



WARREN Com 2 M  
30-045-25567  
Braden head sample

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

Analysis No: SO180166  
Cust No: 15950-11260

### Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT  
Well Name: WARREN COM #2M; BHD  
County/State: SAN JUAN NM  
Location:  
Field:  
Formation: PC  
Cust. Stn. No.: API # 3004525567

Source: BRADENHEAD  
Well Flowing: Y  
Pressure: 12 PSIA  
Flow Temp: DEG. F  
Ambient Temp: 89 DEG. F  
Flow Rate: MCF/D  
Sample Method: Purge & Fill  
Sample Date: 08/02/2018  
Sample Time: 4.51 PM  
Sampled By: SCOTT WILLARD  
Sampled by (CO): PESCO

Heat Trace: N  
Remarks:

NMOC  
FEB 13 2019  
DISTRICT III

### Analysis

| Component:  | Mole%:   | Unnormalized %: | **GPM:  | *BTU:   | *SP Gravity: |
|-------------|----------|-----------------|---------|---------|--------------|
| Nitrogen    | 0.4271   | 0.4240          | 0.0470  | 0.00    | 0.0041       |
| CO2         | 0.9191   | 0.9124          | 0.1580  | 0.00    | 0.0140       |
| Methane     | 73.6051  | 73.0663         | 12.5310 | 743.41  | 0.4077       |
| Ethane      | 11.9629  | 11.8753         | 3.2130  | 211.71  | 0.1242       |
| Propane     | 7.2072   | 7.1544          | 1.9940  | 181.34  | 0.1097       |
| Iso-Butane  | 1.3057   | 1.2961          | 0.4290  | 42.46   | 0.0262       |
| N-Butane    | 2.1988   | 2.1827          | 0.6960  | 71.73   | 0.0441       |
| I-Pentane   | 0.7234   | 0.7181          | 0.2660  | 28.94   | 0.0180       |
| N-Pentane   | 0.5765   | 0.5723          | 0.2100  | 23.11   | 0.0144       |
| Hexane Plus | 1.0742   | 1.0663          | 0.4810  | 56.62   | 0.0356       |
| Total       | 100.0000 | 99.2679         | 20.0250 | 1359.33 | 0.7980       |

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

\*\*@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0045  
BTU/CU.FT IDEAL: 1362.5  
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1368.6  
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1344.8  
DRY BTU @ 15.025: 1396.0  
REAL SPECIFIC GRAVITY: 0.8013

CYLINDER #: 7048  
CYLINDER PRESSURE: 8 PSIG  
ANALYSIS DATE: 08/16/2018  
ANALYSIS TIME: 11:38:24 AM  
ANALYSIS RUN BY: SHYANN ELLEDGE

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: 08/23/2018

GC Method: C6+ Gas



BP - SOUTH BHD PROJECT  
WELL ANALYSIS COMPARISON

Lease: WARREN COM #2M; BHD  
Stn. No.: API # 3004525567  
Mtr. No.:

BRADENHEAD  
PC

08/23/2018  
15950-11260

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Smpl Date: 08/02/2018  
Test Date: 08/16/2018  
Run No: SO180166  
Nitrogen: 0.4271  
CO2: 0.9191  
Methane: 73.6051  
Ethane: 11.9629  
Propane: 7.2072  
I-Butane: 1.3057  
N-Butane: 2.1988  
I-Pentane: 0.7234  
N-Pentane: 0.5765  
Hexane+: 1.0742  
BTU: 1368.6  
GPM: 20.0250  
SPG: 0.8013



Warren Com 2 M  
30-045-25567  
Casing Sample

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

Analysis No: SO180167  
Cust No: 15950-11265

### Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT  
Well Name: WARREN COM #2M; CSG  
County/State: SAN JUAN NM  
Location:  
Field:  
Formation: PC  
Cust. Strn. No.: API # 3004525567

Source: CASING  
Well Flowing: Y  
Pressure: 11 PSIA  
Flow Temp: DEG. F  
Ambient Temp: 89 DEG. F  
Flow Rate: MCF/D  
Sample Method: Purge & Fill  
Sample Date: 08/02/2018  
Sample Time: 4.46 PM  
Sampled By: SCOTT WILLARD  
Sampled by (CO): PESCO

Heat Trace: N

Remarks:

NMOC

FEB 13 2019

DISTRICT III

### Analysis

| Component:  | Mole%:   | Unnormalized %: | **GPM:  | *BTU:   | *SP Gravity: |
|-------------|----------|-----------------|---------|---------|--------------|
| Nitrogen    | 0.4976   | 0.4870          | 0.0550  | 0.00    | 0.0048       |
| CO2         | 0.7757   | 0.7592          | 0.1330  | 0.00    | 0.0118       |
| Methane     | 76.3853  | 74.7620         | 13.0010 | 771.49  | 0.4231       |
| Ethane      | 10.5717  | 10.3470         | 2.8380  | 187.09  | 0.1098       |
| Propane     | 6.8292   | 6.6841          | 1.8890  | 171.83  | 0.1040       |
| Iso-Butane  | 0.9362   | 0.9163          | 0.3080  | 30.44   | 0.0188       |
| N-Butane    | 1.8031   | 1.7648          | 0.5710  | 58.82   | 0.0362       |
| I-Pentane   | 0.4936   | 0.4831          | 0.1810  | 19.75   | 0.0123       |
| N-Pentane   | 0.3970   | 0.3886          | 0.1440  | 15.91   | 0.0099       |
| Hexane Plus | 1.3106   | 1.2827          | 0.5870  | 69.08   | 0.0434       |
| Total       | 100.0000 | 97.8748         | 19.7070 | 1324.42 | 0.7740       |

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

\*\*@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0042  
BTU/CU.FT IDEAL: 1327.5  
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1333.1  
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1309.9  
DRY BTU @ 15.025: 1359.8  
REAL SPECIFIC GRAVITY: 0.7769

CYLINDER #: 7033  
CYLINDER PRESSURE: 11 PSIG  
ANALYSIS DATE: 08/16/2018  
ANALYSIS TIME: 11:59:38 AM  
ANALYSIS RUN BY: SHYANN ELLEDGE

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: 08/23/2018



BP - SOUTH BHD PROJECT  
WELL ANALYSIS COMPARISON

Lease: WARREN COM #2M; CSG  
Stn. No.: API # 3004525567  
Mtr. No.:

CASING  
PC

08/23/2018  
15950-11265

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Smpl Date: 08/02/2018  
Test Date: 08/16/2018  
Run No: SO180167  
Nitrogen: 0.4976  
CO2: 0.7757  
Methane: 76.3853  
Ethane: 10.5717  
Propane: 6.8292  
I-Butane: 0.9362  
N-Butane: 1.8031  
I-Pentane: 0.4936  
N-Pentane: 0.3970  
Hexane+: 1.3106  
BTU: 1333.1  
GPM: 19.7070  
SPG: 0.7769