



Well Name: FEDERAL A 3E; BHD
 API #: API # 3004523890
 Source: BRADENHEAD
 Sample Type: GAS
 Analysis No: HS2021009
 Cust No: 35825-11640

Well/Lease Information

Customer Name:	HILCORP (BHD PROJECT)	Source:	BRADENHEAD
Well Name:	FEDERAL A 3E; BHD	Well Flowing:	N
County/State:	SAN JUAN NM	Pressure:	PSIG
Location:		Flow Temp:	DEG. F
Lease/PA/CA:	NMSF078213	Ambient Temp:	DEG. F
Formation:	COOLWELL	Flow Rate:	MCF/D
Cust. Stn. No.:	API # 3004523890	Sample Method:	
	34756	Sample Date:	04/14/2021
		Sample Time:	8.00 AM
	AREA 2 / RUN 206	Sampled By:	JACINTO CARDENAS
Heat Trace:	N	Sampled by (CO):	HILCORP
Remarks:			

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	1.0055	0.9848	0.1110	0.00	0.0097
CO2	0.0088	0.0086	0.0020	0.00	0.0001
Methane	80.2057	78.5554	13.6430	810.08	0.4443
Ethane	9.1637	8.9751	2.4590	162.17	0.0951
Propane	5.7788	5.6599	1.5970	145.40	0.0880
Iso-Butane	1.2769	1.2506	0.4190	41.52	0.0256
N-Butane	1.3598	1.3318	0.4300	44.36	0.0273
I-Pentane	0.4528	0.4435	0.1660	18.12	0.0113
N-Pentane	0.3101	0.3037	0.1130	12.43	0.0077
Hexane Plus	0.4379	0.4289	0.1960	23.08	0.0145
Total	100.0000	97.9423	19.1360	1257.16	0.7236

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.0036	CYLINDER #:	4003
BTU/CU.FT IDEAL:	1260.1	CYLINDER PRESSURE:	33 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1264.6	ANALYSIS DATE:	04/19/2021
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1242.6	ANALYSIS TIME:	01:11:49 PM
DRY BTU @ 15.025:	1289.9	ANALYSIS RUN BY:	RICHARD WILSON
REAL SPECIFIC GRAVITY:	0.726		

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: 04/22/2021

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	FEDERAL A 3E; BHD	BRADENHEAD	04/22/2021
Stn. No.:	API # 3004523890	COOLWELL	35825-11640
Mtr. No.:	34756		

Smpl Date:	04/14/2021	07/09/2020	07/19/2019
Test Date:	04/19/2021	07/14/2020	07/29/2019
Run No:	HS2021009	HS200062	HS190178
Nitrogen:	1.0055	0.7802	0.7421
CO2:	0.0088	0.0333	0.0156
Methane:	80.2057	80.2998	80.4829
Ethane:	9.1637	9.1629	9.0764
Propane:	5.7788	5.8103	5.7598
I-Butane:	1.2769	1.2863	1.2616
N-Butane:	1.3598	1.3631	1.3192
I-Pentane:	0.4528	0.4503	0.4559
N-Pentane:	0.3101	0.3141	0.3196
Hexane+:	0.4379	0.4997	0.5669
BTU:	1264.6	1270.1	1270.9
GPM:	19.1360	19.1720	19.1700
SPG:	0.7260	0.7275	0.7273



Well Name: FEDERAL A 3E; CSG
 API #: API # 3004523890
 Source: CASING
 Sample Type: GAS
 Analysis No: HS2021010
 Cust No: 35825-11645

Well/Lease Information

Customer Name:	HILCORP (BHD PROJECT)	Source:	CASING
Well Name:	FEDERAL A 3E; CSG	Well Flowing:	N
County/State:	SAN JUAN NM	Pressure:	PSIG
Location:		Flow Temp:	DEG. F
Lease/PA/CA:	NMSF078213	Ambient Temp:	DEG. F
Formation:	COOLWELL	Flow Rate:	MCF/D
Cust. Stn. No.:	API # 3004523890	Sample Method:	
	34756	Sample Date:	04/14/2021
		Sample Time:	8.20 AM
	AREA 2 / RUN 206	Sampled By:	JACINTO CARDENAS
Heat Trace:	N	Sampled by (CO):	HILCORP
Remarks:			

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.7269	0.7124	0.0800	0.00	0.0070
CO2	0.0095	0.0093	0.0020	0.00	0.0001
Methane	80.2690	78.6633	13.6540	810.72	0.4446
Ethane	9.1859	9.0022	2.4650	162.56	0.0954
Propane	5.8090	5.6928	1.6060	146.16	0.0884
Iso-Butane	1.2893	1.2635	0.4230	41.93	0.0259
N-Butane	1.3808	1.3532	0.4370	45.05	0.0277
I-Pentane	0.4698	0.4604	0.1720	18.80	0.0117
N-Pentane	0.3265	0.3200	0.1190	13.09	0.0081
Hexane Plus	0.5333	0.5226	0.2390	28.11	0.0176
Total	100.0000	97.9997	19.1970	1266.41	0.7267

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.0036	CYLINDER #:	4044
BTU/CU.FT IDEAL:	1269.3	CYLINDER PRESSURE:	33 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1273.9	ANALYSIS DATE:	04/19/2021
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1251.7	ANALYSIS TIME:	01:03:37 PM
DRY BTU @ 15.025:	1299.4	ANALYSIS RUN BY:	RICHARD WILSON
REAL SPECIFIC GRAVITY:	0.729		

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: 04/22/2021

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	FEDERAL A 3E; CSG	CASING	04/22/2021
Stn. No.:	API # 3004523890	COOLWELL	35825-11645
Mtr. No.:	34756		

Smpl Date:	04/14/2021	07/09/2020	07/19/2019
Test Date:	04/19/2021	07/14/2020	07/29/2019
Run No:	HS2021010	HS200063	HS190179
Nitrogen:	0.7269	1.0817	0.7480
CO2:	0.0095	0.2137	0.0180
Methane:	80.2690	79.7153	80.3590
Ethane:	9.1859	9.1387	9.0740
Propane:	5.8090	5.8080	5.7613
I-Butane:	1.2893	1.2897	1.2644
N-Butane:	1.3808	1.3917	1.3251
I-Pentane:	0.4698	0.4568	0.4626
N-Pentane:	0.3265	0.3213	0.3266
Hexane+:	0.5333	0.5831	0.6610
BTU:	1273.9	1269.7	1275.6
GPM:	19.1970	19.1840	19.2030
SPG:	0.7290	0.7334	0.7305



Well Name: FEDERAL A 3E; TBG
 API #: API # 3004523890
 Source: TUBING
 Sample Type: GAS
 Analysis No: HS2021011
 Cust No: 35825-11650

Well/Lease Information

Customer Name:	HILCORP (BHD PROJECT)	Source:	TUBING
Well Name:	FEDERAL A 3E; TBG	Well Flowing:	N
County/State:	SAN JUAN NM	Pressure:	PSIG
Location:		Flow Temp:	DEG. F
Lease/PA/CA:	NMSF078213	Ambient Temp:	DEG. F
Formation:	COOLWELL	Flow Rate:	MCF/D
Cust. Stn. No.:	API # 3004523890	Sample Method:	
	34756	Sample Date:	04/14/2021
		Sample Time:	8.10 AM
	AREA 2 / RUN 206	Sampled By:	JACINTO CARDENAS
Heat Trace:	N	Sampled by (CO):	HILCORP
Remarks:			

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.7426	0.7228	0.0820	0.00	0.0072
CO2	0.0145	0.0141	0.0020	0.00	0.0002
Methane	79.8458	77.7148	13.5840	806.44	0.4423
Ethane	9.1536	8.9093	2.4570	161.99	0.0950
Propane	5.8309	5.6753	1.6120	146.71	0.0888
Iso-Butane	1.3188	1.2836	0.4330	42.89	0.0265
N-Butane	1.4660	1.4269	0.4640	47.83	0.0294
I-Pentane	0.5140	0.5003	0.1890	20.56	0.0128
N-Pentane	0.3736	0.3636	0.1360	14.98	0.0093
Hexane Plus	0.7402	0.7204	0.3310	39.02	0.0245
Total	100.0000	97.3311	19.2900	1280.41	0.7360

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.0038	CYLINDER #:	7047
BTU/CU.FT IDEAL:	1283.4	CYLINDER PRESSURE:	33 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1288.3	ANALYSIS DATE:	04/19/2021
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1265.9	ANALYSIS TIME:	01:19:40 PM
DRY BTU @ 15.025:	1314.1	ANALYSIS RUN BY:	RICHARD WILSON
REAL SPECIFIC GRAVITY:	0.7385		

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: 04/22/2021

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease:	FEDERAL A 3E; TBG	TUBING	04/22/2021
Stn. No.:	API # 3004523890	COOLWELL	35825-11650
Mtr. No.:	34756		

Smpl Date:	04/14/2021	07/09/2020	07/19/2019
Test Date:	04/19/2021	07/14/2020	07/29/2019
Run No:	HS2021011	HS200064	HS190180
Nitrogen:	0.7426	0.7627	0.7397
CO2:	0.0145	0.0228	0.0195
Methane:	79.8458	80.0377	79.9725
Ethane:	9.1536	9.1088	9.0513
Propane:	5.8309	5.8068	5.7969
I-Butane:	1.3188	1.2828	1.2878
N-Butane:	1.4660	1.3701	1.3672
I-Pentane:	0.5140	0.5057	0.4979
N-Pentane:	0.3736	0.3603	0.3590
Hexane+:	0.7402	0.7423	0.9082
BTU:	1288.3	1283.6	1290.3
GPM:	19.2900	19.2560	19.2990
SPG:	0.7385	0.7358	0.7398

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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 26401

CONDITIONS OF APPROVAL

Operator:	HILCORP ENERGY COMPANY	1111 Travis Street	Houston, TX77002	OGRID:	372171	Action Number:	26401	Action Type:	GAS ANALYSIS
OCD Reviewer	Condition								
mkuehling	None								