0	<1.0	13.68
MW03	8/27/2008	<1.0	<1.0	<1.0	<1.0	7.10
MW03	11/12/2008	<1.0	<1.0	<1.0	<1.0	10.64
MW03	2/9/2009	<1.0	<1.0	<1.0	<1.0	12.84
MW03	5/8/2009	<1.0	<1.0	<1.0	<1.0	11.76
MW03	8/28/2009	<1.0	<1.0	<1.0	<1.0	6.51
MW03	11/11/2009	<1.0	<1.0	<1.0	<1.0	10.01
MW03	2/25/2010	<1.0	<1.0	<1.0	<1.0	12.55
MW03	5/18/2010	<1.0	<1.0	<1.0	<1.0	NM
MW03	8/11/2010	<1.0	<1.0	<1.0	<1.0	6.20
MW03	11/10/2010	<1.0	<1.0	<1.0	<1.0	11.23
MW03	2/24/2011	<1.0	<1.0	<1.0	<1.0	13.44
MW03	5/5/2011	<1.0	<1.0	<1.0	<1.0	NM
MW03	8/2/2011	<1.0	<1.0	<1.0	<1.0	13.82
MW03	11/30/2011	<1.0	<1.0	<1.0	<1.0	8.80
MW03	2/21/2012	<1.0	<1.0	<1.0	<1.0	11.49
MW03	5/29/2012	1.5	2.4	<1.0	<1.0	9.79
MW03	5/23/2013	<1.0	<1.0	<1.0	<1.0	13.00
MW03	8/27/2013	<1.0	<1.0	<1.0	<1.0	6.70
MW04	2/21/2008	<1.0	<1.0	<1.0	<1.0	13.20
MW04	5/6/2008	<1.0	<1.0	<1.0	<1.0	13.38
MW04	8/27/2008	<1.0	<1.0	<1.0	<1.0	NM
MW04	11/12/2008	<1.0	<1.0	<1.0	<1.0	NM
MW04	2/9/2009	<1.0	<1.0	<1.0	<1.0	NM
MW04	5/8/2009	<1.0	<1.0	<1.0	<1.0	NM
MW04	11/11/2009	<1.0	<1.0	<1.0	<1.0	NM
MW04	2/25/2010	<1.0	<1.0	<1.0	<1.0	0.00
MW04	5/18/2010	<1.0	<1.0	<1.0	<1.0	NM
MW04	8/11/2010	<1.0	<1.0	<1.0	<1.0	7.54

TABLE 1
WIEDEMAN 21B, 24-21, 21-2
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)
MW04	11/10/2010	<1.0	<1.0	<1.0	<1.0	10.61
MW04	2/24/2011	<1.0	<1.0	<1.0	<1.0	NM
MW04	5/5/2011	<1.0	<1.0	<1.0	<1.0	NM
MW04	8/2/2011	<1.0	<1.0	<1.0	<1.0	7.14
MW04	11/30/2011	<1.0	<1.0	<1.0	<1.0	8.50
MW04	2/21/2012	<1.0	<1.0	<1.0	<1.0	10.92
MW04	5/29/2012	<1.0	<1.0	<1.0	<1.0	10.76
MW04	5/23/2013	<1.0	<1.0	<1.0	<1.0	12.48
MW04	8/27/2013	<1.0	<1.0	<1.0	<1.0	7.67
MW05	2/21/2008	<1.0	<1.0	<1.0	<1.0	13.10
MW05	5/6/2008	<1.0	<1.0	<1.0	<1.0	13.24
MW05	8/27/2008	<1.0	<1.0	<1.0	<1.0	7.17
MW05	11/12/2008	<1.0	<1.0	<1.0	<1.0	9.86
MW05	2/9/2009	<1.0	<1.0	<1.0	<1.0	12.20
MW05	5/8/2009	<1.0	<1.0	<1.0	<1.0	11.30
MW05	8/28/2009	<1.0	<1.0	<1.0	<1.0	6.83
MW05	11/11/2009	<1.0	<1.0	<1.0	<1.0	9.31
MW05	2/25/2010	<1.0	<1.0	<1.0	<1.0	12.00
MW05	5/18/2010	<1.0	<1.0	<1.0	<1.0	NM
MW05	8/11/2010	<1.0	<1.0	<1.0	<1.0	6.58
MW05	11/10/2010	<1.0	<1.0	<1.0	<1.0	10.67
MW05	2/24/2011	<1.0	<1.0	<1.0	<1.0	12.88
MW05	5/5/2011	<1.0	<1.0	<1.0	<1.0	NM
MW05	8/2/2011	<1.0	<1.0	<1.0	<1.0	6.12
MW05	11/30/2011	<1.0	<1.0	<1.0	<1.0	9.32
MW05	2/21/2012	<1.0	<1.0	<1.0	<1.0	10.95
MW05	5/29/2012	<1.0	<1.0	<1.0	<1.0	10.09
MW05	5/23/2013	<1.0	<1.0	<1.0	<1.0	12.52
MW05	8/27/2013	<1.0	<1.0	<1.0	<1.0	5.35
COGCC standards for groundwater (ug/L) ⁽¹⁾		5	560	700	1,400	

Notes:

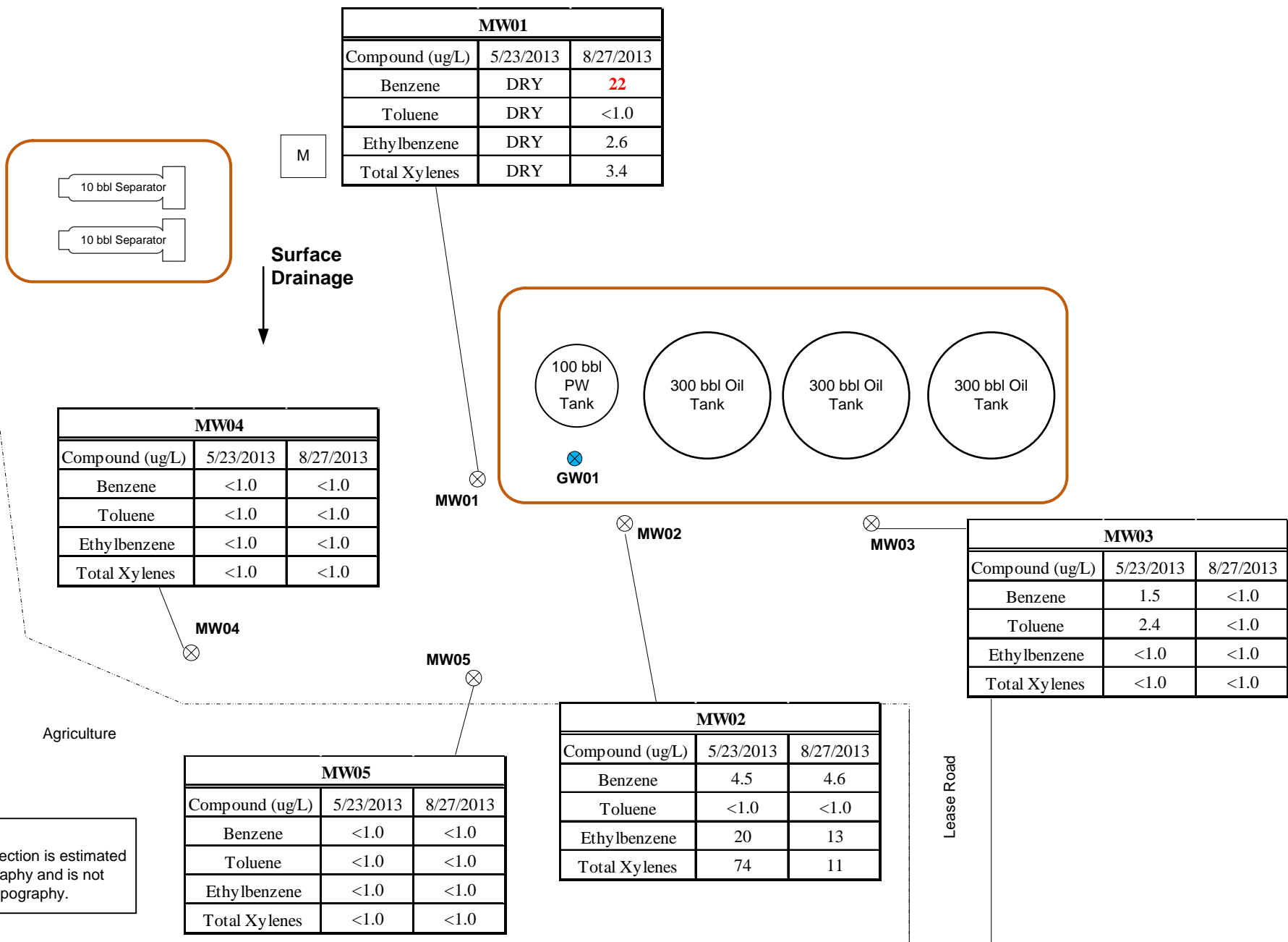
1). The environmental cleanup standards for groundwater that are applicable to this site are the Colorado Oil and Gas Conservation Commission (COGCC) standards for contaminants in groundwater according to Table 910-1 of the COGCC 900 Series Rule for E&P Waste Management.

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

ug/L= Micrograms per liter.

NS = Not Sampled

NM = Not Measured



DRAWN BY: ESS

DATE: 9/3/2013

Facility Diagram

PDC Energy – DJ Basin
Wiedeman 21B, 24-21, 21-2
NESW S21 T5N R67W
Weld County, CO



6899 Pecos St., Unit C
Denver CO 80221

LEGEND

Earthen Berm

Temporary Monitoring Well Location

Groundwater Sample Location

M Meter Shed

FIGURE 2
GROUNDWATER
ANALYTICAL RESULTS
Not to Scale

ATTACHMENT A

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

August 30, 2013

Brandon Bruns

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Wiedeman 21B, 24-21, 21-2

Enclosed are the results of analyses for samples received by Summit Scientific on 08/27/13 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Joseph J Egry IV

Laboratory Director

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

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

Project: Wiedeman 21B, 24-21, 21-2

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
08/30/13 16:08

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01	R308267-01	Water	08/27/13 14:30	08/27/13 17:00
MW02	R308267-02	Water	08/27/13 14:35	08/27/13 17:00
MW03	R308267-03	Water	08/27/13 14:40	08/27/13 17:00
MW04	R308267-04	Water	08/27/13 14:45	08/27/13 17:00
MW05	R308267-05	Water	08/27/13 14:50	08/27/13 17:00

Summit Scientific

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

Project: Wiedeman 21B, 24-21, 21-2

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
08/30/13 16:08

R308267

Summit Scientific

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

Client: POC Tashman Address: _____
City/State/Zip: _____ Phone: _____ Fax: _____
Sample Name: End Siegel
Project Manager: Brandon Bruns Project Name: Widemann 21B, 24-21, 21-2
E-Mail: _____ Project Number: _____
Page _____ of _____

Page / of

[illegible]

www.scientific.com

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Carol Myers IV



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

Project: Wiedeman 21B, 24-21, 21-2

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
08/30/13 16:08

MW01
R308267-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/27/13 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	22	1.0	ug/l	1	3082903	08/30/13	08/30/13	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	2.6	1.0	"	"	"	"	"	"	
Xylenes (total)	3.4	1.0	"	"	"	"	"	"	

Date Sampled: **08/27/13 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		116 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		102 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	45-146		"	"	"	"	

Summit Scientific

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

Project: Wiedeman 21B, 24-21, 21-2

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
08/30/13 16:08

MW02
R308267-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/27/13 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	4.6	1.0	ug/l	1	3082903	08/30/13	08/30/13	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	13	1.0	"	"	"	"	"	"	
Xylenes (total)	11	1.0	"	"	"	"	"	"	

Date Sampled: **08/27/13 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		99.3 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	45-146		"	"	"	"	

Summit Scientific

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

Project: Wiedeman 21B, 24-21, 21-2

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
08/30/13 16:08

MW03

R308267-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/27/13 14:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	3082903	08/30/13	08/30/13	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	1.0		"	"	"	"	"	"	

Date Sampled: **08/27/13 14:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		107 %		37-154		"	"	"	"	
Surrogate: Toluene-d8		101 %		45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.4 %		45-146		"	"	"	"	

Summit Scientific

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

Project: Wiedeman 21B, 24-21, 21-2

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
08/30/13 16:08

MW04

R308267-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/27/13 14:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	3082903	08/30/13	08/30/13	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	1.0		"	"	"	"	"	"	

Date Sampled: **08/27/13 14:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		111 %		37-154		"	"	"	"	
Surrogate: Toluene-d8		101 %		45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.2 %		45-146		"	"	"	"	

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

Project: Wiedeman 21B, 24-21, 21-2

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
08/30/13 16:08

MW05

R308267-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/27/13 14:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	3082903	08/30/13	08/30/13	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	1.0		"	"	"	"	"	"	

Date Sampled: **08/27/13 14:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		103 %		37-154		"	"	"	"	
Surrogate: Toluene-d8		101 %		45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.3 %		45-146		"	"	"	"	

Summit Scientific

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



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

Project: Wiedeman 21B, 24-21, 21-2
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
08/30/13 16:08

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 3082903 - EPA 5030 Water MS

Blank (3082903-BLK1)

Prepared & Analyzed: 08/29/13

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	15.1		"	13.2		114	37-154			
Surrogate: Toluene-d8	13.9		"	13.3		104	45-149			
Surrogate: 4-Bromofluorobenzene	15.3		"	13.3		115	45-146			

Blank (3082903-BLK2)

Prepared & Analyzed: 08/29/13

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	14.8		"	13.2		112	37-154			
Surrogate: Toluene-d8	13.7		"	13.3		103	45-149			
Surrogate: 4-Bromofluorobenzene	14.8		"	13.3		111	45-146			

LCS (3082903-BS1)

Prepared & Analyzed: 08/30/13

Benzene	34.6	1.0	ug/l	33.3		104	51-132			
Toluene	40.6	1.0	"	33.3		122	51-138			
Ethylbenzene	41.3	1.0	"	33.3		124	58-146			
m,p-Xylene	78.2	2.0	"	66.7		117	57-144			
o-Xylene	38.9	1.0	"	33.3		117	53-146			
Surrogate: 1,2-Dichloroethane-d4	15.0		"	13.2		113	37-154			
Surrogate: Toluene-d8	14.0		"	13.3		105	45-149			
Surrogate: 4-Bromofluorobenzene	14.6		"	13.3		110	45-146			

LCS (3082903-BS2)

Prepared & Analyzed: 08/30/13

Benzene	34.4	1.0	ug/l	33.3		103	51-132			
Toluene	40.1	1.0	"	33.3		120	51-138			
Ethylbenzene	41.4	1.0	"	33.3		124	58-146			
m,p-Xylene	77.8	2.0	"	66.7		117	57-144			
o-Xylene	38.7	1.0	"	33.3		116	53-146			
Surrogate: 1,2-Dichloroethane-d4	14.7		"	13.2		111	37-154			
Surrogate: Toluene-d8	13.9		"	13.3		104	45-149			
Surrogate: 4-Bromofluorobenzene	14.3		"	13.3		107	45-146			

Summit Scientific

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

Project: Wiedeman 21B, 24-21, 21-2

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
08/30/13 16:08

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 3082903 - EPA 5030 Water MS

LCS Dup (3082903-BSD1)

Prepared & Analyzed: 08/30/13

Benzene	34.1	1.0	ug/l	33.3	102	51-132	1.63	17	
Toluene	39.7	1.0	"	33.3	119	51-138	2.19	17	
Ethylbenzene	40.7	1.0	"	33.3	122	58-146	1.61	16	
m,p-Xylene	76.7	2.0	"	66.7	115	57-144	1.90	16	
o-Xylene	38.4	1.0	"	33.3	115	53-146	1.37	15	
Surrogate: 1,2-Dichloroethane-d4	14.9		"	13.2	113	37-154			
Surrogate: Toluene-d8	14.1		"	13.3	106	45-149			
Surrogate: 4-Bromofluorobenzene	14.6		"	13.3	110	45-146			

LCS Dup (3082903-BSD2)

Prepared & Analyzed: 08/30/13

Benzene	34.0	1.0	ug/l	33.3	102	51-132	1.31	17	
Toluene	40.0	1.0	"	33.3	120	51-138	0.275	17	
Ethylbenzene	41.6	1.0	"	33.3	125	58-146	0.386	16	
m,p-Xylene	78.2	2.0	"	66.7	117	57-144	0.423	16	
o-Xylene	39.4	1.0	"	33.3	118	53-146	1.82	15	
Surrogate: 1,2-Dichloroethane-d4	14.7		"	13.2	111	37-154			
Surrogate: Toluene-d8	13.7		"	13.3	103	45-149			
Surrogate: 4-Bromofluorobenzene	14.8		"	13.3	111	45-146			

Matrix Spike (3082903-MS1)

Source: R308261-01

Prepared & Analyzed: 08/30/13

Benzene	33.9	1.0	ug/l	33.3	2.67	93.7	34-141		
Toluene	39.6	1.0	"	33.3	11.9	83.1	27-151		
Ethylbenzene	42.3	1.0	"	33.3	3.45	117	29-160		
m,p-Xylene	79.9	2.0	"	66.7	29.0	76.3	20-166		
o-Xylene	39.7	1.0	"	33.3	8.89	92.5	33-159		
Surrogate: 1,2-Dichloroethane-d4	13.5		"	13.2	102	37-154			
Surrogate: Toluene-d8	13.7		"	13.3	103	45-149			
Surrogate: 4-Bromofluorobenzene	14.4		"	13.3	108	45-146			

Summit Scientific

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

Project: Wiedeman 21B, 24-21, 21-2

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
08/30/13 16:08

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 3082903 - EPA 5030 Water MS

Matrix Spike (3082903-MS2)		Source: R308261-02			Prepared & Analyzed: 08/30/13					
Benzene	34.9	1.0	ug/l	33.3	ND	105	34-141			
Toluene	41.2	1.0	"	33.3	ND	124	27-151			
Ethylbenzene	42.3	1.0	"	33.3	ND	127	29-160			
m,p-Xylene	79.7	2.0	"	66.7	ND	120	20-166			
o-Xylene	39.3	1.0	"	33.3	ND	118	33-159			
Surrogate: 1,2-Dichloroethane-d4	14.2		"	13.2		107	37-154			
Surrogate: Toluene-d8	14.0		"	13.3		105	45-149			
Surrogate: 4-Bromofluorobenzene	14.6		"	13.3		110	45-146			

Matrix Spike Dup (3082903-MSD1)		Source: R308261-01			Prepared & Analyzed: 08/30/13					
Benzene	34.6	1.0	ug/l	33.3	2.67	95.7	34-141	1.93	32	
Toluene	40.5	1.0	"	33.3	11.9	85.7	27-151	2.15	25	
Ethylbenzene	41.8	1.0	"	33.3	3.45	115	29-160	1.24	50	
m,p-Xylene	79.2	2.0	"	66.7	29.0	75.2	20-166	0.918	36	
o-Xylene	39.1	1.0	"	33.3	8.89	90.5	33-159	1.62	26	
Surrogate: 1,2-Dichloroethane-d4	14.0		"	13.2		106	37-154			
Surrogate: Toluene-d8	13.9		"	13.3		104	45-149			
Surrogate: 4-Bromofluorobenzene	14.4		"	13.3		108	45-146			

Matrix Spike Dup (3082903-MSD2)		Source: R308261-02			Prepared & Analyzed: 08/30/13					
Benzene	34.8	1.0	ug/l	33.3	ND	104	34-141	0.345	32	
Toluene	40.6	1.0	"	33.3	ND	122	27-151	1.44	25	
Ethylbenzene	42.4	1.0	"	33.3	ND	127	29-160	0.189	50	
m,p-Xylene	80.1	2.0	"	66.7	ND	120	20-166	0.526	36	
o-Xylene	39.6	1.0	"	33.3	ND	119	33-159	0.735	26	
Surrogate: 1,2-Dichloroethane-d4	13.7		"	13.2		103	37-154			
Surrogate: Toluene-d8	13.9		"	13.3		104	45-149			
Surrogate: 4-Bromofluorobenzene	14.6		"	13.3		109	45-146			

Summit Scientific

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

Project: Wiedeman 21B, 24-21, 21-2

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
08/30/13 16:08

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 read 'Daniel A. Bruns IV'.