



Ref sample

30-045-22513

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

Analysis No: SO170086
Cust No: 15950-10415

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: LAWSON LS 1A;BHD
County/State: SAN JUAN NM
Location:
Field:
Formation:
Cust. Stn. No.:
API 3004522513

Source: BRADENHEAD
Well Flowing: Y
Pressure: 45 PSIA
Flow Temp: DEG. F
Ambient Temp: 72 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Date Sampled: 10/20/2017
Sample Time: 12.45 PM
Sampled By: SCOTT WILLARD
Sampled by (CO): PESCO

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2626	0.2577	0.0290	0.00	0.0025
CO2	0.6968	0.6838	0.1190	0.00	0.0106
Methane	79.0503	77.5805	13.4500	798.41	0.4379
Ethane	10.5819	10.3851	2.8400	187.27	0.1099
Propane	5.1712	5.0750	1.4300	130.11	0.0787
Iso-Butane	0.7926	0.7779	0.2600	25.77	0.0159
N-Butane	1.3802	1.3545	0.4370	45.03	0.0277
I-Pentane	0.4494	0.4410	0.1650	17.98	0.0112
N-Pentane	0.3525	0.3459	0.1280	14.13	0.0088
Hexane Plus	1.2625	1.2390	0.5650	66.55	0.0418
Total	100.0000	98.1404	19.4230	1285.25	0.7449

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0039
BTU/CU.FT IDEAL: 1288.2
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1293.3
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1270.8
DRY BTU @ 15.025: 1319.2
REAL SPECIFIC GRAVITY: 0.7476

CYLINDER #: 7023
CYLINDER PRESSURE: 14 PSIG
DATE RUN: 11/2/17 12:45 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: 11/02/2017

GC Method: C6+ Gas

u



BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease: LAWSON LS 1A;BHD
Stn. No.:
Mtr. No.: API 3004522513

BRADENHEAD

11/02/2017
15950-10415

Smpl Date: 10/20/2017
Test Date: 11/02/2017
Run No: SO170086
Nitrogen: 0.2626
CO2: 0.6968
Methane: 79.0503
Ethane: 10.5819
Propane: 5.1712
I-Butane: 0.7926
N-Butane: 1.3802
I-Pentane: 0.4494
N-Pentane: 0.3525
Hexane+: 1.2625
BTU: 1293.3
GPM: 19.4230
SPG: 0.7476



30-045-22513
Casing
2030 Afton Place
Farmington, NM 87401
(505) 325-6622

Analysis No: SO170027
Cust No: 15950-10125

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: LAWSON LS 1A
County/State: NM
Location:
Field:
Formation: MV
Cust. Stn. No.:
API 3004522513

OIL CONS. DIV DIST. 3

JAN 02 2018

Source: CASING
Pressure: 14 PSIA
Sample Temp: DEG. F
Well Flowing: Y
Date Sampled: 06/20/2017
Sampled By: E. HAMILTON
Foreman/Engr.: KEVIN IRELAND

Remarks:

Analysis

Component::	Mole%:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.277	0.0310	0.00	0.0027
CO2	0.427	0.0730	0.00	0.0065
Methane	79.521	13.5290	803.16	0.4405
Ethane	10.680	2.8660	189.01	0.1109
Propane	5.245	1.4500	131.97	0.0799
Iso-Butane	0.770	0.2530	25.04	0.0155
N-Butane	1.366	0.4320	44.58	0.0274
I-Pentane	0.418	0.1540	16.74	0.0104
N-Pentane	0.315	0.1140	12.61	0.0078
Hexane Plus	0.981	0.4390	51.70	0.0325
Total	100.000	19.3410	1274.82	0.7340

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0038
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1282.6
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1260.3
REAL SPECIFIC GRAVITY: 0.7365

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

DRY BTU @ 14.650: 1275.6
DRY BTU @ 14.696: 1279.6
DRY BTU @ 14.730: 1282.6
DRY BTU @ 15.025: 1308.3

CYLINDER #: 7065
CYLINDER PRESSURE: 58 PSIG
DATE RUN: 7/5/17 7:15 AM
ANALYSIS RUN BY: RICHARD WILSON

30-045-22513
Casing



BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease: LAWSON LS 1A
Stn. No.:
Mtr. No.: API 3004522513

CASING
MV

07/11/2017
15950-10125

Smpl Date: 06/20/2017
Test Date: 07/05/2017
Run No: SO170027
Nitrogen: 0.277
CO2: 0.427
Methane: 79.521
Ethane: 10.680
Propane: 5.245
I-Butane: 0.770
N-Butane: 1.366
I-Pentane: 0.418
N-Pentane: 0.315
Hexane+: 0.981
BTU: 1282.6
GPM: 19.3410
SPG: 0.7365



30-045-22513
Tubing

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

Analysis No: SO170028
Cust No: 15950-10115

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: LAWSON LS 1A
County/State: NM
Location:
Field:
Formation: MV
Cust. Stn. No.:
API 3004522513

OIL CONS. DIV DIST. 3

JAN 02 2018

Source: TUBING
Pressure: 122 PSIA
Sample Temp: DEG. F
Well Flowing: Y
Date Sampled: 06/21/2017
Sampled By: E. HAMILTON
Foreman/Engr.: KEVIN IRELAND

Remarks:

Analysis

Component::	Mole%:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.169	0.0190	0.00	0.0016
CO2	1.379	0.2360	0.00	0.0210
Methane	81.871	13.9260	826.90	0.4535
Ethane	8.853	2.3760	156.68	0.0919
Propane	4.079	1.1280	102.63	0.0621
Iso-Butane	0.743	0.2440	24.15	0.0149
N-Butane	1.139	0.3600	37.15	0.0229
I-Pentane	0.399	0.1470	15.98	0.0099
N-Pentane	0.316	0.1150	12.68	0.0079
Hexane Plus	1.052	0.4710	55.44	0.0348
Total	100.000	19.0220	1231.59	0.7205

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0036
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1238.8
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1217.2
REAL SPECIFIC GRAVITY: 0.7227

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

DRY BTU @ 14.650: 1232.1
DRY BTU @ 14.696: 1235.9
DRY BTU @ 14.730: 1238.8
DRY BTU @ 15.025: 1263.6

CYLINDER #: 7078
CYLINDER PRESSURE: PSIG
DATE RUN: 7/5/17 7:16 AM
ANALYSIS RUN BY: RICHARD WILSON

30-145-22513
Tubing



BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease: LAWSON LS 1A
Stn. No.:
Mtr. No.: API 3004522513

TUBING
MV

07/11/2017
15950-10115

Smpl Date: 06/21/2017
Test Date: 07/05/2017
Run No: SO170028

Nitrogen: 0.169
CO2: 1.379
Methane: 81.871
Ethane: 8.853
Propane: 4.079
I-Butane: 0.743
N-Butane: 1.139
I-Pentane: 0.399
N-Pentane: 0.316
Hexane+: 1.052

BTU: 1238.8
GPM: 19.0220
SPG: 0.7227