

HOBBS OCD

OCT 01 2018

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EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Orrtanna 20 Fed

#707H

OH

Design: OH

Final PVA

17 July, 2018



Final PVA

Company:	EOG Resources - Midland			Local Co-ordinate Reference:	Well #707H
Project:	Lea County, NM (NAD 83 NME)			TVD Reference:	KB = 25 @ 3265.0usft (HP 465)
Site:	Ortanna 20 Fed			MD Reference:	KB = 25 @ 3265.0usft (HP 465)
Well:	#707H			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	Ortanna 20 Fed				
Site Position:		Northing:	373,025.00 usft	Latitude:	32° 1' 24.126 N
From:	Map	Easting:	770,593.00 usft	Longitude:	103° 35' 36.933 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.39 °

Well	#707H					
Well Position	+N-S	0.0 usft	Northing:	373,224.00 usft	Latitude:	32° 1' 25.962 N
	+E-W	0.0 usft	Easting:	772,556.00 usft	Longitude:	103° 35' 14.116 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,240.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/15/2017	6.95	59.88	47,819.28282143

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	354.86	



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Survey Program		Date 7/17/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
190.0	864.0	Cartel 41 (OH)	MWD	OWSG MWD - Standard
1,052.0	17,282.0	Intrepid MWD #1 (OH)	MWD	OWSG MWD - Standard

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
190.0	0.92	287.40	190.0	0.5	-1.5	0.48	0.48	0.00	0.0	0.0
313.0	0.75	281.95	313.0	0.9	-3.2	0.15	-0.14	-4.43	0.0	0.0
440.0	0.73	280.72	440.0	1.2	-4.8	0.02	-0.02	-0.97	0.0	0.0
567.0	0.44	282.83	567.0	1.5	-6.1	0.23	-0.23	1.66	0.0	0.0
694.0	0.13	250.93	694.0	1.6	-6.7	0.27	-0.24	-25.12	0.0	0.0
821.0	0.13	151.44	821.0	1.4	-6.7	0.16	0.00	-78.34	0.0	0.0
864.0	0.26	185.98	864.0	1.2	-6.7	0.39	0.30	80.33	0.0	0.0
1,052.0	0.70	147.90	1,052.0	-0.1	-6.2	0.28	0.23	-20.28	-1.5	-0.2
1,244.0	4.00	210.10	1,243.8	-6.9	-8.9	1.94	1.72	32.40	-8.1	2.2
1,433.0	8.90	212.50	1,431.5	-25.0	-20.1	2.60	2.59	1.27	-29.3	2.9
1,622.0	11.60	210.80	1,617.5	-53.6	-37.7	1.44	1.43	-0.90	-63.0	1.6
1,812.0	12.80	209.00	1,803.2	-88.5	-57.6	0.66	0.63	-0.95	-103.1	-1.1
2,001.0	13.10	204.20	1,987.4	-126.3	-76.6	0.59	0.16	-2.54	-144.9	-11.7
2,189.0	13.00	205.50	2,170.5	-164.8	-94.4	0.16	-0.05	0.69	-187.6	-7.9
2,378.0	13.20	207.20	2,354.6	-203.2	-113.4	0.23	0.11	0.90	-226.1	-1.6
2,567.0	13.10	207.50	2,538.7	-241.4	-133.2	0.06	-0.05	0.16	-251.6	-0.9
2,755.0	11.00	203.70	2,722.5	-276.7	-150.2	1.19	-1.12	-2.02	-261.0	-17.8
2,944.0	10.90	205.20	2,908.1	-309.4	-165.1	0.16	-0.05	0.79	-266.1	-10.3
3,132.0	11.10	206.70	3,092.6	-341.7	-180.8	0.19	0.11	0.80	-271.2	-3.4
3,321.0	8.60	200.50	3,278.8	-371.1	-193.9	1.44	-1.32	-3.28	-270.5	-31.5



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Site:	Orrtanna 20 Fed	MD Reference:	KB = 25 @ 3265.0usft (HP 465)
Well:	#707H	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)	
3,511.0	7.20	198.10	3,467.0	-395.8	-202.6	0.76	-0.74	-1.26	-264.0	-39.1	
3,701.0	5.80	183.10	3,655.8	-416.7	-206.8	1.15	-0.74	-7.89	-237.2	-96.4	
3,890.0	5.50	187.10	3,843.9	-435.2	-208.4	0.26	-0.16	2.12	-232.2	-69.2	
4,079.0	6.80	205.60	4,031.8	-454.3	-214.4	1.25	0.69	9.79	-230.7	10.1	
4,269.0	5.80	198.60	4,220.7	-473.5	-222.3	0.66	-0.53	-3.68	-219.8	-15.2	
4,457.0	5.50	208.10	4,407.8	-490.5	-229.6	0.52	-0.16	5.05	-206.6	21.1	
4,646.0	5.70	194.80	4,595.9	-507.5	-236.3	0.69	0.11	-7.04	-193.5	-22.6	
4,830.0	5.20	220.10	4,779.1	-522.8	-244.0	1.32	-0.27	13.75	-172.0	57.7	
5,018.0	4.50	222.50	4,966.4	-534.7	-254.4	0.39	-0.37	1.28	-155.5	56.2	
5,206.0	4.20	219.70	5,153.8	-545.4	-263.8	0.20	-0.16	-1.49	-142.1	40.8	
5,395.0	4.10	221.40	5,342.3	-555.8	-272.7	0.08	-0.05	0.90	-124.3	36.7	
5,583.0	3.50	219.30	5,529.9	-565.3	-280.8	0.33	-0.32	-1.12	-107.8	24.7	
5,771.0	3.50	215.90	5,717.6	-574.4	-287.8	0.11	0.00	-1.81	-89.9	12.5	
5,959.0	2.70	215.80	5,905.3	-582.7	-293.7	0.43	-0.43	-0.05	-69.4	6.9	
6,148.0	2.80	213.80	6,094.1	-590.1	-298.9	0.07	0.05	-1.06	-47.7	0.0	
6,337.0	2.60	216.90	6,282.9	-597.4	-304.0	0.13	-0.11	1.64	-25.9	-3.3	
6,526.0	2.60	217.70	6,471.7	-604.2	-309.2	0.02	0.00	0.42	-3.9	-9.3	
6,715.0	2.30	217.60	6,660.5	-610.6	-314.2	0.16	-0.16	-0.05	18.6	-15.8	
6,905.0	3.00	195.10	6,850.3	-618.4	-317.8	0.65	0.37	-11.84	45.6	-3.2	
7,094.0	2.90	189.80	7,039.1	-627.9	-319.9	0.15	-0.05	-2.80	66.1	9.1	
7,283.0	2.90	186.00	7,227.8	-637.4	-321.2	0.10	0.00	-2.01	78.2	21.3	
7,472.0	2.70	183.80	7,416.6	-646.6	-322.0	0.12	-0.11	-1.16	78.3	28.3	
7,661.0	2.40	188.00	7,605.4	-654.9	-322.9	0.19	-0.16	2.22	72.6	23.1	
7,851.0	2.50	191.20	7,795.2	-662.9	-324.2	0.09	0.05	1.68	65.7	19.2	
8,040.0	2.20	176.10	7,984.1	-670.6	-324.8	0.36	-0.16	-7.99	50.8	34.6	
8,229.0	2.30	171.00	8,172.9	-677.9	-323.9	0.12	0.05	-2.70	40.1	38.6	
8,418.0	2.50	193.10	8,361.8	-685.7	-324.3	0.50	0.11	11.69	44.0	22.1	



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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)	BuId ("/100usft)	Turn ("/100usft)	High to Plan (usft)	Right to Plan (usft)	
8,607.0	2.50	192.80	8,550.6	-693.7	-326.1	0.01	0.00	-0.16	35.7	22.3	
8,795.0	2.10	191.90	8,738.4	-701.1	-327.7	0.21	-0.21	-0.48	27.8	22.8	
8,984.0	2.80	226.00	8,927.3	-707.7	-331.8	0.84	0.37	18.04	28.3	5.3	
9,172.0	2.50	243.50	9,115.1	-712.7	-338.7	0.46	-0.16	9.31	20.1	-2.1	
9,361.0	1.90	244.50	9,303.9	-715.9	-345.3	0.32	-0.32	0.53	12.8	-2.4	
9,549.0	2.90	246.50	9,491.8	-719.1	-352.4	0.53	0.53	1.06	4.9	-2.7	
9,738.0	2.50	237.60	9,680.6	-723.3	-360.3	0.31	-0.21	-4.71	-3.6	-2.7	
9,926.0	2.40	236.00	9,868.4	-727.7	-367.0	0.06	-0.05	-0.85	-11.6	-2.9	
10,115.0	1.30	251.10	10,057.3	-730.6	-372.3	0.63	-0.58	7.99	-17.9	1.2	
10,303.0	0.90	154.40	10,245.3	-732.6	-373.7	0.89	-0.21	-51.44	-0.4	-20.0	
10,491.0	2.20	129.60	10,433.2	-736.2	-370.3	0.76	0.69	-13.19	3.1	-19.0	
10,680.0	1.90	144.60	10,622.1	-741.1	-365.7	0.32	-0.16	7.94	-8.5	-18.2	
10,869.0	1.50	167.70	10,811.0	-746.1	-363.3	0.42	-0.21	12.22	-20.3	-12.2	
11,057.0	2.60	172.60	10,998.9	-752.7	-362.3	0.59	0.59	2.61	-28.0	-10.2	
11,246.0	3.00	207.50	11,187.7	-761.3	-364.0	0.91	0.21	18.47	-37.3	10.2	
11,435.0	1.70	307.90	11,376.6	-764.0	-368.5	1.96	-0.69	53.12	14.8	39.7	
11,625.0	0.90	276.30	11,566.5	-762.1	-372.2	0.55	-0.42	-16.63	-12.1	40.1	
11,757.0	0.90	262.90	11,698.5	-762.1	-374.3	0.16	0.00	-10.15	-23.1	35.9	
11,852.0	3.40	352.00	11,793.4	-759.4	-375.4	3.69	2.63	93.79	32.7	24.4	
11,875.9	6.06	1.50	11,817.2	-757.5	-375.5	11.58	11.14	39.81	34.3	18.8	
KOP (Orrianna 20 Fed #707H)											
11,899.0	8.70	5.10	11,840.2	-754.5	-375.3	11.58	11.41	15.55	33.2	16.7	
11,946.0	13.20	10.70	11,886.3	-745.7	-374.0	9.83	9.57	11.91	30.2	12.8	
11,993.0	19.30	12.20	11,931.4	-732.8	-371.3	13.01	12.98	3.19	25.9	10.4	
12,041.0	22.90	11.80	11,976.2	-715.9	-367.7	7.51	7.50	-0.83	21.5	7.7	
12,088.0	27.60	10.70	12,018.7	-696.2	-363.8	10.05	10.00	-2.34	18.2	4.7	
12,118.0	30.00	10.80	12,044.9	-682.0	-361.1	8.00	8.00	0.33	16.6	2.2	



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Design: OH		Database:		EDM 5000.14	

Survey											
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12,130.1	31.21	10.87	12,055.4	-676.0	-360.0	10.00	10.00	0.57	16.1	1.1	
HL Crossing, MD:12130.1', TVD:12055.4', N/S:-676.0', E/W:-360.0', INC:31.21											
12,136.0	31.80	10.90	12,060.4	-673.0	-359.4	10.00	10.00	0.54	15.9	0.5	
12,183.0	39.90	12.00	12,098.5	-646.0	-353.9	17.29	17.23	2.34	12.9	-4.8	
12,230.0	47.70	12.10	12,132.4	-614.2	-347.1	16.60	16.60	0.21	7.9	-10.9	
12,262.0	52.10	10.90	12,153.0	-590.2	-342.3	14.05	13.75	-3.75	4.1	-15.2	
12,277.7	53.60	8.80	12,162.4	-577.9	-340.1	14.34	9.57	-13.39	2.4	-17.1	
FTP (Ortanna 20 Fed #707H)											
12,294.0	55.20	6.70	12,171.9	-564.8	-338.3	14.34	9.80	-12.87	0.8	-18.8	
12,325.0	58.60	3.50	12,188.9	-538.9	-336.0	13.96	10.97	-10.32	-2.2	-21.1	
12,372.0	65.20	359.80	12,211.0	-497.5	-334.9	15.66	14.04	-7.87	-7.1	-22.7	
12,420.0	69.80	358.20	12,229.4	-453.2	-335.7	10.07	9.58	-3.33	-12.7	-22.4	
12,467.0	73.30	358.40	12,244.2	-408.6	-337.0	7.46	7.45	0.43	-17.0	-21.4	
12,514.0	76.00	358.80	12,256.7	-363.3	-338.1	5.80	5.74	0.85	-19.1	-20.6	
12,561.0	78.20	358.50	12,267.2	-317.5	-339.2	4.72	4.68	-0.64	-18.2	-19.9	
12,609.0	82.20	358.50	12,275.3	-270.3	-340.4	8.33	8.33	0.00	-15.0	-19.0	
12,656.0	86.30	359.40	12,280.0	-223.5	-341.3	8.93	8.72	1.91	-10.8	-18.5	
12,703.0	90.90	0.10	12,281.2	-176.5	-341.5	9.90	9.79	1.49	-9.3	-18.6	
12,798.0	92.70	359.50	12,278.2	-81.6	-341.8	2.00	1.89	-0.63	-11.4	-19.0	
12,845.0	91.90	358.50	12,276.3	-34.6	-342.6	2.72	-1.70	-2.13	-12.9	-18.6	
12,892.0	90.20	357.20	12,275.5	12.3	-344.4	4.55	-3.62	-2.77	-13.3	-17.2	
12,987.0	86.90	355.60	12,277.9	107.1	-350.4	3.86	-3.47	-1.68	-10.0	-12.0	
13,024.0	88.00	356.50	12,279.5	144.0	-352.9	3.84	2.97	2.43	-8.0	-9.7	
13,080.0	89.70	359.00	12,280.6	199.9	-355.1	5.40	3.04	4.46	-6.4	-7.9	
13,175.0	88.40	358.30	12,282.2	294.9	-357.3	1.55	-1.37	-0.74	-3.9	-6.4	
13,269.0	86.40	357.90	12,286.5	388.7	-360.5	2.17	-2.13	-0.43	1.2	-4.1	
13,364.0	84.10	357.20	12,294.3	483.3	-364.5	2.53	-2.42	-0.74	9.9	-0.8	



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13,396.0	82.50	356.70	12,298.1	515.0	-366.2	5.24	-5.00	-1.56	13.9	0.7	
13,427.0	81.40	356.20	12,302.4	545.7	-368.1	3.89	-3.55	-1.61	18.5	2.4	
13,459.0	81.70	355.60	12,307.1	577.2	-370.4	2.08	0.94	-1.87	23.5	4.4	
13,490.0	83.80	356.20	12,311.0	607.9	-372.6	7.04	6.77	1.94	27.7	6.3	
13,522.0	85.70	356.90	12,313.9	639.7	-374.5	6.32	5.94	2.19	30.9	8.0	
13,554.0	87.30	356.90	12,315.9	671.6	-376.2	5.00	5.00	0.00	33.2	9.5	
13,585.0	89.10	356.80	12,316.9	702.5	-377.9	5.82	5.81	-0.32	34.4	10.9	
13,616.0	89.30	356.40	12,317.3	733.5	-379.7	1.44	0.65	-1.29	35.2	12.5	
13,648.0	90.20	357.40	12,317.4	765.4	-381.5	4.20	2.81	3.12	35.6	14.0	
13,680.0	91.10	358.40	12,317.1	797.4	-382.6	4.20	2.81	3.12	35.5	14.9	
13,711.0	91.00	357.80	12,316.5	828.4	-383.7	1.96	-0.32	-1.94	35.2	15.7	
13,743.0	90.80	357.90	12,316.0	860.4	-384.9	0.70	-0.62	0.31	35.0	16.6	
13,790.0	92.70	359.10	12,314.6	907.3	-386.1	4.78	4.04	2.55	34.0	17.5	
13,838.0	93.30	359.10	12,312.1	955.2	-386.9	1.25	1.25	0.00	31.9	17.9	
13,854.8	93.51	359.35	12,311.1	972.0	-387.1	1.96	1.28	1.49	31.1	18.0	
TGT 1 (Oritanna 20 Fed #707H)											
13,885.0	93.90	359.60	12,309.1	1,002.1	-387.3	1.96	1.28	1.49	29.5	18.0	
13,923.0	93.50	359.40	12,306.7	1,040.1	-387.6	1.49	-1.05	-1.05	27.7	17.9	
13,964.0	91.80	0.00	12,304.8	1,081.0	-387.8	4.40	-4.15	1.46	26.5	17.8	
14,027.0	90.30	0.40	12,303.6	1,144.0	-387.6	2.46	-2.38	0.63	26.3	17.1	
14,059.0	91.80	0.90	12,303.0	1,176.0	-387.2	4.94	4.69	1.56	26.2	16.5	
14,090.0	92.70	1.10	12,301.8	1,207.0	-386.7	2.97	2.90	0.65	25.5	15.7	
14,122.0	92.40	0.50	12,300.4	1,238.9	-386.2	2.09	-0.94	-1.87	24.6	15.0	
14,153.0	92.70	0.50	12,299.0	1,269.9	-385.9	0.97	0.97	0.00	23.7	14.5	
14,185.0	94.20	0.40	12,297.1	1,301.8	-385.7	4.70	4.69	-0.31	22.3	14.0	
14,217.0	93.80	0.60	12,294.8	1,333.8	-385.4	1.40	-1.25	0.62	20.6	13.5	
14,248.0	93.50	0.50	12,292.9	1,364.7	-385.1	1.02	-0.97	-0.32	19.1	13.0	



Final PVA

Company: EOG Resources - Midland		Local Co-ordinate Reference: Well #707H	
Project: Lea County, NM (NAD 83 NME)		TVD Reference: KB = 25 @ 3265.0usft (HP 465)	
Site: Ortanna 20 Fed		MD Reference: KB = 25 @ 3265.0usft (HP 465)	
Well: #707H		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)	
14,280.0	93.40	0.70	12,291.0	1,396.6	-384.8	0.70	-0.31	0.62	17.7	12.4	
14,312.0	92.50	0.20	12,289.3	1,428.6	-384.5	3.22	-2.81	-1.56	16.6	11.9	
14,343.0	92.40	0.00	12,288.0	1,459.6	-384.5	0.72	-0.32	-0.65	15.7	11.6	
14,375.0	92.00	359.80	12,286.7	1,491.5	-384.5	1.40	-1.25	-0.62	15.0	11.4	
14,406.0	92.60	0.10	12,285.5	1,522.5	-384.6	2.16	1.94	0.97	14.3	11.2	
14,438.0	92.40	0.60	12,284.1	1,554.5	-384.4	1.68	-0.62	1.56	13.4	10.7	
14,469.0	91.60	0.60	12,283.0	1,585.5	-384.0	2.58	-2.58	0.00	12.8	10.1	
14,501.0	89.50	0.60	12,282.7	1,617.5	-383.7	6.56	-6.56	0.00	13.0	9.6	
14,564.0	88.60	0.60	12,283.8	1,680.5	-383.0	1.43	-1.43	0.00	15.1	8.4	
14,596.0	90.20	1.00	12,284.1	1,712.4	-382.6	5.15	5.00	1.25	15.9	7.7	
14,627.0	90.50	1.20	12,283.9	1,743.4	-382.0	1.16	0.97	0.65	16.2	6.9	
14,659.0	90.30	1.40	12,283.7	1,775.4	-381.3	0.88	-0.62	0.62	16.5	5.9	
14,691.0	90.20	1.30	12,283.5	1,807.4	-380.5	0.44	-0.31	-0.31	16.9	4.9	
14,722.0	90.60	1.70	12,283.3	1,838.4	-379.7	1.82	1.29	1.29	17.2	3.8	
14,754.0	90.40	1.90	12,283.1	1,870.4	-378.7	0.88	-0.62	0.62	17.4	2.6	
14,785.0	90.10	2.10	12,282.9	1,901.4	-377.6	1.16	-0.97	0.65	17.8	1.3	
14,817.0	89.70	2.30	12,283.0	1,933.3	-376.4	1.40	-1.25	0.62	18.3	-0.2	
14,857.1	89.51	2.43	12,283.3	1,973.5	-374.7	0.57	-0.48	0.32	19.2	-2.2	
TOT 2 (Ortanna 20 Fed #707H)											
14,880.0	89.40	2.50	12,283.5	1,996.3	-373.8	0.57	-0.48	0.32	19.8	-3.4	
14,927.0	90.70	0.90	12,283.4	2,043.3	-372.4	4.39	2.77	-3.40	20.4	-5.1	
14,975.0	90.40	1.00	12,283.0	2,091.3	-371.6	0.66	-0.62	0.21	20.6	-6.3	
15,069.0	90.80	0.60	12,282.0	2,185.2	-370.3	0.60	0.43	-0.43	20.9	-8.3	
15,164.0	89.80	1.20	12,281.5	2,280.2	-368.8	1.23	-1.05	0.63	21.8	-10.6	
15,258.0	91.00	359.20	12,280.8	2,374.2	-368.4	2.48	1.28	-2.13	22.4	-11.7	
15,353.0	89.90	359.60	12,280.1	2,469.2	-369.4	1.23	-1.16	0.42	23.0	-11.4	
15,448.0	90.80	359.10	12,279.5	2,564.2	-370.5	1.08	0.95	-0.53	23.7	-11.1	



Final PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #707H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3265.0usft (HP 465)
Site:	Orianna 20 Fed	MD Reference:	KB = 25 @ 3265.0usft (HP 465)
Well:	#707H	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)	Buflg (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
15,501.0	90.00	359.10	12,279.1	2,617.2	-371.3	1.51	-1.51	0.00	24.1	-10.7	
15,542.0	89.60	359.10	12,279.3	2,658.2	-372.0	0.98	-0.98	0.00	24.8	-10.3	
15,589.0	91.30	358.70	12,278.9	2,705.2	-372.9	3.72	3.62	-0.85	25.1	-9.8	
15,637.0	90.80	358.40	12,278.0	2,753.2	-374.1	1.21	-1.04	-0.62	24.9	-9.0	
15,684.0	90.20	358.90	12,277.6	2,800.1	-375.2	1.66	-1.28	1.06	25.1	-8.2	
15,731.0	89.70	359.00	12,277.7	2,847.1	-376.1	1.08	-1.06	0.21	25.8	-7.7	
15,766.0	92.70	359.40	12,276.9	2,882.1	-376.6	8.65	8.57	1.14	25.6	-7.5	
15,796.0	94.60	359.80	12,275.0	2,912.1	-376.8	6.47	6.33	1.33	24.1	-7.6	
15,826.0	95.30	0.40	12,272.4	2,941.9	-376.7	3.07	2.33	2.00	21.9	-7.8	
15,860.0	93.00	0.50	12,270.0	2,975.8	-376.4	6.77	-6.76	0.29	19.9	-8.4	
15,862.3	92.97	0.48	12,269.8	2,978.1	-376.4	1.67	-1.43	-0.86	19.9	-8.4	
TGT 3 (Orianna 20 Fed #707H)											
15,895.0	92.50	0.20	12,268.3	3,010.8	-376.2	1.67	-1.43	-0.86	18.8	-8.8	
15,921.0	90.50	359.30	12,267.6	3,036.8	-376.3	8.43	-7.69	-3.46	18.4	-8.9	
15,936.0	89.80	359.10	12,267.6	3,051.8	-376.6	4.85	-4.67	-1.33	18.6	-8.8	
15,953.0	90.10	359.60	12,267.6	3,068.8	-376.8	3.43	1.76	2.94	18.9	-8.8	
16,016.0	89.90	0.10	12,267.6	3,131.8	-376.9	0.85	-0.32	0.79	19.7	-9.1	
16,048.0	88.20	0.50	12,268.1	3,163.8	-376.7	5.46	-5.31	1.25	20.7	-9.5	
16,079.0	88.10	0.50	12,269.1	3,194.8	-376.5	0.32	-0.32	0.00	22.1	-10.1	
16,111.0	88.00	0.60	12,270.2	3,226.7	-376.2	0.44	-0.31	0.31	23.7	-10.6	
16,142.0	89.00	0.10	12,271.0	3,257.7	-376.0	3.61	3.23	-1.61	24.9	-11.0	
16,174.0	88.80	359.80	12,271.6	3,289.7	-376.0	1.13	-0.62	-0.94	26.0	-11.3	
16,205.0	87.60	359.40	12,272.6	3,320.7	-376.2	4.08	-3.87	-1.29	27.4	-11.3	
16,300.0	90.30	359.20	12,274.3	3,415.7	-377.4	2.85	2.84	-0.21	30.5	-10.9	
16,363.5	89.76	358.93	12,274.3	3,479.1	-378.4	0.95	-0.85	-0.43	31.3	-10.3	
TGT 4 (Orianna 20 Fed #707H)											
16,394.0	89.50	358.80	12,274.5	3,509.7	-379.0	0.95	-0.85	-0.43	31.8	-10.0	



Final PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #707H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3265.0usft (HP 465)
Site:	Orrtanna 20 Fed	MD Reference:	KB = 25 @ 3265.0usft (HP 465)
Well:	#707H	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)	BuBd (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
16,489.0	91.00	359.10	12,274.1	3,604.6	-380.8	1.61	1.58	0.32	32.1	-9.0	
16,583.0	91.30	358.70	12,272.2	3,698.6	-382.6	0.53	0.32	-0.43	30.9	-7.9	
16,678.0	90.30	358.70	12,270.9	3,793.6	-384.7	1.05	-1.05	0.00	30.3	-6.5	
16,773.0	91.80	358.30	12,269.1	3,888.5	-387.2	1.63	1.58	-0.42	29.3	-4.8	
16,867.0	89.20	359.00	12,268.3	3,982.5	-389.4	2.86	-2.77	0.74	29.2	-3.3	
16,962.0	89.10	359.80	12,269.7	4,077.5	-390.4	0.85	-0.11	0.84	31.3	-3.0	
17,056.0	89.80	358.70	12,270.6	4,171.5	-391.7	1.39	0.74	-1.17	32.9	-2.5	
17,151.0	93.60	0.50	12,267.8	4,266.4	-392.3	4.43	4.00	1.89	30.8	-2.6	
17,162.3	93.40	0.26	12,267.1	4,277.7	-392.2	2.74	-1.77	-2.10	30.2	-2.8	
PBHL (Orrtanna 20 Fed #707H)											
17,213.0	92.50	359.20	12,264.5	4,328.3	-392.5	2.74	-1.77	-2.10	28.0	-2.9	
Final MWD Survey (MD=17213.0')											
17,282.0	92.50	359.20	12,261.5	4,397.2	-393.4	0.00	0.00	0.00	25.5	-2.5	
Final Projection to Bit (MD=17282.0') - EXT PBHL (Orrtanna 20 Fed #707H)											

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/S (usft)	+E/W (usft)	
12,130.1	12,055.4	-676.0	-360.0	HL Crossing, MD:12130.1', TVD:12055.4', N/S:-676.0', E/W:-360.0', INC:31.21
17,213.0	12,264.5	4,328.3	-392.5	Final MWD Survey (MD=17213.0')
17,282.0	12,261.5	4,397.2	-393.4	Final Projection to Bit (MD=17282.0')

Checked By: _____	Approved By: _____	Date: _____
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HOBBS OCD

OCT 01 2018

RECEIVED



Lea County, NM (NAD 83 NME)

Orrtanna 20 Fed #707H

HP 465

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: #707H			
KB = 25 @ 3285.0usft (HP 465)	3240.0		
Northing	373224.00	East	772556.00
		Latitude	32° 1' 23.962 N
		Longitude	103° 35' 14.116 W

SECTION DETAILS									
Sec	MD	Inc	Asl	TYD	+W-S	+E-W	Dlog	TFace	Vsect
1	864.0	0.28	185.98	864.0	1.2	-4.7	0.00	0.00	1.9
2	877.0	0.00	0.00	877.0	1.2	-4.7	2.00	180.00	1.8
3	2200.0	0.00	0.00	2200.0	1.2	-4.7	0.00	0.00	1.9
4	2674.9	9.50	205.72	2672.7	-34.2	-23.8	2.00	205.72	-31.9
5	7074.9	8.50	205.72	7012.3	-68.2	-338.9	0.00	0.00	-655.1
6	7149.7	0.00	0.00	7485.0	-723.6	-355.9	2.00	180.00	-650.9
7	11878.3	0.00	0.00	11813.8	-723.6	-355.9	0.00	0.00	-688.8
8	12632.8	90.52	359.55	12291.0	-241.8	-359.8	12.00	359.55	-208.6
9	13844.7	90.52	359.55	12280.0	970.2	-355.1	0.00	0.00	990.4
10	13884.5	90.52	359.55	12278.8	990.0	-359.2	2.00	0.00	1019.1
11	14848.4	90.52	359.55	12284.0	1973.7	-376.9	0.00	0.00	1999.6
12	14854.3	90.80	359.55	12283.9	1978.6	-377.0	2.00	-190.00	2006.4
13	16892.0	90.80	359.55	12250.0	2977.2	-384.8	0.00	0.00	2999.7
14	18363.9	90.80	359.55	12243.0	3479.0	-388.9	0.00	0.00	3499.9
15	18372.2	90.43	359.55	12242.8	3477.3	-388.9	2.00	180.00	3518.1
16	17723.5	90.43	359.55	12238.0	4398.6	-394.0	0.00	0.00	4416.4

To convert a Magnetic Direction to a Grid Direction, Add 8.55°
To convert a Magnetic Direction to a True Direction, Add 8.95° East
To convert a True Direction to a Grid Direction, Subtract 0.40°

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP COORDINATES)

Name	TYD	+W-S	+E-W	Northing	East
KOP (Orrtanna 20 Fed #707H)	11813.8	-723.6	-355.9	372500.40	772200.20
TGT 1 (Orrtanna 20 Fed #707H)	12280.0	970.2	-369.1	374194.20	772198.92
TGT 2 (Orrtanna 20 Fed #707H)	12284.0	1973.7	-376.9	375197.70	772178.06
TGT 3 (Orrtanna 20 Fed #707H)	12250.0	2977.2	-384.8	376201.20	772171.18
TGT 4 (Orrtanna 20 Fed #707H)	12243.0	3479.0	-388.9	376705.00	772167.25
EXT PBHL (Orrtanna 20 Fed #707H)	12238.0	4398.6	-394.0	377622.97	772160.54
FTP (Orrtanna 20 Fed #707H)	12291.0	-471.0	-358.0	372553.00	772199.00

