



Warren LS 2A
30-045-22748
Bradenhead Sample

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

(BHPW 83)
MK

Analysis No: SO180168
Cust No: 15950-11270

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: WARREN LS #2A; BHD
County/State: SAN JUAN NM
Location:
Field:
Formation: PC
Cust. Stn. No.: API # 3004522748

Source: BRADENHEAD
Well Flowing: Y
Pressure: 83 PSIA
Flow Temp: DEG. F
Ambient Temp: 96 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 08/06/2018
Sample Time: 3.20 PM
Sampled By: SCOTT WILLARD
Sampled by (CO): PESCO

Heat Trace: N

Remarks:

WOOD
FEB 13 2013
DISTRICT III

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.3043	0.3018	0.0340	0.00	0.0029
CO2	1.0391	1.0307	0.1780	0.00	0.0158
Methane	84.7426	84.0559	14.4090	855.90	0.4694
Ethane	7.0500	6.9929	1.8910	124.76	0.0732
Propane	3.7246	3.6944	1.0290	93.71	0.0567
Iso-Butane	0.7969	0.7904	0.2620	25.91	0.0160
N-Butane	1.0432	1.0347	0.3300	34.03	0.0209
I-Pentane	0.4130	0.4097	0.1510	16.52	0.0103
N-Pentane	0.2764	0.2742	0.1000	11.08	0.0069
Hexane Plus	0.6099	0.6050	0.2730	32.15	0.0202
Total	100.0000	99.1897	18.6570	1194.08	0.6923

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0032
BTU/CU.FT IDEAL: 1196.8
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1200.7
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1179.8
DRY BTU @ 15.025: 1224.7
REAL SPECIFIC GRAVITY: 0.6943

CYLINDER #: 7005
CYLINDER PRESSURE: 53 PSIG
ANALYSIS DATE: 08/16/2018
ANALYSIS TIME: 11:23:26 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

b



BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease: WARREN LS #2A; BHD
Stn. No.: API # 3004522748
Mtr. No.:

BRADENHEAD
PC

08/23/2018
15950-11270

Smpl Date: 08/06/2018
Test Date: 08/16/2018
Run No: SO180168
Nitrogen: 0.3043
CO2: 1.0391
Methane: 84.7426
Ethane: 7.0500
Propane: 3.7246
I-Butane: 0.7969
N-Butane: 1.0432
I-Pentane: 0.4130
N-Pentane: 0.2764
Hexane+: 0.6099
BTU: 1200.7
GPM: 18.6570
SPG: 0.6943



Warren LS 2A
30-045-22748
Casing Sample

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

Analysis No: SO180169
Cust No: 15950-11275

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: WARREN LS #2A; CSG
County/State: SAN JUAN NM
Location:
Field:
Formation: PC
Cust. Strn. No.: API # 3004522748

Source: CASING
Well Flowing: Y
Pressure: 90 PSIA
Flow Temp: DEG. F
Ambient Temp: 96 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 08/06/2018
Sample Time: 3:33 PM
Sampled By: SCOTT WILLARD
Sampled by (CO): PESCO

Heat Trace: N
Remarks:

WOOD
FEB 13 2013
DISTRICT III

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.3121	0.3095	0.0340	0.00	0.0030
CO2	1.1672	1.1576	0.2000	0.00	0.0177
Methane	84.4989	83.8004	14.3690	853.44	0.4680
Ethane	7.0418	6.9836	1.8890	124.62	0.0731
Propane	3.7257	3.6949	1.0300	93.74	0.0567
Iso-Butane	0.7985	0.7919	0.2620	25.97	0.0160
N-Butane	1.0396	1.0310	0.3290	33.91	0.0209
I-Pentane	0.4114	0.4080	0.1510	16.46	0.0102
N-Pentane	0.2773	0.2750	0.1010	11.12	0.0069
Hexane Plus	0.7275	0.7215	0.3250	38.35	0.0241
Total	100.0000	99.1734	18.6900	1197.60	0.6967

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0033
BTU/CU.FT IDEAL: 1200.4
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1204.3
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1183.3
DRY BTU @ 15.025: 1228.4
REAL SPECIFIC GRAVITY: 0.6988

CYLINDER #: 7038
CYLINDER PRESSURE: 74 PSIG
ANALYSIS DATE: 08/16/2018
ANALYSIS TIME: 11:07:45 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 LS #2A; CSG
Stn. No.: API # 3004522748
Mtr. No.:

CASING
PC

08/23/2018
15950-11275

Smpl Date: 08/06/2018
Test Date: 08/16/2018
Run No: SO180169
Nitrogen: 0.3121
CO2: 1.1672
Methane: 84.4989
Ethane: 7.0418
Propane: 3.7257
I-Butane: 0.7985
N-Butane: 1.0396
I-Pentane: 0.4114
N-Pentane: 0.2773
Hexane+: 0.7275
BTU: 1204.3
GPM: 18.6900
SPG: 0.6988



Warren LS 2 A
30-045-22748
Tubing Sample

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

Analysis No: SO180170
Cust No: 15950-11280

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: WARREN LS #2A; TBG
County/State: SAN JUAN NM
Location:
Field:
Formation: PC
Cust. Stn. No.: API # 3004522748

Source: TUBING
Well Flowing: Y
Pressure: 74 PSIA
Flow Temp: DEG. F
Ambient Temp: 96 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 08/06/2018
Sample Time: 3.26 PM
Sampled By: SCOTT WILLARD
Sampled by (CO): PESCO

Heat Trace: N
Remarks:

NM000
FEB 13 2013
DISTRICT III

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.3075	0.3109	0.0340	0.00	0.0030
CO2	1.1940	1.2074	0.2050	0.00	0.0181
Methane	74.3026	75.1333	12.6470	750.46	0.4116
Ethane	12.1795	12.3157	3.2700	215.54	0.1264
Propane	6.7428	6.8182	1.8650	169.66	0.1027
Iso-Butane	1.1515	1.1644	0.3780	37.45	0.0231
N-Butane	2.0186	2.0412	0.6390	65.85	0.0405
I-Pentane	0.6494	0.6567	0.2380	25.98	0.0162
N-Pentane	0.4989	0.5045	0.1820	20.00	0.0124
Hexane Plus	0.9552	0.9659	0.4280	50.35	0.0316
Total	100.0000	101.1182	19.8860	1335.28	0.7856

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0043
BTU/CU.FT IDEAL: 1338.4
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1344.2
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1320.8
DRY BTU @ 15.025: 1371.1
REAL SPECIFIC GRAVITY: 0.7887

CYLINDER #: 80746
CYLINDER PRESSURE: 67 PSIG
ANALYSIS DATE: 08/16/2018
ANALYSIS TIME: 11:17:24 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 #2A; TBG
Stn. No.: API # 3004522748
Mtr. No.:

TUBING
PC

08/23/2018
15950-11280

Smpl Date: 08/06/2018
Test Date: 08/16/2018
Run No: SO180170

Nitrogen: 0.3075
CO2: 1.1940
Methane: 74.3026
Ethane: 12.1795
Propane: 6.7428
I-Butane: 1.1515
N-Butane: 2.0186
I-Pentane: 0.6494
N-Pentane: 0.4989
Hexane+: 0.9552

BTU: 1344.2
GPM: 19.8860
SPG: 0.7887