



NMOCD REC'D
10/12/20

Well Name: BARNES LS 7M BHD
API #: API #300453249100
Source: BRADENHEAD
Sample Type: GAS
Analysis No: SO200069
Cust No: 15950-10215

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: BARNES LS 7M BHD
County/State: NM
Location:
Lease/PA/CA:
Formation: MV/DK
Cust. Stn. No.: API #300453249100

Source: BRADENHEAD
Well Flowing:
Pressure: 99 PSIG
Flow Temp: DEG. F
Ambient Temp: DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 07/15/2020
Sample Time: 2.50 PM
Sampled By: SEAN C.
Sampled by (CO): ABC

Heat Trace: N
Remarks:

Analysis

Component:	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	1.0147	1.0120	0.1120	0.00	0.0098
CO2	0.1799	0.1794	0.0310	0.00	0.0027
Methane	89.1812	88.9461	15.1560	900.73	0.4940
Ethane	5.9648	5.9491	1.5990	105.56	0.0619
Propane	2.1474	2.1417	0.5930	54.03	0.0327
Iso-Butane	0.4153	0.4142	0.1360	13.51	0.0083
N-Butane	0.4819	0.4806	0.1520	15.72	0.0097
I-Pentane	0.1898	0.1893	0.0700	7.59	0.0047
N-Pentane	0.0971	0.0968	0.0350	3.89	0.0024
Hexane Plus	0.3279	0.3270	0.1470	17.28	0.0109
Total	100.0000	99.7362	18.0310	1118.32	0.6371

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0027
BTU/CU.FT IDEAL: 1120.9
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1123.9
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1104.3
DRY BTU @ 15.025: 1146.4
REAL SPECIFIC GRAVITY: 0.6386

CYLINDER #: 1063
CYLINDER PRESSURE: 86 PSIG
ANALYSIS DATE: 07/20/2020
ANALYSIS TIME: 09:14:56 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: 07/22/2020

GC Method: C6+ Gas



BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease: BARNES LS 7M BHD
Stn. No.: API
Mtr. No.:

BRADENHEAD
MV/DK

07/22/2020
15950-10215

Smpl Date:	07/15/2020	07/14/2017
Test Date:	07/20/2020	07/14/2017
Run No:	SO200069	SO170043
Nitrogen:	1.0147	1.1979
CO2:	0.1799	0.0986
Methane:	89.1812	89.4191
Ethane:	5.9648	5.8784
Propane:	2.1474	2.0759
I-Butane:	0.4153	0.4093
N-Butane:	0.4819	0.4605
I-Pentane:	0.1898	0.1828
N-Pentane:	0.0971	0.0891
Hexane+:	0.3279	0.1884
BTU:	1123.9	1114.0
GPM:	18.0310	17.9560
SPG:	0.6386	0.6329



NMOCD REC'D
10/12/20

Well Name: BARNES LS 7M INT
API #: API #300453249100
Source: INTERMEDIATE CASING
Sample Type: GAS
Analysis No: SO200071
Cust No: 15950-10220

Well/Lease Information

Customer Name:	BP - SOUTH BHD PROJECT	Source:	INTERMEDIATE CASING
Well Name:	BARNES LS 7M INT	Well Flowing:	
County/State:	NM	Pressure:	177 PSIG
Location:		Flow Temp:	DEG. F
Lease/PA/CA:		Ambient Temp:	100 DEG. F
Formation:	MV/DK	Flow Rate:	MCF/D
Cust. Stn. No.:	API #300453249100	Sample Method:	Purge & Fill
		Sample Date:	07/15/2020
		Sample Time:	2.55 PM
		Sampled By:	SEAN C.
		Sampled by (CO):	ABC
Heat Trace:	N		
Remarks:			

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.0964	0.0940	0.0110	0.00	0.0009
CO2	0.0141	0.0137	0.0020	0.00	0.0002
Methane	83.8664	81.7548	14.2600	847.05	0.4645
Ethane	9.8884	9.6394	2.6520	175.00	0.1027
Propane	3.5733	3.4833	0.9870	89.91	0.0544
Iso-Butane	0.6773	0.6602	0.2220	22.03	0.0136
N-Butane	0.8425	0.8213	0.2660	27.48	0.0169
I-Pentane	0.3210	0.3129	0.1180	12.84	0.0080
N-Pentane	0.2012	0.1961	0.0730	8.07	0.0050
Hexane Plus	0.5194	0.5063	0.2320	27.38	0.0172
Total	100.0000	97.4820	18.8230	1209.75	0.6834

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.0032
BTU/CU.FT IDEAL:	1212.5
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1216.4
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1195.2
DRY BTU @ 15.025:	1240.8
REAL SPECIFIC GRAVITY:	0.6854

CYLINDER #:	210
CYLINDER PRESSURE:	161 PSIG
ANALYSIS DATE:	07/20/2020
ANALYSIS TIME:	10:08:30 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 Last Cal/Verify: 07/22/2020

GC Method: C6+ Gas



BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease:	BARNES LS 7M INT	INTERMEDIATE CASING	07/22/2020
Stn. No.:	API	MV/DK	15950-10220
Mtr. No.:			

Smpl Date:	07/15/2020	07/14/2017
Test Date:	07/20/2020	07/14/2017
Run No:	SO200071	SO170045
Nitrogen:	0.0964	0.1081
CO2:	0.0141	0.0822
Methane:	83.8664	84.2939
Ethane:	9.8884	9.7614
Propane:	3.5733	3.5541
I-Butane:	0.6773	0.6148
N-Butane:	0.8425	0.8189
I-Pentane:	0.3210	0.2888
N-Pentane:	0.2012	0.1836
Hexane+:	0.5194	0.2942
BTU:	1216.4	1201.2
GPM:	18.8230	18.7230
SPG:	0.6854	0.6768



NMOCD REC'D
10/12/20

Well Name: BARNES LS 7M TBG
API #: API #300453249100
Source: TUBING
Sample Type: GAS
Analysis No: SO200072
Cust No: 15950-10205

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: BARNES LS 7M TBG
County/State: NM
Location:
Lease/PA/CA:
Formation: MV/DK
Cust. Stn. No.: API #300453249100

Source: TUBING
Well Flowing: Y
Pressure: 30 PSIG
Flow Temp: DEG. F
Ambient Temp: 100 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 07/15/2020
Sample Time: 4.00 PM
Sampled By: SEAN C.
Sampled by (CO): ABC

Heat Trace: N
Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.1753	0.1704	0.0190	0.00	0.0017
CO2	2.6567	2.5832	0.4550	0.00	0.0404
Methane	85.8451	83.4688	14.5950	867.04	0.4755
Ethane	6.4658	6.2868	1.7340	114.43	0.0671
Propane	2.4628	2.3946	0.6800	61.97	0.0375
Iso-Butane	0.4799	0.4666	0.1570	15.61	0.0096
N-Butane	0.6692	0.6507	0.2120	21.83	0.0134
I-Pentane	0.2734	0.2658	0.1000	10.94	0.0068
N-Pentane	0.1910	0.1857	0.0690	7.66	0.0048
Hexane Plus	0.7808	0.7592	0.3490	41.16	0.0258
Total	100.0000	97.2318	18.3700	1140.62	0.6827

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0031
BTU/CU.FT IDEAL: 1143.3
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1146.7
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1126.7
DRY BTU @ 15.025: 1169.7
REAL SPECIFIC GRAVITY: 0.6844

CYLINDER #: 49
CYLINDER PRESSURE: 31 PSIG
ANALYSIS DATE: 07/20/2020
ANALYSIS TIME: 09:55:48 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

Last Cal/Verify: 07/22/2020

GC Method: C6+ Gas



BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease: BARNES LS 7M TBG
Stn. No.: API
Mtr. No.:

TUBING
MV/DK

07/22/2020
15950-10205

Smpl Date:	07/15/2020	07/14/2017
Test Date:	07/20/2020	07/14/2017
Run No:	SO200072	SO170046
Nitrogen:	0.1753	0.4655
CO2:	2.6567	2.3339
Methane:	85.8451	85.1170
Ethane:	6.4658	7.0025
Propane:	2.4628	2.6188
I-Butane:	0.4799	0.5601
N-Butane:	0.6692	0.6762
I-Pentane:	0.2734	0.2916
N-Pentane:	0.1910	0.2075
Hexane+:	0.7808	0.7269
BTU:	1146.7	1154.3
GPM:	18.3700	18.4280
SPG:	0.6844	0.6872



NMOCD REC'D
10/12/20

Well Name: BARNES LS 7M
API #: API #300453249100
Source: CASING
Sample Type: GAS
Analysis No: SO200070
Cust No: 15950-10210

Well/Lease Information

Customer Name: BP - SOUTH BHD PROJECT
Well Name: BARNES LS 7M
County/State: NM
Location:
Lease/PA/CA:
Formation: MV/DK
Cust. Stn. No.: API #300453249100

Source: CASING
Well Flowing: Y
Pressure: 43 PSIG
Flow Temp: DEG. F
Ambient Temp: 100 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Sample Date: 07/15/2020
Sample Time: 3.00 PM
Sampled By: SEAN C.
Sampled by (CO): ABC

Heat Trace: N
Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.1192	0.1161	0.0130	0.00	0.0012
CO2	0.0377	0.0367	0.0060	0.00	0.0006
Methane	84.2965	82.1026	14.3360	851.39	0.4669
Ethane	8.8940	8.6625	2.3860	157.40	0.0923
Propane	3.2655	3.1805	0.9020	82.16	0.0497
Iso-Butane	0.6793	0.6616	0.2230	22.09	0.0136
N-Butane	0.8215	0.8001	0.2600	26.80	0.0165
I-Pentane	0.3655	0.3560	0.1340	14.62	0.0091
N-Pentane	0.2728	0.2657	0.0990	10.94	0.0068
Hexane Plus	1.2480	1.2155	0.5580	65.78	0.0413
Total	100.0000	97.3973	18.9170	1231.19	0.6980

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0034
BTU/CU.FT IDEAL: 1234.0
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1238.2
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1216.7
DRY BTU @ 15.025: 1263.0
REAL SPECIFIC GRAVITY: 0.7001

CYLINDER #: 223
CYLINDER PRESSURE: 43 PSIG
ANALYSIS DATE: 07/20/2020
ANALYSIS TIME: 09:29:40 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

Last Cal/Verify: 07/22/2020

GC Method: C6+ Gas



BP - SOUTH BHD PROJECT
WELL ANALYSIS COMPARISON

Lease: BARNES LS 7M
Stn. No.: API
Mtr. No.:

CASING
MV/DK

07/22/2020
15950-10210

Smpl Date:	07/15/2020	07/14/2017
Test Date:	07/20/2020	07/14/2017
Run No:	SO200070	SO170044
Nitrogen:	0.1192	8.9021
CO2:	0.0377	0.0109
Methane:	84.2965	75.8364
Ethane:	8.8940	8.4110
Propane:	3.2655	3.4251
I-Butane:	0.6793	0.7886
N-Butane:	0.8215	0.8805
I-Pentane:	0.3655	0.3945
N-Pentane:	0.2728	0.3041
Hexane+:	1.2480	1.0468
BTU:	1238.2	1144.7
GPM:	18.9170	18.3400
SPG:	0.7001	0.7333