



Well Name: SHEPHERD AND KELSEY

API #: 3004524316

Source: BRADENHEAD

Sample Type: GAS

Analysis No: HS20230045

Cust No: 35825-14810

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
 Well Name: SHEPHERD AND KELSEY 1E; BHD
 County/State: SAN JUAN NM
 Location:
 Lease/PA/CA:
 Formation: CH/DK
 Cust. Stn. No.: 3004524316
 36751-30

Source: BRADENHEAD
 Well Flowing: Y
 Pressure: 35 PSIG
 Flow Temp: DEG. F
 Ambient Temp: 53 DEG. F
 Flow Rate: MCF/D
 Sample Method:
 Sample Date: 05/26/2023
 Sample Time: 8.30 AM
 Sampled By: AUSTIN HAWS
 Sampled by (CO): HILCORP

AREA 7 / RUN 703

Heat Trace:

Remarks:

Analysis

Component:	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	1.3958	1.3942	0.1540	0.00	0.0135
CO2	0.0071	0.0071	0.0010	0.00	0.0001
Methane	93.1217	93.0125	15.8190	940.53	0.5158
Ethane	3.8594	3.8549	1.0340	68.30	0.0401
Propane	1.1257	1.1244	0.3110	28.32	0.0171
Iso-Butane	0.2007	0.2005	0.0660	6.53	0.0040
N-Butane	0.1678	0.1676	0.0530	5.47	0.0034
I-Pentane	0.0359	0.0359	0.0130	1.44	0.0009
N-Pentane	0.0161	0.0161	0.0060	0.65	0.0004
Hexane Plus	0.0698	0.0697	0.0310	3.68	0.0023
Total	100.0000	99.8829	17.4880	1054.91	0.5976

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0023
 BTU/CU.FT IDEAL: 1057.4
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1059.8
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1041.4
 DRY BTU @ 15.025: 1081.0
 REAL SPECIFIC GRAVITY: 0.5988

CYLINDER #: 6096
 CYLINDER PRESSURE: 64 PSIG
 ANALYSIS DATE: 05/30/2023
 ANALYSIS TIME: 07:46:05 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: 05/31/2023

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	SHEPHERD AND KELSEY 1E; BHD	BRADENHEAD	05/31/2023
Stn. No.:	3004524316	CH/DK	35825-14810
Mtr. No.:	36751-30		

Smpl Date: 05/26/2023
Test Date: 05/30/2023
Run No: HS20230045

Nitrogen: 1.3958
CO2: 0.0071
Methane: 93.1217
Ethane: 3.8594
Propane: 1.1257
I-Butane: 0.2007
N-Butane: 0.1678
I-Pentane: 0.0359
N-Pentane: 0.0161
Hexane+: 0.0698

BTU: 1059.8
GPM: 17.4880
SPG: 0.5988



Well Name: SHEPHERD AND KELSEY

API #: 3004524316

Source: CASING

Sample Type: GAS

Analysis No: HS20230046

Cust No: 35825-14815

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
 Well Name: SHEPHERD AND KELSEY 1E; CSG
 County/State: SAN JUAN NM
 Location:
 Lease/PA/CA:
 Formation: CH/DK
 Cust. Stn. No.: 3004524316
 36751-30

Source: CASING
 Well Flowing: Y
 Pressure: 120 PSIG
 Flow Temp: DEG. F
 Ambient Temp: 53 DEG. F
 Flow Rate: MCF/D
 Sample Method: Purge & Fill
 Sample Date: 05/26/2023
 Sample Time: 8.30 AM
 Sampled By: AUSTIN HAWS
 Sampled by (CO): HILCORP

AREA 7 / RUN 703

Heat Trace:

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.6887	0.6859	0.0760	0.00	0.0067
CO2	0.3450	0.3436	0.0590	0.00	0.0052
Methane	88.4178	88.0557	15.0290	893.02	0.4897
Ethane	5.4972	5.4747	1.4740	97.28	0.0571
Propane	2.9100	2.8981	0.8040	73.22	0.0443
Iso-Butane	0.4756	0.4737	0.1560	15.47	0.0095
N-Butane	0.7668	0.7637	0.2420	25.02	0.0154
I-Pentane	0.2582	0.2571	0.0950	10.33	0.0064
N-Pentane	0.1885	0.1877	0.0690	7.56	0.0047
Hexane Plus	0.4522	0.4503	0.2020	23.84	0.0150
Total	100.0000	99.5905	18.2060	1145.73	0.6541

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0029
 BTU/CU.FT IDEAL: 1148.4
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1151.7
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1131.7
 DRY BTU @ 15.025: 1174.8
 REAL SPECIFIC GRAVITY: 0.6557

CYLINDER #: 5034
 CYLINDER PRESSURE: 123 PSIG
 ANALYSIS DATE: 05/30/2023
 ANALYSIS TIME: 07:56:26 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: 05/31/2023

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	SHEPHERD AND KELSEY 1E; CSG	CASING	05/31/2023
Stn. No.:	3004524316	CH/DK	35825-14815
Mtr. No.:	36751-30		

Smpl Date: 05/26/2023
Test Date: 05/30/2023
Run No: HS20230046

Nitrogen: 0.6887
CO2: 0.3450
Methane: 88.4178
Ethane: 5.4972
Propane: 2.9100
I-Butane: 0.4756
N-Butane: 0.7668
I-Pentane: 0.2582
N-Pentane: 0.1885
Hexane+: 0.4522

BTU: 1151.7
GPM: 18.2060
SPG: 0.6557



Well Name: SHEPHERD AND KELSEY

API #: 3004524316

Source: TUBING

Sample Type: GAS

Analysis No: HS20230047

Cust No: 35825-14820

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
 Well Name: SHEPHERD AND KELSEY 1E; TBG
 County/State: SAN JUAN NM
 Location:
 Lease/PA/CA:
 Formation: CH/DK
 Cust. Stn. No.: 3004524316
 36751-30

Source: TUBING
 Well Flowing: Y
 Pressure: 116 PSIG
 Flow Temp: DEG. F
 Ambient Temp: 53 DEG. F
 Flow Rate: MCF/D
 Sample Method:
 Sample Date: 05/26/2023
 Sample Time: 8.30 AM
 Sampled By: AUSTIN HAWS
 Sampled by (CO): HILCORP

AREA 7 / RUN 703

Heat Trace:

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.4351	0.4286	0.0480	0.00	0.0042
CO2	0.8565	0.8437	0.1470	0.00	0.0130
Methane	80.2822	79.0852	13.6570	810.85	0.4447
Ethane	9.5547	9.4122	2.5640	169.09	0.0992
Propane	5.0674	4.9918	1.4010	127.50	0.0772
Iso-Butane	0.7925	0.7807	0.2600	25.77	0.0159
N-Butane	1.4430	1.4215	0.4560	47.07	0.0290
I-Pentane	0.4534	0.4466	0.1660	18.14	0.0113
N-Pentane	0.3684	0.3629	0.1340	14.77	0.0092
Hexane Plus	0.7468	0.7357	0.3340	39.36	0.0247
Total	100.0000	98.5089	19.1670	1252.56	0.7283

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0037
 BTU/CU.FT IDEAL: 1255.5
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1260.0
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1238.1
 DRY BTU @ 15.025: 1285.2
 REAL SPECIFIC GRAVITY: 0.7306

CYLINDER #: 6191
 CYLINDER PRESSURE: 119 PSIG
 ANALYSIS DATE: 05/30/2023
 ANALYSIS TIME: 08:04:44 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: 05/31/2023

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	SHEPHERD AND KELSEY 1E; TBG	TUBING	05/31/2023
Stn. No.:	3004524316	CH/DK	35825-14820
Mtr. No.:	36751-30		

Smpl Date: 05/26/2023
Test Date: 05/30/2023
Run No: HS20230047

Nitrogen: 0.4351
CO2: 0.8565
Methane: 80.2822
Ethane: 9.5547
Propane: 5.0674
I-Butane: 0.7925
N-Butane: 1.4430
I-Pentane: 0.4534
N-Pentane: 0.3684
Hexane+: 0.7468

BTU: 1260.0
GPM: 19.1670
SPG: 0.7306

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 222431

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 222431
	Action Type: [UF-GA] Gas Analysis (GAS ANALYSIS)

CONDITIONS

Created By	Condition	Condition Date
mkuehling	different	10/6/2023