



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

Analysis No: HS180156
Cust No: 35825-10600

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: FEDERAL PIONEER #1E; BHD
County/State: NM
Location:
Field: AREA N/A
Formation: DK
Cust. Stn. No.: 14004 / 67986

Source: BRADENHEAD
Well Flowing: Y
Pressure: 38 PSIG
Flow Temp: 100 DEG. F
Ambient Temp: 74 DEG. F
Flow Rate: 0 MCF/D
Sample Method: Purge & Fill
Sample Date: 08/24/2018
Sample Time: 10.43 AM
Sampled By: KALAN DIBBLE
Sampled by (CO): HILCORP

Heat Trace: N

Remarks:

API 3004533473

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	2.2936	2.2309	0.2530	0.00	0.0222
CO2	0.0160	0.0156	0.0030	0.00	0.0002
Methane	94.0811	91.5085	15.9790	950.22	0.5211
Ethane	2.8671	2.7887	0.7680	50.74	0.0298
Propane	0.4198	0.4083	0.1160	10.56	0.0064
Iso-Butane	0.1428	0.1389	0.0470	4.64	0.0029
N-Butane	0.0353	0.0343	0.0110	1.15	0.0007
I-Pentane	0.0245	0.0238	0.0090	0.98	0.0006
N-Pentane	0.0106	0.0103	0.0040	0.42	0.0003
Hexane Plus	0.1092	0.1062	0.0490	5.76	0.0036
Total	100.0000	97.2655	17.2390	1024.48	0.5878

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0021
BTU/CU.FT IDEAL: 1026.8
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1029.0
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1011.1
DRY BTU @ 15.025: 1049.6
REAL SPECIFIC GRAVITY: 0.5888

CYLINDER #: 6221
CYLINDER PRESSURE: 37 PSIG
ANALYSIS DATE: 09/04/2018
ANALYSIS TIME: 09:34:49 AM
ANALYSIS RUN BY: SHYANN ELLEDGE

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: 09/07/2018

GC Method: C6+ Gas

NMOC

SEP 11 2018

DISTRICT III

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HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: FEDERAL PIONEER #1E; BHD
Stn. No.: 14004 / 67986
Mtr. No.:

BRADENHEAD
DK

09/07/2018
35825-10600

API 3004533473

Smpl Date: 08/24/2018
Test Date: 09/04/2018
Run No: HS180156
Nitrogen: 2.2936
CO2: 0.0160
Methane: 94.0811
Ethane: 2.8671
Propane: 0.4198
I-Butane: 0.1428
N-Butane: 0.0353
I-Pentane: 0.0245
N-Pentane: 0.0106
Hexane+: 0.1092
BTU: 1029.0
GPM: 17.2390
SPG: 0.5888



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

Analysis No: HS180157
Cust No: 35825-10605

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: FEDERAL PIONEER #1E; CSG
County/State: NM
Location:
Field: AREA N/A
Formation: DK
Cust. Stn. No.: 14004 / 67986

Source: CASING
Well Flowing: Y
Pressure: 41 PSIG
Flow Temp: 100 DEG. F
Ambient Temp: 74 DEG. F
Flow Rate: 0 MCF/D
Sample Method: Purge & Fill
Sample Date: 08/24/2018
Sample Time: 10.43 AM
Sampled By: KALAN DIBBLE
Sampled by (CO): HILCORP

Heat Trace: N
Remarks:

API 3004533473

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.5602	0.5422	0.0620	0.00	0.0054
CO2	2.0097	1.9453	0.3440	0.00	0.0305
Methane	76.5019	74.0503	13.0240	772.67	0.4237
Ethane	9.8680	9.5518	2.6500	174.63	0.1024
Propane	4.6885	4.5383	1.2970	117.97	0.0714
Iso-Butane	0.8241	0.7977	0.2710	26.80	0.0165
N-Butane	1.7159	1.6609	0.5430	55.98	0.0344
I-Pentane	0.8073	0.7814	0.2960	32.30	0.0201
N-Pentane	0.8219	0.7956	0.2990	32.95	0.0205
Hexane Plus	2.2025	2.1319	0.9860	116.10	0.0729
Total	100.0000	96.7954	19.7720	1329.39	0.7980

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0045
BTU/CU.FT IDEAL: 1332.5
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1338.4
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1315.1
DRY BTU @ 15.025: 1365.2
REAL SPECIFIC GRAVITY: 0.8012

CYLINDER #: 5021
CYLINDER PRESSURE: 42 PSIG
ANALYSIS DATE: 09/04/2018
ANALYSIS TIME: 09:46:53 AM
ANALYSIS RUN BY: SHYANN ELLEDGE

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: 09/07/2018

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: FEDERAL PIONEER #1E; CSG
Stn. No.: 14004 / 67986
Mtr. No.:

CASING
DK

09/07/2018
35825-10605

API 3004533473

Smpl Date: 08/24/2018
Test Date: 09/04/2018
Run No: HS180157

Nitrogen: 0.5602
CO2: 2.0097
Methane: 76.5019
Ethane: 9.8680
Propane: 4.6885
I-Butane: 0.8241
N-Butane: 1.7159
I-Pentane: 0.8073
N-Pentane: 0.8219
Hexane+: 2.2025

BTU: 1338.4
GPM: 19.7720
SPG: 0.8012

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE
1000 RIO BRAZOS ROAD
AZTEC NM 87410
(505) 334-6178 FAX: (505) 334-6170
[http://emnrd.state.nm.us/ocd/District III/3district.htm](http://emnrd.state.nm.us/ocd/District%20III/3district.htm)

BRADENHEAD TEST REPORT

(submit 1 copy to above address)

Date of Test 8/24/2018 Operator Hilcorp Energy Company API # 3004533473
Property Name FEDERAL PIONEER Well No. 1E Location: Unit J Section 29 Township 030N Range 012W
Well Status Flowing Initial PSI: Tubing 39 Intermediate Casing 41 Bradenhead 37.6

OPEN BRADENHEAD AND INTERMEDIATE TO ATMOSPHERE INDIVIDUALLY FOR 15 MINUTES EACH

Testing TIME	PRESSURE						FLOW CHARACTERISTICS	
	BRADENHEAD			INTERM			BRADENHEAD	INTERMEDIATE
	BH	Int	Csg	Int	Csg			
5 min	0		43				Steady Flow	
10 min	0		45				Surges	
15 min	0		46				Down to Nothing	Y
20 min							Nothing	
25 min							Gas	Y
30 min							Gas & Water	
							Water	

If Bradenhead flowed water, check all of the descriptions that apply below:

CLEAR FRESH SALTY SULFUR BLACK

If Intermediate flowed water, check all of the descriptions that apply below:

CLEAR FRESH SALTY SULFUR BLACK

5 MINUTE SHUT-IN PRESSURE Bradenhead 1 Intermediate

REMARKS:

Monica approved test without witness, by houses.

SEP 11 2018
DISTRICT III
DISTRICT III

Tested By kdibble Witness