



30-045 07554

Analytical Report

Report Summary

Client: ConocoPhillips
Chain Of Custody Number: 16695
Samples Received: 3/4/2014 2:45:00PM
Job Number: 96052-2441
Work Order: P403007
Project Name/Location: Redfern #5

OIL CONS. DIV DIST. 3
MAY 14 2014

Entire Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Tim Cain', is written over a horizontal line.

Tim Cain, Laboratory Manager

Date: 3/10/14

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.



ConocoPhillips
PO Box 2200
Bartlesville OK, 74005

Project Name: Redfern #5
Project Number: 96052-2441
Project Manager: Sheena Leon

Reported:
10-Mar-14 13:56

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Braden Head	P403007-01A	Aqueous	03/04/14	03/04/14	Poly 250mL

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5796 US Highway 64, Farmington, NM 87401

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Project Name: Redfern #5
Project Number: 96052-2441
Project Manager: Sheena Leon

Reported:
10-Mar-14 13:56

Braden Head
P403007-01 (Water)

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Cation/Anion Analysis									
pH @19.3°C	9.79		pH Units	1	1410017	03/05/14 09:20	03/05/14 09:20	EPA 150.1	
Total Dissolved Solids	13100		mg/L	1	1410029	03/07/14	03/07/14	EPA 160.1	
Chloride	2620	100	mg/L	100	1410024	03/05/14	03/05/14	EPA 300.0	

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Reported:
10-Mar-14 13:56

Cation/Anion Analysis - Quality Control
Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1410024 - Anion Extraction EPA 300.0										
Blank (1410024-BLK1)				Prepared & Analyzed: 05-Mar-14						
Chloride	ND	1.00	mg/L							
LCS (1410024-BS1)				Prepared & Analyzed: 05-Mar-14						
Chloride	49.0	1.00	mg/L	50.0		98.0	90-110			
Matrix Spike (1410024-MS1)				Source: P403007-01 Prepared & Analyzed: 05-Mar-14						
Chloride	7520	100	mg/L	5000	2620	98.0	80-120			
Matrix Spike Dup (1410024-MSD1)				Source: P403007-01 Prepared & Analyzed: 05-Mar-14						
Chloride	7780	100	mg/L	5000	2620	103	80-120	3.43	20	

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Project Name: Redfern #5
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Reported:
10-Mar-14 13:56

Notes and Definitions

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

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CHAIN OF CUSTODY RECORD

16695

Client: ConocoPhillips			Project Name / Location: Redfern #5			ANALYSIS / PARAMETERS															
Email results to: S. Leon			Sampler Name: S. Leon			TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418-1)	CHLORIDE	PH	TDS	Sample Cool	Sample Intact		
Client Phone No.:			Client No.: 96052-1403 2441																		
Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative			TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418-1)	CHLORIDE	PH	TDS	Sample Cool	Sample Intact
					HNO ₃	HCl	CO ₂														
Bottom Head	3/4/14	1:15	P403002-01	1-250ml poly			X										X	X	X	-	✓
Relinquished by: (Signature) [Signature]					Date	Time	Received by: (Signature) [Signature]										Date	Time			
Relinquished by: (Signature) [Signature]					3/4/14	2:45	Received by: (Signature) [Signature]										3/4/14	14:45			
Sample Matrix																					
Soil ☐ Solid ☐ Sludge ☐ Aqueous ☒ Other ☐																					
☐ Sample(s) dropped off after hours to secure drop off area:																					





2030 Afton Place
Farmington, NM 87401
(505) 325-6622

Analysis No: BU140184
Cust No: 52100-22125

Well/Lease Information

Customer Name: CONOCO PHILLIPS COMPANY
Well Name: RED FERN 5 BHD
County/State: SAN JUAN
Location:
Field:
Formation: DAKOTA
Cust. Stn. No.: 14633307
9274968

Source:
Pressure: 85 PSIG
Sample Temp: DEG. F
Well Flowing: Y
Date Sampled: 03/05/2014
Sampled By: DAN CHAPMAN
Foreman/Engr.:

OIL CONS. DIV DIST. 3
MAY 14 2014

Remarks:

Analysis

Component:	Mole%:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.928	0.1020	0.00	0.0090
CO2	0.004	0.0010	0.00	0.0001
Methane	90.154	15.3200	910.55	0.4994
Ethane	5.526	1.4810	97.80	0.0574
Propane	2.129	0.5880	53.57	0.0324
Iso-Butane	0.415	0.1360	13.50	0.0083
N-Butane	0.466	0.1470	15.20	0.0094
I-Pentane	0.168	0.0620	6.72	0.0042
N-Pentane	0.093	0.0340	3.73	0.0023
Hexane Plus	0.117	0.0520	6.17	0.0039
Total	100.000	17.9230	1107.23	0.6262

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0026

BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1112.7

BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1093.3

REAL SPECIFIC GRAVITY: 0.6276

GPM, BTU, and SPG calculations as shown
above are based on current GPA factors.

DRY BTU @ 14.650: 1106.7

DRY BTU @ 14.696: 1110.1

DRY BTU @ 14.730: 1112.7

DRY BTU @ 15.025: 1135.0

CYLINDER #: 122

CYLINDER PRESSURE: 62 PSIG

DATE RUN: 3/12/14 12:46 PM

ANALYSIS RUN BY: PATRICIA KING



CONOCO PHILLIPS COMPANY
WELL ANALYSIS COMPARISON

Lease: RED FERN 5 BHD
Stn. No.: 14633307
Mtr. No.: 9274968

DAKOTA

03/12/2014
52100-22125

Smpl Date: 03/05/2014
Test Date: 03/12/2014
Run No: BU140184

Nitrogen: 0.928
CO2: 0.004
Methane: 90.154
Ethane: 5.526
Propane: 2.129
I-Butane: 0.415
N-Butane: 0.466
I-Pentane: 0.168
N-Pentane: 0.093
Hexane+: 0.117

BTU: 1112.7
GPM: 17.9230
SPG: 0.6276



2030 Afton Place
Farmington, NM 87401
(505) 325-6622

Analysis No: BU140185
Cust No: 52100-22130

Well/Lease Information

Customer Name: CONOCO PHILLIPS COMPANY
Well Name: RED FERN 5 CSG
County/State: SAN JUAN
Location:
Field:
Formation: DAKOTA
Cust. Stn. No.: 14633307
9274968

Source:
Pressure: 18 PSIG
Sample Temp: DEG. F
Well Flowing: Y
Date Sampled: 03/05/2014
Sampled By: DAN CHAPMAN
Foreman/Engr.:

OIL CONS. DIV DIST. 3
MAY 14 2014

Remarks:

Analysis

Component:	Mole%:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.323	0.0360	0.00	0.0031
CO2	1.717	0.2940	0.00	0.0261
Methane	82.367	14.0090	831.90	0.4562
Ethane	8.788	2.3580	155.52	0.0912
Propane	3.293	0.9100	82.86	0.0501
Iso-Butane	0.645	0.2120	20.97	0.0129
N-Butane	0.942	0.2980	30.73	0.0189
I-Pentane	0.420	0.1540	16.80	0.0105
N-Pentane	0.310	0.1130	12.43	0.0077
Hexane Plus	1.195	0.5350	62.99	0.0395
Total	100.000	18.9190	1214.21	0.7164

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0035
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1221.3
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1200.0
REAL SPECIFIC GRAVITY: 0.7186

GPM, BTU, and SPG calculations as shown
above are based on current GPA factors.

DRY BTU @ 14.650: 1214.7
DRY BTU @ 14.696: 1218.5
DRY BTU @ 14.730: 1221.3
DRY BTU @ 15.025: 1245.8

CYLINDER #: 104
CYLINDER PRESSURE: 18 PSIG
DATE RUN: 3/12/14 12:49 PM
ANALYSIS RUN BY: PATRICIA KING



CONOCO PHILLIPS COMPANY
WELL ANALYSIS COMPARISON

Lease: RED FERN 5 CSG
Stn. No.: 14633307
Mtr. No.: 9274968

DAKOTA

03/12/2014
52100-22130

Smpl Date: 03/05/2014
Test Date: 03/12/2014
Run No: BU140185

Nitrogen: 0.323
CO2: 1.717
Methane: 82.367
Ethane: 8.788
Propane: 3.293
I-Butane: 0.645
N-Butane: 0.942
I-Pentane: 0.420
N-Pentane: 0.310
Hexane+: 1.195

BTU: 1221.3
GPM: 18.9190
SPG: 0.7186