

UNITED STATES **NMCD-ARTESIA**
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WELL COMPLETION OR RECOMPLETION REPORT AND LOGFORM APPROVED
OMB NO 1004-0137
Expires July 31, 2010

5. LEASE DESIGNATION AND SERIAL NO

NMNM120344

1a Type of Well ☐ Oil Well ☒ Gas Well ☐ Dry ☐ Other
b Type of Completion ☒ New Well ☐ Workover ☐ Deepen ☐ Plug Back ☐ Diff Resvr
Other _____

6 INDIAN ALLOTTEE OR TRIBE NAME

7 UNIT AGREEMENT

2 Name of Operator
COG Operating LLC

8 FARM OR LEASE NAME

Bawh State Com #1H

3 Address
2208 W. Main Street
Artesia, NM 88210

3a Phone No (include area code)

575-748-6940

9 API WELL NO

30-015-36287

4 Location of Well (Report location clearly and in accordance with Federal requirements)

At surface 1930' FSL & 810' FEL, Unit I (NESE)

At top prod. Interval reported below

At total depth 776' FNL & 988' FEL, Unit A (NENE)

10. FIELD NAME

Walnut Canyon; Upper Penn (G)

11. SEC T. R. M. OR BLOCK AND SURVEY
OR AREA 34 T 24S R 25E

12 COUNTY OR PARISH 13 STATE

Eddy

NM

14 Date Spudded 6/17/10 15 Date T D Reached 8/14/10 16 Date Completed 12/1/11
☐ D & A ☒ Ready to Prod

17 ELEVATIONS (DF, RKB, RT, GR, etc)*

3626'

GR

3643'

KB

18 Total Depth MD 12160' TVD 9754' 19 Plug back T D MD 11913' TVD 9767'

20 Depth Bridge Plug Set MD
TVD

21. Type Electric & other Logs Run (Submit a copy of each)

DLL, DSN

22 Was well cored? ☒ No ☐ Yes (Submit analysis)Was DST run? ☒ No ☐ Yes (Submit report)Directional Survey? ☐ No ☒ Yes (Submit copy)

23 Casing and Liner Record (Report all strings set in well)

Hole Size	Size/ Grade	Wt (#/ft)	Top (MD)	Bottom(MD)	Stage Cementer Depth	No of Sks & Type of Cement	Slurry Vol (Bbl)	Cement Top*	Amount Pulled
17 1/2"	13 3/8" J55	54#	0	398'		450 sx		0	None
12 1/4"	9 5/8" J55	36#	0	1391'		625 sx		0	None
8 3/4"	7" P110	23#	0	9148'	5084'	1300 sx		0	None
6 1/8"	4 1/2" P110	11.6#	0	11969'	8796'	150 sx		8570' (CBL)	None

24 Tubing Record

Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)
None								

25 Producing Intervals

Formation	Top	Bottom	Perforated Interval	Size	No of Holes	Perf Status
A) Penn	9950'	11903'	9950-11903'	0.43	212	Open
B)						
C)						
D)						

26 Perforation Record

27 Acid, Fracture Treatment, Cement Squeeze, Etc

Depth Interval	Amount and Type of Material
9950-11903'	Acidz w/21168 gal 7 1/2%; Frac w/1067930# sand & 1631156 gal fluid
	Accepted for record
	NMCD 105/21/2012
	RECLAMATION DUE 6-1-12

28 Production- Interval A

Date First Produced	Test Date	Hours Tested	Test Production	Oil Bbl	Gas MCF	Water Bbl	Oil Gravity Corr API	Gas Gravity	Production Method
12/2/11	12/8/11	24	→	2	794	150			Flowing
Choke Size	Tbg Press Flwg. SI	Csg Press.	24 Hr Rate	Oil Bbl	Gas MCF	Water Bbl	Gas Oil Ratio	Well Status	
3/4"	150#		→	2	794	150			Producing

28a Production- Interval B

Date First Produced	Test Date	Hours Tested	Test Production	Oil Bbl	Gas MCF	Water Bbl	Oil Gravity Corr API	Gas Gravity	Production Method
			→						JAN 28 2012
Choke Size	Tbg Press Flwg. SI	Csg Press.	24 Hr Rate	Oil Bbl	Gas MCF	Water Bbl	Gas Oil Ratio	Well Status	
			→						

* See instructions and spaces for additional data on page 2)

BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

28b Production- Interval C

Date First Produced	Test Date	Hours Tested	Test Production →	Oil Bbl	Gas MCF	Water Bbl	Oil Gravity Corr API	Gas Gravity	Production Method
Choke Size	Tbg. Press Flwg SI	Csg Press	24 Hr Rate →	Oil Bbl	Gas MCF	Water Bbl	Gas Oil Ratio	Well Status	

28c Production- Interval D

Date First Produced	Test Date	Hours Tested	Test Production →	Oil Bbl	Gas MCF	Water Bbl	Oil Gravity Corr API	Gas Gravity	Production Method
Choke Size	Tbg. Press Flwg SI	Csg Press	24 Hr Rate →	Oil Bbl	Gas MCF	Water Bbl	Gas Oil Ratio	Well Status	

29 Disposition of Gas (Sold, used for fuel, vented, etc.)

Sold

30 Summary of Porous Zones (include Aquifers)

Show all important zones of porosity and contents thereof Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries

31 Formation (Log) Markers

Formation	Top	Bottom	Descriptions Contents, Etc	Name	Top
					Measured Depth
Glorieta	5058'	8209'		Top of Salt	398'
Wolfcamp	8210'	9657'		Bottom of Salt	1369'
Penn	9658'	12160'		Glorieta	5058'
				Wolfcamp	8210'
				Penn	9658'
					TD 12160'

32 Additional remarks (include plugging procedure)

33 Indicate which items have been attached by placing a check in the appropriate boxes

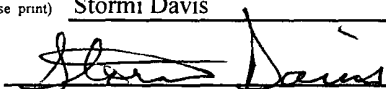
- ☒ Electrical/ Mechanical Logs (1 full set required)
 ☐ Geologic Report
 ☐ DST Report
 ☒ Directional Survey
- ☐ Sundry Notice for plugging and cement verification
 ☐ Core Analysis
 ☒ Other Deviation Report

34 I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions)*

Name (please print) Stormi Davis

Title Regulatory Analyst

Signature



Date 1/16/12

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction

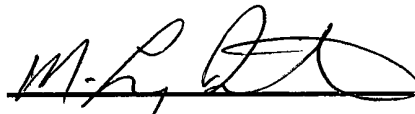
30-015-36287

OPERATOR: Marbob Energy Corp.
WELL/LEASE: Bawh State Com. # 1
COUNTY: Eddy Co., New Mexico
Sec. 34, T24S, R25E

STATE OF NEW MEXICO
DEVIATION REPORT

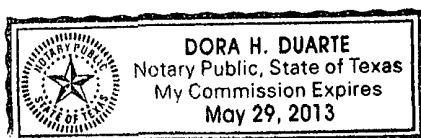
<u>Depth</u>	<u>Deviation</u>	<u>Depth</u>	<u>Deviation</u>
194	1/2	3,827	1 1/2
487	1 3/4	3,927	1 1/2
531	1/2	4,146	1
673	2 1/2	4,304	1
706	3 1/4	4,462	1
731	2 1/2	4,621	1
787	2 1/4	4,779	1
874	1 3/4	4,938	1 1/4
930	1 1/4	5,096	1
993	3	5,413	3/4
1,057	3	5,572	2 1/4
1,120	2 1/2	5,698	1
1,184	1 1/2	5,856	1 1/4
1,247	1 1/4	6,013	1 1/4
1,311	1 1/4	6,170	2
1,464	2 3/4	6,485	1 1/4
1,552	2 1/2	6,643	3/4
1,589	2 1/2	6,799	1/2
1,638	1 1/2	6,989	1/2
1,734	2 1/2	7,276	1
1,829	1 1/2	7,366	1
1,925	2	7,556	2
2,020	1 1/4	7,744	1 1/4
2,116	1	7,973	1 1/4
2,306	1	8,123	2
2,402	1	8,311	1/2
2,560	1 1/4	8,500	1
2,720	1 1/4	8,689	1 3/4
2,879	2 1/4	8,879	1 1/2
3,035	1	9,066	1 1/4
3,194	1 1/4	9,256	3/4
3,511	1 1/2	9,445	1
3,669	1 1/4	9,633	2
		9,821	2 1/4

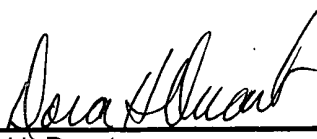
Patriot Drilling, LLC

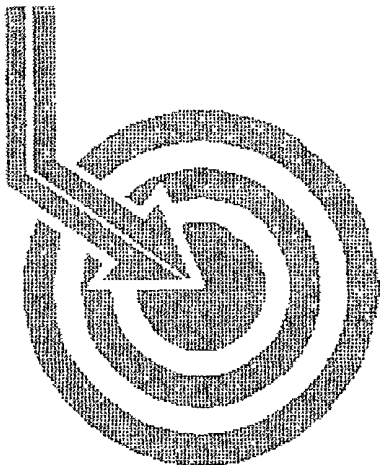

M. Leroy Peterson, Executive Vice-
President

The foregoing instrument was acknowledged before me on this 10th day of
September, 2010 by M. Leroy Peterson, Executive Vice-President of Patriot Drilling,
LLC.

My Commission Expires: 5/29/2013




Dora H. Duarte
Notary Public for Midland Co., Texas



Scientific Drilling

MARBOB ENERGY

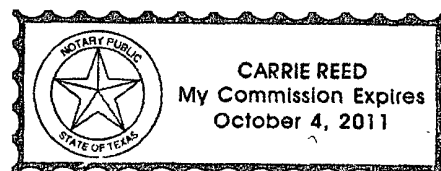
Field: Chosa Draw
Site: Eddy County, NM
Well: Bawh State Com #1
Wellpath: VH - Job #32K0710517
Survey: 07/10/10

This survey is correct to the best of my knowledge and is supported by actual field data.

[Signature]
Company Representative

Notarized this date 4th **of** August, 2010.

[Signature]
Notary Signature
County of Midland
State of Texas





Scientific
Drilling

Scientific Drilling International, Inc.

Survey Report

Company: MARBOB ENERGY
Field: Chosa Draw
Site: Eddy County, NM
Well: Bawh State Com #1
Wellpath: VH - Job #32K0710517

Date: 7/13/2010 Time: 19:23:56 Page: 1
Co-ordinate(N/E) Reference: Site: Eddy County, NM, Grid North
Vertical (TVD) Reference: SITE 0.0
Section (VS) Reference: Well (0.00N,0.00E,246.98Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey: 07/10/10
KSRG 0'-10500'

Start Date: 7/10/2010

Company: Scientific Drilling Internatio
Tool: Keeper, Keeper Gyro

Engineer: Garza w/Dialog
Tied-to: From Surface

Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
0.0	0.00	0.02	0.0	0.0	0.0	0.0	0.00	0.0	0.00
100.0	0.23	123.14	100.0	-0.1	-0.1	0.2	0.23	0.2	123.14
200.0	0.26	78.34	200.0	-0.4	-0.2	0.6	0.19	0.6	107.27
300.0	0.54	77.53	300.0	-1.1	0.0	1.2	0.28	1.2	91.20
400.0	0.70	71.89	400.0	-2.2	0.3	2.3	0.17	2.3	83.36
500.0	0.93	51.31	500.0	-3.6	1.0	3.5	0.37	3.6	74.60
600.0	2.08	37.95	599.9	-6.0	2.9	5.2	1.19	6.0	61.05
700.0	2.84	36.76	699.9	-9.7	6.3	7.8	0.76	10.1	51.15
800.0	2.08	27.06	799.8	-13.2	9.9	10.2	0.86	14.2	45.67
900.0	1.71	4.04	899.7	-15.3	13.0	11.1	0.84	17.1	40.40
1000.0	2.49	17.21	999.6	-17.4	16.6	11.8	0.91	20.4	35.50
1100.0	2.75	19.85	1099.5	-20.4	20.9	13.3	0.29	24.8	32.43
1200.0	1.35	340.04	1199.5	-22.1	24.3	13.7	1.92	27.9	29.43
1300.0	2.03	342.50	1299.4	-22.3	27.1	12.8	0.68	29.9	25.24
1400.0	2.11	336.20	1399.4	-22.5	30.5	11.5	0.24	32.5	20.67
1500.0	2.13	335.22	1499.3	-22.4	33.8	10.0	0.04	35.3	16.42
1600.0	1.89	328.06	1599.2	-22.1	36.9	8.3	0.35	37.8	12.70
1700.0	1.33	311.63	1699.2	-21.3	39.1	6.6	0.72	39.6	9.55
1800.0	1.40	307.72	1799.2	-20.2	40.6	4.7	0.12	40.9	6.66
1900.0	1.45	317.17	1899.1	-19.2	42.3	2.9	0.24	42.4	3.95
2000.0	1.11	290.66	1999.1	-18.1	43.5	1.2	0.67	43.6	1.51
2100.0	0.70	256.15	2099.1	-16.8	43.7	-0.3	0.66	43.7	359.54
2200.0	0.74	258.29	2199.1	-15.5	43.5	-1.6	0.05	43.5	357.93
2300.0	0.81	266.47	2299.1	-14.2	43.3	-2.9	0.13	43.4	356.15
2400.0	0.87	270.23	2399.1	-12.9	43.2	-4.4	0.08	43.5	354.22
2500.0	0.96	273.46	2499.1	-11.4	43.3	-6.0	0.10	43.7	352.15
2600.0	0.97	274.48	2599.0	-9.9	43.4	-7.7	0.02	44.1	350.00
2700.0	1.00	275.86	2699.0	-8.4	43.6	-9.4	0.04	44.6	347.87
2800.0	0.96	296.42	2799.0	-7.1	44.0	-11.0	0.35	45.4	346.00
2900.0	1.07	293.35	2899.0	-5.9	44.8	-12.6	0.12	46.5	344.30
3000.0	1.00	291.17	2999.0	-4.7	45.5	-14.3	0.08	47.6	342.58
3100.0	0.98	295.37	3099.0	-3.5	46.1	-15.8	0.08	48.8	341.05
3200.0	1.01	292.70	3199.0	-2.3	46.8	-17.4	0.06	50.0	339.59
3300.0	1.13	286.57	3298.9	-0.9	47.5	-19.2	0.17	51.2	337.99
3400.0	1.28	278.91	3398.9	0.8	47.9	-21.2	0.22	52.4	336.10
3500.0	1.15	279.54	3498.9	2.6	48.3	-23.3	0.13	53.6	334.20
3600.0	1.05	236.42	3598.9	4.3	47.9	-25.1	0.81	54.1	332.37
3700.0	1.12	205.96	3698.9	6.0	46.5	-26.3	0.57	53.4	330.55
3800.0	1.19	201.11	3798.8	7.4	44.7	-27.1	0.12	52.3	328.79
3900.0	1.29	201.95	3898.8	9.0	42.7	-27.9	0.10	51.0	326.85
4000.0	1.38	199.95	3998.8	10.6	40.5	-28.7	0.10	49.6	324.67
4100.0	0.81	153.78	4098.8	11.4	38.7	-28.8	1.01	48.3	323.37
4200.0	0.86	139.59	4198.8	11.1	37.5	-28.0	0.21	46.8	323.27
4300.0	0.87	142.75	4298.7	10.7	36.4	-27.1	0.05	45.3	323.34
4400.0	0.84	135.81	4398.7	10.2	35.2	-26.1	0.11	43.8	323.48
4500.0	0.90	134.85	4498.7	9.7	34.1	-25.0	0.06	42.3	323.77
4600.0	1.04	128.02	4598.7	8.9	33.0	-23.7	0.18	40.7	324.29
4700.0	1.03	133.69	4698.7	8.1	31.9	-22.4	0.10	38.9	324.90
4800.0	1.01	130.32	4798.7	7.4	30.7	-21.1	0.06	37.2	325.51



Scientific
Drilling

Scientific Drilling International, Inc.

Survey Report

Company: MARBOB ENERGY
Field: Chosa Draw
Site: Eddy County, NM
Well: Bawh State Com #1
Wellpath: VH - Job #32K0710517

Date: 7/13/2010 Time: 19:23:56 Page: 2
Co-ordinate(N/E) Reference: Site: Eddy County, NM, Grid North
Vertical (TVD) Reference: SITE 0.0
Section (VS) Reference: Well (0.00N,0.00E,246.98Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
4900.0	0.95	130.28	4898.7	6.6	29.6	-19.8	0.06	35.6	326.24
5000.0	0.97	127.77	4998.6	5.8	28.5	-18.5	0.05	34.0	327.07
5100.0	0.99	124.90	5098.6	5.0	27.5	-17.1	0.05	32.4	328.15
5200.0	0.51	136.18	5198.6	4.4	26.7	-16.1	0.50	31.1	328.94
5300.0	0.44	132.67	5298.6	4.0	26.1	-15.5	0.08	30.3	329.33
5400.0	0.41	202.44	5398.6	4.1	25.5	-15.3	0.49	29.8	328.99
5500.0	1.48	261.64	5498.6	5.6	25.0	-16.7	1.32	30.1	326.17
5600.0	2.80	269.72	5598.5	9.1	24.8	-20.5	1.35	32.1	320.46
5700.0	2.12	254.59	5698.4	13.2	24.3	-24.7	0.93	34.6	314.52
5800.0	0.70	293.88	5798.4	15.5	24.0	-27.0	1.64	36.2	311.65
5900.0	0.86	279.79	5898.4	16.5	24.4	-28.3	0.25	37.4	310.75
6000.0	0.90	235.15	5998.4	17.9	24.1	-29.7	0.67	38.2	309.03
6100.0	1.44	217.38	6098.4	19.8	22.6	-31.1	0.64	38.5	306.04
6200.0	1.54	213.13	6198.3	22.0	20.5	-32.6	0.15	38.5	302.17
6300.0	1.40	215.36	6298.3	24.1	18.4	-34.1	0.15	38.7	298.38
6400.0	1.20	193.22	6398.3	25.8	16.4	-35.0	0.54	38.6	295.08
6500.0	1.25	192.21	6498.3	27.1	14.3	-35.5	0.05	38.2	291.95
6600.0	1.13	198.77	6598.2	28.3	12.3	-36.0	0.18	38.1	288.85
6700.0	0.43	203.70	6698.2	29.3	11.0	-36.5	0.70	38.1	286.80
6800.0	0.39	235.68	6798.2	29.9	10.5	-36.9	0.23	38.4	285.85
6900.0	0.37	279.42	6898.2	30.5	10.3	-37.5	0.28	38.9	285.41
7000.0	0.44	266.96	6998.2	31.1	10.4	-38.2	0.11	39.6	285.19
7100.0	0.47	305.27	7098.2	31.7	10.6	-38.9	0.30	40.4	285.22
7200.0	0.85	279.40	7198.2	32.5	11.0	-40.0	0.47	41.5	285.31
7300.0	0.71	289.73	7298.2	33.6	11.3	-41.3	0.20	42.8	285.27
7400.0	0.80	307.71	7398.2	34.4	11.9	-42.5	0.25	44.1	285.68
7500.0	0.94	311.96	7498.2	35.1	12.9	-43.6	0.15	45.5	286.47
7600.0	1.61	324.23	7598.2	35.8	14.6	-45.1	0.72	47.4	287.93
7700.0	1.91	321.55	7698.1	36.5	17.0	-46.9	0.31	49.9	289.95
7800.0	1.08	251.72	7798.1	37.9	18.0	-48.8	1.84	52.1	290.27
7900.0	1.20	230.27	7898.1	39.8	17.1	-50.5	0.44	53.3	288.66
8000.0	1.30	233.32	7998.0	41.9	15.7	-52.3	0.12	54.6	286.75
8100.0	1.41	239.79	8098.0	44.3	14.4	-54.2	0.19	56.1	284.90
8200.0	1.77	221.30	8198.0	46.9	12.6	-56.3	0.62	57.7	282.66
8300.0	1.63	219.94	8297.9	49.5	10.4	-58.2	0.15	59.2	280.12
8400.0	0.82	227.46	8397.9	51.5	8.8	-59.7	0.82	60.3	278.41
8500.0	0.88	231.84	8497.9	52.9	7.9	-60.8	0.09	61.3	277.37
8600.0	1.06	221.90	8597.9	54.5	6.7	-62.0	0.25	62.4	276.17
8700.0	1.37	225.55	8697.9	56.4	5.2	-63.5	0.32	63.7	274.66
8800.0	1.42	225.38	8797.8	58.7	3.5	-65.2	0.05	65.3	273.04
8900.0	1.18	229.90	8897.8	60.8	1.9	-66.9	0.26	66.9	271.66
9000.0	1.07	226.89	8997.8	62.7	0.6	-68.4	0.12	68.4	270.53
9100.0	1.02	222.59	9097.8	64.4	-0.7	-69.7	0.09	69.7	269.46
9200.0	1.04	213.68	9197.7	65.9	-2.1	-70.8	0.16	70.8	268.32
9300.0	0.73	219.61	9297.7	67.3	-3.3	-71.7	0.32	71.8	267.35
9400.0	0.77	214.48	9397.7	68.4	-4.4	-72.5	0.08	72.6	266.56
9500.0	1.09	226.64	9497.7	69.9	-5.6	-73.5	0.37	73.7	265.67
9600.0	1.46	223.17	9597.7	71.9	-7.2	-75.1	0.38	75.4	264.56
9700.0	1.51	217.09	9697.7	74.2	-9.1	-76.8	0.17	77.3	263.22
9800.0	1.73	210.58	9797.6	76.6	-11.5	-78.3	0.29	79.2	261.66
9900.0	1.80	210.68	9897.6	79.1	-14.1	-79.9	0.07	81.1	259.97
10000.0	2.20	207.66	9997.5	81.8	-17.2	-81.6	0.41	83.4	258.11



Scientific
Drilling

Scientific Drilling International, Inc.

Survey Report

Company: MARBOB ENERGY
Field: Chosa Draw
Site: Eddy County, NM
Well: Bawh State Com #1
Wellpath: VH - Job #32K0710517

Date: 7/13/2010 Time: 19:23:56 Page: 3
Co-ordinate(NE) Reference: Site: Eddy County, NM, Grid North
Vertical (TVD) Reference: SITE 0.0
Section (VS) Reference: Well (0.00N,0.00E,246.98Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
10100.0	2.55	198.89	10097.4	84.8	-21.0	-83.2	0.50	85.8	255.84
10200.0	2.57	179.14	10197.3	87.1	-25.3	-83.9	0.88	87.6	253.20
10300.0	1.63	178.91	10297.3	88.5	-29.0	-83.8	0.94	88.7	250.92
10400.0	1.82	170.28	10397.2	89.4	-32.0	-83.5	0.32	89.4	249.05
10500.0	2.01	172.56	10497.2	90.2	-35.3	-83.0	0.20	90.2	246.98



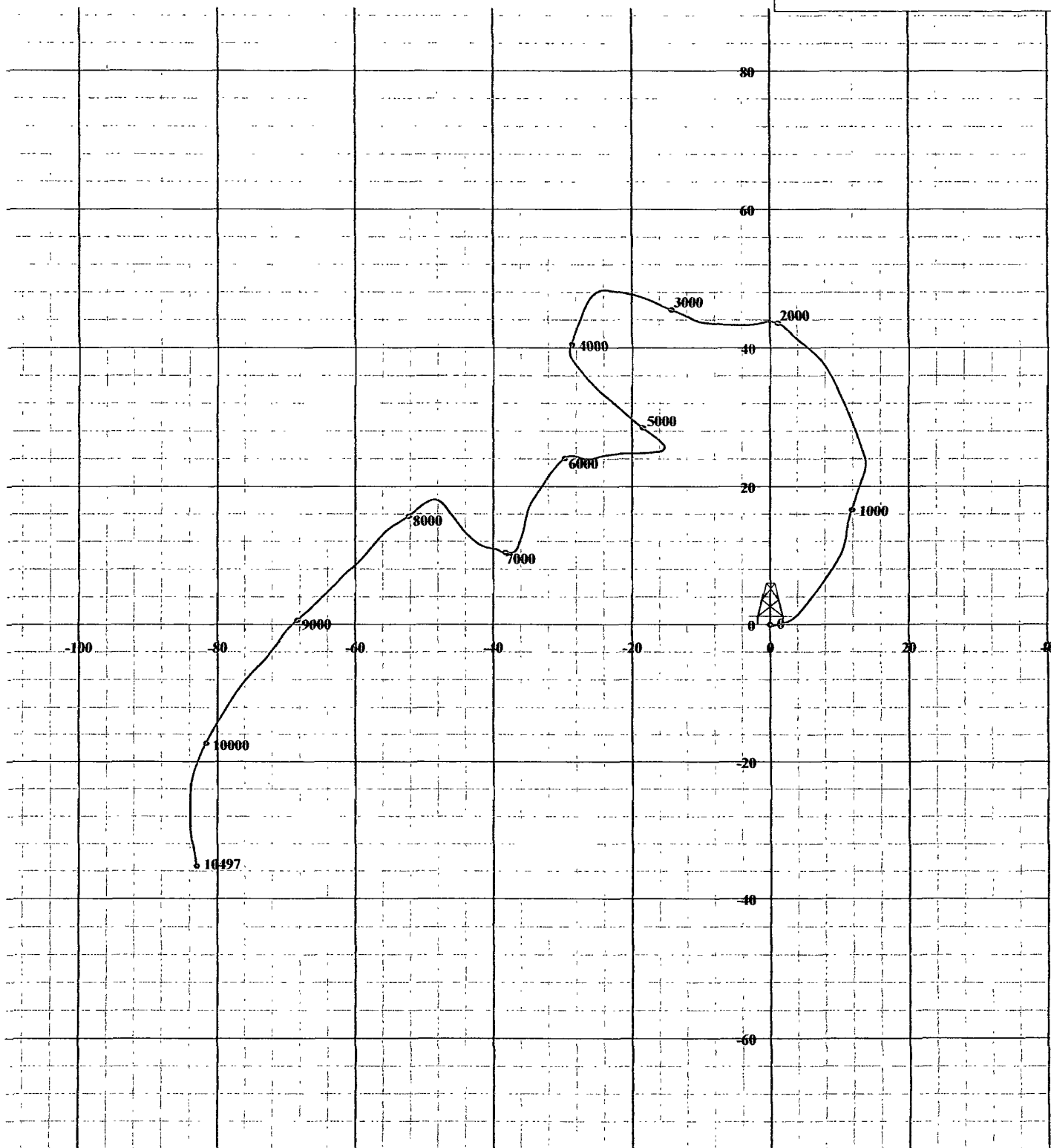
Scientific
Drilling

Field: Chosa Draw
Site: Eddy County, NM
Well: Bawh State Com #1
Survey: 07/10/10



Azimuths to Grid North
True North: 0.00°
Magnetic North: 0.00°
Magnetic Field
Dip Angle: 0.00°
Date: 7/13/2010
Model: igrf2000

South(-)/North(+) [20ft/in]



West(-)/East(+) [20ft/in]



Marbob

**Eddy County
Bawh State Com
#1
OH**

Survey: MWD #2

Pathfinder X & Y Survey Report

16 August, 2010

PATHFINDER



Pathfinder

Pathfinder X & Y Survey Report



Company:	Marbob	Local Co-ordinate Reference:	Well #1
Project:	Eddy County	TVD Reference:	Patriot #2 @ 3661.00ft (17' KB Correction)
Site:	Bawh State Com	MD Reference:	Patriot #2 @ 3661.00ft (17' KB Correction)
Well:	#1	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland Database

Project: Eddy County	
Map System:	US State Plane 1927 (Exact solution)
Geo Datum:	NAD 1927 (NADCON CONUS)
Map Zone:	New Mexico East 3001
System Datum:	Mean Sea Level

Site		Bawh State Com			
Site Position:		Northing:	426,223.300 ft	Latitude:	32° 10' 18.471 N
From:	Map	Easting:	486,588.300 ft	Longitude:	104° 22' 36.043 W
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	-0 02 °

Well	#1					
Well Position	+N-S	0.00 ft	Northing:	426,223.300 ft	Latitude:	32° 10' 18.471 N
	+E-W	0.00 ft	Easting:	486,588.300 ft	Longitude:	104° 22' 36.043 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	3,644.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	07/11/2010	8.05	60.04	48,644

Design:	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.00	0.00	0.00	358.35	



Pathfinder

Pathfinder X & Y Survey Report



Company: Marbob
Project: Eddy County
Site: Bawh State Com
Well: #1
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #1
TVD Reference: Patriot #2 @ 3661.00ft (17' KB Correction)
MD Reference: Patriot #2 @ 3661.00ft (17' KB Correction)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Survey Program Date 08/16/2010

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
100.00	9,200.00	GYRO (OH)	CB-GYRO-MS	Camera based gyro multishot
9,274.00	10,139.00	MWD #1 (OH)	MWD	MWD - Standard

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
9,200.00	1.04	213.68	9,197.75	5,536.75	-2.07	-70.77	-0.03	0.00	426,221.23	486,517.53
9,267.00	5.28	314.71	9,264.65	5,603.65	-0.41	-73.30	1.70	8.32	426,222.89	486,515.00
9,299.00	8.97	334.77	9,296.40	5,635.40	2.89	-75.41	5.06	13.74	426,226.19	486,512.89
9,330.00	12.22	348.58	9,326.88	5,665.88	8.29	-77.09	10.51	13.23	426,231.59	486,511.21
9,361.00	15.04	351.79	9,357.00	5,696.00	15.49	-78.32	17.74	9.41	426,238.79	486,509.98
9,393.00	17.24	358.12	9,387.74	5,726.74	24.34	-79.06	26.61	8.79	426,247.64	486,509.24
9,425.00	19.70	4.09	9,418.09	5,757.09	34.46	-78.84	36.72	9.69	426,257.76	486,509.46
9,457.00	23.21	4.89	9,447.87	5,786.87	46.13	-77.91	48.35	11.01	426,269.43	486,510.39
9,488.00	27.26	3.35	9,475.91	5,814.91	59.31	-76.98	61.50	13.23	426,282.61	486,511.32
9,520.00	31.04	356.50	9,503.86	5,842.86	74.87	-77.05	77.06	15.74	426,298.17	486,511.25
9,552.00	35.17	2.94	9,530.66	5,869.66	92.32	-77.08	94.50	16.94	426,315.62	486,511.22
9,583.00	38.78	5.78	9,555.43	5,894.43	110.90	-75.65	113.04	12.88	426,334.20	486,512.65
9,615.00	42.30	7.21	9,579.74	5,918.74	131.56	-73.29	133.62	11.38	426,354.86	486,515.01
9,647.00	46.52	7.32	9,602.60	5,941.60	153.77	-70.45	155.74	13.19	426,377.07	486,517.85
9,679.00	50.47	5.85	9,623.80	5,962.80	177.57	-67.72	179.45	12.81	426,400.87	486,520.58
9,711.00	54.96	3.76	9,643.18	5,982.18	202.94	-65.60	204.74	14.96	426,426.24	486,522.70
9,743.00	58.12	1.24	9,660.82	5,999.82	229.60	-64.44	231.36	11.86	426,452.90	486,523.86
9,775.00	60.85	359.85	9,677.07	6,016.07	257.16	-64.19	258.91	9.32	426,480.46	486,524.11
9,807.00	64.37	359.88	9,691.79	6,030.79	285.57	-64.25	287.30	11.00	426,508.87	486,524.05
9,838.00	68.15	359.47	9,704.27	6,043.27	313.94	-64.42	315.67	12.25	426,537.24	486,523.88
9,870.00	70.26	359.87	9,715.63	6,054.63	343.86	-64.59	345.57	6.70	426,567.16	486,523.71



Pathfinder

Pathfinder X & Y Survey Report



Company: Marbob
Project: Eddy County
Site: Bawh State Com
Well: #1
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #1
TVD Reference: Patriot #2 @ 3661.00ft (17' KB Correction)
MD Reference: Patriot #2 @ 3661.00ft (17' KB Correction)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
9,902.00	71.93	359.24	9,726.00	6,065.00	374.13	-64.82	375.84	5.54	426,597.43	486,523.48
9,934.00	73.69	358.73	9,735.45	6,074.45	404.69	-65.37	406.41	5.71	426,627.99	486,522.93
9,965.00	76.50	359.23	9,743.43	6,082.43	434.64	-65.90	436.36	9.20	426,657.94	486,522.40
9,997.00	78.44	358.96	9,750.37	6,089.37	465.87	-66.39	467.59	6.12	426,689.17	486,521.91
10,029.00	81.78	358.04	9,755.86	6,094.86	497.38	-67.22	499.11	10.81	426,720.68	486,521.08
10,060.00	84.68	358.89	9,759.52	6,098.52	528.15	-68.04	529.89	9.74	426,751.45	486,520.26
10,092.00	84.77	358.62	9,762.46	6,101.46	560.01	-68.73	561.76	0.89	426,783.31	486,519.57
10,124.00	84.86	358.23	9,765.35	6,104.35	591.87	-69.61	593.63	1.25	426,815.17	486,518.69
10,156.00	87.14	358.17	9,767.58	6,106.58	623.77	-70.61	625.55	7.13	426,847.07	486,517.69
10,187.00	88.37	358.07	9,768.80	6,107.80	654.73	-71.63	656.52	3.98	426,878.03	486,516.67
10,251.00	91.36	359.14	9,768.95	6,107.95	718.70	-73.19	720.51	4.96	426,942.00	486,515.11
10,283.00	91.98	0.05	9,768.02	6,107.02	750.69	-73.41	752.49	3.44	426,973.99	486,514.89
10,346.00	91.45	359.62	9,766.13	6,105.13	813.66	-73.59	815.44	1.08	427,036.96	486,514.71
10,410.00	90.48	358.81	9,765.05	6,104.05	877.64	-74.47	879.42	1.97	427,100.94	486,513.83
10,442.00	90.84	359.18	9,764.68	6,103.68	909.63	-75.03	911.42	1.61	427,132.93	486,513.27
10,505.00	88.29	358.06	9,765.16	6,104.16	972.61	-76.55	974.41	4.42	427,195.91	486,511.75
10,537.00	87.93	357.42	9,766.22	6,105.22	1,004.57	-77.81	1,006.39	2.29	427,227.87	486,510.49
10,601.00	89.25	357.56	9,767.79	6,106.79	1,068.48	-80.61	1,070.36	2.07	427,291.78	486,507.69
10,664.00	90.48	357.27	9,767.94	6,106.94	1,131.42	-83.45	1,133.35	2.01	427,354.72	486,504.85
10,727.00	88.90	357.63	9,768.28	6,107.28	1,194.35	-86.26	1,196.34	2.57	427,417.65	486,502.04
10,791.00	89.87	357.81	9,768.97	6,107.97	1,258.30	-88.80	1,260.33	1.54	427,481.60	486,499.50
10,854.00	90.48	357.79	9,768.78	6,107.78	1,321.25	-91.22	1,323.33	0.97	427,544.55	486,497.08
10,918.00	90.75	356.90	9,768.09	6,107.09	1,385.18	-94.19	1,387.32	1.45	427,608.48	486,494.11
10,982.00	89.25	356.96	9,768.09	6,107.09	1,449.08	-97.61	1,451.29	2.35	427,672.38	486,490.69
11,046.00	88.90	357.11	9,769.12	6,108.12	1,512.99	-100.92	1,515.27	0.59	427,736.29	486,487.38
11,109.00	89.08	356.49	9,770.23	6,109.23	1,575.88	-104.44	1,578.24	1.02	427,799.18	486,483.86
11,173.00	90.22	355.82	9,770.62	6,109.62	1,639.73	-108.73	1,642.19	2.07	427,863.03	486,479.57



Pathfinder

Pathfinder X & Y Survey Report



Company: Marbob
 Project: Eddy County
 Site: Bawh State Com
 Well: #1
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #1
 TVD Reference: Patriot #2 @ 3661.00ft (17' KB Correction)
 MD Reference: Patriot #2 @ 3661.00ft (17' KB Correction)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: Midland Database

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
11,237.00	90.75	355.42	9,770.08	6,109.08	1,703.55	-113.62	1,706.11	1.04	427,926.85	486,474.68
11,301.00	89.16	356.98	9,770.13	6,109.13	1,767.40	-117.86	1,770.06	3.48	427,990.70	486,470.44
11,364.00	88.02	357.21	9,771.68	6,110.68	1,830.30	-121.05	1,833.03	1.85	428,053.60	486,467.25
11,427.00	87.76	357.54	9,774.00	6,113.00	1,893.19	-123.93	1,895.97	0.67	428,116.49	486,464.37
11,491.00	90.13	355.87	9,775.18	6,114.18	1,957.07	-127.61	1,959.93	4.53	428,180.37	486,460.69
11,555.00	90.22	355.10	9,774.98	6,113.98	2,020.87	-132.65	2,023.85	1.21	428,244.17	486,455.65
11,618.00	90.22	355.86	9,774.74	6,113.74	2,083.67	-137.62	2,086.77	1.21	428,306.97	486,450.68
11,681.00	90.13	355.37	9,774.55	6,113.55	2,146.49	-142.43	2,149.70	0.79	428,369.79	486,445.87
11,745.00	91.36	355.89	9,773.72	6,112.72	2,210.29	-147.31	2,213.62	2.09	428,433.59	486,440.99
11,809.00	92.15	356.16	9,771.76	6,110.76	2,274.11	-151.74	2,277.53	1.30	428,497.41	486,436.56
11,872.00	92.77	356.13	9,769.05	6,108.05	2,336.91	-155.97	2,340.43	0.99	428,560.21	486,432.33
11,936.00	92.59	355.63	9,766.06	6,105.06	2,400.67	-160.57	2,404.30	0.83	428,623.97	486,427.73
11,999.00	92.86	355.78	9,763.07	6,102.07	2,463.42	-165.28	2,467.16	0.49	428,686.72	486,423.02
12,063.00	93.03	355.79	9,759.78	6,098.78	2,527.17	-169.98	2,531.01	0.27	428,750.47	486,418.32
12,115.00	93.30	354.99	9,756.91	6,095.91	2,578.92	-174.15	2,582.86	1.62	428,802.22	486,414.15
12,160.00	93.30	354.99	9,754.32	6,093.32	2,623.67	-178.07	2,627.71	0.00	428,846.97	486,410.23

BHL-12160.00°MD,93.30°INC,354.99°AZI, 9754.32°TVD, 2627.71°VS, 2623.67°N, -178.07°E

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
12,160.00	9,754.32	2,623.67	-178.07	BHL-12160.00°MD,93.30°INC,354.99°AZI, 9754.32°TVD, 2627.71°VS, 2

Checked By: _____ Approved By: _____ Date: _____