



2030 Afton Place
Farmington, NM 87401
(505) 325-6622

Analysis No: HS190256
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: DAKOTA
Cust. Stn. No.: 95618
API # 3004526122
AREA 2 / RUN 209
Heat Trace: N
Remarks:

Source: CASING
Well Flowing: Y
Pressure: PSIG
Flow Temp: DEG. F
Ambient Temp: 65 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 08/26/2019
Sample Time: 7.45 AM
Sampled By: JESSE RANGEL
Sampled by (CO): HILCORP

NMOC
SEP 09 2019
DISTRICT III

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.7223	0.7156	0.0800	0.00	0.0070
CO2	1.3988	1.3857	0.2390	0.00	0.0213
Methane	80.4255	79.6749	13.6770	812.30	0.4455
Ethane	10.0896	9.9954	2.7070	178.56	0.1048
Propane	4.4056	4.3645	1.2180	110.85	0.0671
Iso-Butane	0.5849	0.5794	0.1920	19.02	0.0117
N-Butane	1.1895	1.1784	0.3760	38.81	0.0239
I-Pentane	0.3737	0.3702	0.1370	14.95	0.0093
N-Pentane	0.3288	0.3257	0.1200	13.18	0.0082
Hexane Plus	0.4813	0.4768	0.2150	25.37	0.0159
Total	100.0000	99.0666	18.9610	1213.03	0.7146

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0034
BTU/CU.FT IDEAL: 1215.8
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1220.0
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1198.8
DRY BTU @ 15.025: 1244.4
REAL SPECIFIC GRAVITY: 0.7167

CYLINDER #: 6157
CYLINDER PRESSURE: 181 PSIG
ANALYSIS DATE: 08/29/2019
ANALYSIS TIME: 10:56:26 AM
ANALYSIS RUN BY: PATRICIA KING

GPM, BTU, and SPG calculations as shown above are based on current GPA constants.

GPA Standard: GPA-2261

GC: Danalyzer Model 500

GC Method: C6+ Gas

Last Cal/Verify: 08/30/2019



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	FEDERAL GAS COM H #1E; CSG	CASING	08/30/2019
Stn. No.:	95618	DAKOTA	35825-10595
Mtr. No.:	API # 3004526122		

Smpl Date:	08/26/2019	04/05/2019	08/24/2018
Test Date:	08/29/2019	04/10/2019	09/04/2018
Run No:	HS190256	HS190021	HS180155
Nitrogen:	0.7223	0.5334	0.5700
CO2:	1.3988	1.3782	1.2525
Methane:	80.4255	81.1424	82.0103
Ethane:	10.0896	10.2252	9.4793
Propane:	4.4056	4.3267	4.1270
I-Butane:	0.5849	0.5186	0.5639
N-Butane:	1.1895	1.0143	1.1308
I-Pentane:	0.3737	0.2467	0.3299
N-Pentane:	0.3288	0.1864	0.2877
Hexane+:	0.4813	0.4281	0.2486
BTU:	1220.0	1206.0	1199.6
GPM:	18.9610	18.8720	18.7860
SPG:	0.7167	0.7053	0.6996



2030 Afton Place
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Analysis No: HS190255
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:	PSIG
Location:		Flow Temp:	65 DEG. F
Lease/PA/CA:		Ambient Temp:	DEG. F
Formation:	DAKOTA	Flow Rate:	MCF/D
Cust. Str. No.:	95618	Sample Method:	Purge & Fill
	API # 3004526122	Sample Date:	08/26/2019
	AREA 2 / RUN 209	Sample Time:	7.45 AM
Heat Trace:	N	Sampled By:	JESSE RANGEL
Remarks:		Sampled by (CO):	HILCORP

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	6.4969	6.4726	0.7160	0.00	0.0628
CO2	0.0074	0.0074	0.0010	0.00	0.0001
Methane	90.9995	90.6588	15.4540	919.09	0.5040
Ethane	1.9560	1.9487	0.5240	34.62	0.0203
Propane	0.2012	0.2004	0.0560	5.06	0.0031
Iso-Butane	0.2188	0.2180	0.0720	7.12	0.0044
N-Butane	0.0420	0.0418	0.0130	1.37	0.0008
I-Pentane	0.0173	0.0172	0.0060	0.69	0.0004
N-Pentane	0.0113	0.0113	0.0040	0.45	0.0003
Hexane Plus	0.0496	0.0494	0.0220	2.61	0.0016
Total	100.0000	99.6256	16.8680	971.02	0.5980

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.002	CYLINDER #:	6094
BTU/CU.FT IDEAL:	973.3	CYLINDER PRESSURE:	31 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	975.2	ANALYSIS DATE:	08/29/2019
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	958.2	ANALYSIS TIME:	10:47:29 AM
DRY BTU @ 15.025:	994.7	ANALYSIS RUN BY:	Celia Lobato
REAL SPECIFIC GRAVITY:	0.5989		

GPM, BTU, and SPG calculations as shown above are based on current GPA constants.

GPA Standard: GPA-2261

GC: Danalyzer Model 500

GC Method: C6+ Gas

Last Cal/Verify: 08/30/2019



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	FEDERAL GAS COM H #1E; BHD	BRADENHEAD	08/30/2019
Stn. No.:	95618	DAKOTA	35825-10590
Mtr. No.:	API # 3004526122		

Smpl Date:	08/26/2019	04/05/2019	08/24/2018
Test Date:	08/29/2019	04/10/2019	09/04/2018
Run No:	HS190255	HS190020	HS180154
Nitrogen:	6.4969	1.1485	1.1190
CO2:	0.0074	0.0213	0.0229
Methane:	90.9995	96.1330	96.2247
Ethane:	1.9560	2.0758	2.0602
Propane:	0.2012	0.2048	0.1937
I-Butane:	0.2188	0.2380	0.2206
N-Butane:	0.0420	0.0416	0.0377
I-Pentane:	0.0173	0.0168	0.0153
N-Pentane:	0.0113	0.0096	0.0097
Hexane+:	0.0496	0.1106	0.0962
BTU:	975.2	1033.4	1032.2
GPM:	16.8680	17.2210	17.2120
SPG:	0.5989	0.5795	0.5785



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Analysis No: HS190257
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.: 95618
API # 3004526122
AREA 2 / RUN 209
Heat Trace: N
Remarks:

Source: TUBING
Well Flowing: Y
Pressure: PSIG
Flow Temp: DEG. F
Ambient Temp: 65 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 08/26/2019
Sample Time: 7.45 AM
Sampled By: JESSE RANGEL
Sampled by (CO): HILCORP

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.6891	0.6847	0.0760	0.00	0.0067
CO2	1.3912	1.3823	0.2380	0.00	0.0211
Methane	80.2453	79.7332	13.6480	810.48	0.4445
Ethane	10.1953	10.1302	2.7350	180.43	0.1058
Propane	4.4429	4.4145	1.2280	111.79	0.0676
Iso-Butane	0.5712	0.5676	0.1880	18.57	0.0115
N-Butane	1.1481	1.1408	0.3630	37.45	0.0230
I-Pentane	0.3412	0.3390	0.1250	13.65	0.0085
N-Pentane	0.3082	0.3062	0.1120	12.35	0.0077
Hexane Plus	0.6675	0.6632	0.2990	35.18	0.0221
Total	100.0000	99.3617	19.0120	1219.91	0.7185

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0035
BTU/CU.FT IDEAL: 1222.7
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1227.0
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1205.7
DRY BTU @ 15.025: 1251.6
REAL SPECIFIC GRAVITY: 0.7208

CYLINDER #: 4026
CYLINDER PRESSURE: 181 PSIG
ANALYSIS DATE: 08/29/2019
ANALYSIS TIME: 11:00:28 AM
ANALYSIS RUN BY: Celia Lobato

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: 08/30/2019

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	FEDERAL GAS COM H #1E; TBG	TUBING	08/30/2019
Stn. No.:	95618	DAKOTA	35825-11005
Mtr. No.:	API # 3004526122		

Smpl Date:	08/26/2019	04/05/2019
Test Date:	08/29/2019	04/10/2019
Run No:	HS190257	HS190022
Nitrogen:	0.6891	0.5737
CO2:	1.3912	1.0622
Methane:	80.2453	79.0242
Ethane:	10.1953	10.1307
Propane:	4.4429	5.0414
I-Butane:	0.5712	0.7532
N-Butane:	1.1481	1.5532
I-Pentane:	0.3412	0.6072
N-Pentane:	0.3082	0.5876
Hexane+:	0.6675	0.6666
BTU:	1227.0	1270.0
GPM:	19.0120	19.2740
SPG:	0.7208	0.7419