

HOBBS OCD

OCT 22 2018

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EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Hearns 34 State Com

#712H

OH

Design: OH

Midland PVA

10 August, 2018





Midland PVA



Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #712H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3509.0usft
Site:	Hearns 34 State Com	MD Reference:	KB = 25' @ 3509.0usft
Well:	#712H	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
From:	Map	Easting:	780,745.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 10' 3.355 N
		Longitude:	103° 33' 34.635 W
		Grid Convergence:	0.41 °

Well	#712H		
Well Position	+N-S	0.0 usft	Northing:
	+E-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 10' 3.566 N
		Longitude:	103° 33' 12.540 W
		Ground Level:	3,484.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	7/11/2018	6.83
			Dip Angle (°)
			60.00
			Field Strength (nT)
			47,796.56942697

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	11,428.0
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)
	0.0	0.0	0.0
			Direction (°)
			358.04



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Survey Program		Date 8/10/2018			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
183.0	1,164.0	Cartel 41 8' KB + 17' (Pilot Hole)	MWD	OWSG MWD - Standard	
1,337.0	4,960.0	Gordon MWD 22' KB + 3' (Pilot Hole)	MWD	OWSG MWD - Standard	
5,036.0	11,428.0	Leam MWD (Pilot Hole)	MWD	OWSG MWD - Standard	
11,574.0	21,682.0	Leam MWD (OH)	MWD	OWSG MWD - Standard	

MD (usft)	Inc (")	Azi (azimuth) (")	TVD (usft)	N/S (usft)	E/W (usft)	DLeg ("/100usft)	Buile ("/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
183.0	0.84	267.36	183.0	-0.1	-1.3	0.46	0.46	0.00	0.0	0.0
371.0	0.26	226.49	371.0	-0.4	-3.0	0.35	-0.31	-21.74	0.0	0.0
530.0	0.40	230.62	530.0	-1.0	-3.7	0.09	0.09	2.60	0.0	0.0
689.0	0.40	262.09	689.0	-1.4	-4.7	0.14	0.00	19.79	0.0	0.0
848.0	0.24	340.75	848.0	-1.2	-5.4	0.27	-0.10	49.47	0.0	0.0
1,006.0	0.53	324.14	1,006.0	-0.3	-5.9	0.19	0.18	-10.51	0.0	0.0
1,164.0	0.68	291.53	1,164.0	0.6	-7.2	0.23	0.09	-20.64	0.0	0.0
1,340.0	0.55	239.08	1,340.0	0.6	-8.9	0.32	-0.07	-29.80	0.0	0.0
1,515.0	0.68	225.24	1,514.9	-0.6	-10.3	0.11	0.07	-7.91	0.0	0.0
1,689.0	1.14	248.51	1,688.9	-1.9	-12.7	0.33	0.26	13.37	0.0	0.0
1,863.0	0.84	243.79	1,862.9	-3.1	-15.4	0.18	-0.17	-2.71	0.0	0.0
2,038.0	1.97	250.50	2,037.8	-4.7	-19.4	0.65	0.65	3.83	0.0	0.0
2,213.0	4.88	245.21	2,212.5	-8.8	-29.0	1.67	1.66	-3.02	0.0	0.0
2,387.0	4.68	236.72	2,385.9	-15.8	-41.7	0.42	-0.11	-4.88	0.0	0.0
2,561.0	4.25	226.81	2,559.4	-24.1	-52.3	0.51	-0.25	-5.70	0.0	0.0
2,736.0	3.28	229.44	2,734.0	-31.8	-60.8	0.56	-0.55	1.50	0.0	0.0
2,867.0	2.79	232.53	2,864.8	-36.2	-66.2	0.39	-0.37	2.36	0.0	0.0
3,041.0	2.09	231.03	3,038.7	-40.8	-72.1	0.40	-0.40	-0.86	0.0	0.0
3,215.0	4.93	225.08	3,212.3	-48.1	-79.8	1.64	1.63	-3.42	0.0	0.0



Midland PVA



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Project: Lea County, NM (NAD 83 NME)
Site: Hearn 34 State Com
Well: #712H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #712H
TVD Reference: KB = 25' @ 3509.0usft
MD Reference: KB = 25' @ 3509.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)	
3,389.0	4.28	218.97	3,385.7	-58.4	-89.2	0.47	-0.37	-3.51	0.0	0.0	
3,563.0	4.18	225.96	3,559.3	-67.8	-97.8	0.30	-0.06	4.02	0.0	0.0	
3,738.0	3.42	228.58	3,733.9	-75.7	-106.3	0.45	-0.43	1.50	0.0	0.0	
3,912.0	5.16	226.38	3,907.4	-84.6	-115.9	1.00	1.00	-1.26	0.0	0.0	
4,087.0	3.53	220.93	4,081.9	-94.1	-125.1	0.96	-0.93	-3.11	0.0	0.0	
4,261.0	2.61	218.47	4,255.6	-101.2	-131.1	0.53	-0.53	-1.41	0.0	0.0	
4,436.0	3.61	230.05	4,430.4	-107.9	-137.8	0.67	0.57	6.62	0.0	0.0	
4,611.0	2.92	204.77	4,605.1	-115.5	-143.9	0.90	-0.39	-14.45	0.0	0.0	
4,785.0	3.57	217.02	4,778.8	-123.8	-149.0	0.54	0.37	7.04	0.0	0.0	
4,960.0	3.69	224.92	4,953.5	-132.1	-156.3	0.29	0.07	4.51	0.0	0.0	
5,036.0	3.63	232.15	5,029.3	-135.4	-159.9	0.61	-0.08	9.51	0.0	0.0	
5,154.0	3.00	229.80	5,147.1	-139.6	-165.2	0.55	-0.53	-1.99	0.0	0.0	
5,248.0	2.60	221.90	5,241.0	-142.8	-168.5	0.59	-0.43	-8.40	0.0	0.0	
5,341.0	3.50	222.60	5,333.9	-146.5	-171.8	0.97	0.97	0.75	0.0	0.0	
5,436.0	4.00	217.90	5,428.7	-151.2	-175.8	0.62	0.53	-4.95	0.0	0.0	
5,529.0	4.20	217.90	5,521.4	-156.5	-179.9	0.22	0.22	0.00	0.0	0.0	
5,624.0	4.30	217.90	5,616.2	-162.0	-184.2	0.11	0.11	0.00	0.0	0.0	
5,718.0	4.30	218.20	5,709.9	-167.6	-188.6	0.02	0.00	0.32	0.0	0.0	
5,811.0	4.00	217.20	5,802.7	-172.9	-192.7	0.33	-0.32	-1.08	0.0	0.0	
5,904.0	4.40	228.10	5,895.4	-177.9	-197.3	0.96	0.43	11.72	0.0	0.0	
5,998.0	4.60	232.30	5,989.1	-182.6	-203.0	0.41	0.21	4.47	0.0	0.0	
6,092.0	4.30	231.40	6,082.8	-187.1	-208.7	0.33	-0.32	-0.96	0.0	0.0	
6,186.0	3.90	228.80	6,176.6	-191.4	-213.9	0.47	-0.43	-2.77	0.0	0.0	
6,280.0	3.80	229.70	6,270.4	-195.5	-218.7	0.12	-0.11	0.96	0.0	0.0	
6,373.0	4.80	228.30	6,363.1	-200.1	-223.9	1.08	1.08	-1.51	0.0	0.0	
6,467.0	5.20	227.70	6,456.8	-205.6	-230.0	0.43	0.43	-0.64	0.0	0.0	
6,561.0	5.00	226.50	6,550.4	-211.3	-236.1	0.24	-0.21	-1.28	0.0	0.0	



Midland PVA



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Well:	#712H	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)	
6,653.0	5.00	226.00	6,642.0	-216.8	-241.9	0.05	0.00	-0.54	0.0	0.0	
6,747.0	5.00	226.70	6,735.7	-222.5	-247.8	0.06	0.00	0.74	0.0	0.0	
6,841.0	5.00	224.00	6,829.3	-228.2	-253.7	0.25	0.00	-2.87	0.0	0.0	
6,935.0	4.70	224.40	6,923.0	-233.9	-259.2	0.32	-0.32	0.43	0.0	0.0	
7,028.0	4.50	225.30	7,015.7	-239.2	-264.5	0.23	-0.22	0.97	0.0	0.0	
7,122.0	4.10	227.90	7,109.4	-244.0	-269.6	0.47	-0.43	2.77	0.0	0.0	
7,215.0	3.10	231.20	7,202.2	-247.8	-274.0	1.10	-1.08	3.55	0.0	0.0	
7,309.0	1.50	241.60	7,296.2	-250.0	-277.1	1.75	-1.70	11.06	0.0	0.0	
7,403.0	1.20	259.20	7,390.1	-250.8	-279.1	0.54	-0.32	18.72	0.0	0.0	
7,496.0	1.10	246.70	7,483.1	-251.3	-280.9	0.29	-0.11	-13.44	0.0	0.0	
7,589.0	1.10	242.30	7,576.1	-252.1	-282.5	0.09	0.00	-4.73	0.0	0.0	
7,684.0	1.10	238.20	7,671.1	-253.0	-284.1	0.12	0.00	-6.42	0.0	0.0	
7,777.0	1.10	238.80	7,764.1	-254.0	-285.6	0.05	0.00	2.80	0.0	0.0	
7,871.0	1.10	232.30	7,858.0	-255.0	-287.1	0.13	0.00	-6.91	0.0	0.0	
7,964.0	0.20	244.30	7,951.0	-255.6	-287.9	0.97	-0.97	12.90	0.0	0.0	
8,057.0	0.70	187.80	8,044.0	-256.3	-288.1	0.66	0.54	-60.75	0.0	0.0	
8,151.0	0.70	183.30	8,138.0	-257.4	-288.3	0.06	0.00	-4.79	0.0	0.0	
8,245.0	0.80	171.70	8,232.0	-258.6	-288.2	0.19	0.11	-12.34	0.0	0.0	
8,338.0	0.80	76.00	8,325.0	-259.1	-287.5	1.28	0.00	-102.90	0.0	0.0	
8,432.0	0.90	68.60	8,419.0	-258.7	-286.1	0.16	0.11	-7.87	0.0	0.0	
8,526.0	0.90	75.20	8,513.0	-258.2	-284.7	0.11	0.00	7.02	0.0	0.0	
8,620.0	0.60	85.20	8,607.0	-258.0	-283.5	0.35	-0.32	10.64	0.0	0.0	
8,714.0	0.70	98.40	8,701.0	-258.0	-282.5	0.19	0.11	14.04	0.0	0.0	
8,808.0	0.50	118.00	8,795.0	-258.3	-281.5	0.30	-0.21	20.85	0.0	0.0	
8,902.0	0.70	123.70	8,889.0	-258.8	-280.7	0.22	0.21	6.06	0.0	0.0	
8,995.0	0.70	144.80	8,982.0	-259.6	-279.9	0.28	0.00	22.69	0.0	0.0	
9,089.0	0.50	159.20	9,076.0	-260.5	-279.4	0.26	-0.21	15.32	0.0	0.0	



Midland PVA



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Well:	#712H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
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9,182.0	0.40	164.80	9,169.0	-261.1	-279.2	0.12	-0.11	6.02	0.0	0.0	
9,276.0	0.20	134.00	9,262.9	-261.6	-279.0	0.27	-0.21	-32.77	0.0	0.0	
9,369.0	0.40	249.50	9,355.9	-261.8	-279.2	0.56	0.22	124.19	0.0	0.0	
9,463.0	0.60	291.20	9,449.9	-261.7	-280.0	0.43	0.21	44.36	0.0	0.0	
9,556.0	0.90	305.80	9,542.9	-261.1	-281.0	0.38	0.32	15.70	0.0	0.0	
9,650.0	1.40	284.20	9,636.9	-260.4	-282.7	0.70	0.53	-22.98	0.0	0.0	
9,744.0	1.60	275.70	9,730.9	-260.0	-285.1	0.32	0.21	-9.04	0.0	0.0	
9,837.0	0.50	28.20	9,823.9	-259.5	-286.2	1.99	-1.18	120.97	0.0	0.0	
9,931.0	1.20	46.70	9,917.9	-258.5	-285.3	0.79	0.74	19.68	0.0	0.0	
10,026.0	1.40	58.50	10,012.8	-257.2	-283.6	0.35	0.21	12.42	0.0	0.0	
10,119.0	1.50	69.50	10,105.8	-256.2	-281.5	0.32	0.11	11.83	0.0	0.0	
10,213.0	1.70	89.00	10,199.8	-255.7	-278.9	0.61	0.21	20.74	0.0	0.0	
10,307.0	1.50	105.60	10,293.7	-256.0	-276.4	0.53	-0.21	17.66	0.0	0.0	
10,401.0	1.10	91.00	10,387.7	-256.4	-274.3	0.55	-0.43	-15.53	0.0	0.0	
10,494.0	1.10	109.10	10,480.7	-256.7	-272.5	0.37	0.00	19.46	0.0	0.0	
10,588.0	0.40	0.80	10,574.7	-256.7	-271.7	1.36	-0.74	-115.21	0.0	0.0	
10,681.0	0.20	261.00	10,667.7	-256.4	-271.8	0.51	-0.22	-107.31	0.0	0.0	
10,774.0	0.90	214.00	10,760.7	-257.0	-272.4	0.84	0.75	-50.54	0.0	0.0	
10,868.0	1.20	232.70	10,854.7	-258.2	-273.6	0.48	0.32	19.89	0.0	0.0	
10,961.0	0.50	318.10	10,947.7	-258.5	-274.7	1.36	-0.75	91.83	0.0	0.0	
11,054.0	0.40	339.00	11,040.7	-257.9	-275.0	0.20	-0.11	22.47	0.0	0.0	
11,148.0	1.00	257.60	11,134.6	-257.7	-276.0	1.09	0.64	-86.60	0.0	0.0	
11,241.0	1.50	270.10	11,227.6	-257.9	-278.0	0.61	0.54	13.44	0.0	0.0	
11,335.0	1.20	337.40	11,321.6	-257.0	-279.6	1.61	-0.32	71.60	0.0	0.0	
11,428.0	1.40	349.20	11,414.6	-255.0	-280.2	0.36	0.22	12.69	0.0	0.0	
11,574.0	6.33	6.27	11,560.2	-245.2	-279.6	3.43	3.38	11.69	0.9	-0.5	
11,669.0	7.57	355.81	11,654.5	-233.8	-279.5	1.86	1.31	-11.01	-0.6	0.1	



Midland PVA



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11,744.0	6.91	358.51	11,728.9	-224.4	-280.0	0.99	-0.88	3.60	-2.3	1.0	
11,837.0	6.22	1.15	11,821.3	-213.7	-280.0	0.81	-0.74	2.84	-3.1	1.9	
11,931.0	5.51	6.24	11,914.8	-204.1	-279.4	0.94	-0.76	5.41	-2.7	2.2	
11,984.5	5.39	7.80	11,968.1	-199.1	-278.8	0.35	-0.22	2.92	-2.1	1.9	
FTP Crossing 11984.5' MD, 11968.1' TVD, -199.1', -278.8', 5.39											
12,025.0	5.31	9.03	12,008.4	-195.4	-278.3	0.35	-0.21	3.03	-1.7	1.6	
12,119.0	18.42	345.74	12,100.2	-176.6	-281.3	14.57	13.95	-24.78	-10.5	2.5	
12,212.0	34.37	339.96	12,183.3	-137.4	-294.0	17.35	17.15	-6.22	-29.7	9.3	
12,305.0	47.77	340.74	12,253.2	-80.0	-314.4	14.42	14.41	0.84	-55.3	25.2	
12,399.0	61.79	350.88	12,307.4	-5.7	-332.6	17.29	14.91	10.79	-78.8	51.0	
12,493.0	68.19	358.09	12,347.2	78.9	-340.6	9.73	6.81	7.67	-102.1	65.0	
12,540.0	68.63	357.58	12,364.4	122.6	-342.3	1.38	0.94	-1.09	-112.2	65.2	
12,586.0	68.76	357.91	12,381.2	165.4	-343.9	0.73	0.28	0.72	-116.4	66.8	
12,633.0	68.77	358.82	12,398.2	209.2	-345.2	1.80	0.02	1.94	-114.8	68.9	
12,680.0	69.12	359.26	12,415.1	253.1	-345.9	1.15	0.74	0.94	-108.0	70.4	
12,727.0	69.26	0.94	12,431.8	297.0	-345.8	3.35	0.30	3.57	-95.5	71.8	
12,774.0	69.94	3.74	12,448.2	341.0	-344.0	5.77	1.45	5.96	-79.1	70.5	
12,822.0	70.43	4.55	12,464.4	386.1	-340.8	1.89	1.02	1.69	-62.8	66.4	
12,869.0	71.27	6.40	12,479.8	430.3	-336.5	4.13	1.79	3.94	-47.3	61.4	
12,915.0	71.31	7.10	12,494.6	473.5	-331.4	1.44	0.09	1.52	-32.6	55.5	
12,962.0	78.25	8.09	12,506.9	518.4	-325.4	14.91	14.77	2.11	-21.7	48.0	
13,060.0	86.50	7.70	12,519.9	614.6	-312.1	8.43	8.42	-0.40	-9.9	33.4	
13,154.0	87.10	7.50	12,525.2	707.6	-299.7	0.67	0.64	-0.21	-4.7	20.3	
13,248.0	89.60	3.80	12,527.9	801.1	-290.4	4.75	2.66	-3.94	-2.1	10.4	
13,340.0	91.50	2.60	12,527.0	892.9	-285.3	2.44	2.07	-1.30	-3.0	4.6	
13,433.0	90.20	2.90	12,525.6	985.8	-280.8	1.43	-1.40	0.32	-4.4	-0.5	
13,527.0	90.10	1.70	12,525.4	1,079.7	-277.1	1.28	-0.11	-1.28	-4.6	-5.0	



Midland PVA



Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #712H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25' @ 3509.0usft
Site:	Hearns 34 State Corn	MD Reference:	KB = 25' @ 3509.0usft
Well:	#712H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (")	Azi (azimuth) (°)	TVD (usft)	NS (usft)	EW (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
13,620.0	91.50	1.10	12,524.1	1,172.7	-274.8	1.64	1.51	-0.65	-5.9	-7.9	
13,714.0	90.20	1.00	12,522.7	1,266.7	-273.1	1.39	-1.38	-0.11	-7.3	-10.3	
13,807.0	90.70	2.00	12,521.9	1,359.6	-270.6	1.20	0.54	1.08	-8.1	-13.4	
13,901.0	90.20	2.90	12,521.2	1,453.5	-266.6	1.10	-0.53	0.96	-8.8	-18.1	
13,994.0	88.00	1.70	12,522.7	1,546.4	-262.9	2.69	-2.37	-1.29	-7.4	-22.5	
14,088.0	89.40	1.50	12,524.8	1,640.4	-260.3	1.50	1.49	-0.21	-5.2	-25.8	
14,182.0	90.70	2.00	12,524.7	1,734.3	-257.4	1.48	1.38	0.53	-5.3	-29.3	
14,275.0	89.30	359.60	12,524.7	1,827.3	-256.1	2.99	-1.51	-2.58	-5.3	-31.3	
14,369.0	88.90	356.90	12,526.2	1,921.2	-259.0	2.90	-0.43	-2.87	-3.8	-29.1	
14,462.0	90.00	356.90	12,527.1	2,014.1	-264.0	1.18	1.18	0.00	-2.9	-24.7	
14,556.0	92.40	357.50	12,525.1	2,108.0	-268.6	2.63	2.55	0.64	-4.9	-20.8	
14,649.0	88.50	358.70	12,524.4	2,200.9	-271.7	4.39	-4.19	1.29	-5.6	-18.4	
14,743.0	89.10	358.70	12,526.4	2,294.8	-273.8	0.64	0.64	0.00	-3.6	-16.9	
14,837.0	90.50	358.90	12,526.7	2,388.8	-275.8	1.50	1.49	0.21	-3.3	-15.7	
14,931.0	94.40	358.50	12,522.7	2,482.7	-277.9	4.17	4.15	-0.43	-7.3	-14.2	
15,025.0	95.50	359.40	12,514.6	2,576.3	-279.6	1.51	1.17	0.96	-15.4	-13.2	
15,119.0	94.30	1.00	12,506.5	2,670.0	-279.3	2.12	-1.28	1.70	-23.4	-14.2	
15,212.0	88.50	3.10	12,504.3	2,762.8	-276.0	6.63	-6.24	2.26	-25.8	-18.1	
15,306.0	87.60	1.50	12,507.5	2,856.7	-272.2	1.95	-0.96	-1.70	-22.6	-22.6	
15,400.0	88.40	359.70	12,510.7	2,950.6	-271.2	2.09	0.85	-1.91	-19.3	-24.2	
15,494.0	90.30	358.50	12,511.8	3,044.6	-272.7	2.39	2.02	-1.28	-18.2	-23.4	
15,588.0	90.70	358.00	12,511.0	3,138.6	-275.6	0.68	0.43	-0.53	-19.0	-21.2	
15,682.0	88.80	357.60	12,511.4	3,232.5	-279.2	2.07	-2.02	-0.43	-18.6	-18.3	
15,776.0	88.60	355.50	12,513.5	3,326.3	-284.8	2.24	-0.21	-2.23	-16.5	-13.3	
15,869.0	90.20	356.40	12,514.5	3,419.1	-291.4	1.97	1.72	0.97	-15.5	-7.4	
15,962.0	94.40	358.20	12,510.8	3,511.9	-295.8	4.91	4.52	1.94	-19.2	-3.7	
16,057.0	93.10	358.00	12,504.6	3,606.6	-298.9	1.38	-1.37	-0.21	-25.4	-1.2	



Midland PVA



Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Hearn 34 State Com
Well: #712H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #712H
TVD Reference: KB = 25' @ 3509.0usft
MD Reference: KB = 25' @ 3509.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)	
16,151.0	94.20	357.80	12,498.6	3,700.3	-302.3	1.19	1.17	-0.21	-31.4	1.5	
16,245.0	94.70	359.60	12,491.3	3,794.0	-304.5	1.98	0.53	1.91	-38.7	3.0	
16,339.0	92.10	359.40	12,485.7	3,887.8	-305.3	2.77	-2.77	-0.21	-44.3	3.1	
16,432.0	92.20	0.10	12,482.2	3,980.8	-305.7	0.76	0.11	0.75	-47.8	2.9	
16,526.0	90.20	1.10	12,480.2	4,074.7	-304.7	2.38	-2.13	1.06	-49.8	1.2	
16,620.0	90.70	1.80	12,479.5	4,168.7	-302.3	0.92	0.53	0.74	-50.5	-1.8	
16,713.0	91.50	2.00	12,477.7	4,261.6	-299.3	0.89	0.86	0.22	-52.3	-5.6	
16,807.0	90.00	1.80	12,476.5	4,355.6	-296.1	1.61	-1.60	-0.21	-53.5	-9.4	
16,902.0	90.80	2.40	12,475.8	4,450.5	-292.7	1.05	0.84	0.63	-54.2	-13.5	
16,996.0	91.50	2.90	12,473.9	4,544.4	-288.3	0.92	0.74	0.53	-56.1	-18.5	
17,090.0	90.90	2.00	12,472.0	4,638.3	-284.3	1.15	-0.64	-0.96	-58.0	-23.2	
17,183.0	87.90	1.10	12,472.9	4,731.2	-281.8	3.37	-3.23	-0.97	-57.1	-26.4	
17,278.0	89.30	358.30	12,475.3	4,826.2	-282.3	3.29	1.47	-2.95	-54.7	-26.6	
17,371.0	89.90	359.00	12,475.9	4,919.2	-284.5	0.99	0.65	0.75	-54.1	-25.1	
17,465.0	91.50	358.90	12,474.8	5,013.1	-286.2	1.71	1.70	-0.11	-55.2	-24.0	
17,559.0	93.50	359.70	12,470.7	5,107.0	-287.3	2.29	2.13	0.85	-59.3	-23.6	
17,684.0	91.90	0.30	12,464.8	5,231.9	-287.3	1.37	-1.28	0.48	-65.2	-24.4	
17,778.0	91.40	357.80	12,462.1	5,325.8	-288.9	2.71	-0.53	-2.66	-67.9	-23.5	
17,873.0	92.90	358.70	12,458.5	5,420.7	-291.8	1.84	1.58	0.95	-71.5	-21.3	
17,968.0	91.10	357.80	12,455.2	5,515.6	-294.7	2.12	-1.89	-0.95	-74.8	-19.1	
18,062.0	91.70	358.30	12,452.9	5,609.5	-297.9	0.83	0.64	0.53	-77.1	-16.6	
18,155.0	90.60	357.30	12,451.0	5,702.4	-301.5	1.60	-1.18	-1.08	-79.0	-13.7	
18,249.0	88.70	357.10	12,451.6	5,796.3	-306.1	2.03	-2.02	-0.21	-78.4	-9.8	
18,343.0	90.20	357.80	12,452.5	5,890.2	-310.2	1.76	1.60	0.74	-77.5	-6.2	
18,436.0	91.00	359.20	12,451.5	5,983.2	-312.7	1.73	0.86	1.51	-78.5	-4.5	
18,529.0	89.10	358.30	12,451.5	6,076.2	-314.7	2.26	-2.04	-0.97	-78.5	-3.1	
18,622.0	89.20	358.90	12,452.8	6,169.1	-317.0	0.85	0.11	0.65	-77.2	-1.5	



Midland PVA



Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Hearn 34 State Com
Well: #712H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #712H
TVD Reference: KB = 25' @ 3509.0usft
MD Reference: KB = 25' @ 3509.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLag (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
18,716.0	90.00	359.40	12,453.5	6,263.1	-318.4	1.00	0.85	0.53	-76.5	-0.8	
18,809.0	86.80	356.40	12,456.2	6,356.0	-321.8	4.87	-3.66	-3.23	-73.8	2.0	
18,902.0	87.80	356.60	12,460.8	6,448.7	-327.4	1.31	1.29	0.22	-69.2	7.0	
18,996.0	90.70	357.10	12,462.0	6,542.5	-332.6	3.13	3.09	0.53	-88.0	11.4	
19,090.0	92.30	356.80	12,459.6	6,636.4	-337.6	1.73	1.70	-0.32	-70.4	15.8	
19,183.0	91.70	359.00	12,456.3	6,729.2	-341.0	2.45	-0.65	2.37	-73.7	18.5	
19,277.0	91.80	359.00	12,453.4	6,823.2	-342.6	0.21	0.21	0.00	-76.6	19.5	
19,370.0	92.20	359.40	12,450.0	6,916.1	-343.9	0.54	0.32	0.43	-80.0	20.1	
19,464.0	90.40	1.10	12,447.9	7,010.1	-343.5	2.63	-1.91	1.81	-82.1	19.0	
19,558.0	91.00	0.10	12,446.8	7,104.1	-342.5	1.24	0.64	-1.06	-83.2	17.4	
19,652.0	88.30	1.10	12,447.3	7,198.0	-341.6	3.06	-2.87	1.06	-82.7	15.7	
19,746.0	87.40	0.10	12,450.9	7,292.0	-340.6	1.43	-0.96	-1.06	-79.1	14.1	
19,839.0	89.00	0.10	12,453.8	7,384.9	-340.4	1.72	1.72	0.00	-76.2	13.2	
19,932.0	87.70	359.40	12,456.5	7,477.9	-340.8	1.59	-1.40	-0.75	-73.5	13.0	
20,026.0	84.20	357.30	12,463.1	7,571.6	-343.5	4.34	-3.72	-2.23	-66.9	15.1	
20,120.0	90.70	0.30	12,467.3	7,665.4	-345.5	7.61	6.91	3.19	-62.7	16.3	
20,214.0	87.80	0.80	12,468.5	7,759.4	-344.6	3.13	-3.09	0.53	-61.5	14.7	
20,308.0	93.60	2.60	12,467.4	7,853.3	-341.8	6.46	6.17	1.91	-62.6	11.3	
20,402.0	93.60	1.30	12,461.5	7,947.0	-338.6	1.38	0.00	-1.38	-68.5	7.4	
20,496.0	93.80	2.00	12,455.4	8,040.8	-335.9	0.77	0.21	0.74	-74.6	4.0	
20,589.0	92.00	358.90	12,450.7	8,133.7	-335.2	3.85	-1.94	-3.33	-79.3	2.6	
20,683.0	90.60	358.00	12,448.5	8,227.6	-337.7	1.77	-1.49	-0.96	-81.5	4.5	
20,777.0	92.60	359.40	12,445.9	8,321.5	-339.8	2.60	2.13	1.49	-84.1	6.0	
20,871.0	92.40	1.70	12,441.8	8,415.4	-338.9	2.45	-0.21	2.45	-88.2	4.4	
20,965.0	90.20	359.90	12,439.7	8,509.4	-337.6	3.02	-2.34	-1.91	-90.3	2.4	
21,059.0	92.20	359.60	12,437.7	8,603.4	-338.0	2.15	2.13	-0.32	-92.3	2.1	
21,153.0	89.80	359.70	12,436.1	8,697.3	-338.6	2.56	-2.55	0.11	-93.9	2.0	



Midland PVA



Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Heams 34 State Com
Well: #712H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #712H
TVD Reference: KB = 25' @ 3509.0usft
MD Reference: KB = 25' @ 3509.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)	
21,247.0	89.50	359.60	12,436.7	8,791.3	-339.2	0.34	-0.32	-0.11	-93.3	1.9	
21,340.0	88.10	1.00	12,438.6	8,884.3	-338.7	2.13	-1.51	1.51	-91.4	0.8	
21,435.0	88.50	0.60	12,441.4	8,979.3	-337.4	0.60	0.42	-0.42	-88.6	-1.2	
21,528.0	91.30	0.40	12,441.6	9,072.3	-336.6	3.02	3.01	-0.22	-88.4	-2.7	
21,622.0	89.30	0.10	12,441.1	9,166.3	-336.2	2.15	-2.13	-0.32	-88.9	-3.8	
Last MWD Survey (MD = 21622.0)											
21,682.0	89.30	0.10	12,441.8	9,226.2	-336.1	0.00	0.00	0.00	-88.2	-4.3	
Projection to Bit (MD = 21682.0)											

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
11,984.5	11,988.1	-199.1	-278.8	FTP Crossing 11984.5' MD; 11988.1' TVD; -199.1'; -278.8'; 5.39
21,622.0	12,441.1	9,166.3	-336.2	Last MWD Survey (MD = 21622.0)
21,682.0	12,441.8	9,226.2	-336.1	Projection to Bit (MD = 21682.0)

Checked By: _____ Approved By: _____ Date: _____



Lea County, NM (NAD 83 NME)

Hearns 34 State Com #712H

Plan #4

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: #712H

KB = 25' @ 3509.0usft 3484.0
Northing 425603.00 Easting 782844.00 Latitude 32°10' 3.566 N Longitude 103°33' 12.540 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	11478.4	1.54	327.35	11485.0	-253.8	-280.6	0.00	0.00	-244.1	
2	11489.8	6.00	7.00	11478.4	-253.1	-280.7	43.09	51.16	-243.4	
3	11495.4	6.00	3.79	11481.9	-252.5	-280.6	6.00	-90.95	-242.8	
4	12080.2	6.00	3.79	12063.5	-191.5	-276.6	0.00	0.00	-181.9	
5	12843.9	90.00	359.59	12530.0	326.6	-276.7	11.00	-4.23	335.8	
6	22672.6	90.00	359.59	12530.0	10155.0	-347.0	0.00	0.00	10160.9	PBHL (Hearns 34 State Com #712H)

PILOT PLAN SECTION DETAILS

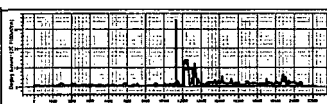
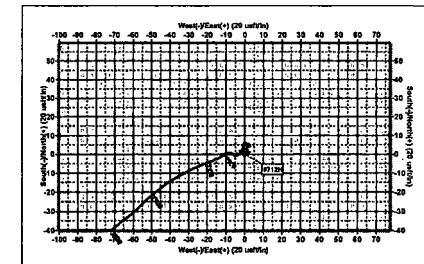
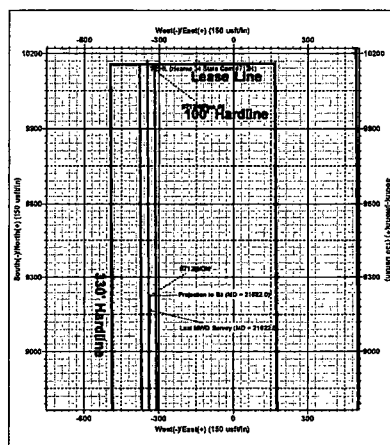
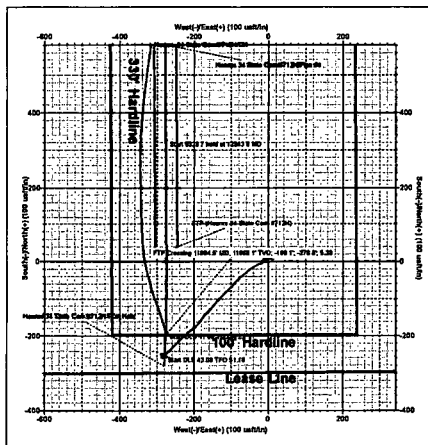
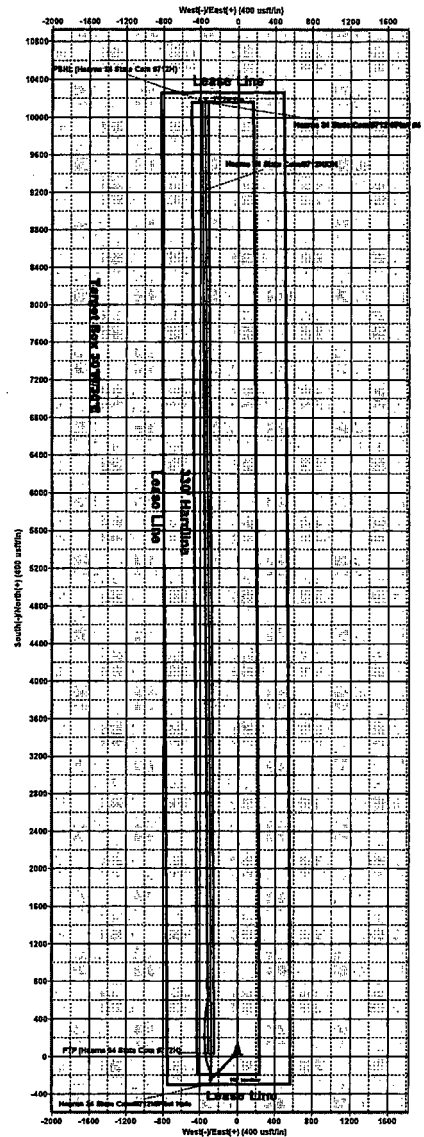
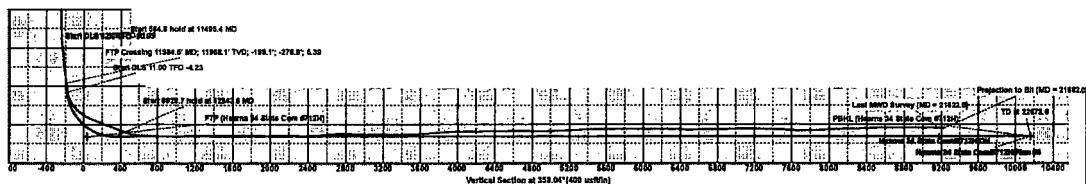
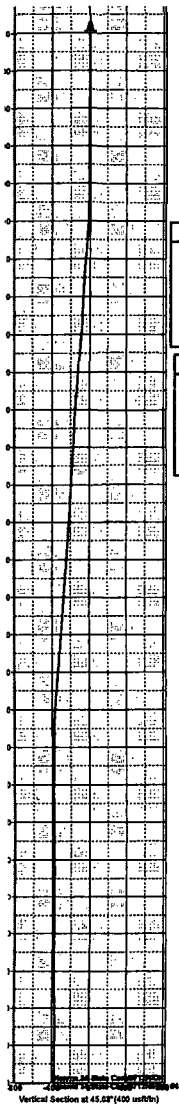
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	11478.4	1.54	327.35	11485.0	-253.8	-280.6	0.00	0.00	-244.1	
2	11489.8	6.00	7.00	11478.4	-253.1	-280.7	43.09	51.16	-243.4	
3	11495.4	6.00	3.79	11481.9	-252.5	-280.6	6.00	-90.95	-242.8	
4	12080.2	6.00	3.79	12063.5	-191.5	-276.6	0.00	0.00	-181.9	
5	12843.9	90.00	359.59	12530.0	326.6	-276.7	11.00	-4.23	335.8	
6	22672.6	90.00	359.59	12530.0	10155.0	-347.0	0.00	0.00	10160.9	PBHL (Hearns 34 State Com #712H)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
FTP (Hearns 34 State Com #712H)	12530.0	29.0	-278.0	425832.00	782368.00
PBHL (Hearns 34 State Com #712H)	12530.0	10155.0	-347.0	435768.00	782297.00



Lea County, NM (NAD 83 NME)
Hearns 34 State Com #712H
Plan #4
11/21/2010 10:00 AM

