



OIL CONS. DIV DIST. 3

NOV 01 2017

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

Analysis No: GW170013

Cust No: 33050-10265

API-30-045-34546

Well/Lease Information

Customer Name: GREAT WESTERN DRILLING
Well Name: ATLANTIC C 101 E; TBG
County/State: SAN JUAN NM
Location:
Field:
Formation: BD
Cust. Str. No.:

Source: TUBING
Well Flowing: Y
Pressure: 65 PSIG
Flow Temp: DEG. F
Ambient Temp: 46 DEG. F
Flow Rate: 36 MCF/D
Sample Method: Purge & Fill
Date Sampled: 10/18/2017
Sample Time: 8.00 AM
Sampled By: CULLAN
Sampled by (CO): GWDC

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.1116	0.1102	0.0120	0.00	0.0011
CO2	1.6188	1.5983	0.2770	0.00	0.0246
Methane	94.4666	93.2694	16.0480	954.11	0.5233
Ethane	2.8734	2.8370	0.7700	50.85	0.0298
Propane	0.4965	0.4902	0.1370	12.49	0.0076
Iso-Butane	0.1085	0.1071	0.0360	3.53	0.0022
N-Butane	0.0676	0.0667	0.0210	2.21	0.0014
I-Pentane	0.0623	0.0615	0.0230	2.49	0.0016
N-Pentane	0.0288	0.0284	0.0100	1.15	0.0007
Hexane Plus	0.1659	0.1638	0.0740	8.74	0.0055
Total	100.0000	98.7326	17.4080	1035.58	0.5976

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0023
BTU/CU.FT IDEAL: 1038.0
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1040.4
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1022.3
DRY BTU @ 15.025: 1061.2
REAL SPECIFIC GRAVITY: 0.5988

CYLINDER #: 4073
CYLINDER PRESSURE: 72 PSIG
DATE RUN: 10/24/17 8:00 AM
ANALYSIS RUN BY: CAMERON MANGAN

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

GPA Standard: GPA-2261

GC: Danalyzer Model 500

Last Cal/Verify: 10/27/2017

GC Method: C6+ Gas

8



API 30-045 - 34546

GREAT WESTERN DRILLING

WELL ANALYSIS COMPARISON

Lease: ATLANTIC C 101 E; TBG
Stn. No.:
Mtr. No.:

TUBING
BD

10/27/2017
33050-10265

Smpl Date: 10/18/2017
Test Date: 10/24/2017
Run No: GW170013

Nitrogen: 0.1116
CO2: 1.6188
Methane: 94.4666
Ethane: 2.8734
Propane: 0.4965
I-Butane: 0.1085
N-Butane: 0.0676
I-Pentane: 0.0623
N-Pentane: 0.0288
Hexane+: 0.1659

BTU: 1040.4
GPM: 17.4080
SPG: 0.5988



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

Analysis No: GW170011
Cust No: 33050-10255

API 30-045-34546

Well/Lease Information

Customer Name: GREAT WESTERN DRILLING
Well Name: ATLANTIC C 101E; CSG
County/State: SAN JUAN NM
Location:
Field:
Formation:
Cust. Stn. No.:

Source: CASING
Well Flowing: Y
Pressure: 145 PSIG
Flow Temp: DEG. F
Ambient Temp: 46 DEG. F
Flow Rate: 36 MCF/D
Sample Method: Purge & Fill
Date Sampled: 10/18/2017
Sample Time: 8.10 AM
Sampled By: CULLAN
Sampled by (CO): GWDC

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.1235	0.1219	0.0140	0.00	0.0012
CO2	1.8520	1.8283	0.3170	0.00	0.0281
Methane	93.4032	92.2104	15.8690	943.37	0.5174
Ethane	3.0034	2.9650	0.8050	53.15	0.0312
Propane	0.6725	0.6639	0.1860	16.92	0.0102
Iso-Butane	0.1987	0.1962	0.0650	6.46	0.0040
N-Butane	0.1788	0.1765	0.0560	5.83	0.0036
I-Pentane	0.1349	0.1332	0.0490	5.40	0.0034
N-Pentane	0.0690	0.0681	0.0250	2.77	0.0017
Hexane Plus	0.3640	0.3594	0.1630	19.19	0.0120
Total	100.0000	98.7229	17.5490	1053.09	0.6128

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0024
BTU/CU.FT IDEAL: 1055.5
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1058.1
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1039.7
DRY BTU @ 15.025: 1079.3
REAL SPECIFIC GRAVITY: 0.614

CYLINDER #: 6422
CYLINDER PRESSURE: 173 PSIG
DATE RUN: 10/24/17 8:10 AM
ANALYSIS RUN BY: CAMERON MANGAN

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

GPA Standard: GPA-2261

GC: Danalyzer Model 500

Last Cal/Verify: 10/27/2017

GC Method: C6+ Gas



APR 30-045-34546

GREAT WESTERN DRILLING
WELL ANALYSIS COMPARISON

Lease: ATLANTIC C 101E; CSG
Stn. No.:
Mtr. No.:

CASING

10/27/2017
33050-10255

Smpl Date: 10/18/2017
Test Date: 10/24/2017
Run No: GW170011

Nitrogen: 0.1235
CO2: 1.8520
Methane: 93.4032
Ethane: 3.0034
Propane: 0.6725
I-Butane: 0.1987
N-Butane: 0.1788
I-Pentane: 0.1349
N-Pentane: 0.0690
Hexane+: 0.3640

BTU: 1058.1
GPM: 17.5490
SPG: 0.6140



2030 Afton Place
Farmington, NM 87401
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Analysis No: GW170010
Cust No: 33050-10135

API 30-045-34546

Well/Lease Information

Customer Name: GREAT WESTERN DRILLING
Well Name: ATLANTIC C 101 E BHD
County/State: SAN JUAN
Location:
Field:
Formation: BASIN DAKOTA
Cust. Stn. No.: 88644

Source: BRADENHEAD
Well Flowing: Y
Pressure: 51 PSIG
Flow Temp: DEG. F
Ambient Temp: 48 DEG. F
Flow Rate: 36 MCF/D
Sample Method: Purge & Fill
Date Sampled: 10/18/2017
Sample Time: 8.30 AM
Sampled By: CULLAN KELLER
Sampled by (CO): GWDC

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2540	0.2543	0.0280	0.00	0.0025
CO2	0.0046	0.0046	0.0010	0.00	0.0001
Methane	69.4043	69.4858	11.8300	700.98	0.3844
Ethane	10.0459	10.0577	2.7010	177.78	0.1043
Propane	9.2432	9.2541	2.5600	232.57	0.1407
Iso-Butane	3.2403	3.2441	1.0660	105.37	0.0650
N-Butane	3.3320	3.3359	1.0560	108.70	0.0669
I-Pentane	1.8686	1.8708	0.6870	74.76	0.0465
N-Pentane	1.4019	1.4035	0.5110	56.20	0.0349
Hexane Plus	1.2052	1.2066	0.5400	63.53	0.0399
Total	100.0000	100.1174	20.9800	1519.89	0.8852

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0057
BTU/CU.FT IDEAL: 1523.4
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1532.1
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1505.4
DRY BTU @ 15.025: 1562.8
REAL SPECIFIC GRAVITY: 0.89

CYLINDER #: 4126
CYLINDER PRESSURE: 52 PSIG
DATE RUN: 10/24/17 8:30 AM
ANALYSIS RUN BY: CAMERON MANGAN

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

GPA Standard: GPA-2261

GC: Danalyzer Model 500

GC Method: C6+ Gas

Last Cal/Verify: 10/27/2017



API 30-045-34546

GREAT WESTERN DRILLING

WELL ANALYSIS COMPARISON

Lease: ATLANTIC C 101 E BHD
Stn. No.: 88644
Mtr. No.:

BRADENHEAD
BASIN DAKOTA

10/27/2017
33050-10135

Smpl Date:	10/18/2017	03/26/2015	09/04/2014
Test Date:	10/24/2017	04/09/2015	09/05/2014
Run No:	GW170010	GW150013	GW140013
Nitrogen:	0.2540	0.1070	0.1680
CO2:	0.0046	0.0100	0.0050
Methane:	69.4043	62.9370	80.2810
Ethane:	10.0459	16.2490	10.5970
Propane:	9.2432	13.2860	5.2030
I-Butane:	3.2403	3.1030	1.1730
N-Butane:	3.3320	2.6710	1.2730
I-Pentane:	1.8686	0.8370	0.5820
N-Pentane:	1.4019	0.5310	0.4310
Hexane+:	1.2052	0.2690	0.2870
BTU:	1532.1	1526.6	1272.2
GPM:	20.9800	21.2810	19.2450
SPG:	0.8900	0.8842	0.7217



2030 Afton Place
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Analysis No: GW170012
Cust No: 33050-10260

API 30-045-34546

Well/Lease Information

Customer Name: GREAT WESTERN DRILLING
Well Name: ATLANTIC C 101E; INT
County/State: SAN JUAN NM
Location:
Field:
Formation: BD
Cust. Str. No.:

Source: INTERMEDIATE
Well Flowing: Y
Pressure: 39 PSIG
Flow Temp: DEG. F
Ambient Temp: 48 DEG. F
Flow Rate: 36 MCF/D
Sample Method: Purge & Fill
Date Sampled: 10/18/2017
Sample Time: 8.20 AM
Sampled By: CULLAN
Sampled by (CO): GWDC

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2378	0.2370	0.0260	0.00	0.0023
CO2	0.0070	0.0070	0.0010	0.00	0.0001
Methane	78.9647	78.7052	13.4380	797.54	0.4374
Ethane	10.3733	10.3392	2.7850	183.58	0.1077
Propane	5.1262	5.1094	1.4180	128.98	0.0780
Iso-Butane	1.2079	1.2039	0.3970	39.28	0.0242
N-Butane	1.2563	1.2522	0.3980	40.98	0.0252
I-Pentane	0.6239	0.6219	0.2290	24.96	0.0155
N-Pentane	0.4960	0.4944	0.1800	19.88	0.0124
Hexane Plus	1.7069	1.7013	0.7640	89.97	0.0565
Total	100.0000	99.6715	19.6360	1325.18	0.7594

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0041
BTU/CU.FT IDEAL: 1328.2
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1333.7
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1310.5
DRY BTU @ 15.025: 1360.4
REAL SPECIFIC GRAVITY: 0.7622

CYLINDER #: 7010
CYLINDER PRESSURE: 40 PSIG
DATE RUN: 10/24/17 8:20 AM
ANALYSIS RUN BY: CAMERON MANGAN

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

GPA Standard: GPA-2261

GC: Danalyzer Model 500

Last Cal/Verify: 10/27/2017

GC Method: C6+ Gas



API -30-045-34546

GREAT WESTERN DRILLING

WELL ANALYSIS COMPARISON

Lease: ATLANTIC C 101E; INT
Stn. No.:
Mtr. No.:

INTERMEDIATE
BD

10/27/2017
33050-10260

Smpl Date: 10/18/2017
Test Date: 10/24/2017
Run No: GW170012

Nitrogen: 0.2378
CO2: 0.0070
Methane: 78.9647
Ethane: 10.3733
Propane: 5.1262
I-Butane: 1.2079
N-Butane: 1.2563
I-Pentane: 0.6239
N-Pentane: 0.4960
Hexane+: 1.7069

BTU: 1333.7
GPM: 19.6360
SPG: 0.7622