



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

Analysis No: RO190004
Cust No: 69010-10130

Well/Lease Information

Customer Name: RIM OPERATING
Well Name: HOWARD FEDERAL 43-15 #1A; BHD
County/State:
Location:
Lease/PA/CA:
Formation:
Cust. Stn. No.: API # 3003929700

Source: BRADENHEAD
Well Flowing: Y
Pressure: 995 PSIG
Flow Temp: DEG. F
Ambient Temp: 66 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 05/15/2019
Sample Time: 10.10 AM
Sampled By: CELIA L.
Sampled by (CO): ABC

Heat Trace: N
Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.3229	0.3163	0.0360	0.00	0.0031
CO2	0.3353	0.3284	0.0570	0.00	0.0051
Methane	85.6238	83.8631	14.5560	864.80	0.4743
Ethane	7.9198	7.7570	2.1240	140.16	0.0822
Propane	3.4900	3.4182	0.9640	87.81	0.0531
Iso-Butane	0.6761	0.6622	0.2220	21.99	0.0136
N-Butane	0.8328	0.8157	0.2630	27.17	0.0167
I-Pentane	0.2886	0.2827	0.1060	11.55	0.0072
N-Pentane	0.2086	0.2043	0.0760	8.36	0.0052
Hexane Plus	0.3021	0.2959	0.1350	15.92	0.0100
Total	100.0000	97.9438	18.5390	1177.76	0.6705

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.003
BTU/CU.FT IDEAL: 1180.5
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1184.0
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1163.4
DRY BTU @ 15.025: 1207.7
REAL SPECIFIC GRAVITY: 0.6723

CYLINDER #: 105
CYLINDER PRESSURE: 961 PSIG
ANALYSIS DATE: 05/28/2019
ANALYSIS TIME: 10:34:08 AM
ANALYSIS RUN BY: RICHARD WILSON

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

GPA Standard: GPA-2261

GC: Danalyzer Model 500

GC Method: C8+ Gas

Last Cal/Verify: 05/30/2019



RIM OPERATING
WELL ANALYSIS COMPARISON

Lease: HOWARD FEDERAL 43-15 #1A; BHD BRADENHEAD 05/30/2019
Stn. No.: API # 3003929700 69010-10130
Mtr. No.:

Smpl Date: 05/15/2019
Test Date: 05/28/2019
Run No: RO190004

Nitrogen: 0.3229
CO2: 0.3353
Methane: 85.6238
Ethane: 7.9198
Propane: 3.4900
I-Butane: 0.6761
N-Butane: 0.8328
I-Pentane: 0.2886
N-Pentane: 0.2086
Hexane+: 0.3021

BTU: 1184.0
GPM: 18.5390
SPG: 0.6723



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

Analysis No: RO190005
Cust No: 69010-10135

Well/Lease Information

Customer Name: RIM OPERATING
Well Name: HOWARD FEDERAL 43-15 #1A; CSG
County/State:
Location:
Lease/PA/CA:
Formation:
Cust. Stn. No.: API # 3003929700

Source: CASING
Well Flowing: Y
Pressure: 1005 PSIG
Flow Temp: DEG. F
Ambient Temp: 66 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 05/15/2019
Sample Time: 10.15 AM
Sampled By: CELIA L.
Sampled by (CO): ABC

Heat Trace: N
Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.3242	0.3185	0.0360	0.00	0.0031
CO2	0.3447	0.3386	0.0590	0.00	0.0052
Methane	84.8904	83.3890	14.4320	857.39	0.4702
Ethane	8.0838	7.9408	2.1680	143.06	0.0839
Propane	3.8497	3.7816	1.0640	96.86	0.0586
Iso-Butane	0.7734	0.7597	0.2540	25.15	0.0155
N-Butane	0.9100	0.8939	0.2880	29.69	0.0183
I-Pentane	0.3149	0.3093	0.1150	12.60	0.0078
N-Pentane	0.2245	0.2205	0.0820	9.00	0.0056
Hexane Plus	0.2844	0.2794	0.1270	14.99	0.0094
Total	100.0000	98.2313	18.6250	1188.74	0.6778

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0031
BTU/CU.FT IDEAL: 1191.5
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1195.2
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1174.4
DRY BTU @ 15.025: 1219.1
REAL SPECIFIC GRAVITY: 0.6796

CYLINDER #: 039
CYLINDER PRESSURE: 917 PSIG
ANALYSIS DATE: 05/28/2019
ANALYSIS TIME: 10:07:01 AM
ANALYSIS RUN BY: RICHARD WILSON

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: 05/30/2019

GC Method: C6+ Gas



RIM OPERATING
WELL ANALYSIS COMPARISON

Lease: HOWARD FEDERAL 43-15 #1A; CSG CASING
Stn. No.: API # 3003929700
Mtr. No.:

05/30/2019
69010-10135

Smpl Date: 05/15/2019
Test Date: 05/28/2019
Run No: RO190005
Nitrogen: 0.3242
CO2: 0.3447
Methane: 84.8904
Ethane: 8.0838
Propane: 3.8497
I-Butane: 0.7734
N-Butane: 0.9100
I-Pentane: 0.3149
N-Pentane: 0.2245
Hexane+: 0.2844
BTU: 1195.2
GPM: 18.6250
SPG: 0.6796