



NMOCD REC'D
10/12/20

Well Name: CASE A 4E; BHD
API #: API #300452461800
Source: BRADENHEAD
Sample Type: GAS
Analysis No: SO200054
Cust No: 15950-11720

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: CASE A 4E; BHD
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation:
Cust. Stn. No.: API #300452461800

Source: BRADENHEAD
Well Flowing: Y
Pressure: 25 PSIG
Flow Temp: 74.1 DEG. F
Ambient Temp: 65 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 07/15/2020
Sample Time: 7.15 AM
Sampled By: CELIA L.
Sampled by (CO): ABC

Heat Trace: N
Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	2.4283	2.2833	0.2680	0.00	0.0235
CO2	0.0117	0.0110	0.0020	0.00	0.0002
Methane	83.1781	78.2116	14.1410	840.10	0.4607
Ethane	7.2085	6.7781	1.9330	127.57	0.0748
Propane	4.4014	4.1386	1.2160	110.74	0.0670
Iso-Butane	0.9775	0.9191	0.3210	31.79	0.0196
N-Butane	0.9548	0.8978	0.3020	31.15	0.0192
I-Pentane	0.3561	0.3348	0.1310	14.25	0.0089
N-Pentane	0.1920	0.1805	0.0700	7.70	0.0048
Hexane Plus	0.2916	0.2742	0.1300	15.37	0.0097
Total	100.0000	94.0290	18.5140	1178.66	0.6883

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0031
BTU/CU.FT IDEAL: 1181.4
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1185.1
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1164.5
DRY BTU @ 15.025: 1208.8
REAL SPECIFIC GRAVITY: 0.6902

CYLINDER #: 019
CYLINDER PRESSURE: 21 PSIG
ANALYSIS DATE: 07/17/2020
ANALYSIS TIME: 02:00:21 PM
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: 07/22/2020

GC Method: C6+ Gas



BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease: CASE A 4E; BHD
Stn. No.: API
Mtr. No.:

BRADENHEAD

07/22/2020
15950-11720

Smpl Date: 07/15/2020
Test Date: 07/17/2020
Run No: SO200054

Nitrogen: 2.4283
CO2: 0.0117
Methane: 83.1781
Ethane: 7.2085
Propane: 4.4014
I-Butane: 0.9775
N-Butane: 0.9548
I-Pentane: 0.3561
N-Pentane: 0.1920
Hexane+: 0.2916

BTU: 1185.1
GPM: 18.5140
SPG: 0.6902



NMOCD REC'D
10/12/20

Well Name: CASE A 4E; CSG
API #: API #300452461800
Source: CASING
Sample Type: GAS
Analysis No: SO200055
Cust No: 15950-11725

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: CASE A 4E; CSG
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation:
Cust. Stn. No.: API #300452461800

Source: CASING
Well Flowing: Y
Pressure: 160 PSIG
Flow Temp: 77.3 DEG. F
Ambient Temp: 65 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 07/15/2020
Sample Time: 7.20 AM
Sampled By: CELIA L.
Sampled by (CO): ABC

Heat Trace: N
Remarks:

Analysis

Component:	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2226	0.2187	0.0250	0.00	0.0022
CO2	2.3223	2.2818	0.3970	0.00	0.0353
Methane	84.7061	83.2285	14.4010	855.53	0.4692
Ethane	7.4464	7.3165	1.9970	131.78	0.0773
Propane	2.7781	2.7296	0.7680	69.90	0.0423
Iso-Butane	0.5748	0.5648	0.1890	18.69	0.0115
N-Butane	0.7477	0.7347	0.2360	24.39	0.0150
I-Pentane	0.3373	0.3314	0.1240	13.50	0.0084
N-Pentane	0.2318	0.2278	0.0840	9.29	0.0058
Hexane Plus	0.6329	0.6219	0.2830	33.36	0.0209
Total	100.0000	98.2557	18.5040	1156.44	0.6879

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0031
BTU/CU.FT IDEAL: 1159.1
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1162.7
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1142.5
DRY BTU @ 15.025: 1186.0
REAL SPECIFIC GRAVITY: 0.6898

CYLINDER #: 19
CYLINDER PRESSURE: 160 PSIG
ANALYSIS DATE: 07/17/2020
ANALYSIS TIME: 01:29:20 PM
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: 07/22/2020

GC Method: C6+ Gas



BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease: CASE A 4E; CSG
Stn. No.: API
Mtr. No.:

CASING

07/22/2020
15950-11725

Smpl Date: 07/15/2020
Test Date: 07/17/2020
Run No: SO200055

Nitrogen: 0.2226
CO2: 2.3223
Methane: 84.7061
Ethane: 7.4464
Propane: 2.7781
I-Butane: 0.5748
N-Butane: 0.7477
I-Pentane: 0.3373
N-Pentane: 0.2318
Hexane+: 0.6329

BTU: 1162.7
GPM: 18.5040
SPG: 0.6898



NMOCD REC'D
10/12/20

Well Name: CASE A 4E; TBG
API #: API #300452461800
Source: TUBING
Sample Type: GAS
Analysis No: SO200056
Cust No: 15950-11730

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: CASE A 4E; TBG
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation:
Cust. Stn. No.: API #300452461800

Source: TUBING
Well Flowing: Y
Pressure: 160 PSIG
Flow Temp: 77.5 DEG. F
Ambient Temp: 65 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 07/15/2020
Sample Time: 7.25 AM
Sampled By: CELIA L.
Sampled by (CO): ABC

Heat Trace: N
Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2240	0.2201	0.0250	0.00	0.0022
CO2	2.3213	2.2807	0.3970	0.00	0.0353
Methane	84.6792	83.1977	14.3970	855.26	0.4690
Ethane	7.4435	7.3133	1.9960	131.73	0.0773
Propane	2.7799	2.7313	0.7680	69.95	0.0423
Iso-Butane	0.5760	0.5659	0.1890	18.73	0.0116
N-Butane	0.7500	0.7369	0.2370	24.47	0.0151
I-Pentane	0.3383	0.3324	0.1240	13.54	0.0084
N-Pentane	0.2322	0.2281	0.0840	9.31	0.0058
Hexane Plus	0.6556	0.6441	0.2930	34.56	0.0217
Total	100.0000	98.2505	18.5100	1157.53	0.6886

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0031
BTU/CU.FT IDEAL: 1160.2
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1163.8
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1143.5
DRY BTU @ 15.025: 1187.1
REAL SPECIFIC GRAVITY: 0.6905

CYLINDER #: 1060
CYLINDER PRESSURE: 152 PSIG
ANALYSIS DATE: 07/17/2020
ANALYSIS TIME: 01:43:36 PM
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: 07/22/2020

GC Method: C6+ Gas



BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease: CASE A 4E; TBG
Stn. No.: API
Mtr. No.:

TUBING

07/22/2020
15950-11730

Smpl Date: 07/15/2020
Test Date: 07/17/2020
Run No: SO200056

Nitrogen: 0.2240
CO2: 2.3213
Methane: 84.6792
Ethane: 7.4435
Propane: 2.7799
I-Butane: 0.5760
N-Butane: 0.7500
I-Pentane: 0.3383
N-Pentane: 0.2322
Hexane+: 0.6556

BTU: 1163.8
GPM: 18.5100
SPG: 0.6905