



WARREN LS 8
30-045-11745
Bradenhead Sample

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

Analysis No: SO180175
Cust No: 15950-11305

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: WARREN LS #8; BHD
County/State: SAN JUAN NM
Location:
Field:
Formation: PC
Cust. Stn. No.: API # 3004511745

Source: BRADENHEAD
Well Flowing: Y
Pressure: 40 PSIA
Flow Temp: DEG. F
Ambient Temp: 89 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 08/07/2018
Sample Time: 12.22 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	80.2466	1.0282	8.8320	0.00	0.7761
CO2	0.4839	0.0062	0.0830	0.00	0.0074
Methane	17.6696	0.2264	2.9970	178.46	0.0979
Ethane	0.2497	0.0032	0.0670	4.42	0.0026
Propane	0.1171	0.0015	0.0320	2.95	0.0018
Iso-Butane	0.0000	0.0000	0.0000	0.00	0.0000
N-Butane	0.0000	0.0000	0.0000	0.00	0.0000
I-Pentane	0.0000	0.0000	0.0000	0.00	0.0000
N-Pentane	0.0000	0.0000	0.0000	0.00	0.0000
Hexane Plus	1.2331	0.0158	0.5500	65.00	0.0408
Total	100.0000	1.2813	12.5610	250.83	0.9266

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0007
BTU/CU.FT IDEAL: 251.4
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 251.6
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 247.2
DRY BTU @ 15.025: 256.6
REAL SPECIFIC GRAVITY: 0.9268

CYLINDER #: 7044
CYLINDER PRESSURE: 37 PSIG
ANALYSIS DATE: 08/16/2018
ANALYSIS TIME: 10:39:22 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: 08/23/2018

GC Method: C6+ Gas

6



BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease: WARREN LS #8; BHD
Stn. No.: API # 3004511745
Mtr. No.:

BRADENHEAD
PC

08/23/2018
15950-11305

Smpl Date: 08/07/2018
Test Date: 08/16/2018
Run No: SO180175
Nitrogen: 80.2466
CO2: 0.4839
Methane: 17.6696
Ethane: 0.2497
Propane: 0.1171
I-Butane: 0.0000
N-Butane: 0.0000
I-Pentane: 0.0000
N-Pentane: 0.0000
Hexane+: 1.2331
BTU: 251.6
GPM: 12.5610
SPG: 0.9268



Warren LS 8
30-045-11745
Casing Sample

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

Analysis No: SO180176
Cust No: 15950-11310

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: WARREN LS #8; CSG
County/State: SAN JUAN NM
Location:
Field:
Formation: PC
Cust. Str. No.: API # 3004511745

Source: CASING
Well Flowing: Y
Pressure: 35 PSIA
Flow Temp: DEG. F
Ambient Temp: 89 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 08/07/2018
Sample Time: 12.42 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	0.0988	0.0961	0.0110	0.00	0.0010
CO2	0.8852	0.8608	0.1510	0.00	0.0135
Methane	88.2236	85.7955	14.9930	891.06	0.4887
Ethane	7.7313	7.5185	2.0730	136.82	0.0803
Propane	2.2744	2.2118	0.6280	57.23	0.0346
Iso-Butane	0.4044	0.3933	0.1330	13.15	0.0081
N-Butane	0.1880	0.1828	0.0590	6.13	0.0038
I-Pentane	0.0587	0.0571	0.0220	2.35	0.0015
N-Pentane	0.0177	0.0172	0.0060	0.71	0.0004
Hexane Plus	0.1179	0.1147	0.0530	6.21	0.0039
Total	100.0000	97.2478	18.1290	1113.66	0.6357

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0027
BTU/CU.FT IDEAL: 1116.2
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1119.3
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1099.8
DRY BTU @ 15.025: 1141.7
REAL SPECIFIC GRAVITY: 0.6371

CYLINDER #: 7065
CYLINDER PRESSURE: 30 PSIG
ANALYSIS DATE: 08/16/2018
ANALYSIS TIME: 10:49:34 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 LS #8; CSG
Stn. No.: API # 3004511745
Mtr. No.:

CASING
PC

08/23/2018
15950-11310

Smpl Date: 08/07/2018
Test Date: 08/16/2018
Run No: SO180176
Nitrogen: 0.0988
CO2: 0.8852
Methane: 88.2236
Ethane: 7.7313
Propane: 2.2744
I-Butane: 0.4044
N-Butane: 0.1880
I-Pentane: 0.0587
N-Pentane: 0.0177
Hexane+: 0.1179
BTU: 1119.3
GPM: 18.1290
SPG: 0.6371



Warren LS 8
30-045-11745
Tubing Sample

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

Analysis No: SO180177
Cust No: 15950-11315

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: WARREN LS #8; TBG
County/State: SAN JUAN NM
Location:
Field:
Formation: PC
Cust. Stn. No.: API # 3004511745

Source: TUBING
Well Flowing: Y
Pressure: 30 PSIA
Flow Temp: DEG. F
Ambient Temp: 89 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 08/07/2018
Sample Time: 12.30 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	0.0674	0.0675	0.0070	0.00	0.0007
CO2	0.8910	0.8920	0.1520	0.00	0.0135
Methane	88.1223	88.2237	14.9760	890.04	0.4881
Ethane	7.8803	7.8894	2.1130	139.46	0.0818
Propane	2.3008	2.3035	0.6350	57.89	0.0350
Iso-Butane	0.4096	0.4101	0.1340	13.32	0.0082
N-Butane	0.1968	0.1970	0.0620	6.42	0.0039
I-Pentane	0.0616	0.0617	0.0230	2.46	0.0015
N-Pentane	0.0189	0.0189	0.0070	0.76	0.0005
Hexane Plus	0.0513	0.0514	0.0230	2.70	0.0017
Total	100.0000	100.1152	18.1320	1113.05	0.6350

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0027
BTU/CU.FT IDEAL: 1115.6
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1118.6
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1099.1
DRY BTU @ 15.025: 1141.0
REAL SPECIFIC GRAVITY: 0.6365

CYLINDER #: 7098
CYLINDER PRESSURE: 30 PSIG
ANALYSIS DATE: 08/16/2018
ANALYSIS TIME: 10:54:38 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: 08/23/2018

GC Method: C6+ Gas



BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease: WARREN LS #8; TBG
Stn. No.: API # 3004511745
Mtr. No.:

TUBING
PC

08/23/2018
15950-11315

Smpl Date: 08/07/2018
Test Date: 08/16/2018
Run No: SO180177
Nitrogen: 0.0674
CO2: 0.8910
Methane: 88.1223
Ethane: 7.8803
Propane: 2.3008
I-Butane: 0.4096
N-Butane: 0.1968
I-Pentane: 0.0616
N-Pentane: 0.0189
Hexane+: 0.0513
BTU: 1118.6
GPM: 18.1320
SPG: 0.6365