



3A-06291

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

Analysis No: LG190225
Cust No: 46600-11525

Well/Lease Information

Customer Name: LOGOS OPERATING LLC
Well Name: JICARILLA 120 C 4; BHD
County/State: RIO ARriba NM
Location:
Lease/PA/CA: 120
Formation: PC
Cust. Stn. No.: 86184010
CC # 3152016A

Source: BRADENHEAD
Well Flowing: Y
Pressure: 70 PSIG
Flow Temp: 87.2 DEG. F
Ambient Temp: 80 DEG. F
Flow Rate: 0 MCF/D
Sample Method: Purge & Fill
Sample Date: 07/30/2019
Sample Time: 10.15 AM
Sampled By: EUGENE BURBANK
Sampled by (CO): LOGOS

Heat Trace: SOUTH
N
Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.7124	0.6998	0.0790	0.00	0.0069
CO2	0.1708	0.1678	0.0290	0.00	0.0026
Methane	85.6250	84.1144	14.5570	864.81	0.4743
Ethane	7.0172	6.8934	1.8820	124.18	0.0729
Propane	3.7323	3.6665	1.0310	93.91	0.0568
Iso-Butane	0.6810	0.6690	0.2230	22.15	0.0137
N-Butane	0.9065	0.8905	0.2870	29.57	0.0182
I-Pentane	0.3138	0.3083	0.1150	12.55	0.0078
N-Pentane	0.2235	0.2196	0.0810	8.96	0.0056
Hexane Plus	0.6175	0.6066	0.2760	32.55	0.0204
Total	100.0000	98.2359	18.5600	1188.69	0.6791

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0031
BTU/CU.FT IDEAL: 1191.4
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1195.1
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1174.3
DRY BTU @ 15.025: 1219.0
REAL SPECIFIC GRAVITY: 0.681

CYLINDER #: 7055
CYLINDER PRESSURE: 67 PSIG
ANALYSIS DATE: 08/08/2019
ANALYSIS TIME: 11:31:19 AM
ANALYSIS RUN BY: RICHARD WILSON

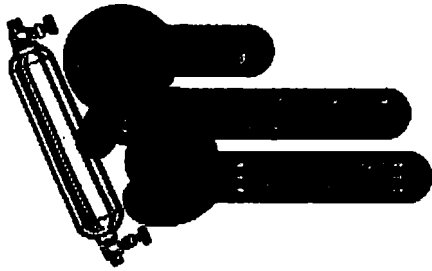
GPM, BTU, and SPG calculations as shown above are based on current GPA constants.

GPA Standard: GPA-2261

GC: Danalyzer Model 500

Last Cal/Verify: 08/12/2019

GC Method: C6+ Gas



LOGOS OPERATING LLC
WELL ANALYSIS COMPARISON

Lease: JICARILLA 120 C 4; BHD
Stn. No.: 86184010
Mtr. No.: CC # 3152016A

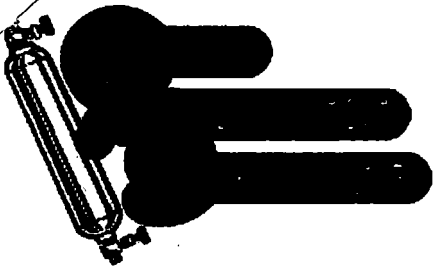
BRADENHEAD
PC

08/12/2019
46600-11525

Smpl Date: 07/30/2019
Test Date: 08/08/2019
Run No: LG190225

Nitrogen: 0.7124
CO2: 0.1708
Methane: 85.6250
Ethane: 7.0172
Propane: 3.7323
I-Butane: 0.6810
N-Butane: 0.9065
I-Pentane: 0.3138
N-Pentane: 0.2235
Hexane+: 0.6175

BTU: 1195.1
GPM: 18.5600
SPG: 0.6810



2030 Afton Place
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Analysis No: LG190226
Cust No: 46600-11530

Well/Lease Information

Customer Name: LOGOS OPERATING LLC
Well Name: JICARILLA 120 C 4; CSG
County/State: RIO ARRIBA NM
Location:
Lease/PA/CA: 120
Formation: PC
Cust. Stn. No.: 86184010
CC # 3152016A

Source: CASING
Well Flowing: Y
Pressure: 111 PSIG
Flow Temp: 87.2 DEG. F
Ambient Temp: 80 DEG. F
Flow Rate: 0 MCF/D
Sample Method: Purge & Fill
Sample Date: 07/30/2019
Sample Time: 10.20 AM
Sampled By: EUGENE BURBANK
Sampled by (CO): LOGOS

SOUTH
Heat Trace: N
Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.7055	0.6996	0.0780	0.00	0.0068
CO2	0.2264	0.2245	0.0390	0.00	0.0034
Methane	85.1885	84.4760	14.4850	860.40	0.4719
Ethane	7.2864	7.2255	1.9540	128.95	0.0756
Propane	3.8149	3.7830	1.0540	95.99	0.0581
Iso-Butane	0.6883	0.6825	0.2260	22.38	0.0138
N-Butane	0.9338	0.9260	0.2950	30.46	0.0187
I-Pentane	0.3212	0.3185	0.1180	12.85	0.0080
N-Pentane	0.2294	0.2275	0.0830	9.20	0.0057
Hexane Plus	0.6056	0.6005	0.2710	31.92	0.0200
Total	100.0000	99.1636	18.6030	1192.15	0.6822

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0032
BTU/CU.FT IDEAL: 1194.9
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1198.7
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1177.8
DRY BTU @ 15.025: 1222.7
REAL SPECIFIC GRAVITY: 0.6841

CYLINDER #: 6036
CYLINDER PRESSURE: 100 PSIG
ANALYSIS DATE: 08/08/2019
ANALYSIS TIME: 11:17:24 AM
ANALYSIS RUN BY: SHYANN ELLEDGE

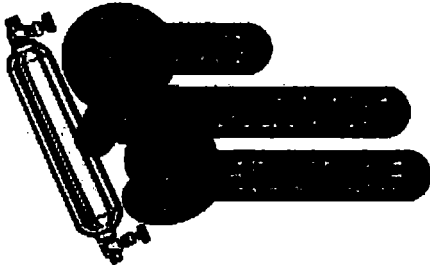
GPM, BTU, and SPG calculations as shown above are based on current GPA constants.

GPA Standard: GPA-2261

GC: Danalyzer Model 500

GC Method: C6+ Gas

Last Cal/Verify: 08/12/2019



LOGOS OPERATING LLC
WELL ANALYSIS COMPARISON

Lease: JICARILLA 120 C 4; CSG
Stn. No.: 86184010
Mtr. No.: CC # 3152016A

CASING
PC

08/12/2019
46600-11530

Smpl Date: 07/30/2019
Test Date: 08/08/2019
Run No: LG190226

Nitrogen: 0.7055
CO2: 0.2264
Methane: 85.1885
Ethane: 7.2864
Propane: 3.8149
I-Butane: 0.6883
N-Butane: 0.9338
I-Pentane: 0.3212
N-Pentane: 0.2294
Hexane+: 0.6056

BTU: 1198.7
GPM: 18.6030
SPG: 0.6841

2030 Afton Place
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Analysis No: LG190227
Cust No: 46600-11535

Well/Lease Information

Customer Name: LOGOS OPERATING LLC
Well Name: JICARILLA 120 C 4; TBG
County/State: RIO ARRIBA NM
Location:
Lease/PA/CA: 120
Formation: PC
Cust. Stn. No.: 86184010
CC # 3152016A

Source: TUBING
Well Flowing: Y
Pressure: 110 PSIG
Flow Temp: 87.2 DEG. F
Ambient Temp: 80 DEG. F
Flow Rate: 0 MCF/D
Sample Method: Purge & Fill
Sample Date: 07/30/2019
Sample Time: 10.25 AM
Sampled By: EUGENE BURBANK
Sampled by (CO): LOGOS

Heat Trace: SOUTH
Remarks: N

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.6978	0.6926	0.0770	0.00	0.0067
CO2	0.2170	0.2154	0.0370	0.00	0.0033
Methane	85.7186	85.0838	14.5730	865.76	0.4748
Ethane	7.0176	6.9656	1.8820	124.19	0.0729
Propane	3.7248	3.6972	1.0290	93.72	0.0567
Iso-Butane	0.6763	0.6713	0.2220	21.99	0.0136
N-Butane	0.8976	0.8910	0.2840	29.28	0.0180
I-Pentane	0.3035	0.3013	0.1110	12.14	0.0076
N-Pentane	0.2146	0.2130	0.0780	8.60	0.0053
Hexane Plus	0.5322	0.5283	0.2380	28.05	0.0176
Total	100.0000	99.2595	18.5310	1183.74	0.6765

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0031
BTU/CU.FT IDEAL: 1186.5
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1190.2
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1169.5
DRY BTU @ 15.025: 1214.0
REAL SPECIFIC GRAVITY: 0.6783

CYLINDER #: 6029
CYLINDER PRESSURE: 95 PSIG
ANALYSIS DATE: 08/08/2019
ANALYSIS TIME: 11:32:54 AM
ANALYSIS RUN BY: SHYANN ELLEDGE

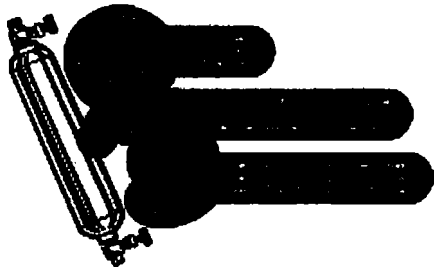
GPM, BTU, and SPG calculations as shown above are based on current GPA constants.

GPA Standard: GPA-2261

GC: Danalyzer Model 500

Last Cal/Verify: 08/12/2019

GC Method: C6+ Gas



LOGOS OPERATING LLC
WELL ANALYSIS COMPARISON

Lease: JICARILLA 120 C 4; TBG
Stn. No.: 86184010
Mtr. No.: CC # 3152016A

TUBING
PC

08/12/2019
46600-11535

Smpl Date: 07/30/2019
Test Date: 08/08/2019
Run No: LG190227

Nitrogen: 0.6978
CO2: 0.2170
Methane: 85.7186
Ethane: 7.0176
Propane: 3.7248
I-Butane: 0.6763
N-Butane: 0.8976
I-Pentane: 0.3035
N-Pentane: 0.2146
Hexane+: 0.5322

BTU: 1190.2
GPM: 18.5310
SPG: 0.6783