

HOBBS OCD

OCT 22 2018

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EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Hearns 34 State Com

#713H

OH

Design: OH

Midland PVA

30 August, 2018



Midland PVA

Company:	EOG Resources - Midland			Local Co-ordinate Reference:	Well #713H
Project:	Lea County, NM (NAD 83 NME)			TVD Reference:	KB = 25' @ 3510.0usft
Site:	Hearns 34 State Com			MD Reference:	KB = 25' @ 3510.0usft
Well:	#713H			North Reference:	Grid
Wellbore:	OH			Survey Calculation Method:	Minimum Curvature
Design:	OH			Database:	EDM 5000.14

Project	Lea County, NM (NAD 83 NME)				
Map System:	US State Plane 1983		System Datum:	Mean Sea Level	
Geo Datum:	North American Datum 1983				
Map Zone:	New Mexico Eastern Zone				

Site	Hearns 34 State Com				
Site Position:		Northing:	425,568.00 usft	Latitude:	32° 10' 3.355 N
From:	Map	Easting:	780,745.00 usft	Longitude:	103° 33' 34.635 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.41 "

Well	#713H					
Well Position	+N/-S	0.0 usft	Northing:	425,604.00 usft	Latitude:	32° 10' 3.573 N
	+E/-W	0.0 usft	Easting:	782,679.00 usft	Longitude:	103° 33' 12.133 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,485.0 usft

Wellbore	OH				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/14/2017	6.94	60.01	47,906,97322511

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	0.58	



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Survey Program		Date	8/30/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
212.0	1,233.0	Cartel 41 8' KB + 17' (OH)	MWD	OWSG MWD - Standard	
1,381.0	5,002.0	Cartel 18 22' KB +3' (OH)	MWD	OWSG MWD - Standard	
5,156.0	22,706.0	Learn MWD (OH)	MWD	OWSG MWD - Standard	

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0
212.0	0.35	346.20	212.0	0.6	-0.2	0.17	0.17	0.00	0.0	0.0
371.0	0.59	4.39	371.0	1.9	-0.2	0.18	0.15	11.44	0.0	0.0
530.0	0.55	299.27	530.0	3.1	-0.8	0.39	-0.03	-40.96	0.0	0.0
688.0	0.88	306.56	688.0	4.2	-2.4	0.22	0.21	4.61	0.0	0.0
846.0	0.79	319.22	846.0	5.7	-4.1	0.13	-0.06	8.01	0.0	0.0
1,006.0	0.81	280.28	1,005.9	6.8	-6.0	0.33	0.01	-24.34	0.0	0.0
1,165.0	1.78	291.80	1,164.9	7.9	-9.4	0.63	0.61	7.25	0.0	0.0
1,233.0	1.47	286.52	1,232.9	8.5	-11.2	0.51	-0.46	-7.76	0.0	0.0
1,514.0	2.10	171.58	1,513.8	4.5	-13.9	1.08	0.22	-40.90	-2.2	-0.7
1,689.0	1.78	153.81	1,688.7	-1.1	-12.2	0.39	-0.18	-10.15	-1.9	-1.3
1,863.0	1.56	159.98	1,862.6	-5.8	-10.2	0.16	-0.13	3.55	-2.1	-1.1
2,038.0	1.02	161.69	2,037.6	-9.5	-8.9	0.31	-0.31	0.98	-2.1	-1.1
2,212.0	1.73	164.29	2,211.5	-13.5	-7.7	0.41	0.41	1.49	-2.1	-1.0
2,387.0	3.26	146.50	2,386.4	-20.2	-4.2	0.97	0.87	-10.17	-1.7	-1.6
2,561.0	3.08	137.01	2,560.1	-27.7	1.7	0.32	-0.10	-5.45	-1.5	-1.8
2,735.0	2.36	134.10	2,733.9	-33.7	7.4	0.42	-0.41	-1.67	-1.4	-1.9
2,910.0	2.82	141.65	2,908.7	-39.5	12.7	0.33	0.26	4.31	-1.6	-1.7
3,083.0	3.65	149.67	3,081.4	-47.6	18.1	0.55	0.48	4.64	-1.8	-1.5
3,257.0	4.86	153.81	3,255.0	-59.0	24.2	0.72	0.70	2.38	-1.9	-1.3



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Well:	#713H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	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)	
3,432.0	3.76	145.03	3,429.5	-70.4	30.7	0.73	-0.63	-5.02	-1.7	-1.6	
3,607.0	3.18	145.73	3,604.1	-79.1	36.7	0.33	-0.33	0.40	-1.7	-1.6	
3,781.0	4.97	147.88	3,777.7	-89.5	43.5	1.03	1.03	1.24	-1.8	-1.5	
3,956.0	3.85	126.84	3,952.2	-99.4	52.2	1.11	-0.64	-12.02	-1.1	-2.1	
4,130.0	2.36	145.18	4,125.9	-105.9	58.9	1.02	-0.86	10.54	-1.7	-1.6	
4,305.0	1.72	150.07	4,300.8	-111.1	62.3	0.38	-0.37	2.79	-1.8	-1.5	
4,479.0	2.72	140.19	4,474.7	-116.5	66.2	0.61	0.57	-5.68	-1.6	-1.7	
4,654.0	2.65	131.94	4,649.5	-122.4	71.9	0.22	-0.04	-4.71	-1.3	-2.0	
4,828.0	2.97	128.81	4,823.3	-127.9	78.4	0.20	0.18	-1.80	-1.2	-2.0	
5,002.0	2.69	130.48	4,997.1	-133.4	85.0	0.17	-0.16	0.96	-1.2	-2.0	
5,156.0	3.40	147.70	5,150.9	-139.6	90.2	0.75	0.46	11.18	-2.4	-2.6	
5,250.0	3.20	146.80	5,244.7	-144.2	93.1	0.22	-0.21	-0.96	-1.8	-3.9	
5,343.0	4.20	127.80	5,337.5	-148.4	97.3	1.69	1.08	-20.43	-0.3	-4.4	
5,437.0	4.70	125.40	5,431.2	-152.8	103.1	0.57	0.53	-2.55	-1.4	-3.5	
5,531.0	4.70	124.70	5,524.8	-157.2	109.4	0.06	0.00	-0.74	-3.0	-2.5	
5,626.0	4.90	122.50	5,619.6	-161.6	116.0	0.29	0.21	-2.32	-4.8	-1.4	
5,719.0	5.00	122.50	5,712.2	-165.9	122.8	0.11	0.11	0.00	-7.0	-0.1	
5,813.0	4.80	122.90	5,805.9	-170.2	129.6	0.22	-0.21	0.43	-9.0	1.2	
5,906.0	4.90	122.90	5,898.6	-174.5	136.2	0.11	0.11	0.00	-11.0	2.5	
6,000.0	4.90	121.70	5,992.2	-178.8	143.0	0.11	0.00	-1.28	-13.1	3.6	
6,094.0	5.10	136.30	6,085.9	-183.9	149.3	1.37	0.21	15.53	-13.8	7.6	
6,188.0	5.30	140.30	6,178.5	-190.3	154.9	0.44	0.21	4.26	-15.7	8.3	
6,282.0	5.20	139.10	6,273.1	-196.8	160.5	0.16	-0.11	-1.28	-18.4	7.5	
6,375.0	5.30	138.20	6,365.7	-203.2	166.1	0.14	0.11	-0.97	-21.0	6.8	
6,469.0	5.10	137.30	6,459.3	-209.5	171.8	0.23	-0.21	-0.96	-23.5	6.1	
6,563.0	5.00	136.80	6,552.9	-215.6	177.5	0.12	-0.11	-0.53	-25.7	5.7	
6,655.0	5.00	137.00	6,644.6	-221.4	182.9	0.02	0.00	0.22	-27.8	5.6	



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6,749.0	5.10	137.50	6,738.2	-227.5	188.6	0.12	0.11	0.53	-29.9	5.6	
6,843.0	5.20	136.80	6,831.8	-233.7	194.3	0.13	0.11	-0.74	-32.3	5.0	
6,936.0	4.60	143.60	6,924.5	-239.8	199.4	0.90	-0.65	7.31	-33.4	8.4	
7,030.0	2.60	164.00	7,018.3	-244.9	202.2	2.49	-2.13	21.70	-28.8	17.8	
7,123.0	1.90	168.20	7,111.2	-248.4	203.1	0.77	-0.75	4.52	-26.0	16.7	
7,217.0	1.80	165.10	7,205.2	-251.4	203.8	0.15	-0.11	-3.30	-24.6	12.2	
7,311.0	2.00	166.70	7,299.1	-254.4	204.6	0.22	0.21	1.70	-22.1	9.7	
7,404.0	0.80	175.30	7,392.1	-256.6	205.0	1.31	-1.29	9.25	-18.1	9.2	
7,498.0	0.40	180.70	7,486.1	-257.6	205.1	0.43	-0.43	5.74	-13.9	6.6	
7,591.0	0.60	174.20	7,579.1	-258.4	205.1	0.22	0.22	-6.99	-11.3	1.6	
7,685.0	0.90	173.20	7,673.1	-259.6	205.2	0.32	0.32	-1.06	-10.8	0.0	
7,779.0	1.00	177.00	7,767.1	-261.2	205.4	0.13	0.11	4.04	-12.2	0.7	
7,872.0	1.00	172.10	7,860.1	-262.8	205.5	0.09	0.00	-5.27	-13.9	-0.4	
7,966.0	1.00	167.90	7,954.1	-264.4	205.8	0.08	0.00	-4.47	-15.4	-1.5	
8,059.0	1.20	353.90	8,047.0	-264.2	205.9	2.36	0.22	-187.10	15.3	-0.2	
8,153.0	1.70	347.70	8,141.0	-261.9	205.5	0.56	0.53	-6.60	12.9	1.3	
8,247.0	1.60	349.00	8,235.0	-259.2	204.9	0.11	-0.11	1.38	10.2	1.0	
8,340.0	1.40	342.30	8,327.9	-256.9	204.3	0.29	-0.22	-7.20	7.6	2.1	
8,434.0	1.10	345.30	8,421.9	-254.9	203.7	0.33	-0.32	3.19	5.7	1.7	
8,528.0	0.80	330.80	8,515.9	-253.5	203.2	0.41	-0.32	-15.43	3.5	2.9	
8,622.0	0.60	325.70	8,609.9	-252.5	202.6	0.22	-0.21	-5.43	2.1	3.1	
8,716.0	0.40	352.80	8,703.9	-251.8	202.3	0.32	-0.21	28.83	2.5	2.0	
8,810.0	0.10	212.70	8,797.9	-251.5	202.2	0.51	-0.32	-149.04	-3.1	-0.2	
8,903.0	0.40	212.40	8,890.9	-251.8	202.0	0.32	0.32	-0.32	-3.5	-0.2	
8,997.0	0.40	184.90	8,984.9	-252.4	201.8	0.20	0.00	-29.26	-3.6	-1.9	
9,091.0	0.40	199.70	9,078.9	-253.1	201.6	0.11	0.00	15.74	-4.6	-0.8	
9,184.0	0.20	203.80	9,171.9	-253.5	201.5	0.22	-0.22	4.41	-5.2	-0.5	



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9,277.0	0.20	330.00	9,264.9	-253.5	201.3	0.38	0.00	135.70	2.6	4.6	
9,371.0	0.50	337.20	9,358.9	-253.0	201.1	0.32	0.32	7.66	2.6	4.3	
9,464.0	0.80	335.90	9,451.9	-252.1	200.7	0.32	0.32	-1.40	1.4	4.3	
9,558.0	1.00	328.00	9,545.9	-250.8	200.0	0.25	0.21	-8.40	-0.7	4.4	
9,651.0	1.40	308.50	9,638.9	-249.4	198.6	0.61	0.43	-20.97	-4.0	3.6	
9,745.0	1.80	330.50	9,732.8	-247.4	197.0	0.77	0.43	23.40	-4.9	5.3	
9,839.0	2.40	336.30	9,826.8	-244.3	195.5	0.68	0.64	6.17	-7.7	5.9	
9,933.0	1.60	350.00	9,920.7	-241.2	194.5	0.99	-0.85	14.57	-9.4	8.0	
10,027.0	1.10	345.60	10,014.7	-239.0	194.0	0.54	-0.53	-4.68	-12.2	7.2	
10,121.0	0.40	347.90	10,108.7	-237.8	193.7	0.75	-0.74	2.45	-13.1	7.7	
10,215.0	0.80	32.90	10,202.7	-236.9	194.0	0.63	0.43	47.87	-4.7	14.9	
10,309.0	1.00	36.90	10,296.6	-235.7	194.9	0.22	0.21	4.26	-5.1	15.3	
10,402.0	0.40	11.80	10,389.6	-234.8	195.4	0.71	-0.65	-26.99	-12.2	11.3	
10,589.0	0.40	21.50	10,576.6	-233.5	195.8	0.04	0.00	5.19	-11.4	13.3	
10,683.0	0.80	33.20	10,670.6	-232.7	196.3	0.44	0.43	12.45	-9.4	15.4	
10,776.0	0.90	54.50	10,763.6	-231.7	197.2	0.35	0.11	22.90	-4.5	18.0	
10,870.0	1.10	83.20	10,857.6	-231.2	198.7	0.57	0.21	30.53	3.1	18.3	
10,963.0	1.80	109.00	10,950.6	-231.5	201.0	1.01	0.75	27.74	8.5	15.5	
11,055.0	1.90	105.50	11,042.5	-232.4	203.8	0.16	0.11	-3.80	4.6	15.9	
11,149.0	1.80	105.70	11,136.5	-233.2	206.7	0.11	-0.11	0.21	1.6	15.9	
11,243.0	1.30	132.40	11,230.4	-234.4	208.9	0.92	-0.53	28.40	6.2	14.2	
11,336.0	1.50	134.00	11,323.4	-235.9	210.6	0.22	0.22	1.72	4.3	14.0	
11,430.0	2.00	131.30	11,417.4	-237.8	212.7	0.54	0.53	-2.87	0.8	14.1	
11,523.0	1.70	148.70	11,510.3	-240.1	214.7	0.68	-0.32	18.71	2.1	13.7	
11,616.0	1.60	201.10	11,603.3	-242.5	214.9	1.57	-0.11	56.34	10.0	7.8	
11,710.0	2.10	219.20	11,697.2	-245.0	213.3	0.81	0.53	19.26	9.0	4.7	
11,804.0	2.60	213.10	11,791.2	-248.2	211.1	0.59	0.53	-6.49	4.6	5.5	



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11,932.0	3.10	180.90	11,919.0	-254.1	209.5	1.29	0.39	-25.16	-5.0	5.5	
12,026.0	0.40	222.40	12,012.9	-256.8	209.2	2.99	-2.87	44.15	-2.3	9.1	
12,040.0	1.32	346.54	12,027.0	-256.7	209.1	11.24	6.53	885.17	8.7	-3.2	
KOP 12040.0' MD; 12027.0' TVD; -254.4'; 209.5'; 1.32											
12,073.0	5.00	355.50	12,059.9	-254.9	208.9	11.24	11.17	27.18	6.4	-4.4	
12,120.0	11.80	355.30	12,106.3	-248.1	208.4	14.47	14.47	-0.43	2.7	-4.2	
12,213.0	24.20	357.40	12,194.6	-219.5	206.7	13.35	13.33	2.26	-6.8	-3.2	
12,253.9	28.51	357.92	12,231.3	-201.3	206.0	10.55	10.54	1.26	-11.1	-2.6	
FTP Crossing 12253.9' MD; 12231.3' TVD; -199.0'; 206.3'; 28.51											
12,306.0	34.00	358.40	12,275.8	-174.3	205.1	10.55	10.54	0.93	-15.9	-1.9	
12,400.0	46.30	357.40	12,347.5	-113.9	202.8	13.10	13.09	-1.06	-24.3	-0.5	
12,494.0	58.70	358.80	12,404.6	-39.5	200.4	13.24	13.19	1.49	-33.4	1.8	
12,587.0	64.80	2.70	12,448.6	42.4	201.6	7.53	6.56	4.19	-38.0	1.2	
12,634.0	70.80	2.30	12,466.4	85.8	203.5	12.79	12.77	-0.85	-37.8	-1.3	
12,682.0	71.80	0.90	12,481.8	131.3	204.8	3.46	2.08	-2.92	-35.4	-3.3	
12,775.0	79.70	358.10	12,504.6	221.3	203.9	8.98	8.49	-3.01	-23.3	-3.3	
12,822.0	85.40	356.00	12,510.7	267.9	201.5	12.91	12.13	-4.47	-16.6	-1.1	
12,869.0	87.20	357.20	12,513.8	314.7	198.7	4.60	3.83	2.55	-12.8	1.3	
12,963.0	89.20	358.40	12,516.7	408.6	195.1	2.48	2.13	1.28	-8.3	4.2	
13,010.0	88.80	359.30	12,517.5	455.5	194.2	2.10	-0.85	1.91	-6.7	4.9	
13,056.0	89.40	0.90	12,518.3	501.5	194.3	3.71	1.30	3.48	-5.2	4.4	
13,149.0	91.30	1.30	12,517.7	594.5	196.1	2.09	2.04	0.43	-4.2	2.0	
13,244.0	89.10	1.30	12,517.4	689.5	198.2	2.32	-2.32	0.00	-3.0	-0.8	
13,336.0	89.70	2.80	12,518.3	781.4	201.5	1.76	0.65	1.63	-0.5	-4.7	
13,431.0	90.10	1.40	12,518.5	876.3	205.0	1.53	0.42	-1.47	1.3	-8.9	
13,526.0	90.30	1.40	12,518.2	971.3	207.3	0.21	0.21	0.00	2.6	-11.9	
13,619.0	91.20	1.60	12,516.9	1,064.3	209.7	0.99	0.97	0.22	3.7	-15.0	



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #713H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3510.0usft
Site:	Hearns 34 State Com	MD Reference:	KB = 25' @ 3510.0usft
Well:	#713H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

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)	
13,712.0	90.60	1.60	12,515.5	1,157.2	212.3	0.65	-0.65	0.00	4.5	-18.2	
13,806.0	90.70	359.70	12,514.4	1,251.2	213.4	2.02	0.11	-2.02	5.7	-19.9	
13,899.0	91.40	358.40	12,512.7	1,344.2	211.9	1.59	0.75	-1.40	6.2	-19.1	
13,993.0	91.60	358.60	12,510.3	1,438.1	209.4	0.30	0.21	0.21	6.1	-17.3	
14,087.0	91.90	358.40	12,507.4	1,532.0	206.9	0.38	0.32	-0.21	5.5	-15.5	
14,180.0	92.20	358.80	12,504.1	1,624.9	204.7	0.54	0.32	0.43	4.4	-13.8	
14,274.0	93.10	359.00	12,499.7	1,718.8	202.9	0.98	0.96	0.21	2.4	-12.7	
14,367.0	91.50	359.70	12,496.0	1,811.7	201.8	1.88	-1.72	0.75	0.7	-12.3	
14,460.0	90.90	359.50	12,494.0	1,904.7	201.2	0.68	-0.65	-0.22	-0.2	-12.3	
14,554.0	89.40	358.60	12,493.8	1,998.7	199.6	1.86	-1.60	-0.96	0.6	-11.4	
14,648.0	90.30	358.40	12,494.0	2,092.7	197.2	0.98	0.96	-0.21	1.9	-9.6	
14,741.0	89.70	357.70	12,494.0	2,185.6	194.0	0.99	-0.65	-0.75	2.9	-7.1	
14,835.0	90.20	358.40	12,494.1	2,279.6	190.8	0.92	0.53	0.74	4.1	-4.5	
14,929.0	92.50	358.60	12,491.9	2,373.5	188.3	2.46	2.45	0.21	2.9	-2.7	
15,023.0	92.10	358.40	12,488.1	2,467.4	185.9	0.48	-0.43	-0.21	0.2	-0.9	
15,117.0	92.80	358.40	12,484.1	2,561.3	183.3	0.74	0.74	0.00	-2.8	1.0	
15,211.0	91.10	359.10	12,480.9	2,655.2	181.2	1.96	-1.81	0.74	-4.9	2.4	
15,305.0	91.90	358.80	12,478.4	2,749.1	179.5	0.91	0.65	-0.32	-6.3	3.5	
15,399.0	90.10	359.30	12,476.8	2,843.1	177.9	1.99	-1.91	0.53	-6.9	4.4	
15,492.0	90.40	359.70	12,476.4	2,936.1	177.1	0.54	0.32	0.43	-6.3	4.5	
15,586.0	91.10	0.00	12,475.2	3,030.1	176.9	0.81	0.74	0.32	-6.4	4.1	
15,680.0	91.00	0.70	12,473.4	3,124.1	177.4	0.75	-0.11	0.74	-7.1	2.9	
15,774.0	90.80	1.10	12,472.0	3,218.0	178.9	0.48	-0.21	0.43	-7.5	0.8	
15,867.0	92.90	0.60	12,469.0	3,311.0	180.3	2.32	2.26	-0.54	-9.5	-1.3	
15,961.0	92.20	0.90	12,464.8	3,404.9	181.5	0.81	-0.74	0.32	-12.6	-3.1	
16,055.0	90.00	1.80	12,463.0	3,498.8	183.7	2.53	-2.34	0.96	-13.4	-6.0	
16,149.0	89.80	2.00	12,463.1	3,592.8	186.9	0.30	-0.21	0.21	-11.8	-9.8	



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #713H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3510.0usft
Site:	Hearns 34 State Com	MD Reference:	KB = 25' @ 3510.0usft
Well:	#713H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

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)	
16,243.0	90.00	2.30	12,463.3	3,686.7	190.4	0.38	0.21	0.32	-9.8	-14.0	
16,337.0	90.90	0.00	12,462.6	3,780.7	192.3	2.63	0.96	-2.45	-8.8	-16.5	
16,431.0	90.70	358.80	12,461.3	3,874.7	191.3	1.29	-0.21	-1.28	-8.3	-16.2	
16,524.0	91.10	358.40	12,459.8	3,967.6	189.0	0.61	0.43	-0.43	-8.1	-14.6	
16,618.0	90.40	357.40	12,458.6	4,061.5	185.6	1.30	-0.74	-1.06	-7.5	-11.8	
16,712.0	90.30	357.40	12,458.0	4,155.4	181.3	0.11	-0.11	0.00	-6.3	-8.2	
16,806.0	91.90	358.10	12,456.2	4,249.4	177.6	1.86	1.70	0.74	-6.4	-5.2	
16,900.0	93.40	359.50	12,451.8	4,343.2	175.6	2.18	1.60	1.49	-8.9	-3.9	
16,994.0	90.30	358.80	12,448.8	4,437.2	174.3	3.38	-3.30	-0.74	-10.2	-3.1	
17,088.0	89.40	357.20	12,449.1	4,531.1	171.0	1.95	-0.96	-1.70	-8.2	-0.5	
17,182.0	88.90	357.00	12,450.4	4,625.0	166.2	0.57	-0.53	-0.21	-5.0	3.6	
17,276.0	89.20	357.70	12,452.0	4,718.8	161.9	0.81	0.32	0.74	-1.6	7.2	
17,369.0	89.90	359.00	12,452.7	4,811.8	159.2	1.59	0.75	1.40	0.9	9.3	
17,463.0	90.20	358.40	12,452.7	4,905.8	157.1	0.71	0.32	-0.64	2.7	10.7	
17,557.0	91.30	358.30	12,451.4	4,999.7	154.4	1.18	1.17	-0.11	3.3	12.8	
17,651.0	93.60	358.60	12,447.4	5,093.6	151.8	2.47	2.45	0.32	1.1	14.7	
17,744.0	93.70	359.00	12,441.5	5,186.4	149.9	0.44	0.11	0.43	-3.9	16.0	
17,838.0	94.10	358.60	12,435.1	5,280.2	147.9	0.60	0.43	-0.43	-10.3	17.3	
17,933.0	91.50	359.50	12,430.5	5,375.0	146.3	2.90	-2.74	0.95	-15.0	18.2	
18,027.0	90.70	359.10	12,428.6	5,469.0	145.2	0.95	-0.85	-0.43	-16.9	18.7	
18,120.0	91.40	358.40	12,426.9	5,562.0	143.2	1.06	0.75	-0.75	-18.6	20.0	
18,214.0	92.50	359.10	12,423.7	5,655.9	141.1	1.39	1.17	0.74	-21.8	21.4	
18,308.0	90.70	359.90	12,421.1	5,749.8	140.3	2.10	-1.91	0.85	-24.5	21.6	
18,401.0	88.20	1.30	12,422.0	5,842.8	141.3	3.08	-2.69	1.51	-23.6	20.0	
18,520.0	87.10	0.90	12,426.9	5,961.7	143.5	0.98	-0.92	-0.34	-18.7	16.9	
18,612.0	91.70	0.00	12,427.9	6,053.7	144.3	5.09	5.00	-0.98	-17.8	15.5	
18,706.0	91.80	359.50	12,425.0	6,147.6	143.9	0.54	0.11	-0.53	-20.7	15.2	



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #713H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3510.0usft
Site:	Hearns 34 State Com	MD Reference:	KB = 25' @ 3510.0usft
Well:	#713H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

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)	
18,799.0	92.80	1.60	12,421.3	6,240.5	144.7	2.50	1.08	2.26	-24.4	13.7	
18,893.0	91.70	3.50	12,417.6	6,334.4	148.9	2.33	-1.17	2.02	-28.1	8.8	
18,986.0	90.30	5.10	12,415.9	6,427.1	155.9	2.29	-1.51	1.72	-29.8	1.2	
19,080.0	85.70	4.80	12,419.2	6,520.6	164.0	4.90	-4.89	-0.32	-26.5	-7.5	
19,173.0	86.00	359.00	12,426.0	6,613.3	167.1	6.23	0.32	-6.24	-19.8	-11.3	
19,267.0	89.50	357.40	12,429.6	6,707.2	164.1	4.09	3.72	-1.70	-16.1	-9.0	
19,360.0	90.40	358.40	12,429.7	6,800.1	160.7	1.45	0.97	1.08	-16.1	-6.2	
19,454.0	89.90	359.50	12,429.5	6,894.1	159.0	1.29	-0.53	1.17	-16.3	-5.2	
19,548.0	89.10	0.00	12,430.3	6,988.1	158.6	1.00	-0.85	0.53	-15.5	-5.4	
19,642.0	88.00	1.30	12,432.7	7,082.1	159.6	1.81	-1.17	1.38	-13.2	-7.1	
19,736.0	89.30	1.40	12,434.9	7,176.0	161.9	1.39	1.38	0.11	-11.0	-10.0	
19,830.0	89.20	0.20	12,436.1	7,270.0	163.2	1.28	-0.11	-1.28	-9.8	-12.0	
19,923.0	88.30	1.10	12,438.2	7,363.0	164.2	1.37	-0.97	0.97	-7.8	-13.7	
20,016.0	88.70	2.00	12,440.6	7,455.9	166.7	1.06	0.43	0.97	-5.4	-16.8	
20,110.0	90.30	2.70	12,441.4	7,549.8	170.6	1.86	1.70	0.74	-4.5	-21.4	
20,205.0	90.70	0.90	12,440.6	7,644.8	173.6	1.94	0.42	-1.89	-5.4	-25.0	
20,299.0	92.60	1.30	12,437.9	7,738.7	175.4	2.07	2.02	0.43	-8.1	-27.5	
20,392.0	92.00	0.70	12,434.1	7,831.6	177.0	0.91	-0.65	-0.65	-12.3	-29.8	
20,486.0	89.20	0.00	12,433.2	7,925.6	177.6	3.07	-2.98	-0.74	-14.4	-31.0	
20,579.0	89.80	0.60	12,434.0	8,018.6	178.1	0.91	0.65	0.65	-14.7	-32.1	
20,673.0	89.90	0.20	12,434.2	8,112.6	178.7	0.44	0.11	-0.43	-15.6	-33.4	
20,768.0	90.50	0.70	12,433.9	8,207.6	179.5	0.82	0.63	0.53	-17.0	-34.9	
20,862.0	88.60	358.60	12,434.6	8,301.6	178.9	3.01	-2.02	-2.23	-17.4	-34.9	
20,956.0	88.50	357.90	12,437.0	8,395.5	176.0	0.75	-0.11	-0.74	-16.1	-32.7	
21,050.0	91.30	359.00	12,437.2	8,489.5	173.5	3.20	2.98	1.17	-17.1	-30.8	
21,144.0	90.40	359.30	12,435.8	8,583.4	172.1	1.01	-0.96	0.32	-19.6	-30.1	
21,237.0	90.10	359.70	12,435.4	8,676.4	171.3	0.54	-0.32	0.43	-21.1	-30.0	



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #713H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3510.0usft
Site:	Hearns 34 State Com	MD Reference:	KB = 25' @ 3510.0usft
Well:	#713H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

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)	
21,331.0	90.70	0.00	12,434.7	8,770.4	171.0	0.71	0.64	0.32	-22.9	-30.4	
21,425.0	89.40	0.40	12,434.6	8,864.4	171.4	1.45	-1.38	0.43	-24.1	-31.3	
21,519.0	87.40	358.10	12,437.3	8,958.4	170.1	3.24	-2.13	-2.45	-22.6	-30.8	
21,612.0	87.50	357.90	12,441.4	9,051.2	166.9	0.24	0.11	-0.22	-19.5	-28.2	
21,706.0	87.80	358.10	12,445.2	9,145.1	163.6	0.38	0.32	0.21	-16.8	-25.6	
21,799.0	87.80	358.40	12,448.8	9,238.0	160.8	0.32	0.00	0.32	-14.3	-23.4	
21,893.0	86.60	357.00	12,453.4	9,331.8	157.0	1.96	-1.28	-1.49	-10.8	-20.3	
21,987.0	90.40	354.90	12,455.9	9,425.5	150.4	4.62	4.04	-2.23	-9.6	-14.3	
22,081.0	93.50	353.00	12,452.7	9,518.9	140.5	3.87	3.30	-2.02	-13.9	-5.0	
22,174.0	95.10	353.30	12,445.7	9,611.0	129.4	1.75	1.72	0.32	-21.9	5.3	
22,267.0	95.00	355.80	12,437.5	9,703.2	120.6	2.68	-0.11	2.69	-31.2	13.5	
22,361.0	93.70	358.80	12,430.4	9,796.8	116.2	3.47	-1.38	3.19	-39.4	17.3	
22,454.0	93.50	0.20	12,424.5	9,889.6	115.4	1.52	-0.22	1.51	-46.4	17.5	
22,547.0	89.70	2.30	12,421.9	9,982.5	117.4	4.67	-4.09	2.26	-50.1	14.7	
22,641.0	85.30	2.70	12,426.0	10,076.3	121.5	4.70	-4.68	0.43	-47.1	10.0	
Last MWD Survey (MD = 22641.0)											
22,706.0	85.30	2.70	12,431.4	10,141.0	124.6	0.00	0.00	0.00	-42.6	6.5	
Projection to Bit (MD = 22706.0)											

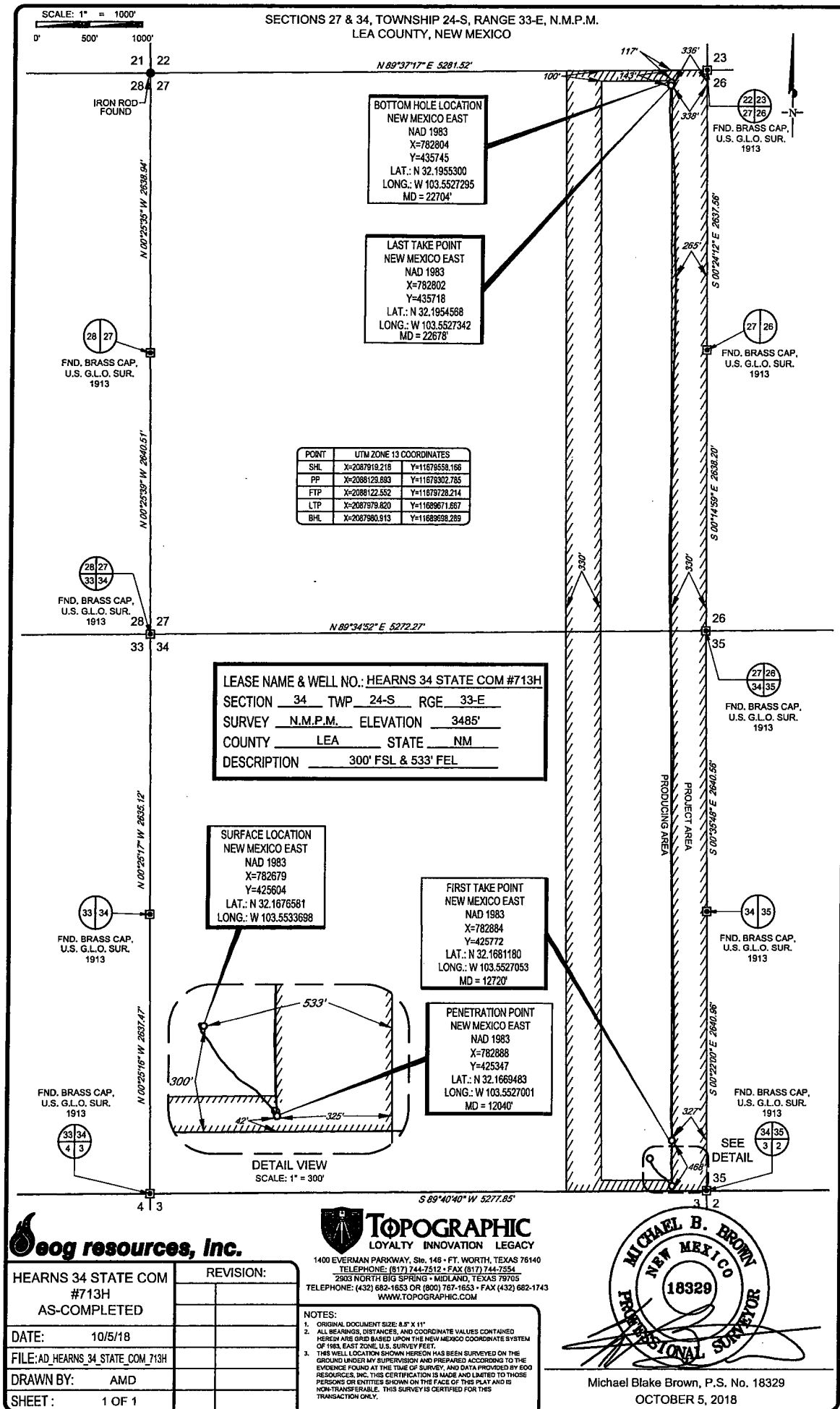
Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
12,040.0	12,027.0	-256.7	209.1	KOP 12040.0' MD; 12027.0' TVD; -254.4'; 209.5'; 1.32
12,253.9	12,231.3	-201.3	206.0	FTP Crossing 12253.9' MD; 12231.3' TVD; -199.0'; 206.3'; 28.51
22,641.0	12,426.0	10,076.3	121.5	Last MWD Survey (MD = 22641.0)
22,706.0	12,431.4	10,141.0	124.6	Projection to Bit (MD = 22706.0)



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #713H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3510.0usft
Site:	Hearns 34 State Com	MD Reference:	KB = 25' @ 3510.0usft
Well:	#713H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Checked By: _____ Approved By: _____ Date: _____





Lea County, NM (NAD 83 NME)

Hearns 34 State Com #713H

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: #713H

KB = 25' @ 3510.0usft 3485.0
Northing 425604.00 Easting 782679.00 Latitude 32°10' 3.673 N Longitude 103°33' 12.133 W

SECTION DETAILS

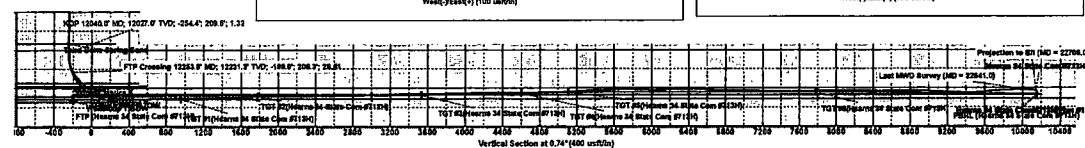
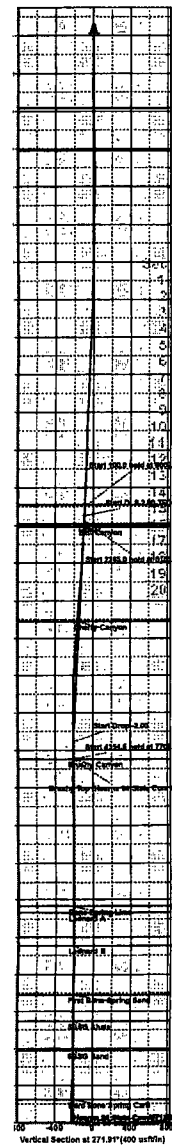
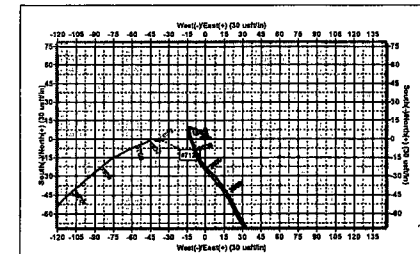
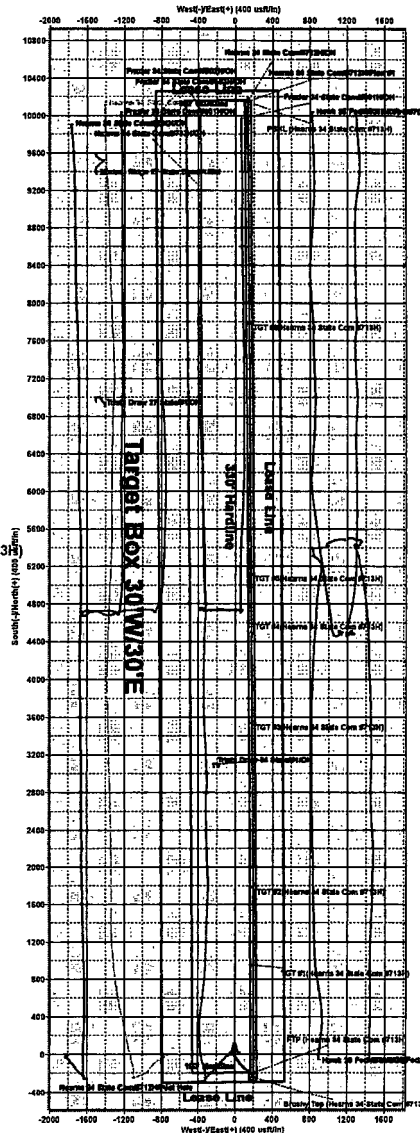
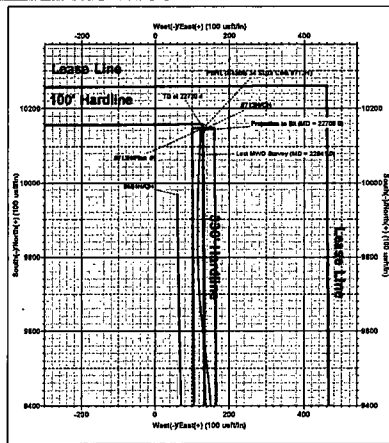
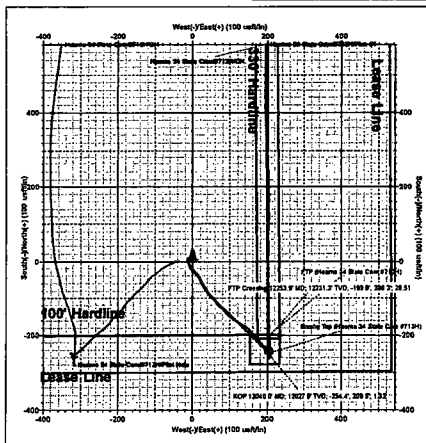
MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	Vsect	Target
5002.0	2.69	130.48	4997.1	-131.1	85.4	0.00	0.00	-130.0	
5102.0	2.69	130.48	5097.0	-134.1	88.9	0.00	0.00	-133.0	
5155.1	3.72	134.99	5150.0	-136.2	91.1	2.00	15.97	-135.0	
7520.1	3.72	134.99	7510.0	-244.7	199.7	0.00	0.00	-242.1	
7706.2	0.00	0.00	7696.0	-249.0	204.0	2.00	180.00	-246.3	Brushy Top (Hearns 34 State Com #713H)
12060.7	0.00	0.00	12050.5	-249.0	204.0	0.00	0.00	-246.3	
12818.7	90.96	359.60	12527.9	236.4	200.6	12.00	359.60	239.0	
13532.0	90.96	359.60	12516.0	949.6	195.6	0.00	0.00	952.0	
13554.1	91.40	359.60	12515.5	971.7	195.4	2.00	0.00	974.1	
14355.3	91.40	359.60	12496.0	1772.7	189.8	0.00	0.00	1775.0	
14393.0	90.64	359.60	12495.3	1810.4	189.5	2.00	179.91	1812.7	
16112.8	90.64	359.60	12476.0	3530.0	177.5	0.00	0.00	3532.0	
16134.5	91.08	359.60	12475.7	3551.6	177.3	2.00	-0.42	3553.6	
17181.2	91.08	359.60	12456.0	4598.2	170.0	0.00	0.00	4600.0	
17183.5	91.12	359.60	12456.0	4600.5	169.9	2.00	2.43	4602.3	
17691.4	91.12	359.60	12446.0	5108.3	166.4	0.00	0.00	5110.0	
17748.2	89.99	359.60	12445.4	5165.1	166.0	2.00	-180.00	5166.8	
20361.9	89.99	359.60	12446.0	7778.7	147.6	0.00	0.00	7780.0	
20395.4	89.32	359.60	12446.2	7812.2	147.4	2.00	180.00	7813.5	
22730.4	89.32	359.60	12474.0	10147.0	131.0	0.00	0.00	10147.8	PBHL (Hearns 34 State Com #713H)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting
Brushy Top (Hearns 34 State Com #713H)	7696.0	-249.0	204.0	425355.00	782883.00
TGT #6(Hearns 34 State Com #713H)	12446.0	5108.3	166.4	430712.30	782845.35
TGT #5(Hearns 34 State Com #713H)	12446.0	7778.7	147.6	431382.70	782826.63
TGT #4(Hearns 34 State Com #713H)	12456.0	4598.2	170.0	430222.20	782848.96
PBHL (Hearns 34 State Com #713H)	12474.0	10147.0	131.0	430781.00	782810.00
TGT #3(Hearns 34 State Com #713H)	12476.0	3530.0	177.5	429134.00	782856.50
TGT #2(Hearns 34 State Com #713H)	12496.0	1772.7	169.8	427376.70	782868.80
TGT #1(Hearns 34 State Com #713H)	12516.0	949.6	165.6	426553.60	782874.50
FTD (Hearns 34 State Com #713H)	12532.0	-199.0	204.0	425405.00	782883.00



Lea County, NM (NAD 83 NME)
Hearns 34 State Com #713H
Plan #1