

30-015-45662

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EOG Resources - Midland

Eddy County, NM (NAD 83 NME)
(Kirk) Sec12_T-17-S_R-30-E
Kirk Federal Com #3H

OWB

Design: AWB

Standard Survey Report

16 April, 2019

INTREPID



Microsoft
Survey Report



Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well Kirk Federal Com #3H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB @ 3773.5usft (Trinidad 436)
Site:	(Kirk) Sec12 T-17-S_R-30-E	MD Reference:	KB @ 3773.5usft (Trinidad 436)
Well:	Kirk Federal Com #3H	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	(Kirk) Sec12 T-17-S_R-30-E		
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Site Position:	Map	Northing:	673,435.00 usft	Latitude:	32° 51' 2.353 N
From:		Easting:	664,546.00 usft	Longitude:	103° 55' 55.648 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.22 °

Well	Kirk Federal Com #3H					
Well Position	+N/-S	0.0 usft	Northing:	674,208.00 usft	Latitude:	32° 51' 9.998 N
	+E/-W	0.0 usft	Easting:	664,649.00 usft	Longitude:	103° 55' 54.406 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,757.0 usft	

Wellbore	OWB				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	04/06/19	6.97	60.56	48,083.15565035

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	80.19

Survey Program	Date 04/16/19				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
107.5	405.5	Invictus MWD (OWB)	MWD	MWD - Standard	
596.0	9,118.0	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	
107.5	0.70	125.81	107.5	-0.4	0.5	0.5	0.65	0.65	0.00	
122.5	0.80	222.81	122.5	-0.5	0.5	0.4	7.50	0.67	646.67	
154.5	0.90	239.81	154.5	-0.8	0.2	0.0	0.84	0.31	53.13	
185.5	0.80	224.81	185.5	-1.1	-0.2	-0.4	0.78	-0.32	-48.39	
216.5	0.80	231.81	216.5	-1.4	-0.5	-0.7	0.32	0.00	22.58	
247.5	0.90	251.81	247.5	-1.6	-0.9	-1.2	1.00	0.32	64.52	
278.5	0.50	230.81	278.5	-1.7	-1.3	-1.5	1.51	-1.29	-67.74	
309.5	0.60	228.81	309.5	-1.9	-1.5	-1.8	0.33	0.32	-6.45	
339.5	0.50	275.81	339.5	-2.0	-1.7	-2.1	1.49	-0.33	156.67	



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Well:	Kirk Federal Com #3H	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)
372.5	0.10	43.81	372.5	-2.0	-1.9	-2.2	1.72	-1.21	387.88
405.5	0.10	49.81	405.5	-1.9	-1.8	-2.1	0.03	0.00	18.18
TIE ON									
596.0	0.26	136.66	596.0	-2.2	-1.4	-1.7	0.14	0.08	45.59
787.0	0.35	192.21	787.0	-3.0	-1.2	-1.7	0.15	0.05	29.08
977.0	0.62	142.64	977.0	-4.4	-0.7	-1.5	0.25	0.14	-26.09
1,166.0	0.88	113.11	1,166.0	-5.8	1.2	0.2	0.24	0.14	-15.62
1,355.0	1.10	103.18	1,354.9	-6.8	4.3	3.1	0.15	0.12	-5.25
1,544.0	1.19	114.16	1,543.9	-8.0	7.9	6.4	0.13	0.05	5.81
1,732.0	0.88	131.74	1,731.9	-9.8	10.8	8.9	0.23	-0.16	9.35
1,921.0	1.01	121.19	1,920.8	-11.6	13.3	11.1	0.11	0.07	-5.58
2,110.0	0.48	116.36	2,109.8	-12.8	15.4	13.0	0.28	-0.28	-2.56
2,299.0	0.53	136.05	2,298.8	-13.8	16.7	14.1	0.10	0.03	10.42
2,487.0	0.26	120.75	2,486.8	-14.6	17.7	14.9	0.15	-0.14	-8.14
2,550.0	0.88	15.20	2,549.8	-14.2	17.9	15.2	1.56	0.98	-167.54
2,614.0	2.15	356.56	2,613.8	-12.6	18.0	15.6	2.10	1.98	-29.13
2,677.0	3.91	352.52	2,676.7	-9.3	17.6	15.8	2.81	2.79	-6.41
2,740.0	6.33	354.89	2,739.4	-3.7	17.1	16.2	3.86	3.84	3.76
2,803.0	8.53	359.73	2,801.9	4.5	16.7	17.2	3.63	3.49	7.68
2,866.0	10.68	1.05	2,864.0	15.0	16.8	19.1	3.43	3.41	2.10
2,928.0	12.75	1.75	2,924.7	27.6	17.1	21.6	3.35	3.34	1.13
2,991.0	14.46	1.13	2,985.9	42.4	17.5	24.5	2.72	2.71	-0.98
3,054.0	16.18	1.22	3,046.7	59.0	17.8	27.6	2.73	2.73	0.14
3,117.0	17.76	2.45	3,107.0	77.4	18.4	31.3	2.57	2.51	1.95
3,180.0	19.08	3.16	3,166.7	97.3	19.4	35.7	2.13	2.10	1.13
3,243.0	20.57	4.39	3,226.0	118.6	20.8	40.7	2.46	2.37	1.95
3,306.0	22.24	6.32	3,284.6	141.5	23.0	46.8	2.88	2.65	3.06
3,344.0	22.99	8.43	3,319.7	156.0	24.9	51.1	2.91	1.97	5.55
3,462.0	21.45	8.61	3,429.0	200.1	31.5	65.1	1.31	-1.31	0.15
3,524.0	19.87	7.11	3,487.0	221.8	34.5	71.8	2.69	-2.55	-2.42
3,587.0	19.82	6.67	3,546.2	243.0	37.0	77.9	0.25	-0.08	-0.70
3,650.0	21.54	8.34	3,605.2	265.0	40.0	84.5	2.89	2.73	2.65
3,713.0	23.30	10.45	3,663.4	288.7	43.9	92.5	3.07	2.79	3.35
3,776.0	24.62	11.07	3,721.0	313.9	48.7	101.4	2.13	2.10	0.98
3,839.0	24.84	11.07	3,778.2	339.7	53.7	110.8	0.35	0.35	0.00
3,902.0	24.97	10.89	3,835.3	365.8	58.8	120.3	0.24	0.21	-0.29
3,964.0	25.05	10.98	3,891.5	391.5	63.8	129.5	0.14	0.13	0.15
4,027.0	25.32	10.63	3,948.5	417.9	68.8	139.0	0.49	0.43	-0.56
4,090.0	27.34	6.06	4,005.0	445.5	72.8	147.6	4.54	3.21	-7.25
4,153.0	29.41	5.71	4,060.4	475.3	75.9	155.7	3.30	3.29	-0.56
4,216.0	30.59	7.99	4,115.0	506.5	79.6	164.8	2.60	1.87	3.62
4,279.0	30.81	7.90	4,169.2	538.4	84.1	174.6	0.36	0.35	-0.14
4,342.0	31.12	9.92	4,223.2	570.4	89.1	185.0	1.72	0.49	3.21

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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)
4,404.0	30.20	18.10	4,276.5	601.0	96.7	197.7	6.88	-1.48	13.19
4,467.0	29.89	26.01	4,331.1	630.2	108.5	214.3	6.30	-0.49	12.56
4,530.0	30.07	33.39	4,385.7	657.5	124.1	234.3	5.86	0.29	11.71
4,593.0	31.38	44.11	4,439.9	682.5	144.2	258.4	8.93	2.08	17.02
4,656.0	34.11	53.34	4,492.9	704.8	169.8	287.4	9.02	4.33	14.65
4,719.0	38.37	62.39	4,543.7	724.5	201.4	321.9	10.84	6.76	14.37
4,781.0	41.63	70.57	4,591.3	740.2	237.9	360.5	9.97	5.26	13.19
4,844.0	45.19	76.90	4,637.0	752.3	279.4	403.5	8.92	5.65	10.05
4,907.0	49.32	81.91	4,679.8	760.7	324.8	449.7	8.78	6.56	7.95
4,970.0	54.59	86.04	4,718.6	765.8	374.2	499.2	9.83	8.37	6.56
5,033.0	60.84	89.90	4,752.3	767.7	427.3	551.9	11.19	9.92	6.13
5,096.0	63.87	91.05	4,781.5	767.2	483.1	606.8	5.07	4.81	1.83
5,159.0	67.43	90.96	4,807.5	766.2	540.5	663.2	5.65	5.65	-0.14
5,222.0	72.31	90.61	4,829.1	765.4	599.7	721.3	7.76	7.75	-0.56
5,285.0	77.27	90.34	4,845.7	764.9	660.4	781.1	7.88	7.87	-0.43
5,348.0	79.47	91.57	4,858.4	763.9	722.1	841.7	3.98	3.49	1.95
5,366.2	81.60	92.24	4,861.4	763.3	740.1	859.3	12.27	11.72	3.68
FTP @ 5366.2' MD, 100' FWL, 502' FNL									
5,411.0	86.86	93.86	4,865.9	760.9	784.5	902.7	12.27	11.73	3.62
5,474.0	90.33	94.39	4,867.4	756.4	847.4	963.8	5.57	5.51	0.84
5,537.0	91.96	91.75	4,866.2	753.0	910.2	1,025.2	4.92	2.59	-4.19
5,600.0	91.65	89.38	4,864.2	752.4	973.2	1,087.2	3.79	-0.49	-3.76
5,663.0	89.49	87.53	4,863.5	754.1	1,036.2	1,149.5	4.51	-3.43	-2.94
5,726.0	88.92	85.69	4,864.4	757.8	1,099.1	1,212.1	3.06	-0.90	-2.92
5,789.0	87.34	85.33	4,866.5	762.7	1,161.8	1,274.8	2.57	-2.51	-0.57
5,851.0	89.36	86.83	4,868.3	766.9	1,223.7	1,336.4	4.06	3.26	2.42
5,914.0	90.07	87.09	4,868.6	770.3	1,286.6	1,399.0	1.20	1.13	0.41
5,977.0	90.73	87.53	4,868.1	773.2	1,349.5	1,461.5	1.26	1.05	0.70
6,040.0	91.03	88.32	4,867.2	775.5	1,412.4	1,523.9	1.34	0.48	1.25
6,103.0	89.36	89.64	4,866.9	776.6	1,475.4	1,586.2	3.38	-2.65	2.10
6,166.0	89.67	90.08	4,867.5	776.8	1,538.4	1,648.3	0.85	0.49	0.70
6,229.0	87.56	89.47	4,869.0	777.1	1,601.4	1,710.4	3.49	-3.35	-0.97
6,292.0	86.29	88.59	4,872.4	778.1	1,664.3	1,772.5	2.45	-2.02	-1.40
6,355.0	86.95	88.76	4,876.1	779.6	1,727.2	1,834.8	1.08	1.05	0.27
6,418.0	87.60	89.03	4,879.1	780.8	1,790.1	1,897.0	1.12	1.03	0.43
6,481.0	88.31	89.29	4,881.3	781.7	1,853.0	1,959.1	1.20	1.13	0.41
6,544.0	88.62	89.29	4,883.0	782.5	1,916.0	2,021.3	0.49	0.49	0.00
6,607.0	89.05	89.73	4,884.3	783.0	1,979.0	2,083.5	0.98	0.68	0.70
6,670.0	89.71	89.55	4,885.0	783.4	2,042.0	2,145.6	1.09	1.05	-0.29
6,733.0	90.29	89.47	4,885.0	784.0	2,105.0	2,207.8	0.93	0.92	-0.13
6,796.0	90.55	89.11	4,884.5	784.7	2,168.0	2,270.0	0.70	0.41	-0.57
6,857.0	90.95	89.03	4,883.7	785.7	2,229.0	2,330.3	0.67	0.66	-0.13
6,921.0	91.82	89.29	4,882.2	786.7	2,292.9	2,393.5	1.42	1.36	0.41
6,983.0	91.56	89.90	4,880.4	787.1	2,354.9	2,454.6	1.07	-0.42	0.98



Microsoft
Survey Report



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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)
7,047.0	89.19	90.34	4,879.9	787.0	2,418.9	2,517.6	3.77	-3.70	0.69
7,110.0	87.65	89.99	4,881.7	786.8	2,481.9	2,579.7	2.51	-2.44	-0.56
7,173.0	88.22	89.47	4,883.9	787.1	2,544.8	2,641.7	1.22	0.90	-0.83
7,235.0	89.05	89.64	4,885.4	787.6	2,606.8	2,702.9	1.37	1.34	0.27
7,298.0	89.80	89.64	4,886.1	788.0	2,669.8	2,765.0	1.19	1.19	0.00
7,361.0	88.26	90.78	4,887.1	787.7	2,732.8	2,827.1	3.04	-2.44	1.81
7,425.0	89.01	91.05	4,888.6	786.7	2,796.8	2,889.9	1.25	1.17	0.42
7,488.0	89.63	91.31	4,889.4	785.4	2,859.8	2,951.8	1.07	0.98	0.41
7,551.0	88.13	91.66	4,890.6	783.8	2,922.7	3,013.5	2.44	-2.38	0.56
7,613.0	88.57	91.57	4,892.4	782.0	2,984.7	3,074.3	0.72	0.71	-0.15
7,676.0	89.23	91.40	4,893.6	780.4	3,047.6	3,136.0	1.08	1.05	-0.27
7,739.0	90.42	91.93	4,893.8	778.6	3,110.6	3,197.8	2.07	1.89	0.84
7,802.0	91.52	91.93	4,892.7	776.5	3,173.6	3,259.5	1.75	1.75	0.00
7,865.0	91.74	91.40	4,891.0	774.6	3,236.5	3,321.2	0.91	0.35	-0.84
7,928.0	90.33	90.52	4,889.8	773.6	3,299.5	3,383.1	2.64	-2.24	-1.40
7,991.0	90.55	90.43	4,889.3	773.0	3,362.5	3,445.0	0.38	0.35	-0.14
8,054.0	89.32	90.78	4,889.4	772.4	3,425.5	3,507.0	2.03	-1.95	0.56
8,116.0	90.02	90.87	4,889.8	771.5	3,487.5	3,567.9	1.14	1.13	0.15
8,179.0	90.86	91.05	4,889.3	770.4	3,550.5	3,629.8	1.36	1.33	0.29
8,242.0	91.38	90.52	4,888.0	769.6	3,613.4	3,691.7	1.18	0.83	-0.84
8,305.0	89.14	89.38	4,887.8	769.6	3,676.4	3,753.8	3.99	-3.56	-1.81
8,368.0	89.32	89.38	4,888.6	770.3	3,739.4	3,816.0	0.29	0.29	0.00
8,430.0	89.58	89.03	4,889.2	771.2	3,801.4	3,877.2	0.70	0.42	-0.56
8,494.0	89.89	88.76	4,889.5	772.4	3,865.4	3,940.5	0.64	0.48	-0.42
8,557.0	90.37	88.67	4,889.4	773.8	3,928.4	4,002.8	0.78	0.76	-0.14
8,620.0	91.08	89.29	4,888.6	774.9	3,991.4	4,065.1	1.50	1.13	0.98
8,682.0	89.01	89.90	4,888.5	775.4	4,053.4	4,126.2	3.48	-3.34	0.98
8,745.0	89.76	90.08	4,889.2	775.4	4,116.4	4,188.3	1.22	1.19	0.29
8,807.0	90.59	90.34	4,889.0	775.2	4,178.4	4,249.3	1.40	1.34	0.42
8,871.0	88.92	90.43	4,889.3	774.7	4,242.4	4,312.3	2.61	-2.61	0.14
8,933.0	89.63	90.34	4,890.1	774.3	4,304.4	4,373.3	1.15	1.15	-0.15
8,996.0	90.11	90.43	4,890.2	773.9	4,367.4	4,435.4	0.78	0.76	0.14
9,059.0	90.77	90.52	4,889.7	773.4	4,430.3	4,497.3	1.06	1.05	0.14
LAST SVY									
9,118.0	90.77	90.52	4,888.9	772.8	4,489.3	4,555.4	0.00	0.00	0.00
PTD @ 9115.0 MD, 110 FEL, 507 FNL									



Microsoft
Survey Report



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Design:	AWB	Database:	EDM 10_13

Design Targets

Target Name

- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
UMP (Kirk FC #3H)	0.00	0.00	4,850.0	775.0	740.0	674,983.00	665,389.00	32° 51' 17.638 N	103° 55' 45.696 W
- actual wellpath misses target center by 16.2usft at 5363.9usft MD (4861.0 TVD, 763.3 N, 737.8 E)									
- Point									
VS TARGET (Kirk FC	0.00	269.96	4,855.0	777.0	3,113.6	674,984.98	667,762.59	32° 51' 17.567 N	103° 55' 17.870 W
- actual wellpath misses target center by 38.8usft at 7742.7usft MD (4893.8 TVD, 778.4 N, 3114.3 E)									
- Rectangle (sides W60.0 H2,350.5 D20.0)									
PBHL (Kirk FC #3H)	-0.75	269.98	4,873.0	778.0	4,499.0	674,986.00	669,148.00	32° 51' 17.523 N	103° 55' 1.629 W
- actual wellpath misses target center by 19.3usft at 9118.0usft MD (4888.9 TVD, 772.8 N, 4489.3 E)									
- Rectangle (sides W60.0 H1,365.3 D20.0)									

Design Annotations

Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
405.5	405.5	-1.9	-1.8	TIE ON
5,366.2	4,861.4	763.3	740.1	FTP @ 5366.2' MD, 100' FWL, 502' FNL
9,059.0	4,889.7	773.4	4,430.3	LAST SVY
9,118.0	4,888.9	772.8	4,489.3	PTD @ 9115.0' MD, 110' FEL, 507' FNL

Checked By: _____ Approved By: _____ Date: _____