



Lea County, NM (NAD 83 NME)

Ares 4 State #301H

Plan #1



To convert a Magnetic Direction to a Grid Direction, Add 6.41°
To convert a Magnetic Direction to a True Direction, Add 6.81° East
To convert a True Direction to a Grid Direction, Subtract 0.41°

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: #301H

Ground Level: 3584.0
KB = 25 @ 3609.0usft
Northing 451993.00 Easting 777378.00 Latitude 32° 14' 25.074 N Longitude 103° 34' 11.822 W

SECTION DETAILS

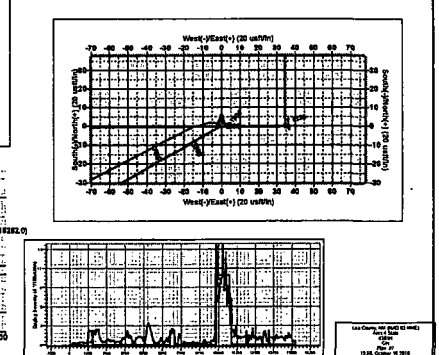
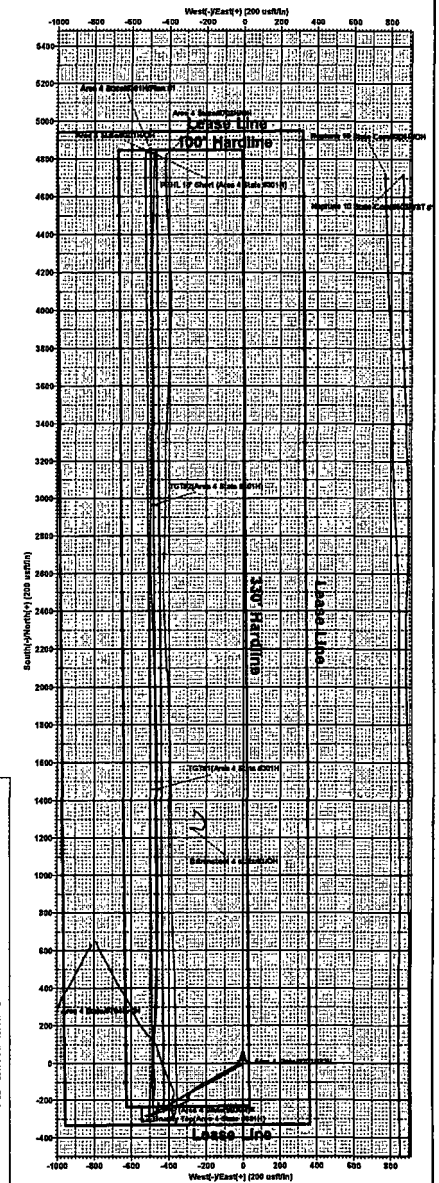
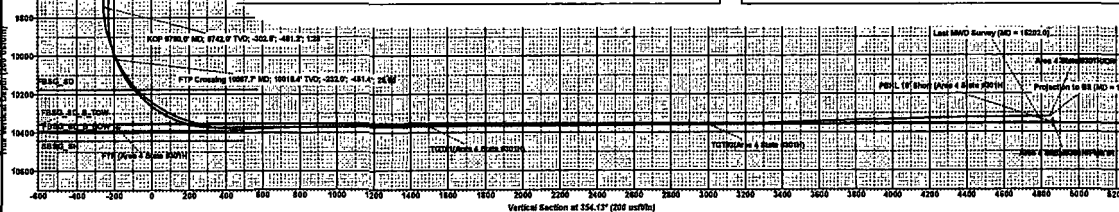
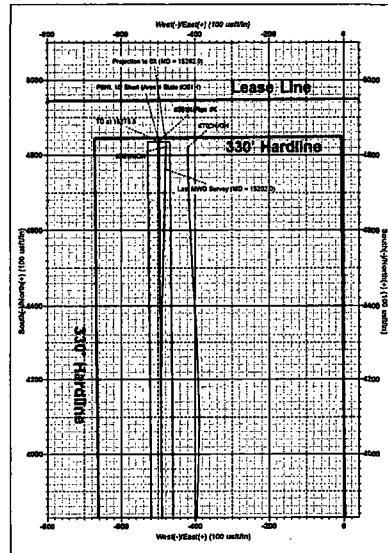
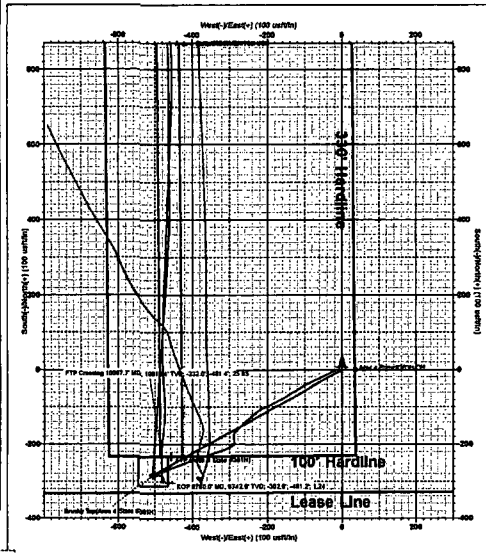
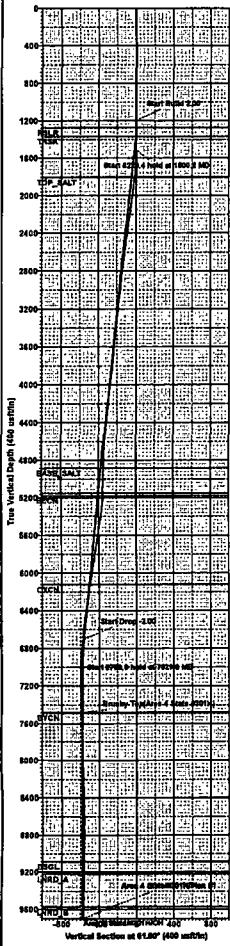
Sec	MD	Inc	At	TVD	+N/S	+E/W	Dip	TFace	VFace	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0		
3	1500.0	0.00	240.82	1499.6	-7.7	-13.7	2.00	240.82	-4.2		
4	6729.6	6.00	240.82	6700.4	-274.3	-491.3	0.00	0.00	-222.7		
5	7029.8	0.00	0.00	7000.0	-282.0	-508.0	2.00	180.00	-228.9		
6	9828.9	0.00	0.00	9798.0	-282.0	-508.0	0.00	0.00	-228.9		
7	10731.7	90.29	3.95	10372.0	292.5	-468.3	10.00	3.95	338.5		
8	10879.1	90.29	359.53	10371.2	439.8	-480.9	3.00	-59.36	494.6		
9	11099.0	90.29	359.53	10368.0	1459.7	-469.3	0.00	0.00	1500.0		TGT#1 (Ares 4 State #301H)
10	11899.7	90.30	359.53	10368.0	1460.3	-469.3	2.00	7.87	1500.8		TGT#2 (Ares 4 State #301H)
11	13405.7	90.30	359.53	10358.0	2968.3	-481.6	0.00	0.00	3000.0		
12	13411.7	90.18	359.53	10358.0	2972.3	-481.7	2.00	-180.00	3008.0		
13	15275.5	90.18	359.53	10352.0	4838.0	-487.0	0.00	0.00	4861.5		PEHL 10' Short (Ares 4 State #301H)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/S	+E/W	Northing	Easting
TGT#1 (Ares 4 State #301H)	10366.0	1459.7	-469.3	453452.70	776908.73
TGT#2 (Ares 4 State #301H)	10358.0	2968.3	-481.6	454959.30	776896.38
PEHL 10' Short (Ares 4 State #301H)	10352.0	4838.0	-487.0	456829.30	776881.00
Brushy Top (Ares 4 State #301H)	7479.0	-282.0	-505.0	451711.00	776873.00
FTP (Ares 4 State #301H)	10372.0	-232.0	-455.0	451761.00	776923.00



HOBBS OCD

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EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Ares 4 State

#301H

OH

Design: OH

Midland PVA

16 October, 2018



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #301H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3609.0usft
Site:	Area 4 State	MD Reference:	KB = 25 @ 3609.0usft
Well:	#301H	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		

Area 4 State			
Site Position:		Northing:	451,993.00 usft
From:	Map	Easting:	777,413.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 14' 25.072 N
		Longitude:	103° 34' 11.622 W
		Grid Convergence:	0.41 °

Well	#301H		
Well Position	+N-S	0.0 usft	Northing:
	+E-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft		Wellhead Elevation:
			usft
			Latitude:
			Longitude:
			Ground Level:
			3,584.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2015	10/2/2018	6.81
			Dip Angle
			(°)
			80.06
			Field Strength
			(nT)
			47,813.80249293

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			354.13

Survey Program	Date 10/16/2018		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
167.0	15,262.0	Drilltech MWD (OH)	MWD
			Description
			OWSG MWD - Standard



Midland PVA

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Well:	#301H	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)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0	0.0
167.0	0.35	49.31	167.0	0.3	0.4	0.21	0.21	0.00	-0.5	0.0	
356.0	0.55	113.99	356.0	0.3	1.7	0.27	0.11	34.22	-1.4	1.0	
515.0	0.44	106.44	515.0	-0.1	2.9	0.08	-0.07	-4.75	-2.9	0.7	
674.0	0.29	210.59	674.0	-0.7	3.3	0.37	-0.09	65.50	1.1	3.2	
832.0	0.29	73.39	832.0	-0.9	3.5	0.34	0.00	-66.84	-3.1	-1.9	
990.0	0.22	183.25	990.0	-1.1	3.9	0.27	-0.04	69.53	-0.9	3.9	
1,148.0	0.44	280.81	1,148.0	-1.3	3.2	0.33	0.14	61.75	3.4	0.6	
1,301.0	0.15	45.26	1,301.0	-1.0	2.8	0.35	-0.19	81.34	-3.0	-3.2	
1,436.0	0.53	351.38	1,436.0	-0.3	2.8	0.34	0.28	-39.91	-2.7	-11.9	
1,530.0	1.14	304.62	1,530.0	0.7	2.0	0.92	0.65	-49.74	9.6	-18.5	
1,624.0	2.90	280.63	1,623.9	1.7	-1.1	2.04	1.87	-25.52	20.7	-19.7	
1,718.0	3.87	264.81	1,717.7	1.8	-6.6	1.42	1.03	-16.83	28.8	-18.0	
1,812.0	5.28	245.56	1,811.4	-0.3	-13.7	2.20	1.50	-20.48	35.6	-8.4	
1,907.0	7.39	243.98	1,905.9	-4.8	-23.2	2.23	2.22	-1.66	35.3	-9.1	
2,001.0	8.53	243.80	1,999.0	-10.5	-34.8	1.21	1.21	-0.19	32.1	-9.5	
2,095.0	8.00	243.01	2,092.0	-16.5	-46.9	0.58	-0.56	-0.84	28.5	-9.5	
2,189.0	7.65	242.84	2,185.1	-22.4	-58.3	0.37	-0.37	-0.18	25.5	-9.8	
2,283.0	7.30	243.28	2,278.3	-27.9	-69.2	0.38	-0.37	0.47	23.0	-10.4	
2,377.0	7.03	244.68	2,371.6	-33.0	-79.8	0.34	-0.29	1.49	20.8	-11.5	
2,471.0	6.42	244.68	2,464.9	-37.8	-89.7	0.65	-0.65	0.00	19.6	-12.1	
2,565.0	7.12	241.96	2,558.3	-42.7	-99.6	0.82	0.74	-2.89	18.9	-11.6	
2,660.0	7.65	238.70	2,652.5	-48.8	-110.2	0.71	0.56	-3.43	17.3	-10.5	
2,754.0	7.39	240.99	2,745.7	-55.0	-120.8	0.42	-0.28	2.44	14.3	-11.0	
2,849.0	6.77	241.17	2,839.8	-60.6	-131.1	0.65	-0.65	0.19	12.5	-11.0	
2,943.0	6.24	240.37	2,933.3	-65.8	-140.4	0.57	-0.56	-0.85	11.9	-10.9	
3,037.0	6.51	238.35	3,026.8	-71.2	-149.4	0.37	0.29	-2.15	11.6	-10.2	



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #301H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3609.0usft
Site:	Area 4 State	MD Reference:	KB = 25 @ 3609.0usft
Well:	#301H	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)	Bulld (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
3,132.0	6.68	240.20	3,121.1	-76.7	-158.7	0.29	0.18	1.95	10.3	-10.3	
3,226.0	6.24	240.11	3,214.5	-82.0	-167.9	0.47	-0.47	-0.10	9.6	-10.2	
3,320.0	5.89	242.13	3,308.0	-86.8	-176.6	0.44	-0.37	2.15	9.1	-10.5	
3,414.0	5.98	241.87	3,401.5	-91.4	-185.2	0.10	0.10	-0.28	9.3	-10.7	
3,508.0	6.77	244.07	3,494.9	-96.1	-194.5	0.88	0.84	2.34	8.2	-11.4	
3,602.0	6.07	245.82	3,588.3	-100.5	-204.0	0.77	-0.74	1.86	7.2	-12.3	
3,697.0	5.10	246.35	3,682.9	-104.3	-212.5	1.02	-1.02	0.56	7.7	-13.3	
3,791.0	5.36	235.45	3,776.5	-108.5	-219.9	1.09	0.28	-11.60	11.4	-11.5	
3,884.0	7.12	230.44	3,868.9	-114.6	-227.9	1.98	1.89	-5.39	11.8	-9.1	
3,979.0	8.00	230.36	3,963.1	-122.6	-237.5	0.93	0.93	-0.08	9.1	-7.3	
4,073.0	6.68	229.30	4,056.3	-130.3	-246.7	1.41	-1.40	-1.13	6.8	-5.3	
4,168.0	5.80	228.77	4,150.8	-137.1	-254.5	0.93	-0.93	-0.56	6.3	-3.2	
4,262.0	5.72	229.92	4,244.3	-143.2	-261.7	0.15	-0.09	1.22	6.4	-1.4	
4,357.0	5.89	229.56	4,338.8	-149.4	-269.0	0.18	0.18	-0.38	6.6	0.6	
4,451.0	5.54	222.80	4,432.3	-155.9	-275.8	0.81	-0.37	-7.19	6.5	3.8	
4,546.0	4.75	216.38	4,527.0	-162.4	-281.2	1.03	-0.83	-6.76	6.6	8.1	
4,640.0	3.69	215.41	4,620.7	-168.0	-285.3	1.13	-1.13	-1.03	8.4	12.4	
4,735.0	3.34	198.80	4,715.5	-173.1	-287.9	1.13	-0.37	-17.48	6.2	20.1	
4,829.0	3.34	180.17	4,809.4	-178.5	-288.8	1.15	0.00	-19.82	-1.0	28.7	
4,924.0	3.61	169.01	4,904.2	-184.2	-288.3	0.77	0.28	-11.75	-9.1	36.9	
5,033.0	3.43	166.02	5,013.0	-190.7	-286.8	0.24	-0.17	-2.74	-14.7	47.2	
5,100.0	2.99	170.85	5,079.9	-194.4	-286.1	0.77	-0.66	7.21	-12.0	55.0	
5,194.0	3.61	213.30	5,173.7	-199.3	-287.3	2.61	0.66	45.16	32.2	54.9	
5,288.0	5.72	238.97	5,267.4	-204.1	-292.9	3.11	2.24	27.31	55.2	37.2	
5,383.0	8.09	242.75	5,361.7	-209.7	-302.9	2.54	2.49	3.98	56.0	33.5	
5,478.0	9.50	249.08	5,455.6	-215.5	-316.2	1.80	1.48	6.66	54.7	26.5	
5,572.0	10.20	252.24	5,548.2	-220.8	-331.4	0.94	0.74	3.36	49.5	22.0	



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #301H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3609.0usft
Site:	Area 4 State	MD Reference:	KB = 25 @ 3609.0usft
	#301H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (°)	Asz (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	DLog (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
5,667.0	9.76	252.15	5,641.8	-225.9	-347.1	0.46	-0.46	-0.09	42.7	20.1	
5,761.0	9.76	252.06	5,734.4	-230.8	-362.2	0.02	0.00	-0.10	38.4	18.2	
5,856.0	9.67	250.31	5,828.1	-235.9	-377.4	0.32	-0.09	-1.84	29.5	17.4	
5,950.0	9.85	249.60	5,920.7	-241.4	-382.4	0.23	0.19	-0.76	23.0	16.2	
6,045.0	9.50	249.34	6,014.4	-247.0	-407.3	0.37	-0.37	-0.27	16.8	14.8	
6,139.0	8.62	250.57	6,107.2	-252.1	-421.2	0.96	-0.94	1.31	11.9	12.9	
6,234.0	8.27	248.72	6,201.2	-256.9	-434.3	0.47	-0.37	-1.95	7.4	11.7	
6,329.0	8.35	249.25	6,295.2	-261.8	-447.1	0.12	0.08	0.56	3.5	10.2	
6,423.0	7.91	248.64	6,388.2	-268.6	-459.5	0.48	-0.47	-0.65	-0.1	8.8	
6,518.0	7.03	249.08	6,482.4	-271.1	-471.0	0.93	-0.93	0.46	-2.6	7.5	
6,612.0	6.88	248.64	6,575.7	-275.1	-481.5	0.38	-0.37	-0.47	-4.1	6.1	
6,708.0	5.63	243.45	6,669.2	-279.2	-490.7	1.26	-1.12	-5.52	-4.9	4.7	
6,801.0	4.57	233.87	6,763.8	-283.5	-497.9	1.43	-1.12	-10.08	-4.8	4.2	
6,894.0	2.73	213.92	6,856.6	-287.5	-502.2	2.38	-1.98	-21.45	-6.2	3.8	
6,989.0	0.79	206.98	6,951.6	-290.0	-503.7	2.05	-2.04	-7.31	-8.9	4.5	
7,083.0	0.70	222.01	7,045.6	-291.0	-504.4	0.23	-0.10	15.99	-6.3	6.4	
7,177.0	0.79	223.41	7,139.6	-291.9	-505.2	0.10	0.10	1.49	-7.3	6.6	
7,272.0	0.79	232.64	7,234.6	-292.7	-506.2	0.13	0.00	9.72	-7.5	7.8	
7,366.0	0.70	52.90	7,328.6	-292.8	-506.3	1.59	-0.10	-191.21	7.5	-7.8	
7,460.0	1.76	50.44	7,422.5	-291.5	-504.7	1.13	1.13	-2.62	5.8	-7.5	
7,555.0	1.85	52.90	7,517.5	-289.7	-502.4	0.12	0.09	2.59	2.5	-7.7	
7,649.0	1.76	54.31	7,611.4	-287.9	-500.0	0.11	-0.10	1.50	-0.6	-7.7	
7,744.0	1.32	52.46	7,706.4	-286.4	-497.9	0.47	-0.46	-1.95	-2.9	-7.8	
7,838.0	1.23	58.18	7,800.4	-285.2	-496.2	0.17	-0.10	6.09	-5.8	-7.4	
7,933.0	1.23	72.59	7,895.4	-284.4	-494.4	0.32	0.00	15.17	-9.4	-5.4	
8,028.0	1.41	75.84	7,990.3	-283.8	-492.3	0.21	0.19	3.42	-11.9	-4.8	
8,122.0	1.49	86.48	8,084.3	-283.4	-489.9	0.30	0.09	11.32	-15.0	-2.3	



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8,216.0	1.49	90.08	8,178.3	-283.3	-487.5	0.10	0.00	3.83	-17.5	-1.3	
8,310.0	1.41	105.11	8,272.2	-283.6	-485.1	0.41	-0.09	15.99	-19.6	3.6	
8,404.0	1.23	108.19	8,366.2	-284.2	-483.1	0.21	-0.19	3.28	-21.5	4.7	
8,498.0	1.14	114.60	8,460.2	-285.0	-481.3	0.17	-0.10	6.82	-22.8	7.2	
8,593.0	1.06	131.04	8,555.2	-285.9	-479.7	0.34	-0.08	17.31	-21.6	13.6	
8,687.0	1.06	141.85	8,649.2	-287.2	-478.5	0.21	0.00	11.50	-20.4	17.6	
8,782.0	0.88	144.05	8,744.2	-288.5	-477.6	0.19	-0.19	2.32	-21.3	18.4	
8,876.0	0.97	144.84	8,838.1	-289.7	-476.7	0.10	0.10	0.84	-22.6	18.7	
8,971.0	0.97	152.04	8,933.1	-291.1	-475.8	0.13	0.00	7.58	-21.7	21.5	
9,065.0	0.79	198.80	9,027.1	-292.4	-475.7	0.76	-0.19	49.74	-0.4	31.1	
9,160.0	0.88	203.02	9,122.1	-293.7	-476.2	0.11	0.09	4.44	0.5	31.1	
9,254.0	0.53	195.90	9,216.1	-294.8	-476.6	0.38	-0.37	-7.57	-4.5	30.8	
9,348.0	0.53	163.12	9,310.1	-295.6	-476.6	0.32	0.00	-34.87	-21.3	23.3	
9,443.0	0.53	181.14	9,405.1	-296.4	-476.5	0.17	0.00	18.97	-13.9	28.8	
9,537.0	1.06	195.81	9,499.1	-297.7	-476.7	0.60	0.56	15.61	-7.4	31.5	
9,631.0	1.41	210.05	9,593.1	-299.6	-477.5	0.49	0.37	15.15	-1.4	32.6	
9,710.0	2.02	232.90	9,672.0	-301.2	-479.1	1.15	0.77	28.92	9.0	31.0	
9,764.0	2.29	235.37	9,726.0	-302.4	-480.8	0.53	0.50	4.57	8.3	30.6	
9,780.0	1.24	271.88	9,742.0	-302.6	-481.2	9.31	-6.57	228.17	24.5	19.8	
KOP 9780.0' MD; 9742.0' TVD; -302.6'; -481.2'; 1.24'											
9,811.0	2.84	0.35	9,773.0	-301.9	-481.5	9.31	4.52	285.39	19.7	-23.6	
9,859.0	9.50	2.63	9,820.7	-298.8	-481.3	14.30	14.29	4.75	14.0	-24.4	
9,906.0	14.77	359.38	9,866.6	-286.9	-481.2	11.30	11.21	-6.91	9.0	-23.5	
9,953.0	17.67	358.24	9,911.7	-273.8	-481.5	6.21	6.17	-2.43	3.5	-22.6	
10,000.0	20.49	0.08	9,956.1	-258.5	-481.7	6.13	6.00	3.91	-1.6	-21.8	
10,047.0	23.92	0.87	9,999.7	-240.7	-481.6	7.33	7.30	1.68	-5.1	-20.8	



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #301H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3609.0usft
Site:	Area 4 State	MD Reference:	KB = 25 @ 3609.0usft
Well:	#301H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (°)	Asl (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
10,067.7	25.85	1.67	10,018.4	-232.0	-481.4	9.47	9.33	3.87	-6.5	-20.4	
FTP Crossing 10067.7' MD; 10018.4' TVD; -232.0'; -481.4'; 25.85											
10,094.0	28.31	2.54	10,041.8	-220.0	-480.9	9.47	9.35	3.31	-8.1	-19.9	
10,142.0	32.54	5.88	10,083.2	-195.8	-479.1	9.49	8.81	6.96	-11.2	-18.6	
10,189.0	36.58	6.76	10,121.9	-169.3	-476.1	8.66	8.60	1.87	-12.9	-20.5	
10,236.0	40.80	4.04	10,158.6	-140.1	-473.4	9.68	8.98	-5.79	-13.1	-21.7	
10,283.0	47.04	0.43	10,192.5	-107.5	-472.2	14.30	13.28	-7.68	-13.4	-21.3	
10,331.0	52.23	356.30	10,223.5	-71.0	-473.3	12.64	10.81	-8.60	-14.7	-18.4	
10,378.0	55.84	355.86	10,251.1	-33.0	-475.9	7.72	7.68	-0.94	-16.6	-13.2	
10,426.0	59.71	357.45	10,276.7	7.5	-478.3	8.54	8.06	3.31	-17.6	-7.7	
10,473.0	63.75	0.08	10,299.0	48.9	-479.1	9.91	8.60	5.60	-17.8	-3.5	
10,506.0	67.53	0.96	10,312.6	78.9	-478.9	11.71	11.45	2.67	-17.6	-1.6	
10,519.0	68.41	1.93	10,317.5	91.0	-478.5	9.68	6.77	7.46	-17.6	-0.9	
10,566.0	71.05	1.84	10,333.8	135.0	-477.1	5.62	5.62	-0.19	-16.2	0.7	
10,614.0	74.04	2.10	10,348.1	180.8	-475.5	6.25	6.23	0.54	-13.1	2.4	
10,661.0	77.38	2.28	10,359.7	226.3	-473.8	7.12	7.11	0.38	-8.6	3.9	
10,709.0	80.20	2.45	10,369.1	273.3	-471.8	5.89	5.87	0.35	-2.6	5.2	
10,756.0	83.54	2.45	10,375.7	319.8	-469.9	7.11	7.11	0.00	3.9	6.2	
10,803.0	86.53	2.37	10,379.8	366.6	-467.9	6.36	6.36	-0.17	8.2	6.2	
10,866.0	90.66	1.84	10,381.3	429.5	-465.6	6.61	6.56	-0.84	10.1	4.8	
10,897.0	91.28	1.84	10,380.8	480.5	-464.6	2.00	2.00	0.00	9.7	3.5	
10,992.0	93.03	2.89	10,377.2	555.3	-460.7	2.15	1.84	1.11	6.6	-1.1	
11,086.0	92.42	2.02	10,372.8	649.1	-456.6	1.13	-0.65	-0.93	2.6	-5.9	
11,181.0	90.92	0.08	10,370.0	744.1	-454.9	2.58	-1.58	-2.04	0.4	-8.5	
11,275.0	91.63	359.99	10,367.9	838.1	-454.8	0.76	0.76	-0.10	-1.3	-9.3	
11,370.0	90.48	359.73	10,366.2	933.0	-455.1	1.24	-1.21	-0.27	-2.5	-9.9	
11,464.0	90.84	358.94	10,365.1	1,027.0	-456.2	0.92	0.38	-0.84	-3.1	-9.5	



Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #301H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3609.0usft
Site:	Area 4 State	MD Reference:	KB = 25 @ 3609.0usft
Well:	#301H	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)	
11,559.0	89.87	358.76	10,364.5	1,122.0	-458.1	1.04	-1.02	-0.19	-3.2	-8.4	
11,654.0	90.66	358.06	10,364.0	1,217.0	-460.7	1.11	0.83	-0.74	-3.2	-6.6	
11,748.0	90.31	359.12	10,363.3	1,310.9	-463.0	1.19	-0.37	1.13	-3.5	-5.0	
11,843.0	90.48	0.08	10,362.6	1,405.9	-463.7	1.03	0.18	1.01	-3.7	-5.1	
11,937.0	91.71	0.17	10,360.8	1,499.9	-463.5	1.31	1.31	0.10	-5.0	-6.1	
12,032.0	91.71	359.73	10,358.0	1,594.9	-463.6	0.46	0.00	-0.46	-7.3	-6.8	
12,126.0	90.57	359.12	10,356.1	1,688.8	-464.5	1.38	-1.21	-0.65	-8.7	-6.6	
12,220.0	91.28	359.03	10,354.6	1,782.8	-466.0	0.76	0.76	-0.10	-9.7	-5.9	
12,315.0	89.16	358.32	10,354.2	1,877.8	-468.2	2.35	-2.23	-0.75	-9.6	-4.5	
12,410.0	89.08	357.45	10,355.7	1,972.7	-471.7	0.92	-0.08	-0.92	-7.6	-1.8	
12,504.0	89.25	358.59	10,357.0	2,066.6	-475.0	1.23	0.18	1.21	-5.7	0.7	
12,599.0	90.04	358.50	10,357.6	2,161.6	-477.4	0.84	0.83	-0.09	-4.6	2.4	
12,693.0	90.40	357.97	10,357.3	2,255.6	-480.3	0.68	0.38	-0.56	-4.5	4.5	
12,787.0	90.22	356.83	10,356.8	2,349.5	-484.5	1.23	-0.19	-1.21	-4.5	8.0	
12,882.0	89.96	357.71	10,356.6	2,444.3	-489.1	0.97	-0.27	0.93	-4.2	11.7	
12,977.0	89.87	357.53	10,356.8	2,539.3	-493.0	0.21	-0.09	-0.19	-3.5	14.9	
13,072.0	88.46	358.59	10,358.1	2,634.2	-498.2	1.86	-1.48	1.12	-1.6	17.3	
13,166.0	89.34	0.17	10,359.9	2,728.2	-497.2	1.92	0.94	1.68	0.7	17.6	
13,260.0	89.43	0.61	10,361.0	2,822.2	-496.6	0.48	0.10	0.47	2.2	16.1	
13,355.0	90.22	0.70	10,361.2	2,917.2	-495.5	0.84	0.83	0.09	3.0	14.3	
13,449.0	91.19	0.79	10,360.1	3,011.1	-494.3	1.04	1.03	0.10	2.2	12.3	
13,543.0	92.07	1.05	10,357.4	3,105.1	-492.8	0.98	0.94	0.28	-0.1	10.0	
13,638.0	91.10	0.87	10,354.8	3,200.0	-491.2	1.04	-1.02	-0.19	-2.5	7.6	
13,732.0	91.63	0.43	10,352.5	3,294.0	-490.1	0.73	0.56	-0.47	-4.4	5.8	
13,826.0	92.24	0.43	10,349.4	3,387.9	-489.4	0.65	0.65	0.00	-7.3	4.3	
13,921.0	90.92	0.08	10,346.8	3,482.9	-489.0	1.44	-1.39	-0.37	-9.6	3.1	
14,015.0	91.71	359.99	10,344.6	3,576.9	-488.9	0.85	0.84	-0.10	-11.4	2.3	



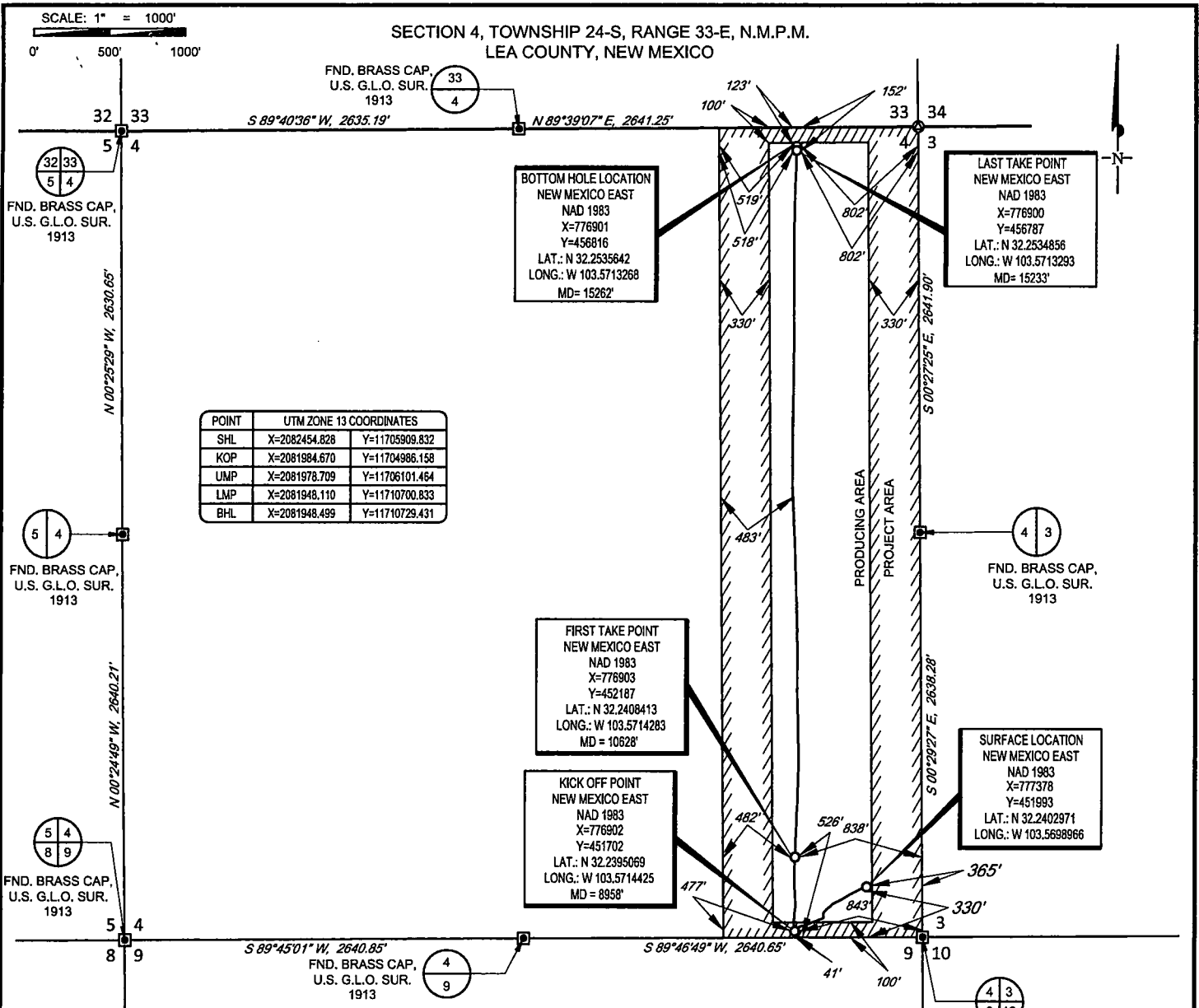
Midland PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #301H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3609.0usft
Site:	Area 4 State	MD Reference:	KB = 25 @ 3609.0usft
Well:	#301H	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)	
14,109.0	92.88	359.73	10,341.0	3,670.8	-489.2	1.07	1.03	-0.28	-14.7	1.7	
14,204.0	91.80	359.99	10,337.3	3,765.7	-489.4	0.97	-0.93	0.27	-18.2	1.2	
14,298.0	90.66	0.08	10,335.3	3,859.7	-489.3	1.22	-1.21	0.10	-19.9	0.4	
14,392.0	91.28	359.47	10,333.7	3,953.7	-489.7	0.93	0.68	-0.65	-21.2	0.0	
14,488.0	91.80	359.38	10,331.1	4,047.7	-490.7	0.56	0.55	-0.10	-23.4	0.1	
14,580.0	91.01	0.35	10,328.8	4,141.6	-490.9	1.33	-0.84	1.03	-25.4	-0.4	
14,674.0	91.71	0.61	10,326.6	4,235.6	-490.1	0.79	0.74	0.28	-27.3	-2.0	
14,768.0	90.31	1.14	10,325.0	4,329.6	-488.7	1.59	-1.49	0.56	-28.7	-4.2	
14,862.0	89.52	1.58	10,325.1	4,423.5	-486.4	0.96	-0.84	0.47	-28.2	-7.2	
14,956.0	90.84	1.66	10,324.8	4,517.5	-483.8	1.41	1.40	0.09	-28.2	-10.6	
15,050.0	90.57	1.49	10,323.6	4,611.5	-481.2	0.34	-0.29	-0.18	-29.1	-14.0	
15,145.0	91.01	1.31	10,322.3	4,706.4	-478.9	0.50	0.46	-0.19	-30.1	-17.1	
15,202.0	91.28	1.14	10,321.2	4,763.4	-477.6	0.56	0.47	-0.30	-31.0	-18.8	
Last MWD Survey (MD = 15202.0)											
15,262.0	91.28	1.14	10,319.9	4,823.4	-476.5	0.00	0.00	0.00	-32.2	-20.4	
Projection to Bit (MD = 15262.0)											

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/S (usft)	+E/W (usft)	
9,780.0	9,742.0	-302.6	-481.2	KOP 9780.0' MD; 9742.0' TVD; -302.6'; -481.2'; 1.24
10,067.7	10,018.4	-232.0	-481.4	FTP Crossing 10067.7' MD; 10018.4' TVD; -232.0'; -481.4'; 25.85
15,202.0	10,321.2	4,763.4	-477.6	Last MWD Survey (MD = 15202.0)
15,262.0	10,319.9	4,823.4	-476.5	Projection to Bit (MD = 15262.0)

Checked By: _____	Approved By: _____	Date: _____
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LEASE NAME & WELL NO.: ARES 4 STATE #301H

SECTION 4 TWP 24-S RGE 33-E SURVEY N.M.P.M.

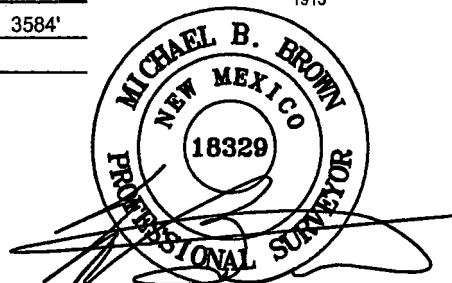
COUNTY LEA STATE NM ELEVATION 3584'

DESCRIPTION 330' FSL & 365' FEL



TOPOGRAPHIC
LOYALTY INNOVATION LEGACY

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Michael Blake Brown, P.S. No. 18329
SEPTEMBER 25, 2017

Geog resources, Inc.

ARES 4 STATE #301H AS-COMPLETED DATE: 01/22/2019 FILE: AD_ARES_4_STATE_301H DRAWN BY: TRG SHEET: 1 OF 1	REVISION:

- NOTES:
1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
 2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE, U.S. SURVEY FEET, NORTH AMERICAN DATUM 1983.
 3. THIS WELL LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY EOG RESOURCES, INC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.