



OCD Received
6/8/2020

Well Name: FEDERAL GAS COM H #1E;
API #: API # 3004526122
Source: BRADENHEAD
Sample Type: GAS
Analysis No: HS200004
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:	35 PSIG
Location:		Flow Temp:	DEG. F
Lease/PA/CA:		Ambient Temp:	23 DEG. F
Formation:	DAKOTA	Flow Rate:	0 MCF/D
Cust. Stn. No.:	API # 3004526122 95618	Sample Method:	
	AREA 2 / RUN 209	Sample Date:	04/15/2020
		Sample Time:	8.00 AM
Heat Trace:	N	Sampled By:	JESSE RANGEL
Remarks:		Sampled by (CO):	HILCORP

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	1.4267	1.4024	0.1570	0.00	0.0138
CO2	0.0081	0.0080	0.0010	0.00	0.0001
Methane	95.8969	94.2627	16.2870	968.56	0.5312
Ethane	2.0899	2.0543	0.5600	36.98	0.0217
Propane	0.2159	0.2122	0.0600	5.43	0.0033
Iso-Butane	0.2311	0.2272	0.0760	7.52	0.0046
N-Butane	0.0493	0.0485	0.0160	1.61	0.0010
I-Pentane	0.0186	0.0183	0.0070	0.74	0.0005
N-Pentane	0.0116	0.0114	0.0040	0.47	0.0003
Hexane Plus	0.0519	0.0510	0.0230	2.74	0.0017
Total	100.0000	98.2960	17.1910	1024.04	0.5782

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.0021
BTU/CU.FT IDEAL:	1026.4
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1028.6
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1010.7
DRY BTU @ 15.025:	1049.2
REAL SPECIFIC GRAVITY:	0.5792

CYLINDER #:	4075
CYLINDER PRESSURE:	38 PSIG
ANALYSIS DATE:	04/15/2020
ANALYSIS TIME:	01:22:49 PM
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: 04/17/2020

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	FEDERAL GAS COM H #1E; BHD	BRADENHEAD	04/17/2020
Stn. No.:	API # 3004526122	DAKOTA	35825-10590
Mtr. No.:	95618		

Smpl Date:	04/15/2020	08/26/2019	04/05/2019	08/24/2018
Test Date:	04/15/2020	08/29/2019	04/10/2019	09/04/2018
Run No:	HS200004	HS190255	HS190020	HS180154
Nitrogen:	1.4267	6.4969	1.1485	1.1190
CO2:	0.0081	0.0074	0.0213	0.0229
Methane:	95.8969	90.9995	96.1330	96.2247
Ethane:	2.0899	1.9560	2.0758	2.0602
Propane:	0.2159	0.2012	0.2048	0.1937
I-Butane:	0.2311	0.2188	0.2380	0.2206
N-Butane:	0.0493	0.0420	0.0416	0.0377
I-Pentane:	0.0186	0.0173	0.0168	0.0153
N-Pentane:	0.0116	0.0113	0.0096	0.0097
Hexane+:	0.0519	0.0496	0.1106	0.0962
BTU:	1028.6	975.2	1033.4	1032.2
GPM:	17.1910	16.8680	17.2210	17.2120
SPG:	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: HS200005
 Cust No: 35825-10595

Well/Lease Information

Customer Name:	HILCORP (BHD PROJECT)	Source:	CASING
Well Name:	FEDERAL GAS COM H #1E; CSG	Well Flowing:	Y
County/State:	NM	Pressure:	201 PSIG
Location:		Flow Temp:	DEG. F
Lease/PA/CA:		Ambient Temp:	23 DEG. F
Formation:	DAKOTA	Flow Rate:	0 MCF/D
Cust. Stn. No.:	API # 3004526122	Sample Method:	
	95618	Sample Date:	04/15/2020
	AREA 2 / RUN 209	Sample Time:	8.00 AM
Heat Trace:	N	Sampled By:	JESSE RANGEL
Remarks:		Sampled by (CO):	HILCORP

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.5350	0.5255	0.0590	0.00	0.0052
CO2	1.4203	1.3951	0.2430	0.00	0.0216
Methane	81.6193	80.1709	13.8780	824.35	0.4521
Ethane	10.0147	9.8370	2.6860	177.23	0.1040
Propane	4.1503	4.0767	1.1470	104.43	0.0632
Iso-Butane	0.5324	0.5230	0.1750	17.31	0.0107
N-Butane	1.0093	0.9914	0.3190	32.93	0.0203
I-Pentane	0.2705	0.2657	0.0990	10.82	0.0067
N-Pentane	0.2246	0.2206	0.0820	9.00	0.0056
Hexane Plus	0.2236	0.2196	0.1000	11.79	0.0074
Total	100.0000	98.2255	18.7880	1187.86	0.6967

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.0032	CYLINDER #:	6013
BTU/CU.FT IDEAL:	1190.6	CYLINDER PRESSURE:	227 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1194.4	ANALYSIS DATE:	04/15/2020
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1173.6	ANALYSIS TIME:	01:31:11 PM
DRY BTU @ 15.025:	1218.3	ANALYSIS RUN BY:	RICHARD WILSON
REAL SPECIFIC GRAVITY:	0.6986		

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: 04/17/2020

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	FEDERAL GAS COM H #1E; CSG	CASING	04/17/2020
Stn. No.:	API # 3004526122	DAKOTA	35825-10595
Mtr. No.:	95618		

Smpl Date:	04/15/2020	08/26/2019	04/05/2019	08/24/2018
Test Date:	04/15/2020	08/29/2019	04/10/2019	09/04/2018
Run No:	HS200005	HS190256	HS190021	HS180155
Nitrogen:	0.5350	0.7223	0.5334	0.5700
CO2:	1.4203	1.3988	1.3782	1.2525
Methane:	81.6193	80.4255	81.1424	82.0103
Ethane:	10.0147	10.0896	10.2252	9.4793
Propane:	4.1503	4.4056	4.3267	4.1270
I-Butane:	0.5324	0.5849	0.5186	0.5639
N-Butane:	1.0093	1.1895	1.0143	1.1308
I-Pentane:	0.2705	0.3737	0.2467	0.3299
N-Pentane:	0.2246	0.3288	0.1864	0.2877
Hexane+:	0.2236	0.4813	0.4281	0.2486
BTU:	1194.4	1220.0	1206.0	1199.6
GPM:	18.7880	18.9610	18.8720	18.7860
SPG:	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: HS200006
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: DAKOTA
Cust. Stn. No.: API # 3004526122
95618
AREA 2 / RUN 209
Heat Trace: N
Remarks:

Source: TUBING
Well Flowing: Y
Pressure: 193 PSIG
Flow Temp: DEG. F
Ambient Temp: 35 DEG. F
Flow Rate: 0 MCF/D
Sample Method:
Sample Date: 04/15/2020
Sample Time: 8.00 AM
Sampled By: JESSE RANGEL
Sampled by (CO): HILCORP

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.5240	0.5147	0.0580	0.00	0.0051
CO2	1.3899	1.3652	0.2380	0.00	0.0211
Methane	80.3944	78.9671	13.6740	811.98	0.4453
Ethane	10.2573	10.0752	2.7520	181.52	0.1065
Propane	4.4587	4.3795	1.2320	112.19	0.0679
Iso-Butane	0.5809	0.5706	0.1910	18.89	0.0117
N-Butane	1.1588	1.1382	0.3670	37.80	0.0233
I-Pentane	0.3349	0.3290	0.1230	13.40	0.0083
N-Pentane	0.2897	0.2846	0.1050	11.61	0.0072
Hexane Plus	0.6114	0.6005	0.2740	32.23	0.0202
Total	100.0000	98.2246	19.0140	1219.63	0.7166

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0035
BTU/CU.FT IDEAL: 1222.4
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1226.7
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1205.4
DRY BTU @ 15.025: 1251.3
REAL SPECIFIC GRAVITY: 0.7188

CYLINDER #: 6044
CYLINDER PRESSURE: 232 PSIG
ANALYSIS DATE: 04/15/2020
ANALYSIS TIME: 01:42:12 PM
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: 04/17/2020

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	FEDERAL GAS COM H #1E; TBG	TUBING	04/17/2020
Stn. No.:	API # 3004526122	DAKOTA	35825-11005
Mtr. No.:	95618		

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