



EOG Resources - Midland

Lea County, NM (NAD 27 NME)

Whirling Wind 14 Fed Com

#701H

ST01

Design: ST01

PVA

31 October, 2016

HOBBS OCD

MAR 13 2017

RECEIVED



EOG Resources, Inc.
PVA

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #701H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB = 25 @ 3365.0usft (H&P 659)
Site:	Whirling Wind 14 Fed Com	MD Reference:	KB = 25 @ 3365.0usft (H&P 659)
Well:	#701H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	EDM 5000.1 Single User Db

Project	Lea County, NM (NAD 27 NME)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Whirling Wind 14 Fed Com		
Site Position:		Northing:	383,037.00 usft
From:	Map	Easting:	747,061.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 3' 2.072 N
		Longitude:	103° 32' 9.319 W
		Grid Convergence:	0.42 °

Well		#701H				
Well Position	+N/-S	0.0 usft	Northing:	383,037.00 usft	Latitude:	32° 3' 2.072 N
	+E/-W	0.0 usft	Easting:	747,061.00 usft	Longitude:	103° 32' 9.319 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	3,340.0 usft	

Wellbore	ST01				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/8/2016	7.00	59.92	47,910

Design		ST01		
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 11,791.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	1.27



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 Wellbore: ST01
 Design: ST01

Local Co-ordinate Reference: Well #701H
 TVD Reference: KB = 25 @ 3365.0usft (H&P 659)
 MD Reference: KB = 25 @ 3365.0usft (H&P 659)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.1 Single User Db

Survey Program		Date 10/31/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
174.0	11,179.0	MWD (Pilot)	MWD	MWD - Standard
11,227.0	11,791.0	Int MWD #1 (Pilot)	MWD	MWD - Standard
11,860.0	20,017.0	Intrepid MWD #2 (ST01)	MWD	MWD - Standard

Survey											
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0	0.0
174.0	0.80	174.70	174.0	-1.2	0.1	0.46	0.46	0.00	0.0	0.0	0.0
353.0	0.80	171.60	353.0	-3.7	0.4	0.02	0.00	-1.73	0.0	0.0	0.0
534.0	1.00	126.80	534.0	-5.9	1.9	0.39	0.11	-24.75	0.0	0.0	0.0
714.0	1.20	123.50	713.9	-7.9	4.7	0.12	0.11	-1.83	0.0	0.0	0.0
897.0	1.30	108.40	896.9	-9.6	8.3	0.19	0.05	-8.25	0.0	0.0	0.0
1,039.0	1.00	86.00	1,038.9	-10.0	11.0	0.38	-0.21	-15.77	0.0	0.0	0.0
1,228.0	1.10	54.70	1,227.8	-8.8	14.1	0.30	0.05	-16.56	0.0	0.0	0.0
1,417.0	1.00	54.30	1,416.8	-6.8	17.0	0.05	-0.05	-0.21	0.0	0.0	0.0
1,606.0	0.80	74.80	1,605.8	-5.5	19.6	0.20	-0.11	10.85	0.0	0.0	0.0
1,794.0	0.50	99.70	1,793.8	-5.3	21.7	0.22	-0.16	13.24	0.0	0.0	0.0
1,983.0	0.30	65.60	1,982.8	-5.2	22.9	0.16	-0.11	-18.04	0.0	0.0	0.0
2,172.0	0.70	44.40	2,171.7	-4.2	24.2	0.23	0.21	-11.22	0.0	0.0	0.0
2,361.0	0.40	31.90	2,360.7	-2.8	25.3	0.17	-0.16	-6.61	0.0	0.0	0.0
2,550.0	0.30	355.10	2,549.7	-1.8	25.6	0.13	-0.05	-19.47	0.0	0.0	0.0
2,738.0	0.70	27.90	2,737.7	-0.3	26.1	0.25	0.21	17.45	0.0	0.0	0.0
2,928.0	0.60	6.50	2,927.7	1.7	26.8	0.14	-0.05	-11.26	0.0	0.0	0.0
3,117.0	0.80	55.00	3,116.7	3.5	28.0	0.32	0.11	25.66	0.0	0.0	0.0
3,306.0	1.40	61.30	3,305.7	5.3	31.1	0.32	0.32	3.33	0.0	0.0	0.0
3,494.0	0.30	333.10	3,493.6	6.9	32.9	0.76	-0.59	-46.91	0.0	0.0	0.0



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Design: ST01

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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

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)
3,684.0	1.10	115.00	3,683.6	6.6	34.3	0.71	0.42	74.68	0.0	0.0
3,873.0	1.10	92.80	3,872.6	5.7	37.8	0.22	0.00	-11.75	0.0	0.0
4,062.0	0.50	313.50	4,061.6	6.2	39.0	0.80	-0.32	-73.70	0.0	0.0
4,250.0	0.30	14.20	4,249.6	7.2	38.5	0.23	-0.11	32.29	0.0	0.0
4,438.0	0.20	125.90	4,437.6	7.5	38.9	0.22	-0.05	59.41	0.0	0.0
4,627.0	0.50	253.30	4,626.6	7.1	38.4	0.34	0.16	67.41	0.0	0.0
4,816.0	0.40	8.60	4,815.6	7.5	37.7	0.40	-0.05	61.01	0.0	0.0
5,004.0	0.70	90.30	5,003.6	8.1	38.9	0.40	0.16	43.46	0.0	0.0
5,193.0	0.30	339.50	5,192.6	8.6	39.9	0.45	-0.21	-58.62	0.0	0.0
5,382.0	0.10	183.90	5,381.6	8.9	39.7	0.21	-0.11	-82.33	0.0	0.0
5,570.0	0.70	98.20	5,569.6	8.6	40.8	0.37	0.32	-45.59	0.0	0.0
5,759.0	0.30	159.20	5,758.6	7.9	42.2	0.32	-0.21	32.28	0.0	0.0
5,947.0	0.10	45.10	5,946.6	7.6	42.5	0.19	-0.11	-60.69	0.0	0.0
6,136.0	0.90	247.80	6,135.5	7.1	41.2	0.53	0.42	-83.23	0.0	0.0
6,323.0	0.40	20.20	6,322.5	7.2	40.1	0.65	-0.27	70.80	0.0	0.0
6,512.0	0.30	44.50	6,511.5	8.2	40.6	0.09	-0.05	12.86	0.0	0.0
6,700.0	0.70	312.10	6,699.5	9.3	40.1	0.41	0.21	-49.15	0.0	0.0
6,888.0	1.00	244.40	6,887.5	9.4	37.8	0.52	0.16	-36.01	0.0	0.0
7,077.0	1.10	186.60	7,076.5	6.8	36.1	0.54	0.05	-30.58	0.0	0.0
7,265.0	0.50	145.60	7,264.5	4.4	36.4	0.42	-0.32	-21.81	0.0	0.0
7,454.0	0.80	54.10	7,453.5	4.5	37.9	0.50	0.16	-48.41	0.0	0.0
7,642.0	0.20	319.30	7,641.5	5.5	38.7	0.45	-0.32	-50.43	0.0	0.0
7,811.0	0.40	263.40	7,810.5	5.6	38.0	0.20	0.12	-33.08	0.0	0.0
7,999.0	1.00	230.20	7,998.4	4.5	36.1	0.37	0.32	-17.66	0.0	0.0
8,188.0	1.20	239.00	8,187.4	2.4	33.1	0.14	0.11	4.66	0.0	0.0
8,376.0	1.10	235.80	8,375.4	0.4	29.9	0.06	-0.05	-1.70	0.0	0.0
8,563.0	1.70	218.10	8,562.3	-2.8	26.7	0.39	0.32	-9.47	0.0	0.0



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8,751.0	1.50	226.00	8,750.2	-6.7	23.2	0.16	-0.11	4.20	0.0	0.0
8,940.0	1.10	266.10	8,939.2	-8.5	19.6	0.51	-0.21	21.22	0.0	0.0
9,128.0	1.40	265.90	9,127.1	-8.8	15.5	0.16	0.16	-0.11	0.0	0.0
9,317.0	1.50	271.90	9,316.1	-8.9	10.8	0.10	0.05	3.17	0.0	0.0
9,506.0	1.20	266.50	9,505.0	-8.9	6.3	0.17	-0.16	-2.86	0.0	0.0
9,694.0	1.10	284.80	9,693.0	-8.6	2.6	0.20	-0.05	9.73	0.0	0.0
9,883.0	1.00	282.00	9,882.0	-7.8	-0.8	0.06	-0.05	-1.48	0.0	0.0
10,071.0	1.70	270.40	10,069.9	-7.4	-5.2	0.40	0.37	-6.17	0.0	0.0
10,259.0	1.90	249.40	10,257.8	-8.5	-10.9	0.36	0.11	-11.17	0.0	0.0
10,447.0	2.50	250.60	10,445.7	-11.0	-17.6	0.32	0.32	0.64	0.0	0.0
10,635.0	3.60	244.20	10,633.4	-14.9	-26.8	0.61	0.59	-3.40	0.0	0.0
10,824.0	3.60	244.70	10,822.0	-20.0	-37.5	0.02	0.00	0.26	0.0	0.0
11,179.0	4.10	242.70	11,176.2	-30.6	-58.9	0.15	0.14	-0.56	0.0	0.0
11,227.0	4.50	240.20	11,224.1	-32.3	-62.0	0.92	0.83	-5.21	0.0	0.0
11,321.0	3.40	241.30	11,317.9	-35.5	-67.7	1.17	-1.17	1.17	0.0	0.0
11,415.0	2.20	273.40	11,411.8	-36.7	-71.9	2.05	-1.28	34.15	0.0	0.0
11,509.0	2.20	272.30	11,505.7	-36.5	-75.5	0.04	0.00	-1.17	0.0	0.0
11,603.0	2.10	260.70	11,599.6	-36.7	-79.0	0.47	-0.11	-12.34	0.0	0.0
11,697.0	2.70	261.70	11,693.6	-37.3	-82.9	0.64	0.64	1.06	0.0	0.0
11,791.0	2.50	258.60	11,787.5	-38.1	-87.1	0.26	-0.21	-3.30	0.2	0.1
11,860.0	6.50	25.20	11,856.3	-34.8	-86.9	11.94	5.80	183.48	-4.8	-1.7
11,907.0	6.60	26.40	11,903.0	-30.0	-84.6	0.36	0.21	2.55	-10.2	-2.7
11,955.0	11.40	23.20	11,950.4	-23.2	-81.5	10.05	10.00	-6.67	-14.1	-2.6
12,002.0	15.20	20.10	11,996.1	-13.1	-77.6	8.22	8.09	-6.60	-18.1	-0.3
12,050.0	19.10	18.80	12,042.0	0.2	-72.9	8.16	8.12	-2.71	-22.4	4.9
12,097.0	24.70	20.50	12,085.6	16.7	-66.9	11.99	11.91	3.62	-26.6	13.4
12,144.0	30.40	27.00	12,127.3	36.6	-58.1	13.70	12.13	13.83	-29.5	25.3



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Design: ST01

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12,191.0	36.70	30.00	12,166.4	59.3	-45.7	13.86	13.40	6.38	-33.4	35.9	
12,238.0	43.90	37.50	12,202.2	84.5	-28.7	18.45	15.32	15.96	-34.8	48.2	
12,285.0	47.20	40.80	12,235.2	110.5	-7.5	8.62	7.02	7.02	-39.2	56.2	
12,331.0	46.90	40.20	12,266.5	136.1	14.4	1.16	-0.65	-1.30	-45.2	58.4	
12,379.0	49.10	37.10	12,298.6	163.9	36.6	6.64	4.58	-6.46	-50.8	57.2	
12,437.0	51.60	34.60	12,335.6	200.1	62.8	5.44	4.31	-4.31	-54.7	53.7	
12,481.0	52.60	32.90	12,362.7	229.0	82.0	3.80	2.27	-3.86	-55.5	49.3	
12,528.0	54.90	30.20	12,390.5	261.3	101.9	6.74	4.89	-5.74	-54.7	42.7	
12,575.0	57.30	28.50	12,416.7	295.3	121.0	5.92	5.11	-3.62	-52.0	35.2	
12,623.0	62.20	27.00	12,440.8	332.0	140.3	10.56	10.21	-3.12	-48.6	25.9	
12,626.7	62.70	26.88	12,442.6	334.9	141.8	13.92	13.60	-3.35	-48.3	25.1	
HL Crossing, MD:12626.7', TVD:12442.6', N/S:334.9', E/W:141.8', INC:62.70											
12,670.0	68.60	25.50	12,460.4	370.3	159.1	13.92	13.62	-3.18	-46.2	15.4	
12,717.0	73.90	20.80	12,475.5	411.2	176.6	14.72	11.28	-10.00	-44.9	4.5	
12,764.0	74.30	15.50	12,488.4	454.1	190.7	10.88	0.85	-11.28	-42.1	-4.6	
12,811.0	74.50	14.70	12,501.0	497.8	202.5	1.69	0.43	-1.70	-36.0	-12.5	
12,859.0	74.70	12.30	12,513.8	542.8	213.3	4.84	0.42	-5.00	-26.5	-21.2	
12,906.0	78.30	6.80	12,524.8	587.9	220.8	13.71	7.66	-11.70	-15.8	-28.2	
12,954.0	81.60	1.10	12,533.1	635.0	224.1	13.56	6.87	-11.87	-7.2	-31.0	
13,049.0	88.30	355.80	12,541.5	729.5	221.5	8.98	7.05	-5.58	1.1	-27.1	
13,142.0	89.60	356.60	12,543.2	822.3	215.3	1.64	1.40	0.86	2.6	-19.6	
13,238.0	89.20	356.60	12,544.2	918.1	209.6	0.42	-0.42	0.00	3.5	-12.6	
13,333.0	91.30	356.60	12,543.8	1,012.9	204.0	2.21	2.21	0.00	3.0	-5.6	
13,428.0	91.50	356.30	12,541.5	1,107.7	198.1	0.38	0.21	-0.32	0.6	1.6	
13,522.0	91.90	357.40	12,538.7	1,201.5	193.0	1.24	0.43	1.17	-2.3	8.0	
13,617.0	89.70	359.50	12,537.4	1,296.5	190.4	3.20	-2.32	2.21	-3.8	11.9	
13,712.0	89.20	359.30	12,538.3	1,391.5	189.4	0.57	-0.53	-0.21	-3.0	14.2	



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13,807.0	90.80	0.00	12,538.3	1,486.5	188.8	1.84	1.68	0.74	-3.1	16.2
13,901.0	90.30	358.20	12,537.4	1,580.5	187.3	1.99	-0.53	-1.91	-4.1	18.9
13,996.0	92.20	358.40	12,535.3	1,675.4	184.5	2.01	2.00	0.21	-6.3	23.1
14,091.0	92.10	1.70	12,531.7	1,770.3	184.6	3.47	-0.11	3.47	-10.0	24.3
14,185.0	90.80	1.90	12,529.4	1,864.2	187.6	1.40	-1.38	0.21	-12.5	22.7
14,280.0	90.20	1.60	12,528.5	1,959.2	190.5	0.71	-0.63	-0.32	-13.4	21.1
14,374.0	89.80	1.10	12,528.5	2,053.2	192.7	0.68	-0.43	-0.53	-13.5	19.6
14,469.0	92.00	2.50	12,527.0	2,148.1	195.7	2.74	2.32	1.47	-14.9	15.9
14,564.0	87.40	2.20	12,527.5	2,243.0	199.5	4.85	-4.84	-0.32	-14.3	11.3
14,659.0	88.40	2.60	12,531.0	2,337.8	203.5	1.13	1.05	0.42	-10.8	6.6
14,753.0	89.50	1.70	12,532.7	2,431.7	207.0	1.51	1.17	-0.96	-9.0	2.4
14,848.0	91.30	0.50	12,532.1	2,526.7	208.9	2.28	1.89	-1.26	-9.5	-0.2
14,943.0	89.30	359.70	12,531.6	2,621.7	209.0	2.27	-2.11	-0.84	-10.0	-1.1
15,038.0	91.80	0.80	12,530.7	2,716.7	209.5	2.87	2.63	1.16	-10.8	-2.2
15,133.0	91.30	0.70	12,528.1	2,811.7	210.7	0.54	-0.53	-0.11	-13.3	-4.2
15,227.0	88.80	359.50	12,528.0	2,905.6	210.9	2.95	-2.66	-1.28	-13.3	-5.1
15,322.0	88.90	359.60	12,529.9	3,000.6	210.1	0.15	0.11	0.11	-11.3	-5.1
15,417.0	89.90	359.70	12,530.9	3,095.6	209.5	1.06	1.05	0.11	-10.2	-5.2
15,512.0	89.50	359.50	12,531.4	3,190.6	208.9	0.47	-0.42	-0.21	-9.7	-5.3
15,606.0	89.80	359.50	12,532.0	3,284.6	208.1	0.32	0.32	0.00	-9.0	-5.2
15,701.0	90.00	0.20	12,532.2	3,379.6	207.8	0.77	0.21	0.74	-8.8	-5.6
15,796.0	90.00	0.70	12,532.2	3,474.6	208.5	0.53	0.00	0.53	-8.7	-7.1
15,891.0	91.30	1.20	12,531.1	3,569.6	210.1	1.47	1.37	0.53	-9.7	-9.4
15,985.0	90.50	359.80	12,529.6	3,663.6	210.9	1.72	-0.85	-1.49	-11.1	-11.0
16,080.0	90.30	0.20	12,528.9	3,758.6	210.9	0.47	-0.21	0.42	-11.7	-11.7
16,174.0	91.40	0.40	12,527.5	3,852.5	211.4	1.19	1.17	0.21	-13.0	-12.9
16,268.0	90.50	359.70	12,526.0	3,946.5	211.5	1.21	-0.96	-0.74	-14.5	-13.7



EOG Resources, Inc.
PVA

Company: EOG Resources - Midland
Project: Lea County, NM (NAD 27 NME)
Site: Whirling Wind 14 Fed Com
Well: #701H
Wellbore: ST01
Design: ST01

Local Co-ordinate Reference: Well #701H
TVD Reference: KB = 25 @ 3365.0usft (H&P 659)
MD Reference: KB = 25 @ 3365.0usft (H&P 659)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

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)
16,362.0	90.50	359.70	12,525.2	4,040.5	211.0	0.00	0.00	0.00	-15.2	-13.9
16,456.0	92.30	0.40	12,522.9	4,134.5	211.1	2.05	1.91	0.74	-17.4	-14.7
16,551.0	92.30	0.40	12,519.1	4,229.4	211.8	0.00	0.00	0.00	-21.2	-16.1
16,645.0	90.80	0.20	12,516.5	4,323.4	212.3	1.61	-1.60	-0.21	-23.6	-17.3
16,740.0	89.70	0.00	12,516.1	4,418.4	212.4	1.18	-1.16	-0.21	-24.0	-18.2
16,834.0	90.60	0.30	12,515.9	4,512.4	212.7	1.01	0.96	0.32	-24.1	-19.2
16,928.0	89.90	0.30	12,515.4	4,606.4	213.2	0.74	-0.74	0.00	-24.5	-20.4
17,015.0	90.50	0.40	12,515.1	4,693.4	213.7	0.70	0.69	0.11	-24.7	-21.5
17,108.0	91.40	0.60	12,513.6	4,786.4	214.5	0.99	0.97	0.22	-26.2	-23.0
17,202.0	90.50	359.20	12,512.0	4,880.3	214.3	1.77	-0.96	-1.49	-27.7	-23.6
17,297.0	91.40	359.40	12,510.5	4,975.3	213.2	0.97	0.95	0.21	-29.2	-23.1
17,391.0	92.10	359.10	12,507.6	5,069.3	212.0	0.81	0.74	-0.32	-32.0	-22.6
17,485.0	90.50	357.40	12,505.5	5,163.2	209.1	2.48	-1.70	-1.81	-34.1	-20.4
17,580.0	91.10	356.90	12,504.1	5,258.1	204.4	0.82	0.63	-0.53	-35.4	-16.4
17,674.0	91.60	357.10	12,501.9	5,351.9	199.4	0.57	0.53	0.21	-37.6	-12.1
17,769.0	89.40	356.60	12,501.1	5,446.8	194.2	2.37	-2.32	-0.53	-38.3	-7.6
17,863.0	90.50	356.50	12,501.2	5,540.6	188.6	1.18	1.17	-0.11	-38.2	-2.7
17,957.0	91.80	356.60	12,499.3	5,634.4	182.9	1.39	1.38	0.11	-40.0	2.3
18,052.0	92.50	357.80	12,495.7	5,729.2	178.3	1.46	0.74	1.26	-43.5	6.2
18,146.0	92.20	358.80	12,491.9	5,823.1	175.5	1.11	-0.32	1.06	-47.3	8.3
18,241.0	88.50	358.90	12,491.3	5,918.0	173.6	3.90	-3.89	0.11	-47.8	9.5
18,335.0	89.60	359.60	12,492.8	6,012.0	172.4	1.39	1.17	0.74	-46.2	10.1
18,429.0	90.30	359.20	12,492.9	6,106.0	171.4	0.86	0.74	-0.43	-46.1	10.4
18,523.0	91.50	359.50	12,491.4	6,200.0	170.3	1.32	1.28	0.32	-47.5	10.7
18,618.0	91.00	0.80	12,489.4	6,295.0	170.5	1.47	-0.53	1.37	-49.5	9.8
18,712.0	90.70	1.00	12,488.0	6,389.0	172.0	0.38	-0.32	0.21	-50.8	7.6
18,807.0	89.80	0.70	12,487.6	6,483.9	173.4	1.00	-0.95	-0.32	-51.2	5.5



EOG Resources, Inc.
PVA

Company: EOG Resources - Midland
Project: Lea County, NM (NAD 27 NME)
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Design: ST01

Local Co-ordinate Reference: Well #701H
TVD Reference: KB = 25 @ 3365.0usft (H&P 659)
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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

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)
18,901.0	89.50	359.80	12,488.1	6,577.9	173.8	1.01	-0.32	-0.96	-50.6	4.4
18,996.0	89.30	0.40	12,489.1	6,672.9	174.0	0.67	-0.21	0.63	-49.5	3.5
19,090.0	92.10	0.60	12,488.0	6,766.9	174.8	2.99	2.98	0.21	-50.6	2.0
19,184.0	89.70	0.80	12,486.5	6,860.9	176.0	2.56	-2.55	0.21	-52.0	0.2
19,278.0	90.00	1.40	12,486.8	6,954.9	177.8	0.71	0.32	0.64	-51.7	-2.3
19,373.0	89.30	0.40	12,487.3	7,049.9	179.3	1.28	-0.74	-1.05	-51.1	-4.5
19,467.0	90.20	359.20	12,487.7	7,143.8	178.9	1.60	0.96	-1.28	-50.6	-4.9
19,562.0	89.10	358.30	12,488.3	7,238.8	176.9	1.50	-1.16	-0.95	-50.0	-3.5
19,655.0	90.50	358.40	12,488.7	7,331.8	174.2	1.51	1.51	0.11	-49.6	-1.5
19,750.0	91.30	359.20	12,487.2	7,426.7	172.2	1.19	0.84	0.84	-51.0	-0.2
19,844.0	90.10	0.00	12,486.0	7,520.7	171.6	1.53	-1.28	0.85	-52.1	-0.3
19,917.7	90.88	0.00	12,485.4	7,594.4	171.6	1.06	1.06	0.00	-52.7	-0.8
HL Crossing, MD:19917.7', TVD:12485.4', N/S:7594.4', E/W:171.6', INC:90.88										
19,938.0	91.10	0.00	12,485.0	7,614.7	171.6	1.06	1.06	0.00	-53.0	-1.0
Last MWD Survey										
20,017.0	91.10	0.00	12,483.5	7,693.7	171.6	0.00	0.00	0.00	-54.5	-1.5
Projection To Bit										

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,626.7	12,442.6	334.9	141.8	HL Crossing, MD:12626.7', TVD:12442.6', N/S:334.9', E/W:141.8', INC:62.70
19,917.7	12,485.4	7,594.4	171.6	HL Crossing, MD:19917.7', TVD:12485.4', N/S:7594.4', E/W:171.6', INC:90.88
19,938.0	12,485.0	7,614.7	171.6	Last MWD Survey
20,017.0	12,483.5	7,693.7	171.6	Projection To Bit

Checked By: _____ Approved By: _____ Date: _____