

HOBBS OCD

DEC 18 2019

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EOG Resources - Midland

Lea County, NM (NAD 83 NME).

Fearless 23 Fed Com

#506H

OH

Design: OH

Midland PVA

09 July, 2019



Midland PVA

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Fearless 23 Fed Com
 Well: #506H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #506H
 TVD Reference: KB = 25' @ 3454.0usft
 MD Reference: KB = 25' @ 3454.0usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.14

Project Lea County, NM (NAD 83 NME)

Map System: US State Plane 1983
 Geo Datum: North American Datum 1983
 Map Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

Site Fearless 23 Fed Com

Site Position:		Northing:	408,599.00 usft	Latitude:	32° 7' 17.261 N
From: Map		Easting:	753,585.00 usft	Longitude:	103° 38' 51.862 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.36 "

Well #506H

Well Position	+N-S	0.0 usft	Northing:	408,585.00 usft	Latitude:	32° 7' 17.125 N
	+E-W	0.0 usft	Easting:	753,552.00 usft	Longitude:	103° 38' 52.247 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,429.0 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/1/2019	6.77	59.93	47,668.31622306

Design OH

Audit Notes:

Version: 1.0 Phase: ACTUAL Tie On Depth: 0.0

Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)
	0.0	0.0	0.0	181.09

Survey Program Date 7/9/2019

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
188.0	20,831.0	Newsco MWD (OH)	MWD	OWSG MWD - Standard



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0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0	0.0
186.0	0.70	11.80	186.0	1.1	0.2	0.38	0.38	0.00	-1.1	0.0	
361.0	0.20	74.70	361.0	2.2	0.7	0.36	-0.29	35.94	-1.3	2.0	
507.0	0.70	75.30	507.0	2.5	1.8	0.34	0.34	0.41	-2.4	2.0	
695.0	1.10	88.10	695.0	2.9	4.8	0.24	0.21	8.81	-4.9	2.7	
870.0	1.50	84.40	869.9	3.2	8.7	0.23	0.23	-2.11	-9.0	2.3	
978.0	1.80	99.10	977.9	3.0	11.8	0.48	0.28	13.61	-11.2	4.9	
1,167.0	2.10	90.30	1,166.8	2.5	18.2	0.22	0.16	-4.66	-18.2	2.6	
1,355.0	4.80	349.00	1,354.5	10.3	20.1	2.98	1.44	-53.88	-2.1	-20.9	
1,544.0	7.30	348.90	1,542.5	29.7	15.9	1.33	1.32	-1.11	-5.4	-17.8	
1,732.0	6.50	350.20	1,729.1	51.8	11.4	0.47	-0.43	1.76	-8.5	-13.0	
1,921.0	5.20	350.50	1,917.1	70.8	8.2	0.69	-0.69	0.16	-7.2	-9.5	
2,110.0	3.80	344.90	2,105.5	85.3	5.1	0.78	-0.74	-2.96	-0.9	-5.5	
2,299.0	6.00	349.50	2,293.8	101.1	1.7	1.18	1.16	2.43	3.1	-1.1	
2,488.0	5.10	349.40	2,481.9	119.1	-1.7	0.48	-0.48	-0.05	5.4	2.7	
2,676.0	6.80	356.30	2,668.9	138.4	-3.9	0.98	0.90	3.67	7.0	4.4	
2,865.0	6.00	356.80	2,856.7	159.4	-5.2	0.42	-0.42	-0.26	6.8	5.6	
3,054.0	5.10	357.60	3,044.8	177.7	-6.1	0.48	-0.48	0.42	9.5	6.5	
3,244.0	8.40	2.40	3,233.5	200.0	-5.9	1.78	1.74	2.53	8.7	5.5	
3,433.0	7.30	10.20	3,420.7	225.6	-3.2	0.81	-0.58	4.13	4.2	2.5	
3,622.0	6.20	15.80	3,608.4	247.2	1.7	0.68	-0.58	2.96	2.3	-2.5	
3,811.0	6.50	350.70	3,796.3	267.6	2.8	1.47	0.16	-13.28	3.8	-2.2	
4,000.0	4.60	353.90	3,984.4	285.7	0.3	1.02	-1.01	1.69	6.2	0.4	
4,189.0	5.00	356.10	4,172.7	301.5	-0.8	0.28	0.21	2.22	11.4	1.2	
4,378.0	2.90	15.70	4,361.3	314.3	0.2	1.27	-1.11	9.31	18.7	-5.4	
4,566.0	1.70	17.00	4,549.1	321.5	2.3	0.64	-0.64	0.69	30.9	-11.8	
4,589.0	1.70	44.50	4,572.1	322.1	2.6	3.51	0.00	119.57	23.2	-26.4	



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Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
4,739.0	1.00	29.20	4,722.1	324.8	4.8	0.52	-0.47	-10.20	40.3	-28.0
4,927.0	7.60	16.60	4,909.4	338.2	9.2	3.53	3.51	-6.70	51.4	-24.8
5,116.0	10.20	4.70	5,096.2	366.9	14.1	1.68	1.38	-6.30	47.1	-18.1
5,305.0	9.80	355.10	5,282.3	399.6	14.1	0.91	-0.21	-5.08	37.6	-11.0
5,494.0	9.90	354.50	5,468.5	431.8	11.2	0.08	0.05	-0.32	26.0	-8.8
5,683.0	8.90	353.10	5,655.0	462.5	7.9	0.54	-0.53	-0.74	16.0	-6.0
5,872.0	9.20	356.30	5,841.6	492.1	5.2	0.31	0.16	1.69	6.7	-4.7
6,061.0	9.20	0.80	6,028.2	522.2	4.4	0.38	0.00	2.38	-3.0	-4.4
6,250.0	9.40	1.30	6,214.7	552.8	5.0	0.11	0.11	0.26	-12.8	-4.7
6,439.0	8.50	1.30	6,401.4	582.2	5.8	0.48	-0.48	0.00	-21.4	-5.2
6,628.0	5.60	357.40	6,589.0	605.4	5.5	1.55	-1.53	-2.06	-23.3	-6.6
6,817.0	4.20	352.70	6,777.3	621.4	4.2	0.77	-0.74	-2.49	-18.2	-6.6
7,005.0	1.80	308.60	6,965.0	630.1	1.0	1.68	-1.28	-23.46	-8.1	-11.7
7,194.0	2.20	157.60	7,154.0	628.6	0.1	2.05	0.21	-79.89	9.8	4.1
7,383.0	2.50	154.50	7,342.8	621.5	3.3	0.17	0.16	-1.64	1.8	4.5
7,572.0	2.20	157.10	7,531.7	614.5	6.5	0.17	-0.16	1.38	-5.8	4.6
7,761.0	1.80	157.50	7,720.5	608.4	9.0	0.21	-0.21	0.21	-12.3	4.6
7,950.0	2.20	155.80	7,909.4	602.3	11.6	0.21	0.21	-0.90	-19.1	4.2
8,139.0	2.20	164.60	8,098.3	595.5	14.1	0.18	0.00	4.66	-25.4	7.6
8,328.0	2.40	182.80	8,287.1	588.1	14.8	0.40	0.11	9.63	-29.2	16.3
8,518.0	0.70	316.10	8,477.1	584.9	13.8	1.54	-0.89	70.16	33.4	13.0
8,706.0	0.90	297.10	8,665.1	586.4	11.7	0.18	0.11	-10.11	24.8	22.8
8,894.0	2.00	263.90	8,853.0	586.8	7.2	0.71	0.59	-17.66	3.8	31.8
9,083.0	1.80	282.90	9,041.9	587.1	1.0	0.35	-0.11	10.05	7.9	29.9
9,272.0	3.30	275.60	9,230.7	588.3	-7.3	0.81	0.79	-3.86	-4.4	30.3
9,461.0	2.90	281.00	9,419.4	589.7	-17.4	0.26	-0.21	2.86	-11.7	31.1
9,649.0	2.30	283.80	9,607.3	591.5	-25.8	0.33	-0.32	1.49	-18.7	31.9



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9,838.0	1.50	290.00	9,798.1	593.3	-31.8	0.44	-0.42	3.28	-21.4	34.1
9,995.0	1.80	285.80	9,953.1	594.6	-36.1	0.21	0.19	-2.80	-28.5	32.2
10,057.0	1.80	247.10	10,015.1	594.5	-37.9	1.91	0.00	-82.10	-44.1	6.9
10,151.0	8.90	210.80	10,108.8	587.7	-43.0	8.01	7.55	-38.83	-46.3	-22.0
10,245.0	14.80	211.40	10,200.6	571.1	-52.9	6.28	6.28	0.85	-50.5	-25.1
10,340.0	20.80	196.90	10,281.0	544.6	-84.2	7.81	6.32	-15.26	-39.1	-39.0
10,387.0	28.30	191.50	10,333.7	525.7	-68.8	16.64	15.96	-11.49	-33.6	-40.3
10,434.0	31.40	189.80	10,374.5	502.7	-73.1	6.84	6.60	-3.62	-30.8	-37.8
10,528.0	41.30	186.40	10,450.1	447.8	-80.8	10.74	10.53	-3.62	-24.7	-27.6
10,622.0	52.80	186.40	10,514.1	379.3	-88.4	12.23	12.23	0.00	-21.9	-12.4
10,718.0	64.40	191.20	10,564.0	298.6	-101.2	12.81	12.08	5.00	-21.2	2.1
10,765.0	68.40	190.60	10,582.8	256.3	-109.3	8.59	8.51	-1.28	-20.9	7.7
10,860.0	72.50	189.80	10,614.6	168.2	-125.1	4.39	4.32	-0.84	-14.9	20.4
10,907.0	76.80	191.50	10,627.0	123.7	-133.5	9.79	9.15	3.62	-9.2	26.7
11,002.0	79.50	193.50	10,646.6	32.9	-153.7	3.51	2.84	2.11	6.8	35.8
11,096.0	80.90	185.40	10,662.6	-56.8	-176.8	2.49	1.49	2.02	22.4	37.6
11,191.0	82.50	195.50	10,676.3	-147.4	-201.8	1.69	1.68	0.11	35.4	33.1
11,285.0	86.20	192.40	10,685.5	-238.1	-224.4	5.12	3.94	-3.30	43.8	26.5
11,380.0	89.30	189.70	10,689.3	-331.3	-242.5	4.33	3.26	-2.84	46.6	19.9
11,474.0	89.60	186.50	10,690.2	-424.3	-255.8	3.42	0.32	-3.40	46.6	13.5
11,569.0	89.50	181.70	10,690.9	-519.1	-262.6	5.05	-0.11	-5.05	46.5	8.9
11,663.0	88.30	178.80	10,692.7	-613.0	-263.0	3.34	-1.28	-3.09	47.5	7.7
11,758.0	90.20	178.70	10,694.0	-708.0	-260.9	2.00	2.00	-0.11	47.9	8.9
11,852.0	89.90	178.90	10,693.9	-802.0	-258.9	0.38	-0.32	0.21	47.0	10.0
11,947.0	89.70	178.10	10,694.2	-896.9	-256.5	0.87	-0.21	-0.84	46.5	11.6
12,041.0	89.20	177.90	10,695.1	-990.9	-253.2	0.57	-0.53	-0.21	46.6	14.0
12,135.0	89.10	177.90	10,696.5	-1,084.8	-249.7	0.11	-0.11	0.00	47.1	16.6



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12,230.0	88.50	178.10	10,698.5	-1,179.7	-246.4	0.87	-0.63	0.21	48.3	19.0
12,324.0	87.60	178.10	10,701.7	-1,273.6	-243.3	0.98	-0.98	0.00	50.6	21.3
12,419.0	88.70	180.30	10,704.8	-1,368.6	-242.0	2.59	1.16	2.32	52.9	21.7
12,513.0	89.10	179.70	10,708.6	-1,462.5	-242.0	0.77	0.43	-0.64	53.9	20.8
12,607.0	90.20	181.30	10,707.1	-1,556.5	-242.8	2.07	1.17	1.70	53.6	19.1
12,702.0	90.10	181.80	10,708.9	-1,651.5	-245.4	0.54	-0.11	0.53	52.5	15.7
12,796.0	89.10	181.80	10,707.5	-1,745.4	-248.3	1.06	-1.06	0.00	52.4	11.8
12,891.0	89.10	181.70	10,709.0	-1,840.4	-251.2	0.11	0.00	-0.11	53.0	8.1
12,985.0	89.40	181.00	10,710.3	-1,934.4	-253.4	0.81	0.32	-0.74	53.4	5.0
13,080.0	89.10	179.90	10,711.5	-2,029.3	-254.2	1.20	-0.32	-1.16	53.8	3.4
13,174.0	88.80	179.80	10,713.2	-2,123.3	-253.9	0.34	-0.32	-0.11	54.2	2.7
13,268.0	88.20	179.60	10,715.7	-2,217.3	-253.4	0.67	-0.64	-0.21	54.7	2.4
13,363.0	89.10	179.00	10,717.9	-2,312.3	-252.3	1.14	0.95	-0.63	55.0	2.7
13,457.0	89.20	178.90	10,719.3	-2,406.2	-250.6	0.15	0.11	-0.11	54.5	3.5
13,551.0	89.60	178.10	10,720.3	-2,500.2	-248.1	0.95	0.43	-0.85	53.6	5.1
13,645.0	89.30	177.30	10,721.2	-2,594.1	-244.3	0.91	-0.32	-0.85	52.5	8.0
13,740.0	89.10	177.90	10,722.5	-2,689.0	-240.3	0.67	-0.21	0.63	51.9	11.1
13,834.0	88.30	177.60	10,724.7	-2,782.9	-236.7	0.91	-0.85	-0.32	52.1	14.0
13,928.0	89.20	179.10	10,726.7	-2,876.9	-234.0	1.86	0.96	1.60	52.3	15.8
14,023.0	89.80	179.80	10,727.5	-2,971.8	-233.0	0.97	0.63	0.74	51.1	15.8
14,117.0	88.70	180.40	10,728.8	-3,065.8	-233.2	1.33	-1.17	0.64	50.5	14.8
14,211.0	88.20	180.40	10,731.3	-3,159.8	-233.9	0.53	-0.53	0.00	51.1	13.2
14,305.0	88.10	180.10	10,734.4	-3,253.8	-234.3	0.34	-0.11	-0.32	52.2	12.0
14,399.0	88.50	179.60	10,737.1	-3,347.7	-234.0	0.68	0.43	-0.53	53.1	11.3
14,494.0	88.40	179.60	10,739.7	-3,442.7	-233.4	0.11	-0.11	0.00	53.7	11.1
14,588.0	89.00	178.60	10,741.8	-3,536.6	-231.9	1.24	0.64	-1.06	53.9	11.8
14,683.0	88.80	177.10	10,743.7	-3,631.5	-228.3	1.59	-0.21	-1.58	53.8	14.5



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14,777.0	90.00	178.80	10,744.7	-3,725.5	-225.0	2.21	1.28	1.81	52.8	16.9
14,871.0	89.40	178.10	10,745.1	-3,819.4	-222.4	0.98	-0.64	-0.74	51.4	18.6
14,966.0	89.30	178.60	10,746.2	-3,914.4	-219.7	0.54	-0.11	0.53	50.5	20.5
15,060.0	89.10	177.90	10,747.5	-4,008.3	-216.8	0.77	-0.21	-0.74	49.9	22.5
15,155.0	89.80	180.40	10,748.4	-4,103.3	-215.4	2.73	0.74	2.63	48.9	23.0
15,249.0	89.10	181.50	10,749.4	-4,197.3	-217.0	1.39	-0.74	1.17	47.9	20.5
15,344.0	88.10	180.70	10,751.7	-4,292.3	-218.8	1.35	-1.05	-0.84	46.3	17.8
15,438.0	88.40	181.00	10,754.5	-4,386.2	-220.2	0.45	0.32	0.32	49.2	15.6
15,532.0	87.40	180.40	10,758.0	-4,480.1	-221.3	1.24	-1.06	-0.64	50.7	13.6
15,627.0	88.90	181.30	10,762.7	-4,575.0	-222.7	1.08	-0.53	0.95	53.5	11.3
15,721.0	88.80	182.30	10,766.2	-4,668.9	-225.7	2.28	2.02	1.06	55.1	7.4
15,815.0	90.00	181.40	10,767.2	-4,762.8	-228.7	1.60	1.28	-0.96	54.2	3.5
15,910.0	89.20	183.40	10,767.9	-4,857.7	-232.7	2.27	-0.84	2.11	52.9	-1.3
16,004.0	90.30	182.50	10,768.3	-4,951.6	-237.5	1.51	1.17	-0.96	51.4	-7.0
16,099.0	89.80	182.60	10,768.2	-5,046.5	-241.8	0.54	-0.53	0.11	49.3	-12.1
16,193.0	90.10	180.80	10,768.3	-5,140.5	-244.8	1.94	0.32	-1.91	47.1	-15.8
16,287.0	89.80	181.50	10,768.4	-5,234.4	-246.4	0.81	-0.32	0.74	45.0	-18.5
16,381.0	89.60	181.00	10,768.9	-5,328.4	-248.5	0.57	-0.21	-0.53	43.3	-21.4
16,476.0	89.40	180.20	10,769.7	-5,423.4	-249.5	0.87	-0.21	-0.84	41.9	-23.3
16,570.0	88.70	180.50	10,771.3	-5,517.4	-250.1	0.81	-0.74	0.32	41.3	-24.7
16,664.0	87.90	181.60	10,774.0	-5,611.3	-251.8	1.45	-0.85	1.17	41.8	-27.3
16,758.0	88.40	178.40	10,777.1	-5,705.3	-251.8	3.44	0.53	-3.40	42.7	-28.2
16,853.0	88.60	178.90	10,779.8	-5,800.2	-249.5	0.57	0.21	0.53	42.9	-26.8
16,947.0	88.40	179.00	10,782.0	-5,894.2	-247.8	0.24	-0.21	0.11	43.2	-25.9
17,042.0	88.40	179.50	10,784.7	-5,989.1	-246.6	0.53	0.00	0.53	43.6	-25.6
17,136.0	89.40	178.10	10,786.5	-6,083.1	-244.8	1.83	1.06	-1.49	43.2	-24.5
17,231.0	88.10	178.20	10,788.6	-6,178.0	-241.5	1.37	-1.37	0.11	43.1	-22.3



Midland PVA

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Fearless 23 Fed Com
 Well: #508H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #508H
 TVD Reference: KB = 25' @ 3454.0usft
 MD Reference: KB = 25' @ 3454.0usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
17,325.0	87.20	178.50	10,792.4	-8,271.9	-238.8	1.01	-0.96	0.32	44.7	-20.4	
17,420.0	87.80	178.10	10,798.6	-8,368.8	-236.0	0.78	0.83	-0.42	48.6	-18.5	
17,514.0	87.20	178.00	10,800.7	-8,460.6	-232.8	0.65	-0.64	-0.11	48.5	-16.2	
17,608.0	88.90	178.70	10,803.9	-8,554.5	-230.1	1.98	1.81	0.74	49.5	-14.3	
17,702.0	87.50	179.10	10,806.8	-8,648.4	-228.3	1.55	-1.49	0.43	50.3	-13.4	
17,797.0	90.20	178.30	10,808.7	-8,743.4	-226.2	2.98	2.84	-0.84	49.9	-12.1	
17,891.0	90.00	177.90	10,808.5	-8,837.3	-223.0	0.48	-0.21	-0.43	47.6	-9.9	
17,985.0	89.30	177.80	10,809.1	-8,931.3	-219.4	0.81	-0.74	-0.32	45.9	-7.0	
18,080.0	88.80	177.40	10,810.7	-7,026.2	-215.2	0.57	-0.53	-0.21	45.3	-3.8	
18,174.0	88.00	177.30	10,813.3	-7,120.0	-210.9	0.86	-0.85	-0.11	45.7	-0.3	
18,269.0	87.20	178.50	10,817.3	-7,214.8	-205.7	1.19	-0.84	-0.84	47.4	4.0	
18,363.0	87.80	179.60	10,821.4	-7,308.6	-202.5	3.36	0.64	3.30	49.3	6.3	
18,457.0	86.60	179.20	10,826.0	-7,402.5	-201.6	1.35	-1.28	-0.43	51.7	6.4	
18,551.0	87.40	179.60	10,830.9	-7,496.4	-200.6	0.95	0.85	0.43	54.4	6.5	
18,646.0	87.40	179.40	10,835.2	-7,591.3	-199.7	0.21	0.00	-0.21	56.5	6.4	
18,740.0	90.20	179.20	10,837.2	-7,685.2	-198.6	2.99	2.98	-0.21	56.3	6.7	
18,835.0	89.00	178.90	10,837.9	-7,780.2	-197.0	1.30	-1.26	-0.32	54.7	7.4	
18,929.0	92.00	179.60	10,837.0	-7,874.2	-195.8	3.28	3.19	0.74	51.7	7.8	
19,023.0	91.10	179.70	10,834.5	-7,968.2	-195.2	0.96	-0.96	0.11	46.9	7.5	
19,117.0	90.60	179.50	10,833.1	-8,062.2	-194.6	0.57	-0.53	-0.21	43.3	7.3	
19,212.0	89.90	178.70	10,832.7	-8,157.1	-193.1	1.12	-0.74	-0.84	40.7	7.8	
19,306.0	88.80	179.60	10,833.7	-8,251.1	-191.7	1.51	-1.17	0.96	39.6	8.4	
19,400.0	88.00	178.80	10,836.4	-8,345.1	-190.4	1.20	-0.85	-0.85	40.0	8.9	
19,494.0	89.00	179.80	10,838.8	-8,439.0	-189.1	1.36	1.06	0.85	40.2	9.3	
19,589.0	88.20	179.60	10,841.2	-8,534.0	-188.4	0.64	-0.84	0.00	40.3	9.1	
19,683.0	87.60	180.00	10,844.6	-8,627.9	-188.1	0.77	-0.64	0.43	41.6	8.5	
19,777.0	90.10	180.30	10,846.5	-8,721.9	-188.3	2.68	2.66	0.32	41.2	7.4	



Midland PVA

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 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.14

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	DLeg (*100usft)	Build (*100usft)	Turn (*100usft)	High to Plan (usft)	Right to Plan (usft)
19,872.0	89.40	180.70	10,846.9	-8,816.9	-189.1	0.85	-0.74	0.42	39.4	5.7
19,966.0	88.40	181.00	10,848.7	-8,910.9	-190.5	1.11	-1.08	0.32	39.0	3.4
20,061.0	88.70	181.10	10,851.1	-9,005.8	-192.3	0.33	0.32	0.11	39.2	0.8
20,155.0	88.20	182.00	10,853.7	-9,099.8	-194.8	1.09	-0.53	0.98	39.5	-2.8
20,250.0	88.30	183.30	10,856.6	-9,194.6	-199.2	1.37	0.11	1.37	40.2	-7.9
20,344.0	87.60	181.40	10,859.9	-9,288.5	-203.1	2.15	-0.74	-2.02	41.4	-12.6
20,438.0	89.10	179.70	10,862.6	-9,382.4	-204.0	2.41	1.60	-1.81	41.9	-14.3
20,533.0	88.80	179.50	10,864.4	-9,477.4	-203.3	0.38	-0.32	-0.21	41.4	-14.5
20,627.0	87.90	179.20	10,867.1	-9,571.4	-202.2	1.01	-0.96	-0.32	41.9	-14.3
20,721.0	87.40	180.00	10,870.9	-9,665.3	-201.6	1.00	-0.53	0.85	43.5	-14.6
20,779.0	87.10	180.70	10,873.7	-9,723.2	-201.9	1.31	-0.52	1.21	45.0	-15.5
20,831.0	87.10	180.70	10,876.3	-9,775.1	-202.6	0.00	0.00	0.00	46.4	-16.6

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/S (usft)	+E/W (usft)	
10,050.0	10,008.1	594.6	-37.7	KOP, MD:10050.0', TVD:10008.1', N/S:594.6', E/W:-37.7', INC:1.76
10,252.8	10,208.1	569.4	-54.0	FTP Crossing, MD:10252.8', TVD:10208.1', N/S:569.4', E/W:-54.0', INC:15.25
20,779.0	10,873.7	-9,723.2	-201.9	Last MWD Survey (MD=20779.0')
20,831.0	10,876.3	-9,775.1	-202.6	Projection to Bit (MD=20831.0')

Checked By: _____ Approved By: _____ Date: _____

I certify this survey to be true and correct to the best of my belief and knowledge.

Signed Kay Maddox Date 12/10/2019



Lea County, NM (NAD 83 NME)

Fearless 23 Fed Com #506H

Plan #1

PROJECT DETAILS: Lea County, NM (NAD 83 NME)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

WELL DETAILS: #506H

KB = 25' @ 3454.0surf 3429.0
Northing 408588.00 Easting 783552.00 Latitude 32° 7' 17.125 N Longitude 103° 38' 52.247 W

To convert a Magnetic Direction to a Grid Direction, Add 8.40°
To convert a Magnetic Direction to a True Direction, Add 8.77° East
To convert a True Direction to a Grid Direction, Subtract 0.36°

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0	
3	1517.3	6.35	0.00	1516.6	17.6	0.0	2.00	0.00	-17.5	
4	6791.3	6.35	0.00	6758.4	600.4	0.0	0.00	0.00	-600.3	
5	7108.6	0.00	0.00	7075.0	818.0	0.0	2.00	180.00	-617.9	
6	10099.6	0.00	0.00	10068.0	818.0	0.0	0.00	0.00	-617.9	
7	10994.5	89.49	198.13	10638.9	78.3	-176.7	10.00	198.13	-75.0	
8	11616.5	89.49	179.47	10844.5	-533.6	-271.4	3.00	-90.07	538.7	
9	13146.5	89.49	179.47	10658.0	-2063.5	-257.2	0.00	0.00	2068.0	TGT#1(Fearless 23 Fed Com #506H)
10	13179.8	88.83	179.47	10658.0	-2096.8	-256.9	2.00	179.78	2101.3	
11	16090.3	88.83	179.47	10718.0	-5008.5	-230.1	0.00	0.00	5010.0	TGT#2(Fearless 23 Fed Com #506H)
12	16098.9	88.85	179.47	10718.2	-5015.2	-230.0	2.00	-180.00	5018.6	
13	20862.3	88.65	179.47	10830.0	-9777.0	-186.0	0.00	0.00	9778.8	PBHL (Fearless 23 Fed Com #506H)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting
Brushy Top(Fearless 23 Fed Com #506H)	7078.0	618.0	0.0	409203.00	783552.00
FTP (Fearless 23 Fed Com #506H)	10638.0	885.0	-294.0	409145.00	783258.00
TGT#1(Fearless 23 Fed Com #506H)	10658.0	-2063.5	-257.2	408521.00	783294.79
TGT#2(Fearless 23 Fed Com #506H)	10718.0	-5008.5	-230.1	403378.60	783321.94
PBHL (Fearless 23 Fed Com #506H)	10830.0	-9777.0	-186.0	398208.00	783358.00

