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EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Hearns 34 State Com

#502H

OH

Design: OH

Final PVA Report

23 April, 2019



Final PVA Report

Company: EOG Resources - Midland Project: Lea County, NM (NAD 83 NME) Site: Hearn 34 State Com Well: #502H Wellbore: OH Design: OH		Local Co-ordinate Reference: TVD Reference: MD Reference: North Reference: Survey Calculation Method: Database:		Well #502H KB = 22' @ 3482.0usft (Nabors M7502) KB = 22' @ 3482.0usft (Nabors M7502) Grid Minimum Curvature 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 Hearn 34 State Com					
Site Position: From: Map Position Uncertainty: 0.0 usft		Northing: 425,568.00 usft Easting: 780,745.00 usft Slot Radius: 13-3/16 "		Latitude: 32° 10' 3.355 N Longitude: 103° 33' 34.635 W Grid Convergence: 0.41 "	
Well #502H					
Well Position +N-S 0.0 usft +E-W 0.0 usft Position Uncertainty 0.0 usft		Northing: 426,166.00 usft Easting: 779,689.00 usft Wellhead Elevation: usft		Latitude: 32° 10' 9.347 N Longitude: 103° 33' 46.870 W Ground Level: 3,480.0 usft	
Wellbore OH					
Magnetics					
Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)	
IGRF2015	2/5/2019	6.77	59.99	47,737.86823787	
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	356.70	
Survey Program Date 4/23/2019					
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
156.0	21,065.0	Learn MWD #1 (OH)	MWD	OWSG MWD - Standard	



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Site:	Hearns 34 State Com	MD Reference:	KB = 22' @ 3482.0usft (Nabors M7502)
Well:	#502H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (")	Azi (grid_north_azim)	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	0.0
156.0	0.44	182.39	156.0	-0.8	0.0	0.28	0.28	0.00	-0.6	0.0	
344.0	0.79	176.77	344.0	-2.6	0.0	0.19	0.19	-2.99	-2.6	-0.1	
532.0	0.53	263.78	532.0	-4.0	-0.8	0.49	-0.14	46.28	-1.2	3.9	
721.0	1.49	270.46	720.9	-4.1	-4.1	0.51	0.51	3.53	-4.1	4.1	
884.0	2.81	272.57	883.8	-3.9	-10.2	0.81	0.81	1.29	-10.0	4.3	
1,072.0	3.78	261.67	1,071.5	-4.6	-20.9	0.61	0.52	-5.80	-21.4	1.5	
1,224.0	2.02	250.24	1,223.3	-8.2	-28.4	1.21	-1.16	-7.52	-28.8	-3.8	
1,344.0	2.11	231.44	1,343.2	-8.3	-32.1	0.57	0.07	-15.67	-30.3	-13.6	
1,532.0	1.41	215.09	1,531.2	-12.3	-36.2	0.45	-0.37	-8.70	-30.9	-22.5	
1,720.0	4.22	193.47	1,718.9	-21.0	-39.1	1.57	1.49	-11.50	-29.5	-33.2	
1,908.0	4.57	200.32	1,908.4	-34.7	-43.3	0.34	0.19	3.64	-47.6	-28.6	
2,096.0	4.57	214.56	2,093.8	-47.9	-50.2	0.60	0.00	7.57	-66.4	-14.5	
2,284.0	6.24	216.14	2,280.9	-62.3	-60.5	0.89	0.89	0.84	-72.2	-15.3	
2,472.0	8.09	209.99	2,467.5	-82.0	-73.1	1.06	0.98	-3.27	-68.5	-27.2	
2,660.0	9.06	202.08	2,653.4	-107.2	-85.3	0.81	0.52	-4.21	-59.5	-37.5	
2,848.0	10.82	203.49	2,838.5	-137.1	-97.9	0.95	0.94	0.75	-60.2	-35.9	
3,037.0	9.85	201.03	3,024.5	-168.5	-110.7	0.56	-0.51	-1.30	-59.7	-38.0	
3,225.0	8.97	202.96	3,209.9	-197.0	-122.2	0.50	-0.47	1.03	-59.0	-35.4	
3,413.0	8.79	198.56	3,395.7	-224.1	-132.5	0.37	-0.10	-2.34	-52.5	-38.4	
3,601.0	8.44	199.44	3,581.6	-250.7	-141.7	0.20	-0.19	0.47	-48.6	-35.3	
3,790.0	8.09	201.20	3,768.6	-276.2	-151.1	0.23	-0.19	0.93	-43.9	-32.3	
3,884.0	7.74	200.32	3,861.7	-288.3	-155.7	0.39	-0.37	-0.94	-40.0	-32.3	
4,072.0	7.30	199.09	4,048.1	-311.5	-164.0	0.25	-0.23	-0.65	-31.2	-31.2	
4,166.0	7.03	200.32	4,141.3	-322.5	-168.0	0.33	-0.29	1.31	-27.2	-29.6	
4,354.0	6.42	192.59	4,328.1	-343.5	-174.2	0.58	-0.32	-4.11	-12.7	-28.6	
4,542.0	7.83	180.63	4,514.6	-366.6	-176.7	1.08	0.75	-6.36	0.6	-20.3	



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Well:	#502H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey

MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	EW (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
4,730.0	7.39	171.85	4,701.0	-391.4	-175.1	0.66	-0.23	-4.67	7.0	-5.0
4,918.0	7.56	162.18	4,887.4	-415.1	-169.8	0.67	0.09	-5.14	8.3	15.5
5,003.0	6.77	168.05	4,971.7	-425.3	-166.7	1.09	-0.93	4.55	10.6	24.2
5,102.0	5.72	167.80	5,070.1	-435.8	-164.2	1.08	-1.06	1.77	14.6	34.0
5,280.0	7.12	199.09	5,257.0	-456.0	-166.1	1.87	0.74	16.64	43.1	28.7
5,479.0	12.22	202.08	5,443.2	-485.6	-177.4	2.71	2.70	1.58	45.6	27.6
5,667.0	13.45	203.49	5,626.5	-524.1	-193.6	0.68	0.65	0.75	37.0	26.8
5,856.0	14.86	204.54	5,809.8	-566.3	-212.4	0.76	0.75	0.56	23.7	25.7
6,044.0	14.33	204.19	5,991.7	-609.5	-232.0	0.29	-0.28	-0.19	8.5	25.0
6,233.0	11.70	204.01	6,175.9	-648.3	-249.4	1.39	-1.39	-0.10	-1.5	24.4
6,421.0	9.76	209.29	6,360.6	-679.6	-264.9	1.16	-1.03	2.81	-1.8	22.6
6,609.0	8.35	215.44	6,546.2	-704.6	-280.8	0.91	-0.75	3.27	3.1	17.4
6,797.0	8.35	214.56	6,732.2	-727.0	-298.3	0.07	0.00	-0.47	7.6	10.7
6,985.0	7.03	217.90	6,918.5	-747.3	-311.1	0.74	-0.70	1.78	14.7	2.7
7,173.0	6.60	211.40	7,105.2	-765.6	-323.8	0.47	-0.23	-3.46	24.5	-1.7
7,362.0	6.24	210.69	7,293.0	-783.7	-334.7	0.20	-0.19	-0.38	31.7	-5.4
7,550.0	3.25	231.08	7,480.4	-795.9	-344.1	1.80	-1.59	10.85	27.0	-20.0
7,738.0	1.76	246.38	7,668.2	-800.4	-350.9	0.86	-0.79	8.14	15.5	-27.7
7,926.0	1.76	237.76	7,856.1	-803.1	-356.0	0.14	0.00	-4.59	13.8	-25.5
8,115.0	1.85	231.26	8,045.0	-806.5	-360.8	0.12	0.05	-3.44	10.6	-24.1
8,303.0	1.76	221.42	8,232.9	-810.6	-365.1	0.17	-0.05	-5.23	8.7	-22.5
8,491.0	1.76	225.28	8,420.8	-814.8	-369.0	0.08	0.00	2.05	1.4	-22.8
8,679.0	1.58	221.59	8,608.7	-818.8	-372.8	0.11	-0.10	-1.96	-2.6	-22.9
8,867.0	1.76	219.66	8,796.7	-822.9	-378.4	0.10	0.10	-1.03	-7.3	-23.0
9,055.0	1.67	226.87	8,984.6	-827.0	-380.2	0.12	-0.05	3.84	-15.7	-21.6
9,243.0	1.58	234.07	9,172.5	-830.4	-384.3	0.12	-0.05	3.83	-23.6	-19.1
9,431.0	1.23	216.32	9,360.5	-833.5	-387.6	0.29	-0.19	-9.44	-21.1	-26.2



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Survey											
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9,619.0	1.58	219.13	9,548.4	-837.2	-390.4	0.19	0.19	1.49	-27.0	-25.0	
9,807.0	3.69	182.22	9,736.2	-845.2	-392.3	1.39	1.12	-19.63	-14.7	-37.8	
9,996.0	0.82	298.06	9,925.1	-850.8	-393.4	2.12	-1.82	61.29	-25.9	35.2	
10,114.0	1.85	324.42	10,043.0	-849.0	-395.1	1.12	1.04	22.34	-10.1	43.3	
10,302.0	1.76	316.69	10,230.9	-844.4	-398.9	0.14	-0.05	-4.11	-21.7	41.2	
10,396.0	8.27	338.66	10,324.5	-837.1	-402.3	7.10	6.93	23.37	-12.7	46.9	
10,485.4	18.64	346.23	10,411.4	-817.1	-408.1	11.73	11.59	8.46	-26.2	49.6	
KOP (Hearn 34 State Com #502H)											
10,490.0	19.17	346.40	10,415.7	-815.7	-408.4	11.73	11.67	3.72	-27.4	49.7	
10,575.8	29.12	346.73	10,493.9	-781.6	-416.5	11.60	11.60	0.38	-55.2	51.2	
HL Crossing, MD:10575.8, TVD:10493.9, N/S:-781.6, E/W:-416.5, INC:29.12											
10,584.0	30.07	346.75	10,501.1	-777.7	-417.5	11.60	11.60	0.25	-57.8	51.3	
10,678.0	35.96	346.40	10,579.8	-727.9	-429.4	6.27	6.27	-0.37	-83.8	51.6	
10,772.0	43.35	344.84	10,652.2	-669.9	-444.4	7.95	7.86	-1.87	-99.5	52.2	
10,856.8	52.61	348.47	10,708.9	-608.6	-458.9	11.42	10.92	4.51	-102.2	59.8	
FTP (Hearn 34 State Com #502H)											
10,867.0	53.73	348.86	10,715.0	-600.6	-460.5	11.42	10.99	3.86	-102.3	60.3	
10,914.0	60.67	350.26	10,740.4	-561.8	-467.6	14.98	14.77	2.98	-102.7	61.1	
10,961.0	64.28	350.62	10,762.2	-520.7	-474.6	7.71	7.68	0.77	-102.2	60.1	
11,008.0	66.92	352.72	10,781.6	-478.4	-480.8	6.94	5.62	4.47	-97.9	59.2	
11,055.0	69.64	354.48	10,799.0	-435.0	-485.6	6.75	5.79	3.74	-90.4	55.9	
11,102.0	72.81	357.30	10,814.1	-390.6	-488.8	8.82	6.74	6.00	-80.1	50.2	
11,149.0	74.83	359.05	10,827.2	-345.5	-490.2	5.59	4.30	3.72	-67.9	42.5	
11,196.0	77.82	359.93	10,838.3	-299.8	-490.6	6.62	6.36	1.87	-57.2	34.6	
11,243.0	78.79	0.28	10,847.8	-253.8	-490.5	2.19	2.06	0.74	-47.7	27.7	
11,280.0	80.55	0.46	10,856.3	-207.6	-490.2	3.76	3.74	0.38	-39.3	21.6	
11,337.0	82.13	0.28	10,863.3	-161.1	-489.9	3.38	3.36	-0.38	-32.2	16.7	



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11,384.0	83.89	0.99	10,869.1	-114.5	-489.4	4.03	3.74	1.51	-26.3	12.8
11,434.0	86.24	0.99	10,873.4	-64.7	-488.6	4.70	4.70	0.00	-21.8	9.5
11,622.0	89.10	359.64	10,881.0	123.2	-487.5	1.68	1.52	-0.72	-13.0	6.4
11,811.0	88.71	359.73	10,884.6	312.1	-488.6	0.21	-0.21	0.05	-8.2	6.0
11,999.0	90.50	358.68	10,885.9	500.1	-491.2	1.10	0.95	-0.56	-5.8	7.2
12,188.0	90.50	358.73	10,884.3	689.0	-495.5	0.03	0.00	0.03	-6.2	10.1
12,376.0	90.34	357.69	10,882.9	876.9	-501.3	0.56	-0.09	-0.55	-6.5	14.6
12,564.0	90.95	357.90	10,880.8	1,064.8	-508.6	0.34	0.32	0.11	-7.4	20.4
12,752.0	89.89	357.87	10,879.4	1,252.6	-515.5	0.56	-0.56	-0.02	-7.6	26.0
12,912.5	88.79	357.83	10,881.2	1,413.0	-521.5	0.89	-0.69	-0.03	-4.8	30.8
TGT 1 (Hearn 34 State Com #502H)										
12,940.0	88.60	357.82	10,881.9	1,440.5	-522.6	0.69	-0.69	-0.03	-3.9	31.7
13,129.0	89.21	0.23	10,885.5	1,629.4	-525.8	1.32	0.32	1.28	1.3	33.5
13,223.0	92.02	2.08	10,884.5	1,723.4	-523.9	3.58	2.99	1.97	1.0	30.9
13,317.0	92.07	2.15	10,881.1	1,817.3	-520.4	0.09	0.05	0.07	-1.5	28.7
13,411.0	92.24	2.98	10,877.6	1,911.1	-516.2	0.91	0.18	0.89	-4.2	21.8
13,505.0	92.47	3.01	10,873.7	2,004.9	-511.3	0.25	0.24	0.02	-7.3	16.2
13,599.0	92.41	2.70	10,869.7	2,098.7	-506.6	0.34	-0.06	-0.33	-10.5	10.8
13,693.0	92.47	2.73	10,865.7	2,192.5	-502.2	0.07	0.06	0.03	-13.7	5.7
13,787.0	92.41	2.56	10,861.7	2,286.3	-497.8	0.19	-0.06	-0.18	-16.9	0.7
13,882.0	92.47	2.77	10,857.7	2,381.1	-493.4	0.23	0.06	0.22	-20.1	-4.4
13,976.0	90.56	2.51	10,855.2	2,475.0	-489.1	2.05	-2.03	-0.28	-21.8	-9.4
14,070.0	89.78	1.97	10,854.9	2,568.9	-485.4	1.01	-0.83	-0.57	-21.3	-13.8
14,088.3	89.73	2.05	10,855.0	2,587.2	-484.8	0.51	-0.30	0.41	-21.0	-14.6
TGT 2 (Hearn 34 State Com #502H)										
14,164.0	89.50	2.38	10,855.5	2,682.8	-481.9	0.51	-0.30	0.41	-19.7	-18.1
14,258.0	89.22	2.17	10,856.5	2,756.8	-478.2	0.36	-0.30	-0.20	-17.5	-22.5



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14,352.0	88.88	359.71	10,858.1	2,850.7	-476.6	2.64	-0.36	-2.62	-14.9	-24.7
14,446.0	87.76	359.40	10,860.9	2,944.7	-477.3	1.24	-1.19	-0.33	-11.0	-24.7
14,540.0	87.58	358.68	10,864.7	3,038.6	-478.9	0.79	-0.19	-0.77	-6.1	-23.8
14,634.0	90.00	357.55	10,866.7	3,132.5	-482.0	2.84	2.57	-1.20	-3.0	-21.4
14,729.0	91.51	356.79	10,865.4	3,227.4	-486.7	1.78	1.59	-0.80	-3.2	-17.4
14,823.0	91.29	356.57	10,863.1	3,321.2	-492.1	0.33	-0.23	-0.23	-4.4	-12.7
14,917.0	91.23	356.55	10,861.0	3,415.0	-497.8	0.07	-0.06	-0.02	-5.4	-7.7
15,011.0	91.96	356.32	10,858.4	3,508.8	-503.6	0.81	0.78	-0.24	-6.9	-2.8
15,105.0	92.41	356.15	10,854.8	3,602.5	-509.8	0.51	0.48	-0.18	-9.4	2.9
15,199.0	92.97	356.82	10,850.4	3,696.2	-515.5	0.93	0.60	0.71	-12.7	8.0
15,293.0	92.02	358.33	10,846.3	3,790.1	-519.5	1.90	-1.01	1.61	-15.7	11.3
15,388.0	90.17	359.38	10,844.5	3,885.0	-521.4	2.24	-1.95	1.11	-16.4	12.4
15,482.0	90.28	359.25	10,844.2	3,979.0	-522.5	0.18	0.12	-0.14	-15.7	12.8
15,576.0	89.94	357.85	10,844.0	4,073.0	-524.9	1.53	-0.36	-1.49	-14.8	14.6
15,670.0	88.54	357.30	10,845.2	4,166.9	-528.9	1.60	-1.49	-0.59	-12.5	17.8
15,764.0	88.43	358.24	10,847.7	4,260.8	-532.6	1.01	-0.12	1.00	-8.9	20.8
15,814.5	89.12	358.45	10,848.8	4,311.2	-534.0	1.44	1.37	0.43	-7.2	21.9
TGT 3 (Hears 34 State Com #502H)										
15,858.0	89.72	358.64	10,849.2	4,354.7	-535.1	1.44	1.37	0.43	-6.5	22.7
15,952.0	91.12	0.28	10,848.5	4,448.7	-536.0	2.28	1.49	1.72	-6.5	22.9
16,046.0	91.35	0.22	10,846.5	4,542.7	-535.8	0.25	0.24	-0.04	-8.0	21.8
16,141.0	91.29	0.36	10,844.3	4,637.7	-535.1	0.16	-0.06	0.15	-9.5	20.6
16,235.0	91.79	0.74	10,841.8	4,731.6	-534.2	0.67	0.53	0.40	-11.4	19.0
16,329.0	90.79	359.54	10,839.7	4,825.6	-534.0	1.66	-1.06	-1.28	-12.9	18.1
16,423.0	91.01	359.17	10,838.2	4,919.6	-535.1	0.46	0.23	-0.39	-13.8	18.4
16,517.0	90.90	359.14	10,836.6	5,013.6	-536.4	0.12	-0.12	-0.03	-14.7	19.1
16,611.0	90.17	359.37	10,835.8	5,107.5	-537.7	0.81	-0.78	0.24	-15.0	19.7



Final PVA Report

Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Hearn 34 State Com
Well: #502H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #502H
TVD Reference: KB = 22' @ 3482.0usft (Nabors M7502)
MD Reference: KB = 22' @ 3482.0usft (Nabors M7502)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	EW (usft)	DLeg (°/100usft)	Bulid (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
16,705.0	89.78	358.99	10,835.8	5,201.5	-539.0	0.58	-0.41	-0.40	-14.4	20.3	
16,789.0	90.28	359.11	10,835.7	5,295.5	-540.8	0.55	0.53	0.13	-13.8	21.2	
16,894.0	89.89	358.38	10,835.6	5,390.5	-542.7	0.87	-0.41	-0.77	-13.3	22.6	
16,888.0	90.22	358.37	10,835.5	5,484.5	-545.3	0.35	0.35	-0.01	-12.8	24.5	
17,082.0	90.45	0.07	10,835.0	5,578.4	-546.6	1.82	0.24	1.81	-12.7	25.1	
17,176.0	90.56	359.90	10,834.1	5,672.4	-546.8	0.22	0.12	-0.18	-12.9	24.4	
17,270.0	90.39	359.81	10,833.4	5,766.4	-546.9	0.20	-0.18	-0.10	-13.1	24.0	
17,384.0	91.88	0.11	10,831.7	5,860.4	-546.9	1.41	1.37	0.32	-14.2	23.4	
17,458.0	91.57	359.91	10,828.0	5,954.4	-546.9	0.24	-0.12	-0.21	-16.3	22.6	
17,552.0	91.23	359.88	10,826.7	6,048.4	-547.1	0.38	-0.36	-0.03	-17.9	22.1	
17,646.0	91.40	359.90	10,824.5	6,142.3	-547.3	0.18	0.18	0.02	-19.5	21.6	
17,740.0	91.29	359.23	10,822.3	6,236.3	-548.0	0.72	-0.12	-0.71	-21.1	21.6	
17,835.0	90.90	359.10	10,820.5	6,331.3	-548.4	0.43	-0.41	-0.14	-22.3	22.3	
17,929.0	90.73	358.99	10,819.2	6,425.2	-550.9	0.22	-0.18	-0.12	-23.0	23.2	
18,023.0	90.62	359.27	10,818.1	6,519.2	-552.4	0.32	-0.12	0.30	-23.5	23.9	
18,117.0	89.89	359.85	10,817.7	6,613.2	-553.1	0.89	-0.78	0.62	-23.3	23.8	
18,211.0	89.66	0.37	10,818.0	6,707.2	-552.9	0.60	-0.24	0.55	-22.3	23.1	
18,305.0	88.93	0.47	10,819.2	6,801.2	-552.2	0.78	-0.78	0.11	-20.5	21.7	
18,399.0	88.65	359.98	10,821.2	6,895.2	-551.8	0.60	-0.30	-0.52	-17.9	20.6	
18,493.0	88.65	0.78	10,823.4	6,989.2	-551.2	0.85	0.00	0.85	-15.1	19.3	
18,587.0	88.82	0.70	10,825.5	7,083.1	-550.0	0.20	0.18	-0.09	-12.4	17.4	
18,681.0	87.93	0.22	10,828.1	7,177.1	-549.2	1.08	-0.95	-0.51	-9.1	15.9	
18,775.0	88.71	359.35	10,830.9	7,271.0	-549.6	1.24	0.83	-0.93	-5.8	15.6	
18,869.0	90.39	359.46	10,831.6	7,365.0	-550.6	1.79	1.79	0.12	-4.4	15.9	
18,876.3	90.38	359.46	10,831.6	7,372.3	-550.6	0.12	-0.12	0.04	-4.4	15.9	
TGT 4 (Hearn 34 State Com #502H)											
18,863.0	90.28	359.50	10,831.1	7,459.0	-551.4	0.12	-0.12	0.04	-4.1	16.0	



Final PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #502H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 22' @ 3482.0usft (Nabors M7502)
Site:	Hearns 34 State Corn	MD Reference:	KB = 22' @ 3482.0usft (Nabors M7502)
Well:	#502H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	EW (usft)	DLog (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
19,057.0	91.46	359.60	10,829.6	7,553.0	-552.2	1.26	1.26	0.11	-4.7	16.1	
19,151.0	91.85	0.27	10,826.9	7,647.0	-552.3	0.82	0.41	0.71	-6.5	15.5	
19,245.0	91.74	359.85	10,824.0	7,740.9	-552.2	0.46	-0.12	-0.45	-8.5	14.7	
19,339.0	91.85	359.88	10,821.0	7,834.9	-552.4	0.12	0.12	0.03	-10.6	14.2	
19,433.0	92.24	0.03	10,817.7	7,928.8	-552.5	0.44	0.41	0.16	-13.0	13.6	
19,527.0	93.59	0.98	10,812.9	8,022.7	-551.6	1.76	1.44	1.01	-16.9	12.1	
19,622.0	91.68	0.80	10,808.5	8,117.6	-550.2	2.02	-2.01	-0.19	-20.4	9.9	
19,716.0	89.16	0.70	10,807.8	8,211.6	-548.9	2.68	-2.68	-0.11	-20.2	8.0	
19,810.0	89.16	0.90	10,809.2	8,305.5	-547.6	0.21	0.00	0.21	-17.9	6.0	
19,904.0	88.88	0.89	10,810.8	8,399.5	-546.2	0.30	-0.30	-0.01	-15.4	3.8	
19,932.5	88.84	0.91	10,811.4	8,428.1	-545.7	0.15	-0.13	0.09	-14.6	3.2	
TGT 5 (Hearns 34 State Corn #502H)											
19,998.0	88.76	0.97	10,812.8	8,493.5	-544.6	0.15	-0.13	0.09	-13.3	1.8	
20,092.0	88.93	0.64	10,814.7	8,587.5	-543.3	0.39	0.18	-0.35	-12.0	-0.4	
20,187.0	88.43	0.69	10,818.9	8,682.4	-542.2	0.53	-0.53	0.05	-10.4	-2.2	
20,281.0	88.77	1.05	10,819.1	8,776.4	-540.8	0.53	0.36	0.38	-8.7	-4.3	
20,375.0	88.99	1.23	10,821.0	8,870.3	-538.9	0.30	0.23	0.19	-7.4	-6.9	
20,469.0	88.65	0.71	10,822.9	8,964.3	-537.3	0.66	-0.36	-0.55	-6.1	-9.2	
20,563.0	90.06	359.49	10,824.0	9,058.3	-537.2	1.98	1.50	-1.30	-5.6	-10.0	
20,657.0	91.46	359.38	10,822.7	9,152.3	-536.1	1.49	1.49	-0.12	-7.4	-9.8	
20,752.0	90.79	359.40	10,820.9	9,247.3	-539.1	0.71	-0.71	0.02	-9.9	-9.5	
20,794.5	90.76	359.44	10,820.3	9,289.7	-539.5	0.11	-0.06	0.09	-10.7	-9.4	
TGT 6 (Hearns 34 State Corn #502H)											
20,846.0	90.73	359.48	10,819.6	9,341.3	-540.0	0.11	-0.06	0.09	-11.2	-9.3	
20,940.0	90.90	359.24	10,816.3	9,435.2	-541.1	0.31	0.18	-0.26	-10.8	-8.9	
20,980.0	90.34	359.40	10,817.9	9,475.2	-541.5	1.46	-1.40	0.40	-10.1	-8.8	
Final MWD Survey (MD=20980.0')											



Final PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #502H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 22' @ 3482.0usft (Nabors M7502)
Site:	Hearns 34 State Com	MD Reference:	KB = 22' @ 3482.0usft (Nabors M7502)
Well:	#502H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

MD (usft)	Inc (")	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	EW (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
21,085.0	90.34	359.40	10,817.3	9,560.2	-542.4	0.00	0.00	0.00	-8.7	-8.5
Final Projection to Bit (MD=21085.0) - PBHL (Hearns 34 State Com #502H)										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/S (usft)	+E/W (usft)	
10,575.8	10,493.9	-781.6	-418.5	HL Crossing, MD:10575.8', TVD:10493.9', N/S:-781.6', EW:-418.5', INC:29.12
20,980.0	10,817.9	9,475.2	-541.5	Final MWD Survey (MD=20980.0)
21,085.0	10,817.3	9,560.2	-542.4	Final Projection to Bit (MD=21085.0)

Checked By: _____	Approved By: _____	Date: _____
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Lea County, NM (NAD 83 NME)

Hearns 34 State Com #502H

Nabors M7502

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: #502H

KB = 22' @ 3482.0ush (Nabors M7502) 3460.0
Northing 426166.00 Easting 779889.50 Latitude 32° 10' 9.347' N Longitude 103° 33' 48.670' W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dieg	TFace	VSeet
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
2	2000.0	0.00	0.00	2000.0	0.0	0.0	0.00	0.00	0.0
3	2500.1	10.00	203.05	2497.6	-40.1	-17.0	2.00	203.05	-39.0
4	7204.5	10.00	203.05	7130.4	-791.9	-337.0	0.00	0.00	-771.2
5	7704.6	0.00	0.00	7628.0	-832.0	-354.0	2.00	180.00	-810.3
6	10495.1	0.00	0.00	10418.5	-832.0	-354.0	0.00	0.00	-810.3
7	11245.1	80.00	349.00	10896.0	-363.3	-445.1	12.00	349.00	-337.1
8	11597.8	80.36	359.58	10894.9	-12.8	-480.2	3.00	88.08	14.8
9	13024.8	80.36	359.58	10886.0	1414.1	-490.7	0.00	0.00	1440.0
10	13031.4	80.49	359.58	10886.0	1420.7	-490.7	2.00	-0.18	1448.8
11	14198.4	80.49	359.58	10876.0	2587.6	-499.4	0.00	0.00	2612.0
12	14207.2	80.67	359.58	10875.9	2596.4	-499.4	2.00	-0.10	2620.9
13	15922.6	80.67	359.58	10856.0	4311.7	-512.1	0.00	0.00	4334.0
14	15937.2	80.37	359.58	10855.9	4326.3	-512.2	2.00	178.92	4348.6
15	18983.6	80.37	359.58	10836.0	7372.5	-534.8	0.00	0.00	7391.1
16	18992.1	80.54	359.58	10835.9	7381.0	-534.8	2.00	0.00	7399.5
17	20038.9	80.54	359.58	10826.0	8427.7	-542.6	0.00	0.00	8445.0
18	20083.8	89.64	359.58	10825.9	8472.7	-542.9	2.00	180.00	8489.9
19	20901.0	89.64	359.58	10831.0	9289.8	-548.9	0.00	0.00	9306.0
20	20984.4	91.31	359.58	10830.3	9373.2	-549.5	2.00	-0.03	9389.3
21	21172.3	91.31	359.58	10826.0	9561.0	-550.9	0.00	0.00	9576.9

WELLBORE TARGET DETAILS (MAP COORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
KOP (Hearns 34 State Com #502H)	10418.5	-423.0	-134.0	426334.00	779235.00
PRH (Hearns 34 State Com #502H)	10828.0	-858.0	-450.8	438772.04	779128.07
TOT 6 (Hearns 34 State Com #502H)	10828.0	8427.7	-642.8	434593.70	779148.48
TOT 8 (Hearns 34 State Com #502H)	10831.0	9289.8	-548.9	434608.89	779140.09
TOT 4 (Hearns 34 State Com #502H)	10838.0	7372.5	-634.8	433338.50	779184.25
TOT 5 (Hearns 34 State Com #502H)	10836.0	4311.7	-612.1	430477.70	779116.87
TOT 3 (Hearns 34 State Com #502H)	10876.0	2587.6	-499.4	429763.65	779188.63
TOT 1 (Hearns 34 State Com #502H)	10836.0	1414.1	-490.7	427580.10	779198.30
FTP (Hearns 34 State Com #502H)	10836.0	-782.0	-474.0	426384.00	779215.00

