



30.015.37646

BOPCO, L.P.

Eddy County(NAD27)

Poker Lake Unit

#303H

OH

Design: OH

PathfinderX & Y Report

02 April, 2012



A Schlumberger Company



Pathfinder
PathfinderX & Y Report

PATHFINDER
A Schlumberger Company

Company: BOPCO, L.P.
Project: Eddy County(NAD27)
Site: Poker Lake Unit
Well: #303H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #303H
TVD Reference: KB = 20.6 @ 3433 6usft (Latshaw #4)
MD Reference: KB = 20.6 @ 3433 6usft (Latshaw #4)
North Reference: Gnd
Survey/Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Project	Eddy County(NAD27)		
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	Poker Lake Unit		
Site Position:		Northing:	431,785.905 usft
From: Map		Easting:	669,777.503 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 11' 9.261 N
		Longitude:	103° 47' 4.373 W
		Grid Convergence:	0.29 °

Well	#303H		
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:
			3,413.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF200510	1/27/2012	7.59
			Dip Angle
			60.10
			Field Strength
			48,529

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
			(°)
			0.00



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Survey Program		Date 4/2/2012			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
80 9	7,455.6	Gyro #1 (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s	
7,476 0	13,844 0	MWD #1 (OH)	MWD	MWD - Standard	

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
0 0	0 00	0 00	0 0	-3,433 6	0 0	0 0	0 0	0 00	420,778 45	670,135 48
80 9	0 05	102 79	80 9	-3,352 7	0 0	0 0	0 0	0 06	420,778 44	670,135 52
175 1	0 09	10 44	175 1	-3,258 5	0 1	0 1	0 1	0 11	420,778 51	670,135 57
269 2	0 40	29 59	269 2	-3,164 4	0 4	0 3	0 4	0 34	420,778 87	670,135 75
363 4	0 18	33 26	363 4	-3,070 2	0 8	0 5	0 8	0 23	420,779 27	670,135 99
457 5	0 20	214 46	457 5	-2,976 1	0 8	0 5	0 8	0 40	420,779 26	670,135 98
460 0	0 21	212 71	460 0	-2,973 6	0 8	0 5	0 8	0 40	420,779 26	670,135 97
T/Rustler - T/Rustler										
551.6	0 55	188 71	551 6	-2,882 0	0 2	0 3	0 2	0 40	420,778 68	670,135 82
645.8	1 12	184 76	645 8	-2,787 8	-1 1	0 2	-1 1	0 61	420,777 32	670,135 67
740 0	1 47	186 49	740 0	-2,693 6	-3 3	0 0	-3 3	0 37	420,775 20	670,135 46
834 1	1 19	186 37	834 0	-2,599 6	-5 4	-0 3	-5 4	0 30	420,773 03	670,135 21
840 1	1 19	186 29	840 0	-2,593 6	-5 5	-0 3	-5 5	0 08	420,772 91	670,135 20
T/Salt - T/Salt										
928 3	1 12	185 02	928 2	-2,505 4	-7 3	-0 5	-7 3	0 08	420,771 14	670,135 03
1,022 4	1 09	176 50	1,022 3	-2,411 3	-9 1	-0 5	-9 1	0 18	420,769 33	670,135 00
1,116 6	1 10	180 21	1,116 5	-2,317 1	-10 9	-0 4	-10 9	0 08	420,767 53	670,135 05
1,210 7	0 72	173 12	1,210 6	-2,223 0	-12 4	-0 4	-12 4	0 42	420,766 04	670,135 12
1,304 8	0 43	145 62	1,304 7	-2,128 9	-13 3	-0 1	-13 3	0 42	420,765 16	670,135 39
1,399 0	0 37	152 52	1,398 9	-2,034 7	-13 9	0 2	-13 9	0 08	420,764 60	670,135 73
1,493 2	0 36	156 73	1,493 1	-1,940 5	-14 4	0 5	-14 4	0 03	420,764 06	670,135 99
1,587 3	0 21	141 09	1,587 2	-1,846 4	-14 8	0 7	-14 8	0 18	420,763 65	670,136 21



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Survey										
MD (usft)	Inc (°)	Azi.(azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
1,681.5	0.19	137.97	1,681.4	-1,752.2	-15.0	0.9	-15.0	0.02	420,763.40	670,136.42
1,775.6	0.14	139.15	1,775.5	-1,658.1	-15.3	1.1	-15.3	0.05	420,763.20	670,136.60
1,869.8	0.19	161.79	1,869.7	-1,563.9	-15.5	1.2	-15.5	0.09	420,762.96	670,136.73
1,963.9	0.19	128.52	1,963.8	-1,469.8	-15.7	1.4	-15.7	0.12	420,762.72	670,136.90
2,058.1	0.15	119.47	2,058.0	-1,375.6	-15.9	1.6	-15.9	0.05	420,762.56	670,137.13
2,152.2	0.14	112.76	2,152.1	-1,281.5	-16.0	1.9	-16.0	0.02	420,762.46	670,137.34
2,246.3	0.16	87.58	2,246.2	-1,187.4	-16.0	2.1	-16.0	0.07	420,762.42	670,137.58
2,340.5	0.15	128.30	2,340.4	-1,093.2	-16.1	2.3	-16.1	0.11	420,762.35	670,137.81
2,434.7	0.27	138.29	2,434.6	-999.0	-16.3	2.6	-16.3	0.13	420,762.10	670,138.05
2,528.8	0.25	170.83	2,528.7	-904.9	-16.7	2.7	-16.7	0.16	420,761.74	670,138.23
2,622.9	0.29	168.81	2,622.8	-810.8	-17.2	2.8	-17.2	0.04	420,761.30	670,138.31
2,717.1	0.21	162.91	2,717.0	-716.6	-17.5	2.9	-17.5	0.09	420,760.90	670,138.41
2,811.3	0.15	140.10	2,811.2	-622.4	-17.8	3.1	-17.8	0.10	420,760.64	670,138.54
2,905.4	0.33	97.63	2,905.3	-528.3	-17.9	3.4	-17.9	0.26	420,760.51	670,138.88
2,999.6	0.61	95.95	2,999.4	-434.2	-18.0	4.2	-18.0	0.30	420,760.42	670,139.65
3,093.7	0.67	95.90	3,093.5	-340.1	-18.1	5.2	-18.1	0.06	420,760.31	670,140.70
3,187.8	0.87	105.40	3,187.6	-246.0	-18.4	6.5	-18.4	0.25	420,760.07	670,141.93
3,282.0	0.87	109.83	3,281.8	-151.8	-18.8	7.8	-18.8	0.07	420,759.64	670,143.30
3,376.2	0.75	116.96	3,376.0	-57.6	-19.3	9.0	-19.3	0.17	420,759.11	670,144.52
3,470.3	0.80	123.89	3,470.1	36.5	-20.0	10.1	-20.0	0.11	420,758.47	670,145.61
3,564.4	0.93	139.78	3,564.2	130.6	-20.9	11.2	-20.9	0.29	420,757.52	670,146.65
3,658.6	1.01	137.63	3,658.4	224.8	-22.1	12.2	-22.1	0.09	420,756.32	670,147.70
3,752.8	0.72	113.68	3,752.6	319.0	-23.0	13.3	-23.0	0.49	420,755.47	670,148.81
3,846.9	0.58	85.20	3,846.7	413.1	-23.2	14.3	-23.2	0.37	420,755.27	670,149.82
3,941.1	0.65	123.32	3,940.9	507.3	-23.4	15.3	-23.4	0.43	420,755.02	670,150.74
4,035.2	0.87	129.35	4,035.0	601.4	-24.2	16.3	-24.2	0.25	420,754.27	670,151.74



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Survey											
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4,096.3	0.92	144.21	4,096.0	662.4	-24.9	16.9	-24.9	0.39	420,753.58	670,152.39	
B/Salt - B/Salt											
4,129.4	0.97	151.38	4,129.1	695.5	-25.3	17.2	-25.3	0.39	420,753.12	670,152.68	
4,223.5	0.96	137.84	4,223.2	789.6	-26.6	18.1	-26.6	0.24	420,751.84	670,153.59	
4,311.3	0.88	140.46	4,311.0	877.4	-27.7	19.0	-27.7	0.11	420,750.77	670,154.51	
T/Lamar - T/Lamar											
4,317.6	0.87	140.67	4,317.3	883.7	-27.8	19.1	-27.8	0.11	420,750.70	670,154.57	
4,349.3	0.85	142.03	4,349.0	915.4	-28.1	19.4	-28.1	0.10	420,750.33	670,154.87	
T/Ramsey - T/Ramsey											
4,411.8	0.80	144.96	4,411.5	977.9	-28.8	19.9	-28.8	0.10	420,749.61	670,155.40	
4,505.9	0.74	138.13	4,505.6	1,072.0	-29.8	20.7	-29.8	0.12	420,748.62	670,156.18	
4,600.1	0.73	151.97	4,599.8	1,166.2	-30.8	21.4	-30.8	0.19	420,747.63	670,156.87	
4,694.3	0.76	154.24	4,694.0	1,260.4	-31.9	21.9	-31.9	0.04	420,746.54	670,157.42	
4,788.4	0.67	156.02	4,788.1	1,354.5	-33.0	22.4	-33.0	0.10	420,745.48	670,157.92	
4,882.6	0.56	154.71	4,882.3	1,448.7	-33.9	22.9	-33.9	0.12	420,744.56	670,158.34	
4,976.7	0.48	141.71	4,976.4	1,542.8	-34.6	23.3	-34.6	0.15	420,743.83	670,158.78	
5,070.9	0.40	125.70	5,070.6	1,637.0	-35.1	23.8	-35.1	0.15	420,743.33	670,159.29	
5,165.0	0.33	121.56	5,164.7	1,731.1	-35.5	24.3	-35.5	0.08	420,743.00	670,159.79	
5,259.1	0.35	125.47	5,258.8	1,825.2	-35.8	24.8	-35.8	0.03	420,742.69	670,160.25	
5,353.3	0.26	129.49	5,353.0	1,919.4	-36.1	25.2	-36.1	0.10	420,742.39	670,160.65	
5,447.4	0.19	146.63	5,447.1	2,013.5	-36.3	25.4	-36.3	0.10	420,742.12	670,160.90	
5,541.6	0.17	168.13	5,541.3	2,107.7	-36.6	25.5	-36.6	0.07	420,741.85	670,161.02	
5,635.8	0.21	179.73	5,635.5	2,201.9	-36.9	25.6	-36.9	0.06	420,741.54	670,161.05	
5,729.9	0.33	196.02	5,729.6	2,296.0	-37.3	25.5	-37.3	0.15	420,741.11	670,160.97	
5,824.1	0.39	200.20	5,823.8	2,390.2	-37.9	25.3	-37.9	0.07	420,740.55	670,160.79	
5,918.2	0.61	192.70	5,917.8	2,484.2	-38.7	25.1	-38.7	0.24	420,739.76	670,160.57	
6,012.4	0.66	207.11	6,012.0	2,578.4	-39.7	24.7	-39.7	0.18	420,738.79	670,160.21	



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6,106.5	0.74	226.90	6,106.1	2,672.5	-40.6	24.0	-40.6	0.27	420,737.89	670,159.52
6,200.6	0.72	221.88	6,200.2	2,766.6	-41.4	23.2	-41.4	0.07	420,737.04	670,158.68
6,294.8	0.40	212.03	6,294.4	2,860.8	-42.1	22.6	-42.1	0.35	420,736.32	670,158.11
6,388.9	0.34	220.26	6,388.5	2,954.9	-42.6	22.3	-42.6	0.09	420,735.82	670,157.76
6,483.1	0.44	249.21	6,482.7	3,049.1	-43.0	21.8	-43.0	0.23	420,735.48	670,157.24
6,577.3	0.74	251.84	6,576.9	3,143.3	-43.3	20.8	-43.3	0.32	420,735.16	670,156.32
6,596.4	0.75	254.04	6,596.0	3,162.4	-43.4	20.6	-43.4	0.15	420,735.09	670,156.09
T/Lower Cherry Canyon - T/Lower Cherry Canyon										
6,671.4	0.78	262.25	6,671.0	3,237.4	-43.6	19.6	-43.6	0.15	420,734.89	670,155.11
6,765.6	0.85	269.73	6,765.2	3,331.6	-43.7	18.3	-43.7	0.14	420,734.80	670,153.78
6,859.7	1.18	267.76	6,859.3	3,425.7	-43.7	16.6	-43.7	0.35	420,734.76	670,152.11
6,953.9	1.23	259.19	6,953.5	3,519.9	-43.9	14.7	-43.9	0.20	420,734.53	670,150.15
7,048.0	1.35	253.56	7,047.5	3,613.9	-44.4	12.6	-44.4	0.19	420,734.03	670,148.09
7,142.1	1.32	249.45	7,141.6	3,708.0	-45.1	10.5	-45.1	0.11	420,733.33	670,146.01
7,236.3	1.35	244.66	7,235.8	3,802.2	-46.0	8.5	-46.0	0.12	420,732.48	670,144.00
7,330.4	1.23	242.70	7,329.9	3,896.3	-46.9	6.6	-46.9	0.14	420,731.54	670,142.10
7,424.6	1.00	245.45	7,424.0	3,990.4	-47.7	5.0	-47.7	0.25	420,730.73	670,140.45
7,455.6	0.93	246.60	7,455.0	4,021.4	-47.9	4.5	-47.9	0.23	420,730.52	670,139.97
7,476.0	0.88	265.26	7,475.4	4,041.8	-48.0	4.2	-48.0	1.46	420,730.44	670,139.67
7,508.0	2.64	310.17	7,507.4	4,073.8	-47.6	3.4	-47.6	6.59	420,730.90	670,138.86
KOP - 7508.0 'MD, 7507.4 'TVD, -47.6 'N, 3.4 'E										
7,540.0	5.89	315.71	7,539.3	4,105.7	-45.9	1.7	-45.9	10.23	420,732.55	670,137.15
7,570.0	9.76	317.64	7,569.0	4,135.4	-42.9	-1.1	-42.9	12.93	420,735.53	670,134.36
7,601.0	13.28	316.76	7,599.4	4,165.8	-38.4	-5.3	-38.4	11.37	420,740.07	670,130.15
7,632.0	17.24	317.20	7,629.3	4,195.7	-32.4	-10.9	-32.4	12.78	420,746.04	670,124.58
7,664.0	21.28	317.82	7,659.5	4,225.9	-24.6	-18.0	-24.6	12.64	420,753.82	670,117.46
7,695.0	23.13	317.73	7,688.2	4,254.6	-16.0	-25.9	-16.0	5.97	420,762.50	670,109.59



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7,726.0	25.94	316.76	7,716.4	4,282.8	-6.5	-34.6	-6.5	9.16	420,771.94	670,100.85	
7,758.0	27.87	315.62	7,745.0	4,311.4	3.9	-44.7	3.9	6.24	420,782.39	670,090.82	
7,789.0	31.39	314.04	7,771.9	4,338.3	14.7	-55.5	14.7	11.63	420,793.18	670,079.94	
7,819.0	34.82	313.16	7,797.0	4,363.4	26.0	-67.4	26.0	11.54	420,804.48	670,068.08	
7,851.0	38.51	314.13	7,822.7	4,389.1	39.2	-81.2	39.2	11.67	420,817.67	670,054.26	
7,882.0	41.68	314.30	7,846.4	4,412.8	53.1	-95.5	53.1	10.23	420,831.59	670,039.95	
7,914.0	44.41	315.27	7,869.8	4,436.2	68.5	-111.0	68.5	8.78	420,846.98	670,024.45	
7,945.0	47.66	316.15	7,891.3	4,457.7	84.5	-126.6	84.5	10.68	420,862.95	670,008.88	
7,975.0	51.35	316.59	7,910.8	4,477.2	101.0	-142.3	101.0	12.35	420,879.46	669,993.14	
8,007.0	54.96	317.03	7,930.0	4,496.4	119.7	-159.9	119.7	11.33	420,898.13	669,975.62	
8,038.0	58.21	315.62	7,947.0	4,513.4	138.4	-177.7	138.4	11.15	420,916.84	669,957.75	
8,057.8	61.41	316.88	7,957.0	4,523.4	150.8	-189.6	150.8	17.05	420,929.22	669,945.90	
T/Lwr Brushy Canyon 8A - T/Lwr Brushy Canyon 8A											
8,069.0	63.22	317.55	7,962.2	4,528.6	158.0	-196.3	158.0	17.05	420,936.48	669,939.18	
8,101.0	67.27	317.64	7,975.6	4,542.0	179.5	-215.9	179.5	12.66	420,957.93	669,919.59	
8,132.0	71.05	316.59	7,986.6	4,553.0	200.7	-235.6	200.7	12.60	420,979.15	669,899.87	
8,163.0	75.01	317.82	7,995.7	4,562.1	222.5	-255.7	222.5	13.33	421,000.91	669,879.74	
8,195.0	79.05	317.64	8,002.8	4,569.2	245.5	-276.7	245.5	12.64	421,023.98	669,858.76	
8,226.0	82.92	317.99	8,007.7	4,574.1	268.2	-297.3	268.2	12.53	421,046.66	669,838.21	
8,310.0	87.14	317.47	8,015.0	4,581.4	330.1	-353.6	330.1	5.06	421,108.57	669,781.93	
8,387.8	86.93	317.98	8,019.0	4,585.4	387.6	-405.8	387.6	0.71	421,166.03	669,729.70	
T/Lwr Brushy Canyon W Sand - T/Lwr Brushy Canyon W Sand											
8,470.0	86.70	318.52	8,023.6	4,590.0	448.8	-460.5	448.8	0.71	421,227.29	669,675.02	
8,565.0	86.97	319.93	8,028.8	4,595.2	520.7	-522.4	520.7	1.51	421,299.12	669,613.07	
8,660.0	88.46	318.87	8,032.6	4,599.0	592.7	-584.2	592.7	1.92	421,371.19	669,551.30	
8,755.0	90.13	316.59	8,033.8	4,600.2	663.0	-648.1	663.0	2.97	421,441.48	669,487.41	
LP - 8755.0 'MD, 8033.8 'TVD, 663.0 'N, -648.1 'E											
8,850.0	92.15	314.21	8,031.9	4,598.3	730.6	-714.8	730.6	3.29	421,509.10	669,420.73	



Pathfinder
PathfinderX & Y Report

PATHFINDER
A Schlumberger Company

Company: BOPCO, L.P.
Project: Eddy County(NAD27)
Site: Poker Lake Unit
Well: #303H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #303H
TVD Reference: KB = 20 6 @ 3433 6usft (Latshaw #4)
MD Reference: KB = 20 6 @ 3433 6usft (Latshaw #4)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
8,946 0	94 44	312.11	8,026 4	4,592 8	796 2	-784 7	796.2	3.23	421,574 65	669,350.83	
9,040 0	95 14	310 52	8,018 5	4,584 9	858 0	-855.0	858 0	1.84	421,636 49	669,280 47	
9,136 0	92 86	311 75	8,011 8	4,578 2	921 0	-927.1	921.0	2 70	421,699 48	669,208 35	
9,232 0	90.40	312 54	8,009.1	4,575.5	985 4	-998 3	985 4	2 69	421,763.87	669,137 21	
9,327 0	91.98	316 15	8,007 1	4,573.5	1,051 8	-1,066 2	1,051.8	4 15	421,830 24	669,069 30	
9,421 0	91 10	319 05	8,004 6	4,571.0	1,121.2	-1,129 5	1,121.2	3.22	421,899.63	669,005 94	
9,516 0	90 57	321 33	8,003.2	4,569 6	1,194.1	-1,190.4	1,194 1	2 46	421,972 59	668,945 13	
9,612 0	91 98	323 62	8,001 1	4,567 5	1,270 2	-1,248.8	1,270.2	2.80	422,048 70	668,886 68	
9,707 0	89 25	322 21	8,000 0	4,566 4	1,346 0	-1,306.1	1,346 0	3.23	422,124 47	668,829 40	
9,802 0	88 81	323 53	8,001.7	4,568.1	1,421.7	-1,363.4	1,421 7	1 46	422,200.20	668,772 07	
9,897 0	88 29	321 95	8,004 1	4,570 5	1,497 3	-1,420 9	1,497 3	1 75	422,275.78	668,714 57	
9,993 0	86 44	319 75	8,008 5	4,574 9	1,571.7	-1,481.4	1,571.7	2 99	422,350.15	668,654 03	
10,089 0	85 91	318 26	8,014 9	4,581.3	1,644 0	-1,544 3	1,644 0	1.64	422,422 44	668,591 20	
10,185 0	86 70	316 50	8,021 1	4,587.5	1,714 5	-1,609 1	1,714 5	2 01	422,492 93	668,526 33	
10,280 0	89 25	315 80	8,024 4	4,590 8	1,782 9	-1,674 9	1,782 9	2 78	422,561 39	668,460 57	
10,376 0	92.07	314.83	8,023 3	4,589 7	1,851.2	-1,742 4	1,851 2	3 11	422,629 63	668,393 07	
10,471 0	94 00	313 60	8,018 3	4,584 7	1,917 3	-1,810.4	1,917.3	2 41	422,695 79	668,325.08	
10,567 0	93 47	311 23	8,012 0	4,578 4	1,981.9	-1,881 1	1,981 9	2 52	422,760 39	668,254 36	
10,662 0	93 30	309 38	8,006 4	4,572 8	2,043 3	-1,953 4	2,043 3	1.95	422,821 74	668,182 04	
10,757 0	93 56	309 38	8,000.7	4,567.1	2,103 5	-2,026 7	2,103 5	0 27	422,881 90	668,108 75	
10,852 0	91 28	309 99	7,996 7	4,563 1	2,164 1	-2,099 8	2,164 1	2 48	422,942 51	668,035 71	
10,948 0	89 34	309 29	7,996 2	4,562.6	2,225 3	-2,173 7	2,225 3	2 15	423,003 75	667,961.79	
11,044 0	91 89	310.17	7,995 2	4,561 6	2,286 6	-2,247.5	2,286 6	2 81	423,065.10	667,887 97	
11,139 0	92.59	310 87	7,991 5	4,557.9	2,348 3	-2,319 7	2,348 3	1.04	423,126 77	667,815.81	
11,234 0	89 60	311 14	7,989 6	4,556 0	2,410 6	-2,391.3	2,410.6	3 16	423,189 09	667,744 13	
11,329 0	91.54	314 74	7,988 7	4,555.1	2,475 3	-2,460.9	2,475 3	4.30	423,253 79	667,674 61	
11,424 0	93 21	317 38	7,984 8	4,551 2	2,543 7	-2,526 7	2,543.7	3.29	423,322.13	667,608 75	



Pathfinder
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Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #303H
TVD Reference: KB = 20.6 @ 3433.6usft (Latshaw #4)
MD Reference: KB = 20.6 @ 3433.6usft (Latshaw #4)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
11,520.0	93.39	320.10	7,979.2	4,545.6	2,615.7	-2,589.9	2,615.7	2.83	423,394.16	667,545.55	
11,616.0	92.07	320.63	7,974.7	4,541.1	2,689.6	-2,651.1	2,689.6	1.48	423,468.01	667,484.38	
11,710.0	90.31	317.82	7,972.7	4,539.1	2,760.7	-2,712.5	2,760.7	3.53	423,539.17	667,423.01	
11,805.0	89.96	317.73	7,972.5	4,538.9	2,831.1	-2,776.3	2,831.1	0.38	423,609.52	667,359.17	
11,900.0	90.22	320.89	7,972.3	4,538.7	2,903.1	-2,838.2	2,903.1	3.34	423,681.54	667,297.24	
11,996.0	87.23	320.89	7,974.5	4,540.9	2,977.6	-2,898.8	2,977.6	3.11	423,756.00	667,236.71	
12,089.0	86.44	319.75	7,979.6	4,546.0	3,049.0	-2,958.1	3,049.0	1.49	423,827.47	667,177.42	
12,184.0	88.72	319.05	7,983.6	4,550.0	3,121.1	-3,019.8	3,121.1	2.51	423,899.53	667,115.65	
12,279.0	92.51	320.45	7,982.6	4,549.0	3,193.6	-3,081.2	3,193.6	4.25	423,972.02	667,054.29	
12,375.0	90.75	320.37	7,979.9	4,546.3	3,267.5	-3,142.3	3,267.5	1.84	424,045.96	666,993.13	
12,470.0	87.67	320.01	7,981.2	4,547.6	3,340.5	-3,203.2	3,340.5	3.26	424,118.92	666,932.32	
12,565.0	85.91	317.64	7,986.5	4,552.9	3,411.9	-3,265.6	3,411.9	3.10	424,190.31	666,869.89	
12,660.0	88.72	316.59	7,991.0	4,557.4	3,481.4	-3,330.2	3,481.4	3.16	424,259.84	666,805.31	
12,756.0	89.96	318.35	7,992.1	4,558.5	3,552.1	-3,395.1	3,552.1	2.24	424,330.57	666,740.43	
12,851.0	91.71	315.88	7,990.7	4,557.1	3,621.7	-3,459.7	3,621.7	3.19	424,400.17	666,675.79	
12,946.0	89.60	311.93	7,989.6	4,556.0	3,687.6	-3,528.1	3,687.6	4.71	424,466.02	666,607.37	
13,041.0	92.24	314.21	7,988.1	4,554.5	3,752.4	-3,597.5	3,752.4	3.67	424,530.88	666,537.99	
13,137.0	95.06	315.53	7,982.0	4,548.4	3,820.0	-3,665.4	3,820.0	3.24	424,598.46	666,470.10	
13,232.0	95.50	317.47	7,973.2	4,539.6	3,888.6	-3,730.5	3,888.6	2.09	424,667.07	666,404.98	
13,327.0	93.91	316.41	7,965.4	4,531.8	3,957.8	-3,795.1	3,957.8	2.01	424,736.25	666,340.34	
13,423.0	92.86	315.53	7,959.7	4,526.1	4,026.7	-3,861.7	4,026.7	1.43	424,805.15	666,273.74	
13,517.0	90.75	316.41	7,956.8	4,523.2	4,094.2	-3,927.0	4,094.2	2.43	424,872.69	666,208.44	
13,614.0	89.96	318.61	7,956.2	4,522.6	4,165.8	-3,992.6	4,165.8	2.41	424,944.21	666,142.93	
13,710.0	91.98	321.24	7,954.6	4,521.0	4,239.2	-4,054.3	4,239.2	3.45	425,017.65	666,081.14	
13,777.0	89.60	321.16	7,953.6	4,520.0	4,291.4	-4,096.3	4,291.4	3.55	425,069.86	666,039.16	
13,844.0	89.60	321.16	7,954.1	4,520.5	4,343.6	-4,138.3	4,343.6	0.00	425,122.04	665,997.15	
BHL - 13844.0 'MD, 7954.1 'TVD, 4343.6 'N, -4138.3 'E											



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

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
8,057.8	7,957.0	T/Lwr Brushy Canyon 8A		0.00	
460.0	460.0	T/Rustler		0.00	
4,311.3	4,311.0	T/Lamar		0.00	
8,387.8	8,019.0	T/Lwr Brushy Canyon W Sand		0.00	
6,596.4	6,596.0	T/Lower Cherry Canyon		0.00	
840.1	840.0	T/Salt		0.00	
6,596.4	6,596.0	T/Lower Cherry Canyon		0.00	
8,387.8	8,019.0	T/Lwr Brushy Canyon W Sand		0.00	
4,096.3	4,096.0	B/Salt		0.00	
460.0	460.0	T/Rustler		0.00	
8,057.8	7,957.0	T/Lwr Brushy Canyon 8A		0.00	
4,349.3	4,349.0	T/Ramsey		0.00	
4,311.3	4,311.0	T/Lamar		0.00	
4,349.3	4,349.0	T/Ramsey		0.00	
840.1	840.0	T/Salt		0.00	
4,096.3	4,096.0	B/Salt		0.00	

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,508.0	7,507.4	-47.6	3.4	KOP - 7508.0 'MD, 7507.4 'TVD, -47.6 'N, 3.4 'E
8,755.0	8,033.8	663.0	-648.1	LP - 8755.0 'MD, 8033.8 'TVD, 663.0 'N, -648.1 'E
13,844.0	7,954.1	4,343.6	-4,138.3	BHL - 13844.0 'MD, 7954.1 'TVD, 4343.6 'N, -4138.3 'E

Checked By _____ Approved By _____ Date: _____