



OCB Received
8/17/2020

Well Name: GRENIER 4A; BHD
API #: API #3004521795
Source: BRADENHEAD
Sample Type: GAS
Analysis No: HS200178
Cust No: 35825-12615

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: GRENIER 4A; BHD
County/State: SAN JUAN NM
Location:
Lease/PA/CA: NMSF-078115
Formation: PC / MV
Cust. Stn. No.: API #3004521795
3440630

Source: BRADENHEAD
Well Flowing: Y
Pressure: 69 PSIG
Flow Temp: 73 DEG. F
Ambient Temp: 74 DEG. F
Flow Rate: 0 MCF/D
Sample Method: Purge & Fill
Sample Date: 08/07/2020
Sample Time: 8.00 AM
Sampled By:
Sampled by (CO):

AREA 1 / 109

Heat Trace:

Remarks:

Analysis

Component:	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2693	0.2646	0.0300	0.00	0.0026
CO2	0.3706	0.3641	0.0630	0.00	0.0056
Methane	83.9589	82.4802	14.2750	847.98	0.4650
Ethane	8.7904	8.6356	2.3580	155.56	0.0913
Propane	4.0101	3.9395	1.1080	100.90	0.0611
Iso-Butane	0.6750	0.6631	0.2220	21.95	0.0135
N-Butane	1.0346	1.0164	0.3270	33.75	0.0208
I-Pentane	0.3270	0.3212	0.1200	13.08	0.0081
N-Pentane	0.2269	0.2229	0.0820	9.10	0.0057
Hexane Plus	0.3372	0.3313	0.1510	17.77	0.0112
Total	100.0000	98.2389	18.7360	1200.10	0.6849

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0032
BTU/CU.FT IDEAL: 1202.9
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1206.7
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1185.7
DRY BTU @ 15.025: 1230.9
REAL SPECIFIC GRAVITY: 0.6868

CYLINDER #: 4051
CYLINDER PRESSURE: 64 PSIG
ANALYSIS DATE: 08/11/2020
ANALYSIS TIME: 04:25:06 PM
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: 08/13/2020

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: GRENIER 4A; BHD
Stn. No.: API #3004521795
Mtr. No.: 3440630

BRADENHEAD
PC / MV

08/13/2020
35825-12615

Smpl Date:	08/07/2020	07/29/2020
Test Date:	08/11/2020	08/04/2020
Run No:	HS200178	HS200130
Nitrogen:	0.2693	0.2585
CO2:	0.3706	0.4258
Methane:	83.9589	82.9911
Ethane:	8.7904	8.7217
Propane:	4.0101	4.0990
I-Butane:	0.6750	0.7201
N-Butane:	1.0346	1.1869
I-Pentane:	0.3270	0.4443
N-Pentane:	0.2269	0.3369
Hexane+:	0.3372	0.8157
BTU:	1206.7	1239.2
GPM:	18.7360	18.9520
SPG:	0.6868	0.7085



Well Name: GRENIER 4A; CSG
API #: API #300451795
Source: CASING
Sample Type: GAS
Analysis No: HS200179
Cust No: 35825-12620

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: GRENIER 4A; CSG
County/State: SAN JUAN NM
Location:
Lease/PA/CA: NMSF-078115
Formation: PC / MV
Cust. Stn. No.: API #300451795
3440630
AREA 1 / RUN 109
Heat Trace:
Remarks: PRESSURED WITH HELIUM TO 30 LBS.

Source: CASING
Well Flowing: Y
Pressure: 69 PSIG
Flow Temp: 73 DEG. F
Ambient Temp: 74 DEG. F
Flow Rate: 0 MCF/D
Sample Method: Purge & Fill
Sample Date: 08/07/2020
Sample Time: 8.00 AM
Sampled By:
Sampled by (CO):

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	10.9980	0.8958	1.2130	0.00	0.1064
CO2	0.3364	0.0274	0.0580	0.00	0.0051
Methane	75.8738	6.1800	12.8960	766.33	0.4203
Ethane	7.0693	0.5758	1.8950	125.11	0.0734
Propane	3.1970	0.2604	0.8830	80.44	0.0487
Iso-Butane	0.5341	0.0435	0.1750	17.37	0.0107
N-Butane	0.8042	0.0655	0.2540	26.24	0.0161
I-Pentane	0.2934	0.0239	0.1080	11.74	0.0073
N-Pentane	0.2149	0.0175	0.0780	8.61	0.0054
Hexane Plus	0.6789	0.0553	0.3040	35.79	0.0225
Total	100.0000	8.1451	17.8640	1071.61	0.7158

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0028
BTU/CU.FT IDEAL: 1074.1
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1077.1
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1058.4
DRY BTU @ 15.025: 1098.7
REAL SPECIFIC GRAVITY: 0.7175

CYLINDER #: 6123
CYLINDER PRESSURE: 0 PSIG
ANALYSIS DATE: 08/12/2020
ANALYSIS TIME: 09:45:43 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: 08/13/2020

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: GRENIER 4A; CSG
Stn. No.: API #300451795
Mtr. No.: 3440630

CASING
PC / MV

08/13/2020
35825-12620

Smpl Date:	08/07/2020	07/29/2020
Test Date:	08/12/2020	08/04/2020
Run No:	HS200179	HS200131
Nitrogen:	10.9980	0.2593
CO2:	0.3364	0.3861
Methane:	75.8738	83.1813
Ethane:	7.0693	8.6565
Propane:	3.1970	3.9000
I-Butane:	0.5341	0.6472
N-Butane:	0.8042	1.0291
I-Pentane:	0.2934	0.3782
N-Pentane:	0.2149	0.2898
Hexane+:	0.6789	1.2725
BTU:	1077.1	1247.1
GPM:	17.8640	18.9940
SPG:	0.7175	0.7130



Well Name: GRENIER 4A; TBG
 API #: API #3004521795
 Source: TUBING
 Sample Type: GAS
 Analysis No: HS200180
 Cust No: 35825-12625

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
 Well Name: GRENIER 4A; TBG
 County/State: SAN JUAN NM
 Location:
 Lease/PA/CA: NMSF-078115
 Formation: PC / MV
 Cust. Stn. No.: API #3004521795
 3440630

Source: TUBING
 Well Flowing: Y
 Pressure: 69 PSIG
 Flow Temp: 73 DEG. F
 Ambient Temp: 74 DEG. F
 Flow Rate: 0 MCF/D
 Sample Method: Purge & Fill
 Sample Date: 08/07/2020
 Sample Time: 8.00 AM
 Sampled By:
 Sampled by (CO):

AREA 1 / RUN 109

Heat Trace:

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2779	0.2745	0.0310	0.00	0.0027
CO2	1.1556	1.1414	0.1980	0.00	0.0176
Methane	78.9384	77.9670	13.4310	797.28	0.4372
Ethane	10.3253	10.1983	2.7710	182.73	0.1072
Propane	4.8054	4.7463	1.3290	120.91	0.0732
Iso-Butane	0.8319	0.8217	0.2730	27.05	0.0167
N-Butane	1.5693	1.5500	0.4970	51.20	0.0315
I-Pentane	0.5784	0.5713	0.2120	23.14	0.0144
N-Pentane	0.4789	0.4730	0.1740	19.20	0.0119
Hexane Plus	1.0389	1.0261	0.4650	54.76	0.0344
Total	100.0000	98.7696	19.3810	1276.26	0.7468

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0039
 BTU/CU.FT IDEAL: 1279.2
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1284.2
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1261.9
 DRY BTU @ 15.025: 1309.9
 REAL SPECIFIC GRAVITY: 0.7494

CYLINDER #: 4132
 CYLINDER PRESSURE: 80 PSIG
 ANALYSIS DATE: 08/12/2020
 ANALYSIS TIME: 10:19:45 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: 08/13/2020

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: GRENIER 4A; TBG
Stn. No.: API #3004521795
Mtr. No.: 3440630

TUBING
PC / MV

08/13/2020
35825-12625

Smpl Date:	08/07/2020	07/29/2020
Test Date:	08/12/2020	08/04/2020
Run No:	HS200180	HS200132
Nitrogen:	0.2779	0.2932
CO2:	1.1556	1.1814
Methane:	78.9384	78.9097
Ethane:	10.3253	10.2839
Propane:	4.8054	4.7793
I-Butane:	0.8319	0.8209
N-Butane:	1.5693	1.5687
I-Pentane:	0.5784	0.5916
N-Pentane:	0.4789	0.4931
Hexane+:	1.0389	1.0782
BTU:	1284.2	1285.3
GPM:	19.3810	19.3860
SPG:	0.7494	0.7507