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EOG Resources - Midland

Eddy County, NM (NAD 83 NME)
(Rumble)Sec28_T-18-S_R-25-E
Rumble State #4H

OWB

Design: AWB

Standard Survey Report

12 March, 2019

INTREPID

Company:	EOG Resources -Midland	Local Co-ordinate Reference:	Well Rumble State #4H
Project:	Eddy County, NM,(NAD 83 NME).	TVD Reference:	KB @ 3583.5usft (Trinidad 436)
Site:	(Rumble)Sec28_T-18-S_R-25-E	MD Reference:	KB @ 3583.5usft (Trinidad 436)
Well:	Rumble State #4H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Project	Eddy 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	(Rumble)Sec28_T-18-S_R-25-E		
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Site Position:		Northing:	627,551.00 usft	Latitude:	32° 43' 30.267 N
From:	Map	Easting:	491,885.00 usft	Longitude:	104° 29' 38.911 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.09 °

Well	Rumble State #4H		
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Well Position	+N/-S	0.0 usft	Northing:	627,375.88 usft	Latitude:	32° 43' 28.514 N
	+E/-W	0.0 usft	Easting:	490,585.27 usft	Longitude:	104° 29' 54.123 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,567.0 usft	

Wellbore	OWB		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	02/25/19	7.24	60.35	47,958.83296974

Design	AWB		
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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	91.09

Survey Program		Date	03/12/19		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
75.0	1,261.0	Invictus MWD (OWB)	MWD	MWD - Standard	
1,405.0	12,084.0	Intrepid MWD (OWB)	MWD	MWD - Standard	

Survey	Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
	75.0	0.20	242.37	75.0	-0.1	-0.1	-0.1	0.27	0.27	0.00
	85.0	0.30	7.37	85.0	0.0	-0.1	-0.1	4.46	1.00	1,250.00
	117.0	0.70	328.37	117.0	0.2	-0.2	-0.2	1.57	1.25	-121.88
	180.0	0.30	352.37	180.0	0.7	-0.4	-0.5	0.70	-0.63	38.10
	237.1	0.90	11.37	237.1	1.3	-0.4	-0.4	1.09	1.05	33.27
	265.0	1.10	349.37	265.0	1.8	-0.4	-0.4	1.54	0.72	-78.85
	293.7	1.30	347.37	293.7	2.4	-0.5	-0.5	0.71	0.70	-6.97
	322.1	0.70	352.37	322.1	2.8	-0.6	-0.7	2.13	-2.11	17.61
	352.6	1.10	351.37	352.6	3.3	-0.7	-0.7	1.31	1.31	-3.28

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Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
383.5	0.90	309.37	383.5	3.8	-0.9	-1.0	2.40	-0.65	-135.92
414.9	0.40	331.37	414.9	4.0	-1.1	-1.2	1.75	-1.59	70.06
445.8	0.40	305.37	445.8	4.2	-1.3	-1.4	0.58	0.00	-84.14
477.2	0.70	305.37	477.2	4.3	-1.5	-1.6	0.96	0.96	0.00
508.7	0.40	292.37	508.7	4.5	-1.8	-1.9	1.03	-0.95	-41.27
540.0	1.00	294.37	540.0	4.7	-2.1	-2.2	1.92	1.92	6.39
571.4	0.60	312.37	571.4	4.9	-2.5	-2.6	1.49	-1.27	57.32
602.1	0.80	315.37	602.1	5.1	-2.8	-2.9	0.66	0.65	9.77
634.1	0.80	279.37	634.1	5.3	-3.2	-3.3	1.55	0.00	-112.50
665.2	0.50	309.37	665.2	5.5	-3.5	-3.6	1.43	-0.96	96.46
696.3	0.60	312.37	696.2	5.6	-3.7	-3.8	0.33	0.32	9.65
727.6	0.40	229.37	727.5	5.7	-3.9	-4.0	2.17	-0.64	-265.18
759.5	0.30	267.37	759.4	5.6	-4.1	-4.2	0.77	-0.31	119.12
790.7	0.60	322.37	790.6	5.7	-4.2	-4.4	1.58	0.96	176.28
822.5	0.80	320.37	822.4	6.0	-4.5	-4.6	0.63	0.63	-6.29
853.8	0.40	314.37	853.7	6.3	-4.7	-4.8	1.29	-1.28	-19.17
885.0	0.60	324.37	884.9	6.5	-4.9	-5.0	0.70	0.64	32.05
917.0	0.80	322.37	916.9	6.8	-5.1	-5.2	0.63	0.63	-6.25
948.0	0.60	279.37	947.9	7.0	-5.4	-5.5	1.76	-0.65	-138.71
980.0	0.90	294.37	979.9	7.1	-5.8	-5.9	1.11	0.94	46.88
1,041.0	0.50	304.37	1,040.9	7.5	-6.5	-6.6	0.68	-0.66	16.39
1,073.0	0.60	339.37	1,072.9	7.7	-6.6	-6.8	1.08	0.31	109.38
1,104.0	0.70	313.37	1,103.9	8.0	-6.8	-7.0	0.99	0.32	-83.87
1,136.0	0.40	336.37	1,135.9	8.2	-7.0	-7.2	1.15	-0.94	71.88
1,167.0	0.60	295.37	1,166.9	8.4	-7.2	-7.4	1.28	0.65	-132.26
1,197.0	0.60	296.37	1,196.9	8.5	-7.5	-7.7	0.03	0.00	3.33
1,229.0	0.40	281.37	1,228.9	8.6	-7.7	-7.9	0.74	-0.63	-46.88
1,261.0	0.40	280.37	1,260.9	8.7	-8.0	-8.1	0.02	0.00	-3.13
TIE ON									
1,405.0	0.44	326.76	1,404.9	9.2	-8.8	-8.9	0.23	0.03	32.22
1,593.0	0.40	326.81	1,592.9	10.4	-9.5	-9.7	0.02	-0.02	0.03
1,846.0	0.53	318.04	1,845.9	12.0	-10.8	-11.0	0.06	0.05	-3.47
2,035.0	0.41	299.13	2,034.9	13.0	-12.0	-12.2	0.10	-0.06	-10.01
2,223.0	0.40	305.55	2,222.9	13.7	-13.1	-13.3	0.02	-0.01	3.41
2,412.0	0.48	293.47	2,411.9	14.4	-14.3	-14.6	0.06	0.04	-6.39
2,601.0	0.46	269.90	2,600.9	14.7	-15.8	-16.1	0.10	-0.01	-12.47
2,790.0	0.30	271.01	2,789.9	14.7	-17.1	-17.4	0.08	-0.08	0.59
2,978.0	0.56	262.64	2,977.9	14.6	-18.5	-18.8	0.14	0.14	-4.45
3,168.0	0.52	265.62	3,167.9	14.4	-20.3	-20.5	0.03	-0.02	1.57
3,357.0	0.59	260.87	3,356.9	14.2	-22.1	-22.3	0.04	0.04	-2.51
3,547.0	0.63	246.44	3,546.8	13.6	-24.0	-24.3	0.08	0.02	-7.59
3,736.0	0.58	242.78	3,735.8	12.8	-25.8	-26.0	0.03	-0.03	-1.94
3,925.0	0.48	235.37	3,924.8	11.9	-27.3	-27.5	0.06	-0.05	-3.92

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4,114.0	0.45	229.98	4,113.8	11.0	-28.5	-28.7	0.03	-0.02	-2.85
4,303.0	0.85	244.83	4,302.8	9.9	-30.4	-30.6	0.23	0.21	7.86
4,366.0	3.37	274.70	4,365.8	9.8	-32.6	-32.8	4.23	4.00	47.41
4,492.0	3.46	273.39	4,491.5	10.4	-40.1	-40.3	0.09	0.07	-1.04
4,618.0	3.38	270.08	4,617.3	10.6	-47.6	-47.8	0.17	-0.06	-2.63
4,744.0	3.13	270.14	4,743.1	10.6	-54.8	-55.0	0.20	-0.20	0.05
4,870.0	3.15	267.50	4,868.9	10.5	-61.7	-61.9	0.12	0.02	-2.10
4,996.0	3.12	270.17	4,994.7	10.3	-68.6	-68.8	0.12	-0.02	2.12
5,122.0	3.03	268.70	5,120.5	10.3	-75.3	-75.5	0.09	-0.07	-1.17
5,248.0	3.12	267.33	5,246.4	10.0	-82.1	-82.3	0.09	0.07	-1.09
5,374.0	3.02	268.97	5,372.2	9.8	-88.8	-89.0	0.11	-0.08	1.30
5,500.0	3.13	266.07	5,498.0	9.5	-95.6	-95.7	0.15	0.09	-2.30
5,626.0	2.70	265.01	5,623.8	9.0	-102.0	-102.1	0.34	-0.34	-0.84
5,751.0	2.57	262.01	5,748.7	8.4	-107.7	-107.8	0.15	-0.10	-2.40
5,877.0	2.91	272.32	5,874.6	8.1	-113.7	-113.8	0.47	0.27	8.18
6,002.0	2.72	270.26	5,999.4	8.2	-119.8	-119.9	0.17	-0.15	-1.65
6,128.0	2.59	261.52	6,125.3	7.8	-125.6	-125.7	0.34	-0.10	-6.94
6,254.0	2.37	254.89	6,251.2	6.7	-130.9	-131.0	0.29	-0.17	-5.26
6,379.0	1.50	248.33	6,376.1	5.5	-135.0	-135.0	0.72	-0.70	-5.25
6,505.0	0.75	153.07	6,502.1	4.1	-136.1	-136.2	1.38	-0.60	-75.60
6,595.0	0.99	144.81	6,592.1	3.0	-135.4	-135.4	0.30	0.27	-9.18
6,721.0	4.01	119.01	6,717.9	-0.1	-130.9	-130.9	2.50	2.40	-20.48
6,753.0	7.37	115.70	6,749.8	-1.5	-128.1	-128.0	10.55	10.50	-10.34
6,785.0	10.21	111.49	6,781.4	-3.4	-123.6	-123.5	9.09	8.88	-13.16
6,817.0	12.95	114.75	6,812.7	-6.0	-117.7	-117.6	8.80	8.56	10.19
6,848.0	15.72	112.81	6,842.8	-9.1	-110.7	-110.5	9.07	8.94	-6.26
6,880.0	19.43	114.52	6,873.3	-12.9	-101.8	-101.6	11.70	11.59	5.34
6,911.0	21.03	115.06	6,902.4	-17.4	-92.1	-91.8	5.20	5.16	1.74
6,942.0	23.44	114.90	6,931.0	-22.4	-81.5	-81.0	7.78	7.77	-0.52
6,974.0	23.04	111.62	6,960.5	-27.4	-69.9	-69.3	4.23	-1.25	-10.25
7,005.0	24.38	109.49	6,988.8	-31.8	-58.2	-57.6	5.13	4.32	-6.87
7,037.0	25.21	103.36	7,017.9	-35.5	-45.4	-44.7	8.44	2.59	-19.16
7,068.0	28.47	99.01	7,045.6	-38.2	-31.6	-30.9	12.27	10.52	-14.03
7,100.0	31.67	97.18	7,073.2	-40.5	-15.8	-15.0	10.40	10.00	-5.72
7,163.0	39.04	95.98	7,124.6	-44.6	20.4	21.3	11.75	11.70	-1.90
7,226.0	45.75	96.05	7,171.1	-49.1	62.7	63.6	10.65	10.65	0.11
7,289.0	52.60	93.79	7,212.3	-53.1	110.1	111.1	11.21	10.87	-3.59
7,352.0	58.49	89.05	7,247.9	-54.3	162.0	163.0	11.22	9.35	-7.52
7,373.0	60.88	88.94	7,258.5	-54.0	180.1	181.1	11.41	11.40	-0.53
FTP @ 7373.0' MD, 911' FNL, 330' FWL									
7,415.0	65.67	88.73	7,277.4	-53.2	217.6	218.6	11.41	11.40	-0.50
7,478.0	70.40	87.23	7,300.9	-51.1	276.0	276.9	7.83	7.51	-2.38
7,509.0	72.64	87.25	7,310.8	-49.7	305.4	306.3	7.23	7.23	0.06
7,540.0	74.75	86.91	7,319.5	-48.2	335.1	335.9	6.89	6.81	-1.10

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7,572.0	76.71	86.16	7,327.3	-46.3	366.0	366.9	6.53	6.13	-2.34
7,603.0	78.89	86.40	7,333.9	-44.4	396.3	397.0	7.07	7.03	0.77
7,666.0	80.93	86.67	7,344.9	-40.6	458.2	458.9	3.27	3.24	0.43
7,720.0	86.07	82.84	7,351.0	-35.7	511.6	512.2	11.84	9.52	-7.09
7,784.0	90.11	83.42	7,353.2	-28.1	575.1	575.5	6.38	6.31	0.91
7,847.0	90.84	82.83	7,352.7	-20.5	637.6	637.9	1.49	1.16	-0.94
7,910.0	91.68	82.68	7,351.3	-12.6	700.1	700.2	1.35	1.33	-0.24
7,973.0	90.56	85.34	7,350.0	-6.0	762.7	762.7	4.58	-1.78	4.22
8,036.0	89.66	85.87	7,349.9	-1.2	825.5	825.4	1.66	-1.43	0.84
8,099.0	89.05	88.92	7,350.6	1.7	888.5	888.3	4.94	-0.97	4.84
8,162.0	86.30	91.56	7,353.2	1.4	951.4	951.2	6.05	-4.37	4.19
8,225.0	87.25	91.75	7,356.7	-0.4	1,014.3	1,014.1	1.54	1.51	0.30
8,288.0	89.49	91.58	7,358.5	-2.2	1,077.2	1,077.1	3.57	3.56	-0.27
8,351.0	89.55	91.37	7,359.1	-3.8	1,140.2	1,140.1	0.35	0.10	-0.33
8,414.0	89.83	91.34	7,359.4	-5.3	1,203.2	1,203.1	0.45	0.44	-0.05
8,477.0	89.55	91.46	7,359.7	-6.9	1,266.2	1,266.1	0.48	-0.44	0.19
8,540.0	89.05	91.91	7,360.5	-8.7	1,329.1	1,329.1	1.07	-0.79	0.71
8,603.0	88.20	91.61	7,362.0	-10.7	1,392.1	1,392.0	1.43	-1.35	-0.48
8,666.0	88.09	91.57	7,364.1	-12.4	1,455.0	1,455.0	0.19	-0.17	-0.06
8,728.0	88.76	91.78	7,365.8	-14.2	1,517.0	1,517.0	1.13	1.08	0.34
8,791.0	88.93	91.74	7,367.0	-16.2	1,579.9	1,580.0	0.28	0.27	-0.06
8,854.0	89.16	91.33	7,368.1	-17.8	1,642.9	1,642.9	0.75	0.37	-0.65
8,917.0	89.61	91.26	7,368.8	-19.3	1,705.9	1,705.9	0.72	0.71	-0.11
8,980.0	88.65	91.76	7,369.7	-20.9	1,768.8	1,768.9	1.72	-1.52	0.79
9,042.0	89.38	91.77	7,370.8	-22.8	1,830.8	1,830.9	1.18	1.18	0.02
9,105.0	90.34	90.92	7,370.9	-24.3	1,893.8	1,893.9	2.04	1.52	-1.35
9,169.0	88.60	90.33	7,371.5	-25.0	1,957.8	1,957.9	2.87	-2.72	-0.92
9,232.0	87.37	90.38	7,373.7	-25.4	2,020.7	2,020.9	1.95	-1.95	0.08
9,294.0	87.59	89.73	7,376.5	-25.5	2,082.7	2,082.8	1.11	0.35	-1.05
9,357.0	87.98	89.18	7,378.9	-24.9	2,145.6	2,145.7	1.07	0.62	-0.87
9,420.0	88.32	88.46	7,380.9	-23.6	2,208.6	2,208.6	1.26	0.54	-1.14
9,483.0	88.20	87.57	7,382.8	-21.4	2,271.5	2,271.5	1.42	-0.19	-1.41
9,546.0	88.04	88.95	7,384.9	-19.5	2,334.5	2,334.4	2.20	-0.25	2.19
9,609.0	88.93	91.51	7,386.6	-19.7	2,397.4	2,397.4	4.30	1.41	4.06
9,672.0	89.38	93.31	7,387.5	-22.4	2,460.4	2,460.3	2.94	0.71	2.86
9,735.0	89.55	93.14	7,388.1	-25.9	2,523.3	2,523.3	0.38	0.27	-0.27
9,797.0	90.90	92.75	7,387.9	-29.1	2,585.2	2,585.3	2.27	2.18	-0.63
9,868.0	92.81	95.92	7,385.6	-34.5	2,655.9	2,656.1	5.21	2.69	4.46
9,930.0	93.37	97.08	7,382.2	-41.5	2,717.4	2,717.7	2.08	0.90	1.87
10,009.0	93.03	95.53	7,377.8	-50.1	2,795.8	2,796.3	2.01	-0.43	-1.96
10,072.0	88.15	91.81	7,377.2	-54.2	2,858.7	2,859.2	9.74	-7.75	-5.90
10,135.0	87.81	89.69	7,379.4	-55.0	2,921.6	2,922.1	3.41	-0.54	-3.37
10,198.0	88.15	89.92	7,381.6	-54.8	2,984.6	2,985.1	0.65	0.54	0.37

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well Rumble State #4H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB @ 3583.5usft (Trinidad 436)
Site:	(Rumble)Sec28_T-18-S_R-25-E	MD Reference:	KB @ 3583.5usft (Trinidad 436)
Well:	Rumble State #4H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,261.0	87.42	90.12	7,384.0	-54.8	3,047.5	3,048.0	1.20	-1.16	0.32
10,324.0	86.63	90.45	7,387.3	-55.1	3,110.4	3,110.9	1.36	-1.25	0.52
10,387.0	85.96	89.26	7,391.4	-55.0	3,173.3	3,173.8	2.16	-1.06	-1.89
10,450.0	86.75	90.49	7,395.4	-54.8	3,236.2	3,236.6	2.32	1.25	1.95
10,513.0	86.92	90.09	7,398.9	-55.1	3,299.1	3,299.5	0.69	0.27	-0.63
10,575.0	88.65	92.08	7,401.2	-56.3	3,361.0	3,361.5	4.25	2.79	3.21
10,638.0	88.32	91.98	7,402.9	-58.5	3,424.0	3,424.5	0.55	-0.52	-0.16
10,701.0	88.15	91.68	7,404.9	-60.6	3,486.9	3,487.4	0.55	-0.27	-0.48
10,763.0	87.81	91.82	7,407.0	-62.4	3,548.8	3,549.4	0.59	-0.55	0.23
10,827.0	89.44	91.90	7,408.6	-64.5	3,612.8	3,613.3	2.55	2.55	0.13
10,889.0	90.28	91.97	7,408.7	-66.6	3,674.7	3,675.3	1.36	1.35	0.11
10,953.0	90.28	91.96	7,408.4	-68.8	3,738.7	3,739.3	0.02	0.00	-0.02
11,016.0	89.72	91.87	7,408.4	-70.9	3,801.7	3,802.3	0.90	-0.89	-0.14
11,079.0	89.72	91.75	7,408.7	-72.9	3,864.6	3,865.3	0.19	0.00	-0.19
11,142.0	90.22	91.60	7,408.8	-74.7	3,927.6	3,928.3	0.83	0.79	-0.24
11,205.0	90.11	91.44	7,408.6	-76.4	3,990.6	3,991.3	0.31	-0.17	-0.25
11,268.0	90.90	91.35	7,408.0	-77.9	4,053.6	4,054.3	1.26	1.25	-0.14
11,331.0	89.78	90.48	7,407.6	-79.0	4,116.6	4,117.3	2.25	-1.78	-1.38
11,393.0	89.89	90.15	7,407.8	-79.3	4,178.5	4,179.3	0.56	0.18	-0.53
11,457.0	86.30	89.99	7,410.0	-79.4	4,242.5	4,243.2	5.61	-5.61	-0.25
11,520.0	86.64	89.73	7,413.8	-79.2	4,305.4	4,306.1	0.68	0.54	-0.41
11,583.0	87.08	90.85	7,417.3	-79.5	4,368.3	4,369.0	1.91	0.70	1.78
11,646.0	88.60	91.83	7,419.7	-81.0	4,431.2	4,432.0	2.87	2.41	1.56
11,709.0	89.27	91.61	7,420.8	-82.9	4,494.2	4,494.9	1.12	1.06	-0.35
11,772.0	90.00	91.50	7,421.2	-84.6	4,557.2	4,557.9	1.17	1.16	-0.17
11,835.0	90.62	91.01	7,420.9	-86.0	4,620.1	4,620.9	1.25	0.98	-0.78
11,897.0	89.38	90.56	7,420.9	-86.8	4,682.1	4,682.9	2.13	-2.00	-0.73
11,960.0	88.88	89.78	7,421.8	-87.0	4,745.1	4,745.9	1.47	-0.79	-1.24
12,000.0	88.93	89.73	7,422.6	-86.9	4,785.1	4,785.9	0.18	0.13	-0.13
LAST SVY									
12,084.0	88.93	89.73	7,424.2	-86.5	4,869.1	4,869.9	0.00	0.00	0.00
PTD @ 12084.0' MD, 854' FNL, 339' FEL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
T1 (Rumble State #4H)	0.00	360.00	7,391.0	-52.5	2,699.5	627,323.33	493,284.76	32° 43' 28.035 N	104° 29' 22.521 W
- hit/miss target									
- Shape									
- Point									
PBHL (Rumble State #4H)	0.00	271.06	7,425.0	-92.9	4,878.7	627,283.00	495,464.00	32° 43' 27.667 N	104° 28' 57.009 W
- actual wellpath misses target center by 11.6usft at 12084.0usft MD (7424.2 TVD, -86.5 N, 4869.1 E)									
- Rectangle (sides W60.0 H4,395.0 D0.0)									

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well Rumble State #4H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB @ 3583.5usft (Trinidad 436)
Site:	(Rumble)Sec28_T-18-S_R-25-E	MD Reference:	KB @ 3583.5usft (Trinidad 436)
Well:	Rumble State #4H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,261.0	1,260.9	8.7	-8.0	TIE ON
7,373.0	7,258.5	-54.0	180.1	FTP @ 7373.0' MD, 911' FNL, 330' FWL
12,000.0	7,422.6	-86.9	4,785.1	LAST SVY
12,084.0	7,424.2	-86.5	4,869.1	PTD @ 12084.0' MD, 854' FNL, 339' FEL

Checked By: _____ Approved By: _____ Date: _____



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DISTRICT II-ARTESIA O.C.D.

EOG Resources - Midland

Eddy County, NM (NAD 83 NME)
(Rumble)Sec28_T-18-S_R-25-E
Rumble State #4H

OWB
AWB

Anticollision Report

12 March, 2019

The logo for Intrepid, featuring a stylized graphic of three vertical bars of increasing height to the left of the word "INTREPID" in a bold, uppercase sans-serif font.

Company:	EOG-Resources - Midland	Local Co-ordinate Reference:	Well Rumble State #4H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB @ 3583.5usft (Trinidad 436)
Reference Site:	(Rumble)Sec28_T-18-S_R-25-E	MD Reference:	KB @ 3583.5usft (Trinidad 436)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Rumble State #4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Reference	AWB		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,500.0 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Program		Date	03/12/19		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
75.0	1,261.0	Invictus MWD (OWB)	MWD	MWD - Standard	
1,405.0	12,084.0	Intrepid MWD (OWB)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
(Rumble)Sec28 T-18-S R-25-E						
Rumble AXM State #1 - OWB - AWB	10,809.3	7,371.7	196.7	34.4	1.212	Level 2, CC, ES, SF
Rumble State #3H - OWB - AWB	8,500.0	7,347.4	178.0	108.0	2.541	CC, ES, SF

Offset Design:(Rumble)Sec28_T-18-S_R-25-E - Rumble AXM State #1 - OWB - AWB													Offset Site Error:	0.0 usft	
Survey Program:		445-MWD <th colspan="3">Offset</th> <th colspan="2">Semi Major Axis</th> <th colspan="2">Offset Wellbore Centre</th> <th colspan="3">Rule Assigned:</th> <th>Offset Well Error:</th> <td>0.0 usft</td>		Offset			Semi Major Axis		Offset Wellbore Centre		Rule Assigned:			Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
9,400.0	7,380.3	7,343.6	7,342.8	82.5	29.7	-70.44	132.6	3,601.6	1,421.6	1,367.3	54.29	26.184			
9,500.0	7,383.4	7,346.7	7,345.9	86.0	29.7	-68.23	132.6	3,601.6	1,322.0	1,267.4	54.64	24.197			
9,600.0	7,386.4	7,349.7	7,348.9	89.5	29.7	-81.84	132.6	3,601.6	1,222.6	1,167.5	55.14	22.173			
9,700.0	7,387.8	7,351.1	7,350.3	93.1	29.7	-87.26	132.6	3,601.6	1,124.2	1,068.1	56.07	20.049			
9,800.0	7,387.8	7,351.1	7,350.3	96.6	29.7	-94.62	132.6	3,601.6	1,026.2	968.9	57.37	17.887			
9,900.0	7,383.9	7,347.2	7,346.4	100.2	29.7	-99.97	132.6	3,601.6	929.7	870.3	59.39	15.654			
10,000.0	7,378.3	7,341.6	7,340.8	103.7	29.7	-99.20	132.6	3,601.6	834.7	772.3	62.43	13.371			
10,100.0	7,378.1	7,341.4	7,340.6	107.3	29.7	-82.85	132.6	3,601.6	739.1	673.1	65.95	11.207			
10,200.0	7,381.7	7,345.0	7,344.2	110.8	29.7	-83.85	132.6	3,601.6	642.9	572.9	69.99	9.186			
10,300.0	7,385.9	7,349.3	7,348.4	114.4	29.7	-81.78	132.6	3,601.6	548.2	472.5	75.68	7.243			
10,400.0	7,392.3	7,355.6	7,354.8	117.9	29.7	-81.29	132.6	3,601.6	455.6	371.8	83.86	5.433			
10,500.0	7,398.1	7,361.5	7,360.6	121.5	29.8	-84.82	132.6	3,601.6	367.1	270.9	96.20	3.816			
10,600.0	7,401.9	7,365.2	7,364.4	125.1	29.8	-88.44	132.6	3,601.6	287.3	171.9	115.35	2.490			
10,700.0	7,404.8	7,368.1	7,367.3	128.7	29.8	-88.97	132.6	3,601.6	225.2	83.5	141.61	1.590			
10,800.0	7,408.1	7,371.5	7,370.6	132.3	29.8	-89.94	132.6	3,601.6	196.9	35.2	161.74	1.217	Level 2		
10,809.3	7,408.3	7,371.7	7,370.8	132.6	29.8	-90.00	132.6	3,601.6	196.7	34.4	162.34	1.212	Level 2, CC, ES, SF		
10,900.0	7,408.7	7,372.0	7,371.2	135.9	29.8	-89.87	132.6	3,601.6	216.7	62.1	154.59	1.401	Level 3		
11,000.0	7,408.4	7,371.7	7,370.9	139.5	29.8	-90.13	132.6	3,601.6	274.1	141.0	133.04	2.060			
11,100.0	7,408.8	7,372.1	7,371.3	143.1	29.8	-90.17	132.6	3,601.6	351.0	236.6	114.40	3.068			
11,200.0	7,408.6	7,371.9	7,371.1	146.7	29.8	-89.77	132.6	3,601.6	437.2	336.0	101.17	4.321			
11,300.0	7,407.7	7,371.0	7,370.2	150.3	29.8	-89.21	132.6	3,601.6	528.1	436.2	91.88	5.747			
11,400.0	7,407.9	7,371.2	7,370.4	153.9	29.8	-91.39	132.6	3,601.6	621.3	536.3	85.01	7.308			
11,500.0	7,412.6	7,376.0	7,375.1	157.5	29.8	-100.92	132.6	3,601.6	716.0	636.1	79.89	8.962			
11,600.0	7,418.1	7,381.4	7,380.6	161.1	29.8	-99.92	132.6	3,601.6	812.0	735.9	76.11	10.669			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well Rumble State #4H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB @ 3583.5usft (Trinidad 436)
Reference Site:	(Rumble)Sec28_T-18-S_R-25-E	MD Reference:	KB @ 3583.5usft (Trinidad 436)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Rumble State #4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design: (Rumble)Sec28_T-18-S_R-25-E - Rumble AXM State #1 - OWB - AWB													Offset Site Error:	0.0 usft
Survey Program: 445-MWD													Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Rule Assigned:		Distance		Minimum Separation		Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	+N/-S	+E/-W	Between Centres	Between Ellipses	Separation	Factor		
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)			
11,700.0	7,420.7	7,384.0	7,383.2	164.7	29.9	-93.86	132.6	3,601.6	909.5	836.0	73.45	12.382		
11,800.0	7,421.2	7,384.5	7,383.7	168.3	29.9	-88.61	132.6	3,601.6	1,007.4	936.1	71.33	14.123		
11,900.0	7,420.9	7,384.2	7,383.4	171.9	29.9	-93.33	132.6	3,601.6	1,105.6	1,036.1	69.53	15.900		
12,000.0	7,422.6	7,385.9	7,385.1	175.5	29.9	-95.60	132.6	3,601.6	1,203.7	1,135.8	67.95	17.714		
12,084.0	7,424.2	7,387.5	7,386.7	178.6	29.9	-96.00	132.6	3,601.6	1,286.3	1,219.5	66.82	19.250		

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well Rumble State #4H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB @ 3583.5usft (Trinidad 436)
Reference Site:	(Rumble)Sec28_T-18-S_R-25-E	MD Reference:	KB @ 3583.5usft (Trinidad 436)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Rumble State #4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design:(Rumble)Sec28_T-18-S_R-25-E - Rumble State #3H - OWB - AWB												Offset Site Error:	0.0 usft
Survey Program: 116-MWD, 1393-MWD												Offset Well Error:	0.0 usft
Reference	Vertical	Offset	Vertical	Semi	Major	Axis	Highside	Offset Wellbore Centre		Distance	Minimum	Separation	Warning
Measured	Depth	Measured	Depth	Reference	Offset	Offset	Tooface	+N/-S	+E/-W	Between	Separation	Factor	
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	Centres	(usft)		
										Ellipses			
										(usft)			
0.0	0.0	0.0	0.0	0.0	0.0	0.0	82.33	175.1	1,299.7	1,311.5			
100.0	100.0	89.1	89.1	0.2	0.2	0.2	101.43	175.5	1,299.7	1,311.6	1,311.3	0.36	3,637.183
200.0	200.0	165.6	165.5	0.5	0.4	0.4	78.20	175.7	1,300.4	1,312.7	1,311.9	0.89	1,476.837
247.8	247.7	237.5	237.5	0.7	0.6	0.6	89.21	175.2	1,300.6	1,312.6	1,311.3	1.30	1,009.851
300.0	300.0	268.5	268.5	0.9	0.7	0.7	94.39	175.1	1,300.8	1,312.9	1,311.3	1.61	813.923
400.0	400.0	389.3	389.3	1.3	1.1	1.1	125.93	175.1	1,302.2	1,314.5	1,312.1	2.40	547.882
500.0	500.0	480.2	480.2	1.7	1.4	1.4	145.03	173.7	1,302.9	1,315.6	1,312.5	3.02	434.932
600.0	600.0	567.6	567.6	2.0	1.6	1.6	127.45	173.2	1,304.0	1,317.7	1,314.0	3.66	359.820
700.0	699.9	669.7	669.6	2.4	2.0	2.0	135.37	172.6	1,305.1	1,319.6	1,315.2	4.36	302.313
800.0	799.9	796.2	796.1	2.7	2.4	2.4	121.11	172.2	1,306.3	1,321.2	1,316.1	5.06	260.965
900.0	899.9	902.4	902.3	3.1	2.7	2.7	119.55	171.5	1,305.5	1,320.9	1,315.1	5.83	226.649
961.6	961.5	963.7	963.6	3.3	2.9	2.9	136.78	171.1	1,304.9	1,320.7	1,314.5	6.26	210.872
1,000.0	999.9	996.3	996.2	3.5	3.0	3.0	146.38	171.2	1,304.7	1,321.0	1,314.5	6.51	202.878
1,070.0	1,069.9	1,066.5	1,066.4	3.8	3.3	3.3	133.06	171.3	1,304.3	1,321.3	1,314.2	7.01	188.511
1,100.0	1,099.9	1,087.0	1,086.9	3.9	3.3	3.3	126.67	171.1	1,304.2	1,321.1	1,313.9	7.20	183.600
1,200.0	1,199.9	1,189.3	1,189.2	4.3	3.7	3.7	147.55	170.5	1,304.9	1,322.4	1,314.5	7.93	166.781
1,300.0	1,299.9	1,300.5	1,300.4	4.6	4.0	4.0	149.64	169.9	1,304.7	1,322.8	1,314.3	8.51	155.383
1,400.0	1,399.9	1,398.6	1,398.5	4.7	4.1	4.1	117.62	169.2	1,304.1	1,322.6	1,313.7	8.87	149.161
1,500.0	1,499.9	1,500.1	1,499.9	4.8	4.2	4.2	116.34	168.2	1,303.5	1,322.2	1,313.2	9.00	146.867
1,600.0	1,599.9	1,599.2	1,599.1	4.9	4.3	4.3	116.38	167.1	1,302.9	1,321.8	1,312.6	9.18	143.985
1,700.0	1,699.9	1,701.3	1,701.2	5.0	4.4	4.4	120.77	166.2	1,302.3	1,321.4	1,312.0	9.46	139.655
1,800.0	1,799.9	1,804.4	1,804.3	5.2	4.6	4.6	124.02	165.4	1,301.3	1,320.9	1,311.1	9.77	135.151
1,900.0	1,899.9	1,903.2	1,903.0	5.4	4.8	4.8	129.77	164.8	1,300.3	1,320.3	1,310.2	10.13	130.313
1,986.4	1,986.3	1,984.0	1,983.8	5.5	5.0	5.0	138.47	164.3	1,299.7	1,320.1	1,309.6	10.48	125.939
2,000.0	1,999.9	1,996.7	1,996.5	5.6	5.0	5.0	140.03	164.2	1,299.7	1,320.1	1,309.6	10.54	125.281
2,100.0	2,099.9	2,093.9	2,093.7	5.8	5.2	5.2	142.15	163.4	1,299.4	1,320.3	1,309.4	10.99	120.087
2,200.0	2,199.9	2,195.6	2,195.5	6.0	5.5	5.5	138.76	162.8	1,299.2	1,320.6	1,309.1	11.50	114.884
2,300.0	2,299.9	2,298.6	2,298.5	6.3	5.7	5.7	143.46	162.3	1,298.6	1,320.5	1,308.5	12.04	109.725
2,309.9	2,309.8	2,308.1	2,307.9	6.3	5.8	5.8	144.11	162.2	1,298.6	1,320.5	1,308.5	12.09	109.247
2,400.0	2,399.9	2,394.1	2,393.9	6.6	6.0	6.0	149.49	161.5	1,298.2	1,320.7	1,308.2	12.57	105.101
2,500.0	2,499.9	2,499.3	2,499.1	6.8	6.3	6.3	160.90	160.4	1,297.9	1,321.0	1,307.9	13.13	100.614
2,600.0	2,599.9	2,599.2	2,599.0	7.1	6.6	6.6	173.68	159.4	1,297.2	1,321.0	1,307.3	13.70	96.428
2,700.0	2,699.9	2,698.6	2,698.4	7.3	7.0	7.0	173.40	158.2	1,296.7	1,321.1	1,306.8	14.27	92.568
2,800.0	2,799.9	2,799.1	2,798.9	7.5	7.3	7.3	173.58	157.3	1,296.1	1,321.0	1,306.1	14.86	88.919
2,832.5	2,832.4	2,830.8	2,830.6	7.6	7.4	7.4	175.76	157.0	1,295.9	1,321.0	1,305.9	15.05	87.791
2,900.0	2,899.9	2,896.6	2,896.4	7.8	7.7	7.7	178.90	156.3	1,295.6	1,321.1	1,305.6	15.44	85.546
3,000.0	2,999.9	2,999.8	2,999.6	8.0	8.0	8.0	-179.07	155.1	1,295.1	1,321.4	1,305.3	16.06	82.277
3,100.0	3,099.9	3,091.8	3,091.6	8.3	8.3	8.3	179.42	154.4	1,294.7	1,321.8	1,305.2	16.57	79.759
3,200.0	3,199.9	3,180.4	3,180.2	8.6	8.5	8.5	179.22	153.9	1,295.1	1,323.0	1,306.0	17.02	77.734
3,300.0	3,299.9	3,272.9	3,272.7	8.8	8.6	8.6	-178.22	153.6	1,296.0	1,325.0	1,307.6	17.42	76.049
3,400.0	3,399.9	3,376.5	3,376.3	9.1	8.8	8.8	-173.48	153.5	1,297.3	1,327.2	1,309.3	17.89	74.202
3,500.0	3,499.8	3,473.5	3,473.3	9.4	9.0	9.0	-165.85	153.5	1,298.3	1,329.3	1,311.0	18.35	72.459
3,600.0	3,599.8	3,572.4	3,572.1	9.6	9.2	9.2	-161.51	153.4	1,299.7	1,331.8	1,312.9	18.84	70.690
3,700.0	3,699.8	3,677.1	3,676.9	9.9	9.5	9.5	-159.59	154.0	1,300.8	1,333.8	1,314.4	19.41	68.733
3,800.0	3,799.8	3,770.3	3,770.0	10.2	9.9	9.9	-156.69	154.9	1,301.8	1,336.0	1,316.0	20.00	66.811
3,900.0	3,899.8	3,873.0	3,872.7	10.4	10.2	10.2	-152.70	156.0	1,303.2	1,338.2	1,317.6	20.63	64.876
4,000.0	3,999.8	3,975.1	3,974.8	10.7	10.6	10.6	-149.54	156.9	1,304.3	1,340.1	1,318.9	21.26	63.032
4,100.0	4,099.8	4,074.3	4,074.0	10.9	11.0	11.0	-146.68	157.7	1,305.3	1,341.9	1,320.0	21.88	61.339
4,200.0	4,199.8	4,172.1	4,171.8	11.2	11.3	11.3	-155.38	158.3	1,306.5	1,344.0	1,321.5	22.49	59.749
4,300.0	4,299.8	4,279.4	4,279.0	11.5	11.6	11.6	-161.04	158.4	1,307.7	1,346.3	1,323.2	23.09	58.308
4,400.0	4,399.7	4,387.8	4,387.5	11.9	11.9	11.9	-169.32	158.7	1,308.2	1,351.0	1,327.3	23.71	56.987
4,500.0	4,499.5	4,490.9	4,490.6	12.2	12.1	12.1	170.49	159.6	1,308.1	1,356.9	1,332.6	24.32	55.790

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well Rumble State #4H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB @ 3583.5usft (Trinidad 436)
Reference Site:	(Rumble)Sec28_T-18-S_R-25-E	MD Reference:	KB @ 3583.5usft (Trinidad 436)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Rumble State #4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design: (Rumble)Sec28_T-18-S_R-25-E - Rumble State #3H - OWB - AWB														Offset Site Error:	0.0 usft
Survey Program: 116-MWD, 1393-MWD														Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi-Major Reference (usft)	Offset Axis (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning		
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
4,600.0	4,599.3	4,592.1	4,591.8	12.6	12.4	173.09	161.1	1,307.8	1,362.7	1,337.8	24.93	54.659			
4,700.0	4,699.2	4,692.7	4,692.4	13.0	12.6	173.50	162.4	1,307.4	1,368.2	1,342.7	25.54	53.578			
4,800.0	4,799.0	4,792.1	4,791.7	13.3	12.8	174.63	163.6	1,307.1	1,373.5	1,347.3	26.14	52.533			
4,900.0	4,898.9	4,889.2	4,888.8	13.7	13.1	175.44	164.6	1,306.9	1,378.8	1,352.1	26.78	51.483			
5,000.0	4,998.7	4,987.3	4,987.0	14.1	13.4	173.38	165.5	1,306.8	1,384.3	1,356.9	27.46	50.419			
5,100.0	5,098.6	5,086.2	5,085.8	14.5	13.7	174.58	166.3	1,306.9	1,389.9	1,361.7	28.16	49.355			
5,200.0	5,198.4	5,185.6	5,185.3	14.9	14.0	175.69	167.1	1,307.0	1,395.4	1,366.5	28.89	48.306			
5,300.0	5,298.3	5,286.4	5,286.0	15.2	14.4	175.53	167.8	1,307.2	1,401.0	1,371.4	29.63	47.289			
5,400.0	5,398.2	5,386.6	5,386.2	15.6	14.7	175.17	168.3	1,307.2	1,406.4	1,376.1	30.36	46.318			
5,500.0	5,498.0	5,487.3	5,486.9	16.0	15.1	177.45	168.8	1,307.3	1,411.9	1,380.8	31.10	45.402			
5,600.0	5,597.9	5,588.7	5,588.3	16.4	15.4	178.26	169.2	1,307.3	1,417.1	1,385.3	31.80	44.562			
5,700.0	5,697.8	5,690.5	5,690.1	16.8	15.7	-179.76	169.3	1,307.2	1,421.7	1,389.2	32.47	43.782			
5,800.0	5,797.7	5,791.7	5,791.3	17.2	16.0	177.19	169.2	1,307.0	1,426.0	1,392.8	33.16	43.002			
5,900.0	5,897.5	5,892.6	5,892.2	17.6	16.4	171.57	169.0	1,306.7	1,430.6	1,396.7	33.93	42.165			
6,000.0	5,997.4	5,994.6	5,994.2	18.0	16.7	173.28	168.7	1,306.3	1,435.1	1,400.4	34.69	41.371			
6,100.0	6,097.3	6,097.0	6,096.6	18.4	17.1	-179.94	168.5	1,305.8	1,439.1	1,403.7	35.43	40.619			
6,200.0	6,197.2	6,198.8	6,198.4	18.8	17.4	-174.28	168.3	1,305.0	1,442.8	1,406.7	36.15	39.908			
6,300.0	6,297.1	6,298.3	6,297.9	19.1	17.7	-169.54	168.0	1,304.3	1,446.1	1,409.2	36.87	39.222			
6,400.0	6,397.1	6,399.9	6,399.6	19.5	18.1	-159.03	167.6	1,303.5	1,448.1	1,410.6	37.59	38.528			
6,500.0	6,497.1	6,501.1	6,500.7	19.8	18.5	-74.28	167.1	1,302.7	1,448.1	1,409.8	38.25	37.856			
6,600.0	6,597.1	6,603.0	6,602.6	20.0	18.9	-57.70	166.5	1,301.7	1,446.4	1,407.6	38.87	37.217			
6,700.0	6,697.0	6,705.3	6,704.9	20.3	19.2	-36.85	166.0	1,300.6	1,442.3	1,402.8	39.52	36.496			
6,800.0	6,796.1	6,806.0	6,805.6	20.6	19.6	-30.63	165.7	1,299.2	1,430.5	1,390.4	40.16	35.623			
6,900.0	6,892.1	6,906.5	6,906.1	21.0	19.8	-34.22	166.0	1,297.7	1,405.3	1,364.6	40.73	34.503			
7,000.0	6,984.3	6,992.7	6,992.3	21.3	20.0	-30.51	166.5	1,296.3	1,370.9	1,329.7	41.23	33.252			
7,100.0	7,073.2	7,077.4	7,076.9	21.6	20.2	-18.94	167.2	1,295.2	1,327.4	1,285.6	41.73	31.810			
7,200.0	7,152.5	7,157.0	7,156.6	21.9	20.4	-21.34	167.9	1,294.2	1,268.1	1,225.9	42.19	30.053			
7,300.0	7,218.9	7,222.2	7,221.7	22.2	20.5	-22.54	168.7	1,293.4	1,195.4	1,152.8	42.60	28.057			
7,400.0	7,271.0	7,272.5	7,272.0	22.9	20.6	-23.06	169.3	1,292.7	1,111.2	1,068.3	42.94	25.879			
7,500.0	7,308.0	7,307.1	7,306.6	24.2	20.7	-29.60	169.8	1,292.2	1,019.5	976.3	43.21	23.593			
7,600.0	7,333.3	7,330.5	7,330.0	26.0	20.7	-42.46	170.2	1,292.0	924.0	880.5	43.44	21.268			
7,700.0	7,349.3	7,345.0	7,344.5	28.2	20.8	-58.51	170.5	1,291.8	826.8	783.1	43.68	18.926			
7,800.0	7,353.1	7,347.8	7,347.3	30.6	20.8	-94.00	170.5	1,291.8	727.9	684.0	43.90	16.580			
7,900.0	7,351.6	7,345.5	7,345.0	33.2	20.8	-100.72	170.5	1,291.8	629.2	585.1	44.18	14.242			
8,000.0	7,349.9	7,342.9	7,342.4	36.0	20.8	-91.75	170.4	1,291.8	531.6	486.9	44.72	11.886			
8,100.0	7,350.6	7,342.7	7,342.2	38.9	20.8	-88.06	170.4	1,291.8	436.3	390.5	45.83	9.520			
8,200.0	7,355.4	7,346.3	7,345.8	42.0	20.8	-84.94	170.5	1,291.8	347.0	298.6	48.41	7.169			
8,300.0	7,358.6	7,348.3	7,347.9	45.1	20.8	-89.20	170.5	1,291.8	266.4	212.9	53.55	4.975			
8,400.0	7,359.3	7,347.9	7,347.4	48.4	20.8	-89.26	170.5	1,291.8	203.3	141.1	62.19	3.269			
8,497.5	7,360.1	7,347.6	7,347.1	51.6	20.8	-89.04	170.5	1,291.8	178.1	108.2	69.97	2.546			
8,500.0	7,359.9	7,347.4	7,346.9	51.6	20.8	-89.04	170.5	1,291.8	178.0	108.0	70.07	2.541 CC, ES, SF			
8,600.0	7,361.9	7,348.3	7,347.8	55.0	20.8	-89.68	170.5	1,291.8	205.6	137.0	68.63	2.996			
8,700.0	7,365.1	7,350.3	7,349.8	58.3	20.8	-90.06	170.5	1,291.8	269.7	206.9	62.86	4.291			
8,800.0	7,367.2	7,351.3	7,350.8	61.7	20.8	-89.70	170.6	1,291.7	351.2	293.0	58.20	6.034			
8,900.0	7,368.6	7,351.6	7,351.1	65.1	20.8	-88.75	170.6	1,291.7	440.1	385.0	55.04	7.996			
9,000.0	7,370.1	7,352.0	7,351.5	68.6	20.8	-90.37	170.6	1,291.7	533.0	480.1	52.94	10.067			
9,100.0	7,371.0	7,351.7	7,351.2	72.0	20.8	-86.12	170.6	1,291.7	628.1	576.6	51.50	12.195			
9,200.0	7,372.4	7,352.1	7,351.6	75.5	20.8	-94.07	170.6	1,291.7	724.1	673.7	50.42	14.362			
9,300.0	7,376.7	7,355.4	7,354.9	79.0	20.8	-96.01	170.6	1,291.7	820.8	771.2	49.61	16.546			
9,400.0	7,380.3	7,358.0	7,357.5	82.5	20.8	-93.99	170.7	1,291.7	917.9	869.0	48.96	18.749			
9,500.0	7,383.4	7,360.1	7,359.6	86.0	20.8	-94.54	170.7	1,291.7	1,015.2	966.7	48.40	20.972			
9,600.0	7,386.4	7,362.1	7,361.6	89.5	20.8	-92.80	170.8	1,291.6	1,113.3	1,065.3	48.02	23.182			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well Rumble State #4H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB @ 3583.5usft (Trinidad 436)
Reference Site:	(Rumble)Sec28_T-18-S_R-25-E	MD Reference:	KB @ 3583.5usft (Trinidad 436)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Rumble State #4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design: (Rumble)Sec28_T-18-S_R-25-E - Rumble State #3H - OWB - AWB												Offset Site Error:	0.0 usft
Survey Program: 116-MWD, 1393-MWD												Offset Well Error:	0.0 usft
Reference	Measured	Vertical	Measured	Vertical	Semi Major Axis		Offset Wellbore Centre		Distance		Rule Assigned:		
Depth	Depth	Depth	Depth	Depth	Reference	Offset	Highside		Between	Between	Minimum	Separation	Warning
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	Toolface	+N/-S	+E/-W	Centres	Ellipses	Separation	Factor
							(°)	(usft)	(usft)	(usft)	(usft)	(usft)	
9,700.0	7,387.8	7,362.4	7,361.9		93.1	20.8	-88.01	170.8	1,291.6	1,212.5	1,164.7	47.83	25.351
9,800.0	7,387.8	7,361.3	7,360.8		96.6	20.8	-73.69	170.7	1,291.6	1,312.0	1,264.3	47.68	27.519
9,900.0	7,383.9	7,356.0	7,355.5		100.2	20.8	-27.26	170.6	1,291.7	1,411.6	1,364.0	47.59	29.660

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well Rumble State #4H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB @ 3583.5usft (Trinidad 436)
Reference Site:	(Rumble)Sec28_T-18-S_R-25-E	MD Reference:	KB @ 3583.5usft (Trinidad 436)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Rumble State #4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 3583.5usft (Trinidad 436)

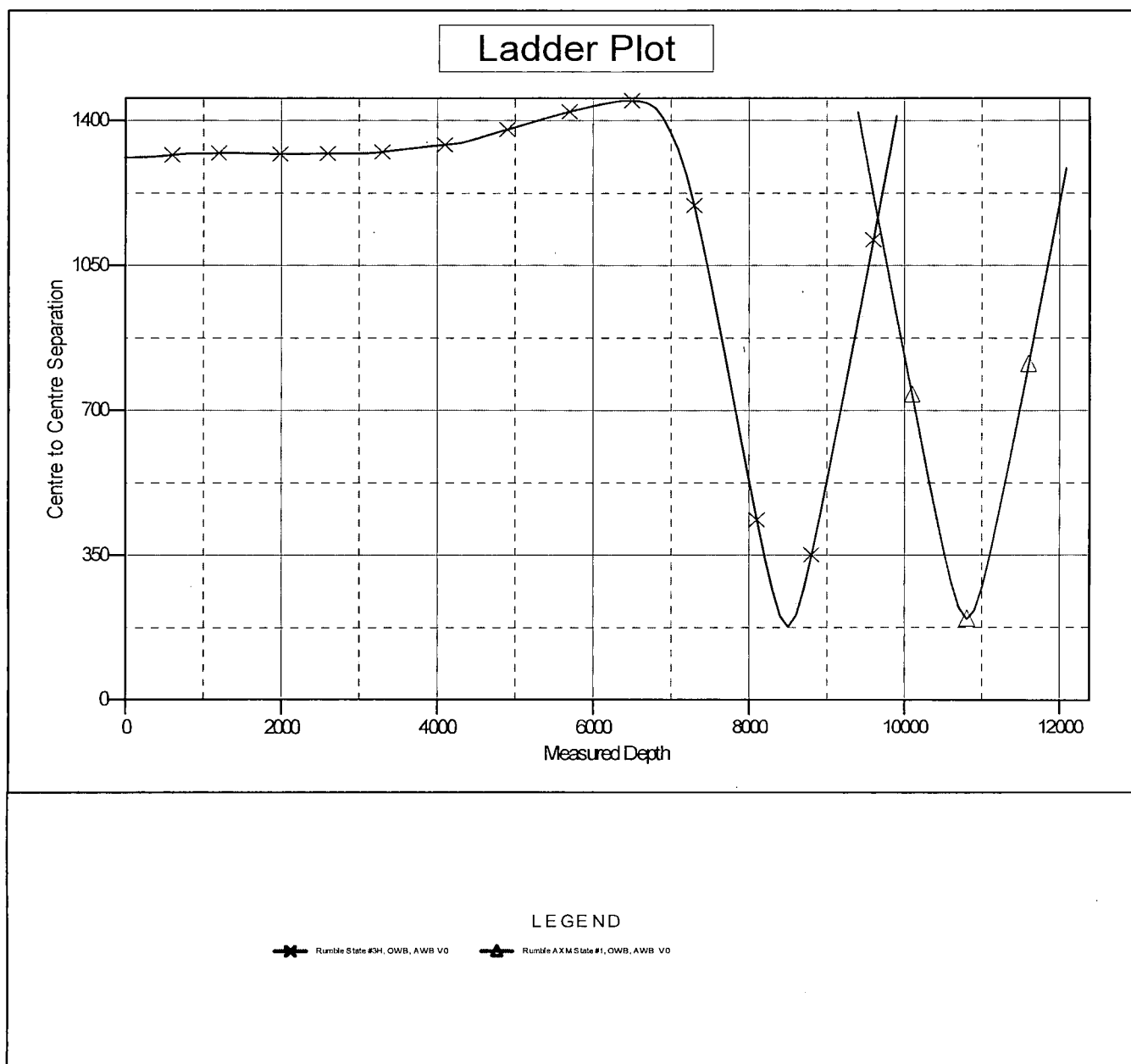
Offset Depths are relative to Offset Datum

Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Rumble State #4H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: -0.09°



Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well Rumble State #4H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB @ 3583.5usft (Trinidad 436)
Reference Site:	(Rumble)Sec28_T-18-S_R-25-E	MD Reference:	KB @ 3583.5usft (Trinidad 436)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Rumble State #4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM-10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 3583.5usft (Trinidad 436)

Offset Depths are relative to Offset Datum

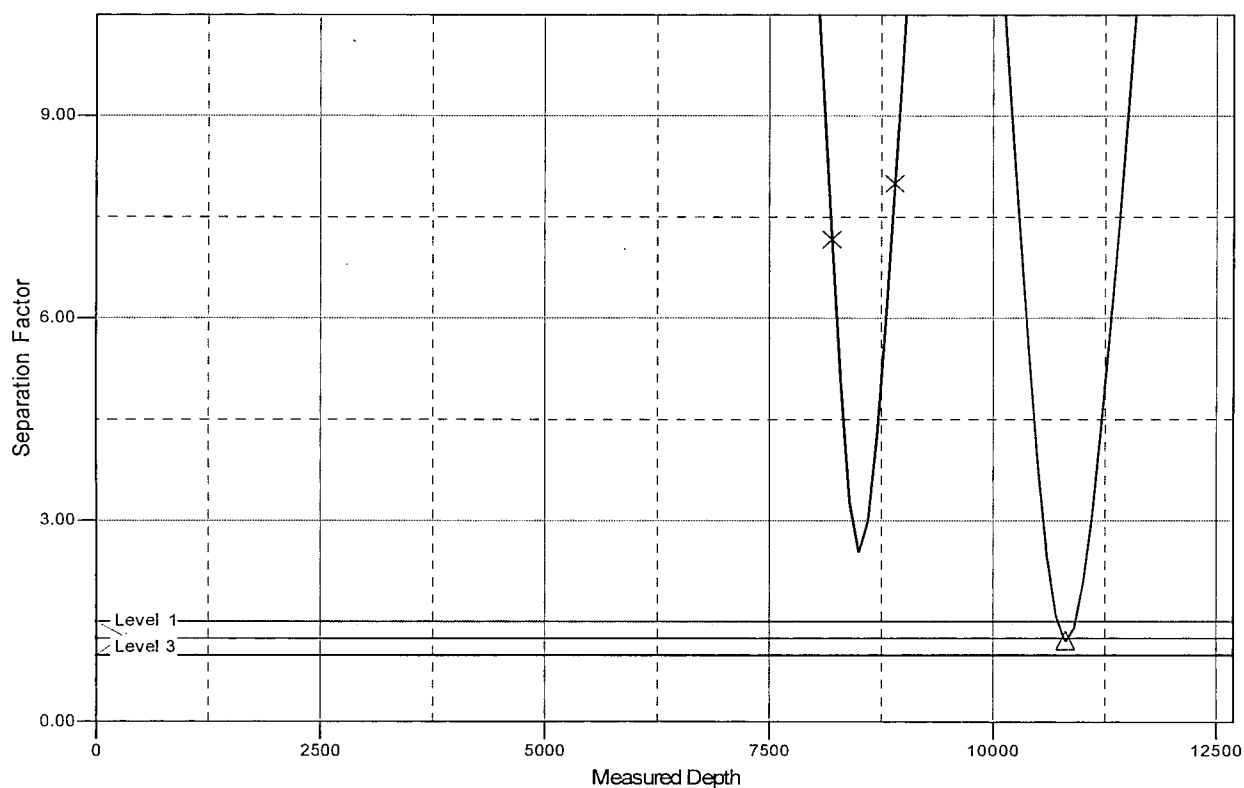
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Rumble State #4H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: -0.09°

Separation Factor Plot



LEGEND

✕ Rumble State #4H, OWB, AWB VO ▲ Rumble AXMS State #1, OWB, AWB VO

