



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

Analysis No: HS190251
Cust No: 35825-12010

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: ROURKE 1E; TBG
County/State: SAN JUAN NM
Location:
Lease/PA/CA: SF078212
Formation:
Cust. Stn. No.: API # 3004525892

Source: TUBING
Well Flowing: N
Pressure: PSIG
Flow Temp: 90 DEG. F
Ambient Temp: 95 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 08/14/2019
Sample Time: 2.00 PM
Sampled By: JOHN RUSSELL
Sampled by (CO): HILCORP

Heat Trace: AREA 2 / RUN 205
Remarks: N

NMOC
AUG 30 2019
DISTRICT III

Analysis

Component:	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.4705	0.4636	0.0520	0.00	0.0046
CO2	1.4633	1.4418	0.2510	0.00	0.0222
Methane	78.5562	77.4024	13.3650	793.42	0.4351
Ethane	10.7613	10.6033	2.8880	190.44	0.1117
Propane	4.9262	4.8539	1.3620	123.95	0.0750
Iso-Butane	0.6481	0.6386	0.2130	21.08	0.0130
N-Butane	1.3709	1.3508	0.4340	44.72	0.0275
I-Pentane	0.3891	0.3834	0.1430	15.57	0.0097
N-Pentane	0.3545	0.3493	0.1290	14.21	0.0088
Hexane Plus	1.0599	1.0443	0.4740	55.87	0.0351
Total	100.0000	98.5314	19.3110	1259.25	0.7428

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0038
BTU/CU.FT IDEAL: 1262.2
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1267.0
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1245.0
DRY BTU @ 15.025: 1292.4
REAL SPECIFIC GRAVITY: 0.7453

CYLINDER #: 6236
CYLINDER PRESSURE: 60 PSIG
ANALYSIS DATE: 08/27/2019
ANALYSIS TIME: 08:31:01 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: 08/28/2019

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: ROURKE 1E; TBG
Stn. No.: API # 3004525892
Mtr. No.:

TUBING

08/28/2019
35825-12010

Smpl Date: 08/14/2019
Test Date: 08/27/2019
Run No: HS190251

Nitrogen: 0.4705
CO2: 1.4633
Methane: 78.5562
Ethane: 10.7613
Propane: 4.9262
I-Butane: 0.6481
N-Butane: 1.3709
I-Pentane: 0.3891
N-Pentane: 0.3545
Hexane+: 1.0599

BTU: 1267.0
GPM: 19.3110
SPG: 0.7453



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

Analysis No: HS190249
Cust No: 35825-12000

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: ROURKE 1E; BHD
County/State: SAN JUAN NM
Location:
Lease/PA/CA: SF078212
Formation:
Cust. Stn. No.: API # 3004525892

Source: BRADENHEAD
Well Flowing: N
Pressure: PSIG
Flow Temp: 90 DEG. F
Ambient Temp: 95 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 08/14/2019
Sample Time: 2.00 PM
Sampled By: JOHN RUSSELL
Sampled by (CO): HILCORP

Heat Trace: AREA 2 / RUN 205
Remarks: N

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.5965	0.5936	0.0660	0.00	0.0058
CO2	0.0071	0.0071	0.0010	0.00	0.0001
Methane	89.9417	89.5002	15.2850	908.41	0.4982
Ethane	5.1914	5.1659	1.3920	91.87	0.0539
Propane	2.5520	2.5395	0.7050	64.21	0.0389
Iso-Butane	0.6523	0.6491	0.2140	21.21	0.0131
N-Butane	0.5983	0.5954	0.1890	19.52	0.0120
I-Pentane	0.2008	0.1998	0.0740	8.03	0.0050
N-Pentane	0.1057	0.1052	0.0380	4.24	0.0026
Hexane Plus	0.1542	0.1534	0.0690	8.13	0.0051
Total	100.0000	99.5092	18.0330	1125.62	0.6347

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0027
BTU/CU.FT IDEAL: 1128.2
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1131.3
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1111.6
DRY BTU @ 15.025: 1154.0
REAL SPECIFIC GRAVITY: 0.6361

CYLINDER #: 6060
CYLINDER PRESSURE: 74 PSIG
ANALYSIS DATE: 08/27/2019
ANALYSIS TIME: 09:10:14 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: 08/28/2019

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: ROURKE 1E; BHD
Stn. No.: API # 3004525892
Mtr. No.:

BRADENHEAD

08/28/2019
35825-12000

Smpl Date: 08/14/2019
Test Date: 08/27/2019
Run No: HS190249

Nitrogen: 0.5965
CO2: 0.0071
Methane: 89.9417
Ethane: 5.1914
Propane: 2.5520
I-Butane: 0.6523
N-Butane: 0.5983
I-Pentane: 0.2008
N-Pentane: 0.1057
Hexane+: 0.1542

BTU: 1131.3
GPM: 18.0330
SPG: 0.6361



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

Analysis No: HS190250
Cust No: 35825-12005

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: ROURKE 1E; CSG
County/State: SAN JUAN NM
Location:
Lease/PA/CA: SF078212
Formation:
Cust. Stn. No.: API # 3004525892

Source: CASING
Well Flowing: N
Pressure: PSIG
Flow Temp: 90 DEG. F
Ambient Temp: 95 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 08/14/2019
Sample Time: 2.00 PM
Sampled By: JOHN RUSSELL
Sampled by (CO): HILCORP

AREA 2 / RUN 205

Heat Trace: N

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.5577	0.5519	0.0620	0.00	0.0054
CO2	1.1478	1.1359	0.1970	0.00	0.0174
Methane	78.0827	77.2709	13.2860	788.64	0.4325
Ethane	10.8073	10.6949	2.9010	191.26	0.1122
Propane	5.2909	5.2359	1.4630	133.12	0.0806
Iso-Butane	0.5040	0.4988	0.1660	16.39	0.0101
N-Butane	1.6565	1.6393	0.5240	54.04	0.0332
I-Pentane	0.3922	0.3881	0.1440	15.69	0.0098
N-Pentane	0.4501	0.4454	0.1640	18.04	0.0112
Hexane Plus	1.1108	1.0993	0.4970	58.55	0.0368
Total	100.0000	98.9604	19.4040	1275.73	0.7492

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0039
BTU/CU.FT IDEAL: 1278.7
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1283.7
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1261.4
DRY BTU @ 15.025: 1309.4
REAL SPECIFIC GRAVITY: 0.7518

CYLINDER #: 4004
CYLINDER PRESSURE: 52 PSIG
ANALYSIS DATE: 08/27/2019
ANALYSIS TIME: 08:50:51 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: 08/28/2019

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: ROURKE 1E; CSG
Stn. No.: API # 3004525892
Mtr. No.:

CASING

08/28/2019
35825-12005

Smpl Date: 08/14/2019
Test Date: 08/27/2019
Run No: HS190250

Nitrogen: 0.5577
CO2: 1.1478
Methane: 78.0827
Ethane: 10.8073
Propane: 5.2909
I-Butane: 0.5040
N-Butane: 1.6565
I-Pentane: 0.3922
N-Pentane: 0.4501
Hexane+: 1.1108

BTU: 1283.7
GPM: 19.4040
SPG: 0.7518