

Well Name: HARTMAN 23 1;BHD
 API #: 3004509298
 Source: BRADENHEAD
 Sample Type: GAS
 Analysis No: HS20230196
 Cust No: 35825-15345

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
 Well Name: HARTMAN 23 1;BHD
 County/State: SAN JUAN NM
 Location:
 Lease/PA/CA:
 Formation: DK
 Cust. Stn. No.: 3004509298

Source: BRADENHEAD
 Well Flowing: Y
 Pressure: PSIG
 Flow Temp: DEG. F
 Ambient Temp: DEG. F
 Flow Rate: MCF/D
 Sample Method:
 Sample Date: 08/11/2023
 Sample Time: 11.32 AM
 Sampled By: TRISTAN ALLEN
 Sampled by (CO): HILCORP

Heat Trace: AREA 7; RUN 700
 N
 Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2703	0.2752	0.0300	0.00	0.0026
CO2	1.8787	1.9126	0.3220	0.00	0.0285
Methane	82.7784	84.2706	14.0760	836.06	0.4585
Ethane	8.4923	8.6454	2.2780	150.29	0.0882
Propane	3.4636	3.5260	0.9570	87.15	0.0527
Iso-Butane	0.6851	0.6975	0.2250	22.28	0.0137
N-Butane	1.1402	1.1608	0.3610	37.20	0.0229
I-Pentane	0.4180	0.4255	0.1530	16.72	0.0104
N-Pentane	0.3254	0.3313	0.1180	13.04	0.0081
Hexane Plus	0.5480	0.5579	0.2450	28.89	0.0181
Total	100.0000	101.8028	18.7650	1191.63	0.7039

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0033
 BTU/CU.FT IDEAL: 1194.4
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1198.3
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1177.4
 DRY BTU @ 15.025: 1222.3
 REAL SPECIFIC GRAVITY: 0.7059

CYLINDER #: 4032
 CYLINDER PRESSURE: 42 PSIG
 ANALYSIS DATE: 08/11/2023
 ANALYSIS TIME: 10:59:53 AM
 ANALYSIS RUN BY: ACEDA GOODNOH

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: 08/23/2023

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: HARTMAN 23 1;BHD
Stn. No.: 3004509298
Mtr. No.:

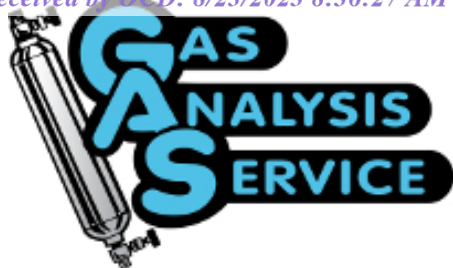
BRADENHEAD
DK

08/23/2023
35825-15345

Smpl Date: 08/11/2023
Test Date: 08/11/2023
Run No: HS20230196

Nitrogen: 0.2703
CO2: 1.8787
Methane: 82.7784
Ethane: 8.4923
Propane: 3.4636
I-Butane: 0.6851
N-Butane: 1.1402
I-Pentane: 0.4180
N-Pentane: 0.3254
Hexane+: 0.5480

BTU: 1198.3
GPM: 18.7650
SPG: 0.7059



Well Name: HARTMAN 23 1; CSG

API #: 3004509298

Source: CASING

Sample Type: GAS

Analysis No: HS20230197

Cust No: 35825-15350

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)

Well Name: HARTMAN 23 1; CSG

County/State: SAN JUAN NM

Location:

Lease/PA/CA:

Formation: DK

Cust. Stn. No.: 3004509298

Source: CASING

Well Flowing: Y

Pressure: PSIG

Flow Temp: DEG. F

Ambient Temp: DEG. F

Flow Rate: MCF/D

Sample Method:

Sample Date: 08/11/2023

Sample Time: 11.33 AM

Sampled By: TRISTAN ALLEN

Sampled by (CO): HILCORP

Heat Trace: AREA 7; RUN 700

Remarks: N

Analysis

Component:	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2724	0.2728	0.0300	0.00	0.0026
CO2	1.9077	1.9108	0.3270	0.00	0.0290
Methane	82.7414	82.8752	14.0700	835.69	0.4583
Ethane	8.5283	8.5421	2.2880	150.93	0.0885
Propane	3.5065	3.5122	0.9690	88.23	0.0534
Iso-Butane	0.6609	0.6620	0.2170	21.49	0.0133
N-Butane	1.0662	1.0679	0.3370	34.78	0.0214
I-Pentane	0.4292	0.4299	0.1570	17.17	0.0107
N-Pentane	0.3388	0.3393	0.1230	13.58	0.0084
Hexane Plus	0.5486	0.5495	0.2450	28.92	0.0182
Total	100.0000	100.1617	18.7630	1190.79	0.7038

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0033
 BTU/CU.FT IDEAL: 1193.5
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1197.5
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1176.7
 DRY BTU @ 15.025: 1221.5
 REAL SPECIFIC GRAVITY: 0.7058

CYLINDER #: 4144
 CYLINDER PRESSURE: 32 PSIG
 ANALYSIS DATE: 08/11/2023
 ANALYSIS TIME: 10:51:32 AM
 ANALYSIS RUN BY: SARAH BALLARD

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: 08/23/2023

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: HARTMAN 23 1; CSG
Stn. No.: 3004509298
Mtr. No.:

CASING
DK

08/23/2023
35825-15350

Smpl Date: 08/11/2023
Test Date: 08/11/2023
Run No: HS20230197

Nitrogen: 0.2724
CO2: 1.9077
Methane: 82.7414
Ethane: 8.5283
Propane: 3.5065
I-Butane: 0.6609
N-Butane: 1.0662
I-Pentane: 0.4292
N-Pentane: 0.3388
Hexane+: 0.5486

BTU: 1197.5
GPM: 18.7630
SPG: 0.7058



Well Name: HARTMAN 23 1; TBG

API #: 3004509298

Source: TUBING

Sample Type: GAS

Analysis No: HS20230198

Cust No: 35825-15355

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
 Well Name: HARTMAN 23 1; TBG
 County/State: SAN JUAN NM
 Location:
 Lease/PA/CA:
 Formation: DK
 Cust. Stn. No.: 3004509298

Source: TUBING
 Well Flowing: Y
 Pressure: PSIG
 Flow Temp: DEG. F
 Ambient Temp: 67 DEG. F
 Flow Rate: MCF/D
 Sample Method:
 Sample Date: 08/11/2023
 Sample Time: 11.35 AM
 Sampled By: TRISTAN ALLEN
 Sampled by (CO): HILCORP

Heat Trace: AREA 7; RUN 700

Remarks: N

Analysis

Component:	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2900	0.2909	0.0320	0.00	0.0028
CO2	1.1781	1.1817	0.2020	0.00	0.0179
Methane	80.2641	80.5125	13.6600	810.67	0.4446
Ethane	7.0910	7.1129	1.9040	125.49	0.0736
Propane	5.0209	5.0364	1.3890	126.33	0.0764
Iso-Butane	1.1271	1.1306	0.3700	36.65	0.0226
N-Butane	1.9632	1.9693	0.6210	64.05	0.0394
I-Pentane	0.9801	0.9831	0.3600	39.21	0.0244
N-Pentane	0.8379	0.8405	0.3050	33.59	0.0209
Hexane Plus	1.2476	1.2515	0.5590	65.76	0.0413
Total	100.0000	100.3094	19.4020	1301.75	0.7639

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0041
 BTU/CU.FT IDEAL: 1304.8
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1310.1
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1287.3
 DRY BTU @ 15.025: 1336.3
 REAL SPECIFIC GRAVITY: 0.7668

CYLINDER #: 7039
 CYLINDER PRESSURE: 31 PSIG
 ANALYSIS DATE: 08/11/2023
 ANALYSIS TIME: 10:39:35 AM
 ANALYSIS RUN BY: SARAH BALLARD

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: 08/23/2023

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: HARTMAN 23 1; TBG
Stn. No.: 3004509298
Mtr. No.:

TUBING
DK

08/23/2023
35825-15355

Smpl Date: 08/11/2023
Test Date: 08/11/2023
Run No: HS20230198

Nitrogen: 0.2900
CO2: 1.1781
Methane: 80.2641
Ethane: 7.0910
Propane: 5.0209
I-Butane: 1.1271
N-Butane: 1.9632
I-Pentane: 0.9801
N-Pentane: 0.8379
Hexane+: 1.2476

BTU: 1310.1
GPM: 19.4020
SPG: 0.7668

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 255785

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 255785
	Action Type: [UF-GA] Gas Analysis (GAS ANALYSIS)

CONDITIONS

Created By	Condition	Condition Date
mkuehling	same gas production casing and bradenhead	9/15/2023