



Well Name: FEDERAL GAS COM H #1E;
 API #: API # 3004526122
 Source: BRADENHEAD
 Sample Type: GAS
 Analysis No: HS2021041
 Cust No: 35825-10590

Well/Lease Information

Customer Name:	HILCORP (BHD PROJECT)	Source:	BRADENHEAD
Well Name:	FEDERAL GAS COM H #1E; BHD	Well Flowing:	Y
County/State:	SAN JUAN NM	Pressure:	37 PSIG
Location:		Flow Temp:	DEG. F
Lease/PA/CA:		Ambient Temp:	DEG. F
Formation:		Flow Rate:	MCF/D
Cust. Stn. No.:	API # 3004526122	Sample Method:	
		Sample Date:	04/23/2021
		Sample Time:	10.00 AM
		Sampled By:	JESSE RANGEL
		Sampled by (CO):	HILCORP

Heat Trace: N

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	1.9341	1.9166	0.2130	0.00	0.0187
CO2	0.0146	0.0145	0.0020	0.00	0.0002
Methane	95.3088	94.4442	16.1880	962.62	0.5279
Ethane	2.1186	2.0994	0.5680	37.49	0.0220
Propane	0.2342	0.2321	0.0650	5.89	0.0036
Iso-Butane	0.2356	0.2335	0.0770	7.66	0.0047
N-Butane	0.0502	0.0497	0.0160	1.64	0.0010
I-Pentane	0.0201	0.0199	0.0070	0.80	0.0005
N-Pentane	0.0124	0.0123	0.0050	0.50	0.0003
Hexane Plus	0.0714	0.0708	0.0320	3.76	0.0024
Total	100.0000	99.0930	17.1730	1020.37	0.5813

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.0021	CYLINDER #:	6074
BTU/CU.FT IDEAL:	1022.7	CYLINDER PRESSURE:	37 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1024.9	ANALYSIS DATE:	04/29/2021
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1007.1	ANALYSIS TIME:	12:27:42 AM
DRY BTU @ 15.025:	1045.4	ANALYSIS RUN BY:	RICHARD WILSON
REAL SPECIFIC GRAVITY:	0.5823		

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: 05/05/2021

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: FEDERAL GAS COM H #1E; BHD BRADENHEAD 05/05/2021
 Stn. No.: API # 3004526122 35825-10590
 Mtr. No.:

Smpl Date:	04/23/2021	04/15/2020	08/26/2019	04/05/2019	08/24/2018
Test Date:	04/29/2021	04/15/2020	08/29/2019	04/10/2019	09/04/2018
Run No:	HS2021041	HS200004	HS190255	HS190020	HS180154
Nitrogen:	1.9341	1.4267	6.4969	1.1485	1.1190
CO2:	0.0146	0.0081	0.0074	0.0213	0.0229
Methane:	95.3088	95.8969	90.9995	96.1330	96.2247
Ethane:	2.1186	2.0899	1.9560	2.0758	2.0602
Propane:	0.2342	0.2159	0.2012	0.2048	0.1937
I-Butane:	0.2356	0.2311	0.2188	0.2380	0.2206
N-Butane:	0.0502	0.0493	0.0420	0.0416	0.0377
I-Pentane:	0.0201	0.0186	0.0173	0.0168	0.0153
N-Pentane:	0.0124	0.0116	0.0113	0.0096	0.0097
Hexane+:	0.0714	0.0519	0.0496	0.1106	0.0962
BTU:	1024.9	1028.6	975.2	1033.4	1032.2
GPM:	17.1730	17.1910	16.8680	17.2210	17.2120
SPG:	0.5823	0.5792	0.5989	0.5795	0.5785



Well Name: FEDERAL GAS COM H #1E;
 API #: API # 3004526122
 Source: CASING
 Sample Type: GAS
 Analysis No: HS2021042
 Cust No: 35825-10595

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
 Well Name: FEDERAL GAS COM H #1E; CSG
 County/State: NM
 Location:
 Lease/PA/CA:
 Formation:
 Cust. Stn. No.: API # 3004526122

Source: CASING
 Well Flowing: Y
 Pressure: 270 PSIG
 Flow Temp: DEG. F
 Ambient Temp: DEG. F
 Flow Rate: MCF/D
 Sample Method: Purge & Fill
 Sample Date: 04/23/2021
 Sample Time: 10.00 AM
 Sampled By: JESSE RANGEL
 Sampled by (CO): HILCORP

Heat Trace: N
 Remarks: AREA 2 / RUN 0209

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.5831	0.5799	0.0640	0.00	0.0056
CO2	1.4347	1.4269	0.2460	0.00	0.0218
Methane	82.3191	81.8741	13.9980	831.42	0.4560
Ethane	9.3820	9.3313	2.5170	166.03	0.0974
Propane	3.6588	3.6390	1.0110	92.06	0.0557
Iso-Butane	0.4945	0.4918	0.1620	16.08	0.0099
N-Butane	0.9348	0.9297	0.2960	30.50	0.0188
I-Pentane	0.3216	0.3199	0.1180	12.87	0.0080
N-Pentane	0.2959	0.2943	0.1080	11.86	0.0074
Hexane Plus	0.5755	0.5724	0.2570	30.34	0.0190
Total	100.0000	99.4593	18.7770	1191.16	0.6996

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0033
 BTU/CU.FT IDEAL: 1193.9
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1197.9
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1177.1
 DRY BTU @ 15.025: 1221.9
 REAL SPECIFIC GRAVITY: 0.7017

CYLINDER #: 7010
 CYLINDER PRESSURE: 274 PSIG
 ANALYSIS DATE: 04/29/2021
 ANALYSIS TIME: 12:41:51 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: 05/05/2021

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: FEDERAL GAS COM H #1E; CSG CASING 05/05/2021
 Stn. No.: API # 3004526122 35825-10595
 Mtr. No.:

Smpl Date:	04/23/2021	04/15/2020	08/26/2019	04/05/2019	08/24/2018
Test Date:	04/29/2021	04/15/2020	08/29/2019	04/10/2019	09/04/2018
Run No:	HS2021042	HS200005	HS190256	HS190021	HS180155
Nitrogen:	0.5831	0.5350	0.7223	0.5334	0.5700
CO2:	1.4347	1.4203	1.3988	1.3782	1.2525
Methane:	82.3191	81.6193	80.4255	81.1424	82.0103
Ethane:	9.3820	10.0147	10.0896	10.2252	9.4793
Propane:	3.6588	4.1503	4.4056	4.3267	4.1270
I-Butane:	0.4945	0.5324	0.5849	0.5186	0.5639
N-Butane:	0.9348	1.0093	1.1895	1.0143	1.1308
I-Pentane:	0.3216	0.2705	0.3737	0.2467	0.3299
N-Pentane:	0.2959	0.2246	0.3288	0.1864	0.2877
Hexane+:	0.5755	0.2236	0.4813	0.4281	0.2486
BTU:	1197.9	1194.4	1220.0	1206.0	1199.6
GPM:	18.7770	18.7880	18.9610	18.8720	18.7860
SPG:	0.7017	0.6986	0.7167	0.7053	0.6996



Well Name: FEDERAL GAS COM H #1E;
 API #: API # 3004526122
 Source: TUBING
 Sample Type: GAS
 Analysis No: HS2021043
 Cust No: 35825-11005

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
 Well Name: FEDERAL GAS COM H #1E; TBG
 County/State: SAN JUAN NM
 Location:
 Lease/PA/CA:
 Formation:
 Cust. Stn. No.: API # 3004526122

Source: TUBING
 Well Flowing: Y
 Pressure: 267 PSIG
 Flow Temp: DEG. F
 Ambient Temp: DEG. F
 Flow Rate: MCF/D
 Sample Method: Purge & Fill
 Sample Date: 04/23/2021
 Sample Time: 10.00 AM
 Sampled By: JESSE RANGEL
 Sampled by (CO): HILCORP

Heat Trace: N
 Remarks: AREA 2 / RUN 0209

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.7459	0.7433	0.0820	0.00	0.0072
CO2	1.4193	1.4143	0.2430	0.00	0.0216
Methane	80.4192	80.1363	13.6760	812.23	0.4454
Ethane	10.2511	10.2150	2.7500	181.41	0.1064
Propane	4.3551	4.3398	1.2040	109.58	0.0663
Iso-Butane	0.5478	0.5459	0.1800	17.81	0.0110
N-Butane	1.0789	1.0751	0.3410	35.20	0.0217
I-Pentane	0.3069	0.3058	0.1130	12.28	0.0076
N-Pentane	0.2714	0.2704	0.0990	10.88	0.0068
Hexane Plus	0.6044	0.6023	0.2700	31.86	0.0200
Total	100.0000	99.6482	18.9580	1211.25	0.7140

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0034
 BTU/CU.FT IDEAL: 1214.1
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1218.2
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1197.0
 DRY BTU @ 15.025: 1242.6
 REAL SPECIFIC GRAVITY: 0.7162

CYLINDER #: 4133
 CYLINDER PRESSURE: 273 PSIG
 ANALYSIS DATE: 04/29/2021
 ANALYSIS TIME: 12:58:31 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: 05/05/2021

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: FEDERAL GAS COM H #1E; TBG TUBING 05/05/2021
 Stn. No.: API # 3004526122 35825-11005
 Mtr. No.:

Smpl Date:	04/23/2021	04/15/2020	08/26/2019	04/05/2019
Test Date:	04/29/2021	04/15/2020	08/29/2019	04/10/2019
Run No:	HS2021043	HS200006	HS190257	HS190022
Nitrogen:	0.7459	0.5240	0.6891	0.5737
CO2:	1.4193	1.3899	1.3912	1.0622
Methane:	80.4192	80.3944	80.2453	79.0242
Ethane:	10.2511	10.2573	10.1953	10.1307
Propane:	4.3551	4.4587	4.4429	5.0414
I-Butane:	0.5478	0.5809	0.5712	0.7532
N-Butane:	1.0789	1.1588	1.1481	1.5532
I-Pentane:	0.3069	0.3349	0.3412	0.6072
N-Pentane:	0.2714	0.2897	0.3082	0.5876
Hexane+:	0.6044	0.6114	0.6675	0.6666
BTU:	1218.2	1226.7	1227.0	1270.0
GPM:	18.9580	19.0140	19.0120	19.2740
SPG:	0.7162	0.7188	0.7208	0.7419

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

CONDITIONS

Action 27380

CONDITIONS OF APPROVAL

Operator:	HILCORP ENERGY COMPANY	1111 Travis Street	Houston, TX77002	OGRID:	372171	Action Number:	27380	Action Type:	GAS ANALYSIS
OCD Reviewer	Condition								
mkuehling	None								