



Well Name: FREEMAN 1M; BHD
 API #: 3004523023
 Source: BRADENHEAD
 Sample Type: GAS
 Analysis No: HS20240101
 Cust No: 35825-15815

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)	Source: BRADENHEAD
Well Name: FREEMAN 1M; BHD	Well Flowing:
County/State:	Pressure: 30 PSIG
Location:	Flow Temp: DEG. F
Lease/PA/CA:	Ambient Temp: DEG. F
Formation:	Flow Rate: MCF/D
Cust. Stn. No.: 3004523023	Sample Method:
90285-01	Sample Date: 05/15/2024
AREA 2 / RUN 0211	Sample Time: 11.00 AM
Heat Trace:	Sampled By: PETE JIM
Remarks: PRESSURED WITH HELIUM TO 30 LBS.	Sampled by (CO): HILCORP

Analysis

Component:	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.4054	0.1602	0.0450	0.00	0.0039
CO2	0.0400	0.0158	0.0070	0.00	0.0006
Methane	66.3288	26.2127	11.3120	669.92	0.3674
Ethane	9.9688	3.9396	2.6820	176.42	0.1035
Propane	10.4739	4.1392	2.9030	263.53	0.1595
Iso-Butane	3.0436	1.2028	1.0020	98.97	0.0611
N-Butane	3.9398	1.5570	1.2490	128.53	0.0791
I-Pentane	2.6018	1.0282	0.9570	104.10	0.0648
N-Pentane	2.7073	1.0699	0.9870	108.53	0.0674
Hexane Plus	0.4906	0.1939	0.2200	25.86	0.0162
Total	100.0000	39.5193	21.3640	1575.86	0.9235

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.0062	CYLINDER #:	1879
BTU/CU.FT IDEAL:	1579.5	CYLINDER PRESSURE:	10 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1589.4	ANALYSIS DATE:	05/22/2024
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1561.7	ANALYSIS TIME:	07:56:22 AM
DRY BTU @ 15.025:	1621.2	ANALYSIS RUN BY:	SARAH BALLARD
REAL SPECIFIC GRAVITY:	0.9289		

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: 05/23/2024

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	FREEMAN 1M; BHD	BRADENHEAD	05/23/2024
Stn. No.:	3004523023		35825-15815
Mtr. No.:	90285-01		

Smpl Date:	05/15/2024
Test Date:	05/22/2024
Run No:	HS20240101
Nitrogen:	0.4054
CO2:	0.0400
Methane:	66.3288
Ethane:	9.9688
Propane:	10.4739
I-Butane:	3.0436
N-Butane:	3.9398
I-Pentane:	2.6018
N-Pentane:	2.7073
Hexane+:	0.4906
BTU:	1589.4
GPM:	21.3640
SPG:	0.9289



Well Name: FREEMAN 1M; CSG
 API #: 3004523023
 Source: CASING
 Sample Type: GAS
 Analysis No: HS20240102
 Cust No: 35825-15820

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)	Source: CASING
Well Name: FREEMAN 1M; CSG	Well Flowing:
County/State:	Pressure: 45 PSIG
Location:	Flow Temp: DEG. F
Lease/PA/CA:	Ambient Temp: DEG. F
Formation:	Flow Rate: MCF/D
Cust. Stn. No.: 3004523023	Sample Method: Purge & Fill
90285-01	Sample Date: 05/15/2024
AREA 2 / RUN 0211	Sample Time: 11.00 AM
Heat Trace:	Sampled By: PETE JIM
Remarks:	Sampled by (CO): HILCORP

Analysis

Component:	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.5894	0.6039	0.0650	0.00	0.0057
CO2	0.2934	0.3006	0.0500	0.00	0.0045
Methane	74.6469	76.4803	12.7210	753.93	0.4135
Ethane	7.1786	7.3549	1.9300	127.04	0.0745
Propane	5.3421	5.4733	1.4790	134.41	0.0813
Iso-Butane	1.9785	2.0271	0.6510	64.34	0.0397
N-Butane	3.4185	3.5025	1.0830	111.52	0.0686
I-Pentane	2.6591	2.7244	0.9780	106.39	0.0662
N-Pentane	1.9654	2.0137	0.7160	78.79	0.0490
Hexane Plus	1.9281	1.9755	0.8640	101.63	0.0638
Total	100.0000	102.4562	20.5370	1478.05	0.8668

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.0055	CYLINDER #:	036
BTU/CU.FT IDEAL:	1481.5	CYLINDER PRESSURE:	45 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1489.7	ANALYSIS DATE:	05/22/2024
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1463.8	ANALYSIS TIME:	08:05:23 AM
DRY BTU @ 15.025:	1519.5	ANALYSIS RUN BY:	ALEXIS MITCHELL
REAL SPECIFIC GRAVITY:	0.8713		

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: 05/23/2024

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	FREEMAN 1M; CSG	CASING	05/23/2024
Stn. No.:	3004523023		35825-15820
Mtr. No.:	90285-01		

Smpl Date:	05/15/2024
Test Date:	05/22/2024
Run No:	HS20240102
Nitrogen:	0.5894
CO2:	0.2934
Methane:	74.6469
Ethane:	7.1786
Propane:	5.3421
I-Butane:	1.9785
N-Butane:	3.4185
I-Pentane:	2.6591
N-Pentane:	1.9654
Hexane+:	1.9281
BTU:	1489.7
GPM:	20.5370
SPG:	0.8713



Well Name: FREEMAN 1M; TBG
 API #: 3004523023
 Source: TUBING
 Sample Type: GAS
 Analysis No: HS20240103
 Cust No: 35825-15825

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)	Source: TUBING
Well Name: FREEMAN 1M; TBG	Well Flowing:
County/State:	Pressure: 45 PSIG
Location:	Flow Temp: DEG. F
Lease/PA/CA:	Ambient Temp: DEG. F
Formation:	Flow Rate: MCF/D
Cust. Stn. No.: 3004523023	Sample Method:
90285-01	Sample Date: 05/15/2024
AREA 2 / RUN 0211	Sample Time: 10.00 AM
Heat Trace:	Sampled By: PETE JIM
Remarks:	Sampled by (CO): HILCORP

Analysis

Component:	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.5902	0.6056	0.0650	0.00	0.0057
CO2	0.3482	0.3573	0.0600	0.00	0.0053
Methane	74.8220	76.7795	12.7500	755.70	0.4144
Ethane	7.1722	7.3598	1.9280	126.93	0.0745
Propane	5.3161	5.4552	1.4720	133.76	0.0809
Iso-Butane	1.9650	2.0164	0.6460	63.90	0.0394
N-Butane	3.3922	3.4809	1.0750	110.66	0.0681
I-Pentane	2.6200	2.6885	0.9630	104.82	0.0653
N-Pentane	1.9262	1.9766	0.7020	77.22	0.0480
Hexane Plus	1.8479	1.8962	0.8280	97.40	0.0612
Total	100.0000	102.6160	20.4890	1470.39	0.8628

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.0054	CYLINDER #:	1842
BTU/CU.FT IDEAL:	1473.8	CYLINDER PRESSURE:	44 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1481.8	ANALYSIS DATE:	05/22/2024
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1456.0	ANALYSIS TIME:	07:53:56 AM
DRY BTU @ 15.025:	1511.5	ANALYSIS RUN BY:	ALEXIS MITCHELL
REAL SPECIFIC GRAVITY:	0.8671		

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: 05/23/2024

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	FREEMAN 1M; TBG	TUBING	05/23/2024
Stn. No.:	3004523023		35825-15825
Mtr. No.:	90285-01		

Smpl Date:	05/15/2024
Test Date:	05/22/2024
Run No:	HS20240103
Nitrogen:	0.5902
CO2:	0.3482
Methane:	74.8220
Ethane:	7.1722
Propane:	5.3161
I-Butane:	1.9650
N-Butane:	3.3922
I-Pentane:	2.6200
N-Pentane:	1.9262
Hexane+:	1.8479
BTU:	1481.8
GPM:	20.4890
SPG:	0.8671

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District IV
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 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 355294

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 355294
	Action Type: [UF-GA] Gas Analysis (GAS ANALYSIS)

CONDITIONS

Created By	Condition	Condition Date
mkuehling	High propane low methane	8/27/2024
mkuehling	possibly bad sample	8/27/2024