

Project: 7239
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PDC Energy, Inc.
First Quarter 2013 Groundwater Monitoring Summary

March 25, 2013

Ryan 23-25U & 25BU, 14-25U/ Scott 24-25U/ MVS #1 Tank Battery
SESW Section 25 T5N R68W
Weld County, API # 05-069-06179

This groundwater monitoring summary has been prepared by Tasman Geosciences, LLC for the Ryan 23-25U & 25BU, 14-25U/ Scott 24-25U/ MVS #1 tank battery. On January 28, 2013, groundwater sampling was conducted at three temporary monitoring well locations. Due to insufficient water in BH02, BH03, and BH-04 groundwater samples were not collected from these points. Groundwater samples were submitted for laboratory analysis of BTEX constituents using USEPA Method 8260B. Analytical results are summarized in Table 1 and are illustrated on Figure 2. The laboratory analytical report is included as Attachment A. Evaluation of first quarter analytical results indicates that benzene concentrations are in exceedance of the COGCC regulatory standards at monitoring well BH04R. However, constituent concentrations in BH04R are significantly lower than what was previously exhibited in neighboring well BH04.

Bi-weekly enhanced fluid recovery (EFR) with air sparge (AS) was initiated on May 29, 2012. A summary of the EFR/AS operational data is provided in Table 2. EFR/AS activities have reduced residual dissolved phase petroleum hydrocarbon impacts and will continue as the selected remedial strategy through second quarter 2013.

Second quarter 2013 groundwater sampling will be conducted during April 2013.

TABLE 1
RYAN 23-25U, 25BU, 14-25U/SCOTT 24-25U/MVS 1
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-BH-01 | 4/13/2012 | 320 | 810 | 44 | 490 | NM |
| BH01 | 7/17/2012 | <1.0 | <1.0 | <1.0 | <1.0 | 14.39 |
| BH01 | 10/1/2012 | <1.0 | <1.0 | <1.0 | <1.0 | 14.67 |
| BH01 | 1/28/2013 | <1.0 | <1.0 | <1.0 | <1.0 | 14.9 |
| GW02-BH02 | 4/13/2012 | 7,100 | 14,000 | 420 | 4,400 | NM |
| BH02 | 7/17/2012 | DRY | DRY | DRY | DRY | DRY |
| BH02 | 10/1/2012 | DRY | DRY | DRY | DRY | DRY |
| BH02 | 1/28/2013 | DRY | DRY | DRY | DRY | DRY |
| GW03-BH03 | 4/13/2012 | 11,000 | 13,000 | 300 | 3,500 | NM |
| BH03 | 7/17/2012 | 1,400 | 710 | 20 | 250 | 13.82 |
| BH03 | 10/1/2012 | 41 | 47 | 3 | 32 | 14.20 |
| BH03 | 1/28/2013 | DRY | DRY | DRY | DRY | DRY |
| GW04-BH04 | 4/13/2012 | 3,100 | 3,900 | 150 | 1,700 | NM |
| BH04 | 7/17/2012 | 1,500 | 490 | <1.0 | 1,900 | 13.21 |
| BH04 ⁽²⁾ | 10/1/2012 | 2,400 | 66 | 53 | 1,800 | 13.58 |
| BH04R | 1/28/2013 | 26 | <1.0 | <1.0 | 77 | 14.53 |
| GW05-BH05 | 4/13/2012 | 510 | 3,400 | 190 | 2,200 | NM |
| BH05 | 7/17/2012 | <1.0 | <1.0 | <1.0 | <1.0 | 13.30 |
| BH05 | 10/1/2012 | <1.0 | <1.0 | <1.0 | <1.0 | 15.60 |
| BH05 | 1/28/2013 | <1.0 | <1.0 | <1.0 | <1.0 | 15.74 |
| 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.

2). BH04 exhibited insufficient water following installation of BH04R during the fourth quarter 2012.

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

Sample locations are shown on Figure 2.

ug/L= Micrograms per liter.

NM- Not Measured

TABLE 2
RYAN 23-25U, 25BU, 14-25U/SCOTT 24-25U/MVS 1
AIR SPARGE / EFR OPERATIONAL SUMMARY TABLE

| Date | EFR Wells | Total EFR / AS Duration (hours) | Approximate Gallons Extracted | AS Wells | Injection Pressure (psi) |
|---------------------|-----------------------------------|---------------------------------|-------------------------------|-----------------------------------|--------------------------|
| SECOND QUARTER 2012 | | | | | |
| 5/29/2012 | BH-01, BH-02, BH-03, BH-04, BH-05 | 6 | 210 | BH-01, BH-02, BH-03, BH-04, BH-05 | 8 |
| 6/13/2012 | | 6 | 210 | | 8 |
| THIRD QUARTER 2012 | | | | | |
| 7/2/2012 | BH-01, BH-02, BH-03, BH-04, BH-05 | 6 | 252 | BH-01, BH-02, BH-03, BH-04, BH-05 | 8 |
| 7/10/2012 | | 6 | 210 | | 8 |
| 7/25/2012 | | 6 | 207 | | 8 |
| 8/18/2012 | | 7 | 124.5 | | 7.5 |
| 8/21/2012 | | 8 | 124.5 | | 8 |
| 9/4/2012 | | 7 | 0 | | 8 |
| FOURTH QUARTER 2012 | | | | | |
| 10/3/2012 | BH-01,BH-03, BH-04R, BH-05 | 7 | 83 | BH-01,BH-03, BH-04R, BH-05 | 8 |
| 10/30/2012 | | 6 | 11.5 | | 8 |
| 11/13/2012 | | 6 | 23 | | 8 |
| 11/29/2012 | | 6.5 | 14.6 | | 8 |
| 12/6/2012 | | 6.5 | 7.5 | | 8 |
| FIRST QUARTER 2013 | | | | | |
| 1/7/2013 | BH-01,BH-03, BH-04R, BH-05 | 5 | 10 | BH-01,BH-03, BH-04R, BH-05 | 8 |

Notes:

psi = pounds per square inch



Surface
Drainage

| BH03 | | |
|-----------------|-----------|-----------|
| Compound (ug/L) | 10/1/2012 | 1/28/2013 |
| Benzene | 41 | DRY |
| Toluene | 47 | DRY |
| Ethylbenzene | 3 | DRY |
| Total Xylenes | 32 | DRY |

BH-03

| BH04R | | |
|-----------------|-----------|--|
| Compound (ug/L) | 1/28/2013 | |
| Benzene | 26 | |
| Toluene | <1.0 | |
| Ethylbenzene | <1.0 | |
| Total Xylenes | 77 | |

BH-04R

BH-04

| BH05 | | |
|-----------------|-----------|-----------|
| Compound (ug/L) | 10/1/2012 | 1/28/2013 |
| Benzene | <1.0 | <1.0 |
| Toluene | <1.0 | <1.0 |
| Ethylbenzene | <1.0 | <1.0 |
| Total Xylenes | <1.0 | <1.0 |

BH-05

M

M

M

BH01

| BH01 | | |
|-----------------|-----------|-----------|
| Compound (ug/L) | 10/1/2012 | 1/28/2013 |
| Benzene | <1.0 | <1.0 |
| Toluene | <1.0 | <1.0 |
| Ethylbenzene | <1.0 | <1.0 |
| Total Xylenes | <1.0 | <1.0 |

BH02

| BH02 | | |
|-----------------|-----------|-----------|
| Compound (ug/L) | 10/1/2012 | 1/28/2013 |
| Benzene | DRY | DRY |
| Toluene | DRY | DRY |
| Ethylbenzene | DRY | DRY |
| Total Xylenes | DRY | DRY |

Separator 10 bbl

Separator 10 bbl

Separator 10 bbl

100 bbl
PW Tank

300 bbl
Condensate
Tank

300 bbl
Condensate
Tank

300 bbl
Condensate
Tank

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

DRAWN BY: CAW

DATE: 3/11/2103

Facility Diagram

PDC Energy – DJ Basin
Ryan 23-25U & 25BU, 14-25U/ Scott 24-25U/ MVS #1
SESW T5N R68W S25
Weld County, CO



6899 Pecos St., Unit C
Denver CO 80221

LEGEND

- Corrugated Steel Berm
- Monitoring Well Location. Soil and Groundwater Samples Collected
- Sampling Discontinued from Monitoring Well Location

M Meter Shed

FIGURE 2
GROUNDWATER
ANALYTICAL
RESULTS

ATTACHMENT A

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

February 01, 2013

Brandon Bruns

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Ryan 23-25U & 25BU,14-25U/Scott 24-25U/MVS #1

Enclosed are the results of analyses for samples received by Summit Scientific on 01/28/13 18:05. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Joseph J Egry IV For Ben Shrewsbury

President / Laboratory Manager

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

Project: Ryan 23-25U & 25BU,14-25U/Scott 24-25U/MVS #1

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
02/01/13 16:13

ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|-----------|---------------|--------|----------------|----------------|
| BH-01 | R301175-01 | Water | 01/28/13 15:15 | 01/28/13 18:05 |
| BH-04A | R301175-03 | Water | 01/28/13 15:25 | 01/28/13 18:05 |
| BH-05 | R301175-04 | Water | 01/28/13 15:25 | 01/28/13 18:05 |

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

Project: Ryan 23-25U & 25BU,14-25U/Scott 24-25U/MVS #1
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
02/01/13 16:13

BH-01
R301175-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/28/13 15:15**

| Analyte | Result | Reporting | | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------|--------|-----------|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | Units | | | | | | |
| Benzene | ND | 1.0 | ug/l | 1 | 3013005 | 01/30/13 | 01/31/13 | EPA 8260B | |
| Toluene | ND | 1.0 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 1.0 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 1.0 | " | " | " | " | " | " | |

Date Sampled: **01/28/13 15:15**

| Analyte | Result | Reporting | | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------|--------|----------|-------|----------|----------|--------|-------|
| | | Limit | Units | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | | 115 % | 37-154 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 103 % | 45-149 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 108 % | 45-146 | | " | " | " | " | |

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

Project: Ryan 23-25U & 25BU,14-25U/Scott 24-25U/MVS #1
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
02/01/13 16:13

BH-04A
R301175-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/28/13 15:25**

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|-----------|--------------------|-------|----------|---------|----------|----------|-----------|-------|
| Benzene | 26 | 1.0 | ug/l | 1 | 3013005 | 01/30/13 | 01/31/13 | EPA 8260B | |
| Toluene | ND | 1.0 | " | " | " | " | 01/31/13 | " | |
| Ethylbenzene | ND | 1.0 | " | " | " | " | " | " | |
| Xylenes (total) | 77 | 1.0 | " | " | " | " | 01/31/13 | " | |

Date Sampled: **01/28/13 15:25**

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|--------------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 | | 123 % | 37-154 | | " | " | 01/31/13 | " | |
| Surrogate: Toluene-d8 | | 107 % | 45-149 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 78.6 % | 45-146 | | " | " | " | " | |

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

Project: Ryan 23-25U & 25BU,14-25U/Scott 24-25U/MVS #1
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
02/01/13 16:13

BH-05
R301175-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/28/13 15:25**

| Analyte | Result | Reporting | | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------|--------|-----------|--|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | | | | | | | | |
| Benzene | ND | 1.0 | | ug/l | 1 | 3013005 | 01/30/13 | 01/31/13 | EPA 8260B | |
| Toluene | ND | 1.0 | | " | " | " | " | " | " | |
| Ethylbenzene | ND | 1.0 | | " | " | " | " | " | " | |
| Xylenes (total) | ND | 1.0 | | " | " | " | " | " | " | |

Date Sampled: **01/28/13 15:25**

| Analyte | Result | Reporting | | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------|--|--------|----------|-------|----------|----------|--------|-------|
| | | Limit | | | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | | 146 % | | 37-154 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 81.8 % | | 45-149 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 109 % | | 45-146 | | " | " | " | " | |

Summit Scientific

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

Project: Ryan 23-25U & 25BU,14-25U/Scott 24-25U/MVS #1
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
02/01/13 16:13

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 3013005 - EPA 5030 Water MS

Blank (3013005-BLK1)

Prepared: 01/30/13 Analyzed: 01/31/13

| | | | | | | | | | | |
|----------------------------------|------|-----|------|------|--|------|--------|--|--|--|
| Benzene | ND | 1.0 | ug/l | | | | | | | |
| Toluene | ND | 1.0 | " | | | | | | | |
| Ethylbenzene | ND | 1.0 | " | | | | | | | |
| Xylenes (total) | ND | 1.0 | " | | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 13.2 | | " | 13.2 | | 100 | 37-154 | | | |
| Surrogate: Toluene-d8 | 13.2 | | " | 13.3 | | 99.2 | 45-149 | | | |
| Surrogate: 4-Bromofluorobenzene | 13.7 | | " | 13.3 | | 103 | 45-146 | | | |

LCS (3013005-BS1)

Prepared: 01/30/13 Analyzed: 01/31/13

| | | | | | | | | | | |
|----------------------------------|------|-----|------|------|--|------|--------|--|--|--|
| Benzene | 19.9 | 1.0 | ug/l | 33.3 | | 59.6 | 51-132 | | | |
| Toluene | 21.2 | 1.0 | " | 33.3 | | 63.6 | 51-138 | | | |
| Ethylbenzene | 21.8 | 1.0 | " | 33.3 | | 65.5 | 58-146 | | | |
| m,p-Xylene | 43.9 | 2.0 | " | 66.7 | | 65.8 | 57-144 | | | |
| o-Xylene | 21.6 | 1.0 | " | 33.3 | | 65.0 | 53-146 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 13.5 | | " | 13.2 | | 102 | 37-154 | | | |
| Surrogate: Toluene-d8 | 13.2 | | " | 13.3 | | 98.9 | 45-149 | | | |
| Surrogate: 4-Bromofluorobenzene | 13.4 | | " | 13.3 | | 101 | 45-146 | | | |

LCS Dup (3013005-BSD1)

Prepared: 01/30/13 Analyzed: 01/31/13

| | | | | | | | | | | |
|----------------------------------|------|-----|------|------|--|------|--------|------|----|--|
| Benzene | 22.5 | 1.0 | ug/l | 33.3 | | 67.4 | 51-132 | 12.3 | 17 | |
| Toluene | 23.7 | 1.0 | " | 33.3 | | 71.0 | 51-138 | 10.9 | 17 | |
| Ethylbenzene | 24.7 | 1.0 | " | 33.3 | | 74.0 | 58-146 | 12.3 | 16 | |
| m,p-Xylene | 50.5 | 2.0 | " | 66.7 | | 75.7 | 57-144 | 14.0 | 16 | |
| o-Xylene | 24.9 | 1.0 | " | 33.3 | | 74.6 | 53-146 | 13.8 | 15 | |
| Surrogate: 1,2-Dichloroethane-d4 | 13.6 | | " | 13.2 | | 103 | 37-154 | | | |
| Surrogate: Toluene-d8 | 12.7 | | " | 13.3 | | 95.2 | 45-149 | | | |
| Surrogate: 4-Bromofluorobenzene | 13.2 | | " | 13.3 | | 98.9 | 45-146 | | | |

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

Project: Ryan 23-25U & 25BU,14-25U/Scott 24-25U/MVS #1
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
02/01/13 16:13

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 3013005 - EPA 5030 Water MS

| Matrix Spike (3013005-MS1) | | | | Source: R301177-01 | | Prepared: 01/30/13 | | Analyzed: 01/31/13 | |
|----------------------------------|------|-----|------|--------------------|----|--------------------|--------|--------------------|----|
| Benzene | 21.1 | 1.0 | ug/l | 33.3 | ND | 63.3 | 34-141 | | |
| Toluene | 22.2 | 1.0 | " | 33.3 | ND | 66.5 | 27-151 | | |
| Ethylbenzene | 22.8 | 1.0 | " | 33.3 | ND | 68.5 | 29-160 | | |
| m,p-Xylene | 46.4 | 2.0 | " | 66.7 | ND | 69.5 | 20-166 | | |
| o-Xylene | 22.7 | 1.0 | " | 33.3 | ND | 68.0 | 33-159 | | |
| Surrogate: 1,2-Dichloroethane-d4 | | | | 13.9 | " | 13.2 | 105 | 37-154 | |
| Surrogate: Toluene-d8 | | | | 13.4 | " | 13.3 | 100 | 45-149 | |
| Surrogate: 4-Bromofluorobenzene | | | | 13.3 | " | 13.3 | 100 | 45-146 | |
| Matrix Spike Dup (3013005-MSD1) | | | | Source: R301177-01 | | Prepared: 01/30/13 | | Analyzed: 01/31/13 | |
| Benzene | 22.1 | 1.0 | ug/l | 33.3 | ND | 66.4 | 34-141 | 4.76 | 32 |
| Toluene | 23.3 | 1.0 | " | 33.3 | ND | 69.9 | 27-151 | 4.88 | 25 |
| Ethylbenzene | 24.6 | 1.0 | " | 33.3 | ND | 73.8 | 29-160 | 7.38 | 50 |
| m,p-Xylene | 50.4 | 2.0 | " | 66.7 | ND | 75.6 | 20-166 | 8.33 | 36 |
| o-Xylene | 24.7 | 1.0 | " | 33.3 | ND | 74.0 | 33-159 | 8.49 | 26 |
| Surrogate: 1,2-Dichloroethane-d4 | | | | 13.2 | " | 13.2 | 100 | 37-154 | |
| Surrogate: Toluene-d8 | | | | 12.8 | " | 13.3 | 95.6 | 45-149 | |
| Surrogate: 4-Bromofluorobenzene | | | | 13.5 | " | 13.3 | 101 | 45-146 | |

Summit Scientific

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

Project: Ryan 23-25U & 25BU,14-25U/Scott 24-25U/MVS #1

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
02/01/13 16:13

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'.