



OCD Received
8/6/2020

Well Name: CALLOWAY 3; BHD
API #: API #3004525337
Source: BRADENHEAD
Sample Type: GAS
Analysis No: HS200133
Cust No: 35825-12630

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: CALLOWAY 3; BHD
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation: MV DK PC
Cust. Stn. No.: API #3004525337
WIH39461
AREA 3 / RUN 302
Heat Trace:
Remarks: PRESSURED WITH HELIUM TO 30 LBS.

Source: BRADENHEAD
Well Flowing: Y
Pressure: 114 PSIG
Flow Temp: 110 DEG. F
Ambient Temp: 87 DEG. F
Flow Rate: 140 MCF/D
Sample Method:
Sample Date: 07/30/2020
Sample Time: 10.54 AM
Sampled By: DUSTIN T.
Sampled by (CO): HILCORP

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	1.2909	0.4186	0.1420	0.00	0.0125
CO2	0.0237	0.0077	0.0040	0.00	0.0004
Methane	88.1223	28.5753	14.9770	890.04	0.4881
Ethane	5.1093	1.6568	1.3700	90.42	0.0530
Propane	3.1995	1.0375	0.8840	80.50	0.0487
Iso-Butane	0.8086	0.2622	0.2650	26.29	0.0162
N-Butane	0.6812	0.2209	0.2150	22.22	0.0137
I-Pentane	0.2880	0.0934	0.1060	11.52	0.0072
N-Pentane	0.1465	0.0475	0.0530	5.87	0.0036
Hexane Plus	0.3300	0.1070	0.1480	17.39	0.0109
Total	100.0000	32.4269	18.1640	1144.26	0.6544

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0028
BTU/CU.FT IDEAL: 1146.9
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1150.1
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1130.1
DRY BTU @ 15.025: 1173.1
REAL SPECIFIC GRAVITY: 0.6559

CYLINDER #: 6093
CYLINDER PRESSURE: 4 PSIG
ANALYSIS DATE: 08/05/2020
ANALYSIS TIME: 11:30:38 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: 08/06/2020

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: CALLOWAY 3; BHD
Stn. No.: API #3004525337
Mtr. No.: WIH39461

BRADENHEAD
MV DK PC

08/06/2020
35825-12630

Smpl Date: 07/30/2020
Test Date: 08/05/2020
Run No: HS200133

Nitrogen: 1.2909
CO2: 0.0237
Methane: 88.1223
Ethane: 5.1093
Propane: 3.1995
I-Butane: 0.8086
N-Butane: 0.6812
I-Pentane: 0.2880
N-Pentane: 0.1465
Hexane+: 0.3300

BTU: 1150.1
GPM: 18.1640
SPG: 0.6559



Well Name: CALLOWAY 3; CSG
 API #: API #3004525337
 Source: CASING
 Sample Type: GAS
 Analysis No: HS200134
 Cust No: 35825-12635

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
 Well Name: CALLOWAY 3; CSG
 County/State: SAN JUAN NM
 Location:
 Lease/PA/CA:
 Formation: MV DK PC
 Cust. Stn. No.: API #3004525337
 WIH39461

Source: CASING
 Well Flowing: Y
 Pressure: 112 PSIG
 Flow Temp: 110 DEG. F
 Ambient Temp: 87 DEG. F
 Flow Rate: 138 MCF/D
 Sample Method: Purge & Fill
 Sample Date: 07/30/2020
 Sample Time: 10.45 AM
 Sampled By: DUSTIN T.
 Sampled by (CO): HILCORP

AREA 3 / RUN 302

Heat Trace:

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2499	0.2462	0.0280	0.00	0.0024
CO2	0.9891	0.9744	0.1690	0.00	0.0150
Methane	81.5812	80.3646	13.8770	823.97	0.4519
Ethane	9.2040	9.0668	2.4700	162.88	0.0956
Propane	4.2866	4.2227	1.1850	107.86	0.0653
Iso-Butane	0.7371	0.7261	0.2420	23.97	0.0148
N-Butane	1.2568	1.2381	0.3980	41.00	0.0252
I-Pentane	0.4408	0.4342	0.1620	17.64	0.0110
N-Pentane	0.3564	0.3511	0.1300	14.29	0.0089
Hexane Plus	0.8981	0.8847	0.4020	47.34	0.0297
Total	100.0000	98.5089	19.0630	1238.94	0.7197

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0036
 BTU/CU.FT IDEAL: 1241.8
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1246.3
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1224.6
 DRY BTU @ 15.025: 1271.3
 REAL SPECIFIC GRAVITY: 0.7221

CYLINDER #: 4240
 CYLINDER PRESSURE: 104 PSIG
 ANALYSIS DATE: 08/05/2020
 ANALYSIS TIME: 11:18:30 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: 08/06/2020

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: CALLOWAY 3; CSG
Stn. No.: API #3004525337
Mtr. No.: WIH39461

CASING
MV DK PC

08/06/2020
35825-12635

Smpl Date: 07/30/2020
Test Date: 08/05/2020
Run No: HS200134

Nitrogen: 0.2499
CO2: 0.9891
Methane: 81.5812
Ethane: 9.2040
Propane: 4.2866
I-Butane: 0.7371
N-Butane: 1.2568
I-Pentane: 0.4408
N-Pentane: 0.3564
Hexane+: 0.8981

BTU: 1246.3
GPM: 19.0630
SPG: 0.7221



Well Name: CALLOWAY 3; TBG
API #: API #3004525337
Source: TUBING
Sample Type: GAS
Analysis No: HS200135
Cust No: 35825-12640

Well/Lease Information

Customer Name: HILCORP (BHD PROJECT)
Well Name: CALLOWAY 3; TBG
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation: MV DK PC
Cust. Stn. No.: API #3004525337
WIH39461

Source: TUBING
Well Flowing: Y
Pressure: 114 PSIG
Flow Temp: 110 DEG. F
Ambient Temp: 87 DEG. F
Flow Rate: 140 MCF/D
Sample Method: Purge & Fill
Sample Date: 07/30/2020
Sample Time: 11.00 AM
Sampled By: DUSTIN T.
Sampled by (CO): HILCORP

AREA 3 / RUN 302

Heat Trace:

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2490	0.2427	0.0270	0.00	0.0024
CO2	0.9617	0.9372	0.1650	0.00	0.0146
Methane	81.7460	79.6625	13.9050	825.63	0.4528
Ethane	8.9632	8.7348	2.4050	158.62	0.0931
Propane	4.1984	4.0914	1.1610	105.64	0.0639
Iso-Butane	0.7307	0.7121	0.2400	23.76	0.0147
N-Butane	1.2459	1.2141	0.3940	40.64	0.0250
I-Pentane	0.4505	0.4390	0.1650	18.02	0.0112
N-Pentane	0.3659	0.3566	0.1330	14.67	0.0091
Hexane Plus	1.0887	1.0610	0.4870	57.39	0.0360
Total	100.0000	97.4514	19.0820	1244.38	0.7228

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0036
BTU/CU.FT IDEAL: 1247.3
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1251.8
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1230.0
DRY BTU @ 15.025: 1276.9
REAL SPECIFIC GRAVITY: 0.7251

CYLINDER #: 5010
CYLINDER PRESSURE: 22 PSIG
ANALYSIS DATE: 08/05/2020
ANALYSIS TIME: 11:48:03 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: 08/06/2020

GC Method: C6+ Gas



HILCORP (BHD PROJECT)
WELL ANALYSIS COMPARISON

Lease: CALLOWAY 3; TBG
Stn. No.: API #3004525337
Mtr. No.: WIH39461

TUBING
MV DK PC

08/06/2020
35825-12640

Smpl Date: 07/30/2020
Test Date: 08/05/2020
Run No: HS200135

Nitrogen: 0.2490
CO2: 0.9617
Methane: 81.7460
Ethane: 8.9632
Propane: 4.1984
I-Butane: 0.7307
N-Butane: 1.2459
I-Pentane: 0.4505
N-Pentane: 0.3659
Hexane+: 1.0887

BTU: 1251.8
GPM: 19.0820
SPG: 0.7251