



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

Analysis No: HS190201
Cust No: 35825-11755

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: SAN JUAN 27-5 UNIT 16; BHD
County/State: RIO ARRIBA NM
Location:
Lease/PA/CA:
Formation:
Cust. Stn. No.: API #3003906964

Source: BRADENHEAD
Well Flowing:
Pressure: 8 PSIG
Flow Temp: DEG. F
Ambient Temp: DEG. F
Flow Rate: MCF/D
Sample Method:
Sample Date: 07/25/2019
Sample Time: 8.12 AM
Sampled By: DANNY RUDDER
Sampled by (CO): HILCORP

AREA 14 / RUN 1407

Heat Trace:

Remarks: PRESSURED WITH HELIUM TO 30 LBS.

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.8085	0.3938	0.0890	0.00	0.0078
CO2	0.6656	0.3242	0.1140	0.00	0.0101
Methane	86.3050	42.0354	14.6710	871.68	0.4780
Ethane	7.0721	3.4445	1.8970	125.15	0.0734
Propane	3.1181	1.5187	0.8610	78.45	0.0475
Iso-Butane	0.4030	0.1963	0.1320	13.11	0.0081
N-Butane	0.7551	0.3678	0.2390	24.63	0.0152
I-Pentane	0.1992	0.0970	0.0730	7.97	0.0050
N-Pentane	0.1706	0.0831	0.0620	6.84	0.0042
Hexane Plus	0.5028	0.2449	0.2250	26.50	0.0166
Total	100.0000	48.7057	18.3630	1154.34	0.6660

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.003
BTU/CU.FT IDEAL: 1157.0
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1160.4
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1140.2
DRY BTU @ 15.025: 1183.6
REAL SPECIFIC GRAVITY: 0.6676

CYLINDER #: 4086
CYLINDER PRESSURE: PSIG
ANALYSIS DATE: 08/06/2019
ANALYSIS TIME: 01:36:15 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

GC Method: C6+ Gas

Last Cal/Verify: 08/09/2019

NMOC

SEP 05 2019

DISTRICT III



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: SAN JUAN 27-5 UNIT 16; BHD
Stn. No.: API #3003906964
Mtr. No.:

BRADENHEAD

08/09/2019
35825-11755

Smpl Date: 07/25/2019
Test Date: 08/06/2019
Run No: HS190201

Nitrogen: 0.8085
CO2: 0.6656
Methane: 86.3050
Ethane: 7.0721
Propane: 3.1181
I-Butane: 0.4030
N-Butane: 0.7551
I-Pentane: 0.1992
N-Pentane: 0.1706
Hexane+: 0.5028

BTU: 1160.4
GPM: 18.3630
SPG: 0.6676



2030 Afton Place
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Analysis No: HS190202
Cust No: 35825-11760

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: SAN JUAN 27-5 UNIT 16; CSG
County/State: RIO ARRIBA NM
Location:
Lease/PA/CA:
Formation:
Cust. Stn. No.: API #3003906964

Source: CASING
Well Flowing: Y
Pressure: 142 PSIA
Flow Temp: DEG. F
Ambient Temp: DEG. F
Flow Rate: MCF/D
Sample Method:
Sample Date: 07/25/2019
Sample Time: 8.50 AM
Sampled By: DANNY RUDDER
Sampled by (CO): HILCORP

Heat Trace: AREA 14 / RUN 1407
N
Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.5630	0.5564	0.0620	0.00	0.0054
CO2	0.4759	0.4704	0.0810	0.00	0.0072
Methane	82.9773	82.0115	14.1110	838.07	0.4596
Ethane	8.7845	8.6823	2.3570	155.46	0.0912
Propane	4.1872	4.1385	1.1570	105.35	0.0638
Iso-Butane	0.6086	0.6015	0.2000	19.79	0.0122
N-Butane	1.0605	1.0482	0.3350	34.60	0.0213
I-Pentane	0.3346	0.3307	0.1230	13.39	0.0083
N-Pentane	0.2860	0.2827	0.1040	11.46	0.0071
Hexane Plus	0.7224	0.7140	0.3230	38.08	0.0239
Total	100.0000	98.8362	18.8530	1216.20	0.7001

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0034
BTU/CU.FT IDEAL: 1219.0
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1223.1
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1201.8
DRY BTU @ 15.025: 1247.6
REAL SPECIFIC GRAVITY: 0.7021

CYLINDER #: 4157
CYLINDER PRESSURE: 140 PSIG
ANALYSIS DATE: 08/06/2019
ANALYSIS TIME: 01:14:50 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: 08/09/2019

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: SAN JUAN 27-5 UNIT 16; CSG
Stn. No.: API #3003906964
Mtr. No.:

CASING

08/09/2019
35825-11760

Smpl Date: 07/25/2019
Test Date: 08/06/2019
Run No: HS190202

Nitrogen: 0.5630
CO2: 0.4759
Methane: 82.9773
Ethane: 8.7845
Propane: 4.1872
I-Butane: 0.6086
N-Butane: 1.0605
I-Pentane: 0.3346
N-Pentane: 0.2860
Hexane+: 0.7224

BTU: 1223.1
GPM: 18.8530
SPG: 0.7021



2030 Afton Place
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Analysis No: HS190203
Cust No: 35825-11765

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: SAN JUAN 27-5 UNIT 16; INTER
County/State: RIO ARRIBA NM
Location:
Lease/PA/CA:
Formation:
Cust. Stn. No.: API #3003906964

Heat Trace: AREA 14 / RUN 1407
Remarks: N
PRESSURED WITH HELIUM TO 30 LBS.

Source: INTERMEDIATE
Well Flowing: Y
Pressure: 0 PSIG
Flow Temp: DEG. F
Ambient Temp: DEG. F
Flow Rate: MCF/D
Sample Method:
Sample Date: 07/25/2019
Sample Time: 8.30 AM
Sampled By: DANNY RUDDER
Sampled by (CO): HILCORP

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	99.1301	27.3028	10.9070	0.00	0.9588
CO2	0.1111	0.0306	0.0190	0.00	0.0017
Methane	0.6836	0.1883	0.1160	6.90	0.0038
Ethane	0.0447	0.0123	0.0120	0.79	0.0005
Propane	0.0211	0.0058	0.0060	0.53	0.0003
Iso-Butane	0.0036	0.0010	0.0010	0.12	0.0001
N-Butane	0.0058	0.0016	0.0020	0.19	0.0001
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	0.0000	0.0000	0.0000	0.00	0.0000
Total	100.0000	27.5424	11.0630	8.53	0.9652

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0003
BTU/CU.FT IDEAL: 8.6
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 8.6
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 8.5
DRY BTU @ 15.025: 8.8
REAL SPECIFIC GRAVITY: 0.9651

CYLINDER #: 7013
CYLINDER PRESSURE: PSIG
ANALYSIS DATE: 08/06/2019
ANALYSIS TIME: 11:20:23 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: 08/09/2019

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: SAN JUAN 27-5 UNIT 16; INTER
Stn. No.: API #3003906964
Mtr. No.:

INTERMEDIATE

08/09/2019
35825-11765

Smpl Date: 07/25/2019
Test Date: 08/06/2019
Run No: HS190203

Nitrogen: 99.1301
CO2: 0.1111
Methane: 0.6836
Ethane: 0.0447
Propane: 0.0211
I-Butane: 0.0036
N-Butane: 0.0058
I-Pentane: 0.0000
N-Pentane: 0.0000
Hexane+: 0.0000

BTU: 8.6
GPM: 11.0630
SPG: 0.9651



2030 Afton Place
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Analysis No: HS190204
Cust No: 35825-11770

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: SAN JUAN 27-5 UNIT 16; TBG
County/State: RIO ARRIBA NM
Location:
Lease/PA/CA:
Formation:
Cust. Stn. No.: API #3003906964

Source: TUBING
Well Flowing: Y
Pressure: 138 PSIA
Flow Temp: DEG. F
Ambient Temp: DEG. F
Flow Rate: MCF/D
Sample Method:
Sample Date: 07/25/2019
Sample Time: 8.40 AM
Sampled By: DANNY RUDDER
Sampled by (CO): HILCORP

Heat Trace: AREA 14 / RUN 1407
N
Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2037	0.2016	0.0220	0.00	0.0020
CO2	0.9203	0.9109	0.1580	0.00	0.0140
Methane	81.7299	80.8964	13.9010	825.47	0.4527
Ethane	8.9216	8.8306	2.3940	157.89	0.0926
Propane	4.7268	4.6786	1.3060	118.93	0.0720
Iso-Butane	0.9190	0.9096	0.3020	29.88	0.0184
N-Butane	1.2512	1.2384	0.3960	40.82	0.0251
I-Pentane	0.4327	0.4283	0.1590	17.31	0.0108
N-Pentane	0.3062	0.3031	0.1110	12.27	0.0076
Hexane Plus	0.5886	0.5826	0.2630	31.03	0.0195
Total	100.0000	98.9801	19.0120	1233.60	0.7147

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0035
BTU/CU.FT IDEAL: 1236.5
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1240.8
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1219.2
DRY BTU @ 15.025: 1265.6
REAL SPECIFIC GRAVITY: 0.7169

CYLINDER #: 5018
CYLINDER PRESSURE: 136 PSIG
ANALYSIS DATE: 08/06/2019
ANALYSIS TIME: 10:55:50 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: 08/09/2019

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: SAN JUAN 27-5 UNIT 16; TBG
Stn. No.: API #3003906964
Mtr. No.:

TUBING

08/09/2019
35825-11770

Smpl Date: 07/25/2019
Test Date: 08/06/2019
Run No: HS190204

Nitrogen: 0.2037
CO2: 0.9203
Methane: 81.7299
Ethane: 8.9216
Propane: 4.7268
I-Butane: 0.9190
N-Butane: 1.2512
I-Pentane: 0.4327
N-Pentane: 0.3062
Hexane+: 0.5886

BTU: 1240.8
GPM: 19.0120
SPG: 0.7169