



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

Analysis No: EN170189
Cust No: 25400-11440

Well/Lease Information

Customer Name: ENERVEST
Well Name: DUKE #1B; BHD
County/State: SAN JUAN NM
Location:
Field:
Formation:
Cust. Stn. No.: API 3004531062

OIL CONS. DIV DIST. 3

OCT 30 2017

Source: BRADENHEAD
Well Flowing: Y
Pressure: 10 PSIG
Flow Temp: DEG. F
Ambient Temp: 41 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Date Sampled: 10/24/2017
Sample Time: 9.10 AM
Sampled By: LEROY MARTINEZ
Sampled by (CO): ENERVEST

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	1.6696	1.6504	0.1840	0.00	0.0161
CO2	0.0399	0.0394	0.0070	0.00	0.0006
Methane	95.4951	94.3951	16.2190	964.50	0.5289
Ethane	2.5282	2.4991	0.6770	44.74	0.0262
Propane	0.0628	0.0621	0.0170	1.58	0.0010
Iso-Butane	0.0781	0.0772	0.0260	2.54	0.0016
N-Butane	0.0289	0.0286	0.0090	0.94	0.0006
I-Pentane	0.0272	0.0269	0.0100	1.09	0.0007
N-Pentane	0.0315	0.0311	0.0110	1.26	0.0008
Hexane Plus	0.0387	0.0383	0.0170	2.04	0.0013
Total	100.0000	98.8482	17.1770	1018.70	0.5778

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0021
BTU/CU.FT IDEAL: 1021.1
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1023.2
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1005.4
DRY BTU @ 15.025: 1043.7
REAL SPECIFIC GRAVITY: 0.5788

CYLINDER #: 5
CYLINDER PRESSURE: 12 PSIG
DATE RUN: 10/25/17 12:00 AM
ANALYSIS RUN BY: RICHARD WILSON

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: 10/25/2017

GC Method: C6+ Gas

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ENERVEST
WELL ANALYSIS COMPARISON

Lease: DUKE #1B; BHD
Stn. No.:
Mtr. No.:

BRADENHEAD

10/25/2017
25400-11440

Smpl Date:	10/24/2017	02/13/2015
Test Date:	10/25/2017	02/20/2015
Run No:	EN170189	EN150055
Nitrogen:	1.6696	0.2330
CO2:	0.0399	0.0450
Methane:	95.4951	92.9940
Ethane:	2.5282	3.0430
Propane:	0.0628	0.5020
I-Butane:	0.0781	0.3490
N-Butane:	0.0289	0.7870
I-Pentane:	0.0272	0.5970
N-Pentane:	0.0315	0.5580
Hexane+:	0.0387	0.8920
BTU:	1023.2	1141.8
GPM:	17.1770	17.9780
SPG:	0.5788	0.6399



2030 Afton Place
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Analysis No: EN170190
Cust No: 25400-11445

Well/Lease Information

Customer Name: ENERVEST
Well Name: DUKE #1B; CSG
County/State: SAN JUAN NM
Location:
Field:
Formation:
Cust. Stn. No.: API 3004531062

OIL CONS. DIV DIST. 3

OCT 30 2017

Source: CASING
Well Flowing: Y
Pressure: 60 PSIG
Flow Temp: DEG. F
Ambient Temp: 45 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Date Sampled: 10/24/2017
Sample Time: 9.35 AM
Sampled By: LEROY MARTINEZ
Sampled by (CO): ENERVEST

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2240	0.2236	0.0250	0.00	0.0022
CO2	0.8594	0.8578	0.1470	0.00	0.0131
Methane	81.4547	81.3074	13.8550	822.69	0.4512
Ethane	9.9534	9.9354	2.6710	176.15	0.1033
Propane	3.9566	3.9494	1.0940	99.55	0.0602
Iso-Butane	0.6920	0.6907	0.2270	22.50	0.0139
N-Butane	1.0513	1.0494	0.3330	34.30	0.0211
I-Pentane	0.3892	0.3885	0.1430	15.57	0.0097
N-Pentane	0.2840	0.2835	0.1030	11.38	0.0071
Hexane Plus	1.1354	1.1333	0.5080	59.85	0.0376
Total	100.0000	99.8190	19.1060	1241.99	0.7193

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0036
BTU/CU.FT IDEAL: 1244.9
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1249.4
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1227.7
DRY BTU @ 15.025: 1274.4
REAL SPECIFIC GRAVITY: 0.7216

CYLINDER #: 102
CYLINDER PRESSURE: 63 PSIG
DATE RUN: 10/25/17 12:00 AM
ANALYSIS RUN BY: RICHARD WILSON

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: 10/25/2017

GC Method: C6+ Gas



ENERVEST
WELL ANALYSIS COMPARISON

Lease: DUKE #1B; CSG
Stn. No.:
Mtr. No.:

CASING

10/25/2017
25400-11445

Smpl Date:	10/24/2017	02/13/2015
Test Date:	10/25/2017	02/20/2015
Run No:	EN170190	EN150056
Nitrogen:	0.2240	0.3590
CO2:	0.8594	0.3820
Methane:	81.4547	79.4770
Ethane:	9.9534	8.9800
Propane:	3.9566	5.8440
I-Butane:	0.6920	1.3450
N-Butane:	1.0513	1.6120
I-Pentane:	0.3892	0.6600
N-Pentane:	0.2840	0.5060
Hexane+:	1.1354	0.8350
BTU:	1249.4	1303.8
GPM:	19.1060	19.4060
SPG:	0.7216	0.7504



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Analysis No: EN170191
Cust No: 25400-11790

Well/Lease Information

Customer Name: ENERVEST
Well Name: DUKE #1B; INT
County/State: SAN JUAN NM
Location:
Field:
Formation:
Cust. Stn. No.: API 3004531062

OIL CONS. DIV DIST. 3

OCT 30 2017

Source: INTERMEDIATE
Well Flowing: Y
Pressure: 9 PSIG
Flow Temp: DEG. F
Ambient Temp: 44 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Date Sampled: 10/24/2017
Sample Time: 9.20 AM
Sampled By: LEROY MARTINEZ
Sampled by (CO): ENERVEST

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.3589	0.3551	0.0400	0.00	0.0035
CO2	0.1263	0.1250	0.0220	0.00	0.0019
Methane	78.3274	77.4990	13.3290	791.11	0.4339
Ethane	9.6558	9.5537	2.5920	170.88	0.1002
Propane	6.5734	6.5039	1.8180	165.39	0.1001
Iso-Butane	1.4396	1.4244	0.4730	46.81	0.0289
N-Butane	1.5881	1.5713	0.5030	51.81	0.0319
I-Pentane	0.5472	0.5414	0.2010	21.89	0.0136
N-Pentane	0.3939	0.3897	0.1430	15.79	0.0098
Hexane Plus	0.9894	0.9789	0.4430	52.15	0.0327
Total	100.0000	98.9424	19.5640	1315.84	0.7565

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.004
BTU/CU.FT IDEAL: 1318.9
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1324.2
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1301.2
DRY BTU @ 15.025: 1350.7
REAL SPECIFIC GRAVITY: 0.7593

CYLINDER #: 4
CYLINDER PRESSURE: 11 PSIG
DATE RUN: 10/25/17 9:20 AM
ANALYSIS RUN BY: RICHARD WILSON

GPM, BTU, and SPG calculations as shown above are based on current GPA constants.

GPA Standard: GPA-2261

GC: Danalyzer Model 500

GC Method: C6+ Gas

Last Cal/Verify: 10/25/2017