



30-015-39392

BOPCO, L.P.

Eddy County(NAD27)

Poker Lake Unit

#325H

OH

Plan: Plan #1

Pathfinder X & Y Report

16 November, 2011

PATHFINDER®

A Schlumberger Company



Smith International, Inc.
Pathfinder X & Y Report

PATHFINDER
A Schlumberger Company

Company:	BOPCO, L.P.	Local Co-ordinate Reference:	Well #325H
Project:	Eddy County(NAD27)	TVD Reference:	KB = 22 @ 3383.0usft (Latshaw 3)
Site:	Poker Lake Unit	MD Reference:	KB = 22 @ 3383.0usft (Latshaw 3)
Well:	#325H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Project:	Eddy County(NAD27)	System Datum:	Mean Sea Level
Map System:	US State Plane 1927 (Exact solution)		
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

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

Well	#325H					
Well Position	+N/-S	0.0 usft	Northing:	438,315.902 usft	Latitude:	32° 12' 15.168 N
	+E/-W	0.0 usft	Easting:	642,055.496 usft	Longitude:	103° 52' 26.628 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	usft	Ground Level:	3,361.0 usft

Wellbore:	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	11/1/2011	7.67	60.13	48,572

Design:	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0 0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	325.22	

Survey Tool Program	Date	11/16/2011			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	14,355.3	Plan #1 (OH)	MWD	MWD - Standard	



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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
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Planned 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)	
0.0	0.00	0.00	0.0	-3,383.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50	
limit											
100.0	0.00	0.00	100.0	-3,283.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50	
200.0	0.00	0.00	200.0	-3,183.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50	
300.0	0.00	0.00	300.0	-3,083.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50	
400.0	0.00	0.00	400.0	-2,983.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50	
Top of Fresh Water											
500.0	0.00	0.00	500.0	-2,883.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50	
600.0	0.00	0.00	600.0	-2,783.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50	
700.0	0.00	0.00	700.0	-2,683.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50	
800.0	0.00	0.00	800.0	-2,583.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50	
900.0	0.00	0.00	900.0	-2,483.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50	
1,000.0	0.00	0.00	1,000.0	-2,383.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50	
1,100.0	0.00	0.00	1,100.0	-2,283.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50	
1,124.0	0.00	0.00	1,124.0	-2,259.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50	
Top of Rustler											
1,200.0	0.00	0.00	1,200.0	-2,183.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50	
1,300.0	0.00	0.00	1,300.0	-2,083.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50	
1,400.0	0.00	0.00	1,400.0	-1,983.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50	
1,500.0	0.00	0.00	1,500.0	-1,883.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50	
1,600.0	0.00	0.00	1,600.0	-1,783.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50	
1,700.0	0.00	0.00	1,700.0	-1,683.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50	
1,800.0	0.00	0.00	1,800.0	-1,583.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50	
1,900.0	0.00	0.00	1,900.0	-1,483.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50	
2,000.0	0.00	0.00	2,000.0	-1,383.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50	
2,100.0	0.00	0.00	2,100.0	-1,283.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50	
2,108.0	0.00	0.00	2,108.0	-1,275.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50	
Top of Salt											



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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
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2,200.0	0.00	0.00	2,200.0	-1,183.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
2,300.0	0.00	0.00	2,300.0	-1,083.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
2,400.0	0.00	0.00	2,400.0	-983.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
2,500.0	0.00	0.00	2,500.0	-883.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
2,600.0	0.00	0.00	2,600.0	-783.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
2,700.0	0.00	0.00	2,700.0	-683.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
2,800.0	0.00	0.00	2,800.0	-583.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
2,900.0	0.00	0.00	2,900.0	-483.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
3,000.0	0.00	0.00	3,000.0	-383.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
3,100.0	0.00	0.00	3,100.0	-283.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
3,200.0	0.00	0.00	3,200.0	-183.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
3,300.0	0.00	0.00	3,300.0	-83.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
3,400.0	0.00	0.00	3,400.0	17.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
3,500.0	0.00	0.00	3,500.0	117.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
3,572.0	0.00	0.00	3,572.0	189.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
Bottom of Salt										
3,600.0	0.00	0.00	3,600.0	217.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
3,700.0	0.00	0.00	3,700.0	317.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
3,800.0	0.00	0.00	3,800.0	417.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
3,832.0	0.00	0.00	3,832.0	449.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
Top of Lamar										
3,865.0	0.00	0.00	3,865.0	482.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
Top of Ramsey										
3,900.0	0.00	0.00	3,900.0	517.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
4,000.0	0.00	0.00	4,000.0	617.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
4,100.0	0.00	0.00	4,100.0	717.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
4,200.0	0.00	0.00	4,200.0	817.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50



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MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
4,300.0	0.00	0.00	4,300.0	917.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
4,400.0	0.00	0.00	4,400.0	1,017.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
4,500.0	0.00	0.00	4,500.0	1,117.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
4,600.0	0.00	0.00	4,600.0	1,217.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
4,700.0	0.00	0.00	4,700.0	1,317.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
4,800.0	0.00	0.00	4,800.0	1,417.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
4,900.0	0.00	0.00	4,900.0	1,517.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
5,000.0	0.00	0.00	5,000.0	1,617.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
5,100.0	0.00	0.00	5,100.0	1,717.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
5,200.0	0.00	0.00	5,200.0	1,817.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
5,300.0	0.00	0.00	5,300.0	1,917.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
5,400.0	0.00	0.00	5,400.0	2,017.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
5,500.0	0.00	0.00	5,500.0	2,117.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
5,600.0	0.00	0.00	5,600.0	2,217.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
5,700.0	0.00	0.00	5,700.0	2,317.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
5,800.0	0.00	0.00	5,800.0	2,417.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
5,900.0	0.00	0.00	5,900.0	2,517.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
5,978.0	0.00	0.00	5,978.0	2,595.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
Top of Lower Cherry Canyon										
6,000.0	0.00	0.00	6,000.0	2,617.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
6,100.0	0.00	0.00	6,100.0	2,717.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
6,200.0	0.00	0.00	6,200.0	2,817.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
6,300.0	0.00	0.00	6,300.0	2,917.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
6,400.0	0.00	0.00	6,400.0	3,017.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
6,500.0	0.00	0.00	6,500.0	3,117.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
6,600.0	0.00	0.00	6,600.0	3,217.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
6,700.0	0.00	0.00	6,700.0	3,317.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50



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Wellbore: OH
Design: Plan #1

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Planned 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)
6,800.0	0.00	0.00	6,800.0	3,417.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
6,900.0	0.00	0.00	6,900.0	3,517.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
7,000.0	0.00	0.00	7,000.0	3,617.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
7,100.0	0.00	0.00	7,100.0	3,717.0	0.0	0.0	0.0	0.00	438,315.90	642,055.50
7,144.5	0.00	0.00	7,144.5	3,761.5	0.0	0.0	0.0	0.00	438,315.90	642,055.50
KOP (325)										
7,150.0	0.66	325.22	7,150.0	3,767.0	0.0	0.0	0.0	12.00	438,315.93	642,055.48
7,175.0	3.66	325.22	7,175.0	3,792.0	0.8	-0.6	1.0	12.00	438,316.70	642,054.94
7,200.0	6.66	325.22	7,199.9	3,816.9	2.6	-1.8	3.2	12.00	438,318.55	642,053.66
7,225.0	9.66	325.22	7,224.6	3,841.6	5.6	-3.9	6.8	12.00	438,321.46	642,051.63
7,250.0	12.66	325.22	7,249.1	3,866.1	9.5	-6.6	11.6	12.00	438,325.44	642,048.87
7,275.0	15.66	325.22	7,273.4	3,890.4	14.6	-10.1	17.7	12.00	438,330.46	642,045.39
7,300.0	18.66	325.22	7,297.3	3,914.3	20.6	-14.3	25.1	12.00	438,336.51	642,041.18
7,325.0	21.66	325.22	7,320.7	3,937.7	27.7	-19.2	33.7	12.00	438,343.59	642,036.27
7,350.0	24.66	325.22	7,343.7	3,960.7	35.8	-24.8	43.5	12.00	438,351.66	642,030.66
7,375.0	27.66	325.22	7,366.2	3,983.2	44.8	-31.1	54.6	12.00	438,360.72	642,024.37
7,400.0	30.66	325.22	7,388.0	4,005.0	54.8	-38.1	66.7	12.00	438,370.72	642,017.42
7,425.0	33.66	325.22	7,409.1	4,026.1	65.7	-45.7	80.0	12.00	438,381.65	642,009.83
7,450.0	36.66	325.22	7,429.6	4,046.6	77.6	-53.9	94.4	12.00	438,393.47	642,001.62
7,463.1	38.23	325.22	7,440.0	4,057.0	84.1	-58.4	102.4	12.00	438,400.02	641,997.07
Top of lower Brushy Canyon 8A										
7,475.0	39.66	325.22	7,449.2	4,066.2	90.3	-62.7	109.9	12.00	438,406.15	641,992.81
7,500.0	42.66	325.22	7,468.1	4,085.1	103.8	-72.1	126.3	12.00	438,419.66	641,983.43
7,525.0	45.66	325.22	7,486.0	4,103.0	118.1	-82.0	143.7	12.00	438,433.97	641,973.49
7,550.0	48.66	325.22	7,503.0	4,120.0	133.1	-92.5	162.1	12.00	438,449.02	641,963.04
7,575.0	51.66	325.22	7,519.0	4,136.0	148.9	-103.4	181.3	12.00	438,464.78	641,952.09
7,600.0	54.66	325.22	7,534.0	4,151.0	165.3	-114.8	201.3	12.00	438,481.21	641,940.68



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7,625.0	57.66	325.22	7,547.9	4,164.9	182.4	-126.7	222.0	12.00	438,498.27	641,928.84	
7,650.0	60.66	325.22	7,560.7	4,177.7	200.0	-138.9	243.5	12.00	438,515.89	641,916.59	
7,675.0	63.66	325.22	7,572.4	4,189.4	218.1	-151.5	265.6	12.00	438,534.05	641,903.98	
7,700.0	66.66	325.22	7,582.9	4,199.9	236.8	-164.5	288.3	12.00	438,552.68	641,891.04	
7,713.3	68.25	325.22	7,588.0	4,205.0	246.8	-171.4	300.5	12.00	438,562.75	641,884.05	
Top of lower Brushy Canyon Y Sand											
7,725.0	69.65	325.22	7,592.2	4,209.2	255.8	-177.7	311.5	12.00	438,571.73	641,877.81	
7,750.0	72.65	325.22	7,600.3	4,217.3	275.3	-191.2	335.1	12.00	438,591.17	641,864.31	
7,775.0	75.65	325.22	7,607.1	4,224.1	295.0	-204.9	359.2	12.00	438,610.92	641,850.60	
7,800.0	78.65	325.22	7,612.7	4,229.7	315.0	-218.8	383.6	12.00	438,630.93	641,836.69	
7,825.0	81.65	325.22	7,616.9	4,233.9	335.3	-232.9	408.2	12.00	438,651.16	641,822.64	
7,850.0	84.65	325.22	7,619.9	4,236.9	355.6	-247.0	433.0	12.00	438,671.55	641,808.49	
7,875.0	87.65	325.22	7,621.6	4,238.6	376.1	-261.2	458.0	12.00	438,692.03	641,794.26	
7,894.6	90.00	325.22	7,622.0	4,239.0	392.2	-272.4	477.5	11.99	438,708.10	641,783.10	
EOC (325)											
7,900.0	89.97	325.22	7,622.0	4,239.0	396.7	-275.5	482.9	0.47	438,712.56	641,780.00	
8,000.0	89.51	325.22	7,622.5	4,239.5	478.8	-332.5	582.9	0.47	438,794.69	641,722.96	
8,092.5	89.07	325.23	7,623.6	4,240.6	554.7	-385.3	675.4	0.47	438,870.64	641,670.23	
8,100.0	89.07	325.23	7,623.7	4,240.7	560.9	-389.6	682.9	0.00	438,876.83	641,665.93	
8,117.1	89.07	325.23	7,624.0	4,241.0	574.9	-399.3	700.0	0.00	438,890.85	641,656.20	
TGT #1(325)											
8,160.1	90.97	325.22	7,624.0	4,241.0	610.3	-423.8	743.0	4.42	438,926.17	641,631.67	
8,200.0	90.97	325.22	7,623.3	4,240.3	643.1	-446.6	782.9	0.00	438,958.96	641,608.90	
8,300.0	90.97	325.22	7,621.6	4,238.6	725.2	-503.6	882.9	0.00	439,041.08	641,551.86	
8,400.0	90.97	325.22	7,619.9	4,236.9	807.3	-560.7	982.9	0.00	439,123.20	641,494.83	
8,500.0	90.97	325.22	7,618.2	4,235.2	889.4	-617.7	1,082.9	0.00	439,205.33	641,437.79	
8,600.0	90.97	325.22	7,616.5	4,233.5	971.5	-674.7	1,182.9	0.00	439,287.45	641,380.76	



Smith International, Inc.
Pathfinder X & Y Report

PATHFINDER
A Schlumberger Company

Company:	BOPCO, L.P.	Local Co-ordinate Reference:	Well #325H
Project:	Eddy County(NAD27)	TVD Reference:	KB = 22 @ 3383.0usft (Latshaw 3)
Site:	Poker Lake Unit	MD Reference:	KB = 22 @ 3383.0usft (Latshaw 3)
Well:	#325H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned 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)
8,700.0	90.97	325.22	7,614.8	4,231.8	1,053.7	-731.8	1,282.9	0.00	439,369.57	641,323.72
8,800.0	90.97	325.22	7,613.1	4,230.1	1,135.8	-788.8	1,382.8	0.00	439,451.70	641,266.69
8,900.0	90.97	325.22	7,611.4	4,228.4	1,217.9	-845.8	1,482.8	0.00	439,533.82	641,209.65
9,000.0	90.97	325.22	7,609.7	4,226.7	1,300.0	-902.9	1,582.8	0.00	439,615.94	641,152.62
9,100.0	90.97	325.22	7,608.0	4,225.0	1,382.2	-959.9	1,682.8	0.00	439,698.06	641,095.59
9,200.0	90.97	325.22	7,606.3	4,223.3	1,464.3	-1,016.9	1,782.8	0.00	439,780.19	641,038.55
9,300.0	90.97	325.22	7,604.6	4,221.6	1,546.4	-1,074.0	1,882.8	0.00	439,862.31	640,981.52
9,400.0	90.97	325.22	7,603.0	4,220.0	1,628.5	-1,131.0	1,982.8	0.00	439,944.43	640,924.48
9,500.0	90.97	325.22	7,601.3	4,218.3	1,710.7	-1,188.0	2,082.7	0.00	440,026.56	640,867.45
9,600.0	90.97	325.22	7,599.6	4,216.6	1,792.8	-1,245.1	2,182.7	0.00	440,108.68	640,810.41
9,700.0	90.97	325.22	7,597.9	4,214.9	1,874.9	-1,302.1	2,282.7	0.00	440,190.80	640,753.38
9,800.0	90.97	325.22	7,596.2	4,213.2	1,957.0	-1,359.2	2,382.7	0.00	440,272.93	640,696.34
9,900.0	90.97	325.22	7,594.5	4,211.5	2,039.1	-1,416.2	2,482.7	0.00	440,355.05	640,639.31
10,000.0	90.97	325.22	7,592.8	4,209.8	2,121.3	-1,473.2	2,582.7	0.00	440,437.17	640,582.27
10,100.0	90.97	325.22	7,591.1	4,208.1	2,203.4	-1,530.3	2,682.7	0.00	440,519.29	640,525.24
10,200.0	90.97	325.22	7,589.4	4,206.4	2,285.5	-1,587.3	2,782.6	0.00	440,601.42	640,468.21
10,300.0	90.97	325.22	7,587.7	4,204.7	2,367.6	-1,644.3	2,882.6	0.00	440,683.54	640,411.17
10,400.0	90.97	325.22	7,586.0	4,203.0	2,449.8	-1,701.4	2,982.6	0.00	440,765.66	640,354.14
10,500.0	90.97	325.22	7,584.3	4,201.3	2,531.9	-1,758.4	3,082.6	0.00	440,847.79	640,297.10
10,517.4	90.97	325.22	7,584.0	4,201.0	2,546.2	-1,768.3	3,100.0	0.00	440,862.08	640,287.17
TGT #2(325)										
10,535.9	90.60	325.22	7,583.7	4,200.7	2,561.4	-1,778.9	3,118.5	2.00	440,877.30	640,276.60
10,600.0	90.60	325.22	7,583.1	4,200.1	2,614.0	-1,815.4	3,182.6	0.00	440,929.91	640,240.06
10,700.0	90.60	325.22	7,582.0	4,199.0	2,696.1	-1,872.5	3,282.6	0.00	441,012.04	640,183.02
10,800.0	90.60	325.22	7,581.0	4,198.0	2,778.3	-1,929.5	3,382.6	0.00	441,094.17	640,125.98
10,900.0	90.60	325.22	7,579.9	4,196.9	2,860.4	-1,986.6	3,482.6	0.00	441,176.31	640,068.94
11,000.0	90.60	325.22	7,578.9	4,195.9	2,942.5	-2,043.6	3,582.6	0.00	441,258.44	640,011.90



Smith International, Inc.
Pathfinder X & Y Report

PATHFINDER
A Schlumberger Company

Company: BOPCO, L.P.
Project: Eddy County(NAD27)
Site: Poker Lake Unit
Well: #325H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:
Well #325H
KB = 22 @ 3383.0usft (Latshaw 3)
KB = 22 @ 3383.0usft (Latshaw 3)
Grid
Minimum Curvature
EDM 5000.1 Single User Db

Planned 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)
11,100.0	90.60	325.22	7,577.8	4,194.8	3,024.7	-2,100.6	3,682.6	0.00	441,340.57	639,954.87
11,200.0	90.60	325.22	7,576.8	4,193.8	3,106.8	-2,157.7	3,782.6	0.00	441,422.70	639,897.83
11,300.0	90.60	325.22	7,575.7	4,192.7	3,188.9	-2,214.7	3,882.5	0.00	441,504.83	639,840.79
11,400.0	90.60	325.22	7,574.7	4,191.7	3,271.1	-2,271.7	3,982.5	0.00	441,586.96	639,783.75
11,500.0	90.60	325.22	7,573.6	4,190.6	3,353.2	-2,328.8	4,082.5	0.00	441,669.09	639,726.71
11,600.0	90.60	325.22	7,572.6	4,189.6	3,435.3	-2,385.8	4,182.5	0.00	441,751.22	639,669.67
11,700.0	90.60	325.22	7,571.5	4,188.5	3,517.4	-2,442.9	4,282.5	0.00	441,833.35	639,612.63
11,800.0	90.60	325.22	7,570.5	4,187.5	3,599.6	-2,499.9	4,382.5	0.00	441,915.48	639,555.59
11,900.0	90.60	325.22	7,569.4	4,186.4	3,681.7	-2,556.9	4,482.5	0.00	441,997.61	639,498.55
12,000.0	90.60	325.22	7,568.4	4,185.4	3,763.8	-2,614.0	4,582.5	0.00	442,079.74	639,441.51
12,100.0	90.60	325.22	7,567.3	4,184.3	3,846.0	-2,671.0	4,682.5	0.00	442,161.87	639,384.47
12,200.0	90.60	325.22	7,566.3	4,183.3	3,928.1	-2,728.1	4,782.5	0.00	442,244.00	639,327.43
12,300.0	90.60	325.22	7,565.2	4,182.2	4,010.2	-2,785.1	4,882.5	0.00	442,326.13	639,270.39
12,400.0	90.60	325.22	7,564.2	4,181.2	4,092.4	-2,842.1	4,982.5	0.00	442,408.26	639,213.35
12,417.5	90.60	325.22	7,564.0	4,181.0	4,106.7	-2,852.1	5,000.0	0.00	442,422.64	639,203.36
TGT #3(325)										
12,418.1	90.59	325.23	7,564.0	4,181.0	4,107.2	-2,852.5	5,000.6	2.00	442,423.12	639,203.03
12,500.0	90.59	325.23	7,563.1	4,180.1	4,174.5	-2,899.2	5,082.5	0.00	442,490.40	639,156.32
12,600.0	90.59	325.23	7,562.1	4,179.1	4,256.6	-2,956.2	5,182.5	0.00	442,572.53	639,099.29
12,700.0	90.59	325.23	7,561.1	4,178.1	4,338.8	-3,013.2	5,282.5	0.00	442,654.67	639,042.26
12,800.0	90.59	325.23	7,560.1	4,177.1	4,420.9	-3,070.3	5,382.5	0.00	442,736.80	638,985.23
12,900.0	90.59	325.23	7,559.0	4,176.0	4,503.0	-3,127.3	5,482.5	0.00	442,818.94	638,928.20
13,000.0	90.59	325.23	7,558.0	4,175.0	4,585.2	-3,184.3	5,582.5	0.00	442,901.08	638,871.16
13,100.0	90.59	325.23	7,557.0	4,174.0	4,667.3	-3,241.4	5,682.5	0.00	442,983.21	638,814.13
13,200.0	90.59	325.23	7,555.9	4,172.9	4,749.4	-3,298.4	5,782.4	0.00	443,065.35	638,757.10
13,300.0	90.59	325.23	7,554.9	4,171.9	4,831.6	-3,355.4	5,882.4	0.00	443,147.49	638,700.07
13,400.0	90.59	325.23	7,553.9	4,170.9	4,913.7	-3,412.5	5,982.4	0.00	443,229.62	638,643.04



Smith International, Inc.
Pathfinder X & Y Report

PATHFINDER
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Company:	BOPCO, L.P.	Local Co-ordinate Reference:	Well #325H
Project:	Eddy County(NAD27)	TVD Reference:	KB = 22 @ 3383.0usft (Latshaw 3)
Site:	Poker Lake Unit	MD Reference:	KB = 22 @ 3383.0usft (Latshaw 3)
Well:	#325H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned 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)
13,500.0	90.59	325.23	7,552.8	4,169.8	4,995.9	-3,469.5	6,082.4	0.00	443,311.76	638,586.01
13,600.0	90.59	325.23	7,551.8	4,168.8	5,078.0	-3,526.5	6,182.4	0.00	443,393.90	638,528.98
13,700.0	90.59	325.23	7,550.8	4,167.8	5,160.1	-3,583.5	6,282.4	0.00	443,476.03	638,471.95
13,800.0	90.59	325.23	7,549.7	4,166.7	5,242.3	-3,640.6	6,382.4	0.00	443,558.17	638,414.92
13,900.0	90.59	325.23	7,548.7	4,165.7	5,324.4	-3,697.6	6,482.4	0.00	443,640.31	638,357.89
14,000.0	90.59	325.23	7,547.7	4,164.7	5,406.5	-3,754.6	6,582.4	0.00	443,722.44	638,300.86
14,100.0	90.59	325.23	7,546.6	4,163.6	5,488.7	-3,811.7	6,682.4	0.00	443,804.58	638,243.82
14,200.0	90.59	325.23	7,545.6	4,162.6	5,570.8	-3,868.7	6,782.4	0.00	443,886.72	638,186.79
14,300.0	90.59	325.23	7,544.6	4,161.6	5,653.0	-3,925.7	6,882.4	0.00	443,968.85	638,129.76
14,355.3	90.59	325.23	7,544.0	4,161.0	5,698.4	-3,957.3	6,937.7	0.00	444,014.30	638,098.21
PBHL (#325H)										

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,865.0	3,865.0	Top of Ramsey		0.00	
1,124.0	1,124.0	Top of Rustler		0.00	
400.0	400.0	Top of Fresh Water		0.00	
5,978.0	5,978.0	Top of Lower Cherry Canyon		0.00	
3,572.0	3,572.0	Bottom of Salt		0.00	
3,832.0	3,832.0	Top of Lamar		0.00	
7,463.1	7,440.0	Top of lower Brushy Canyon 8A		0.00	
7,713.3	7,588.0	Top of lower Brushy Canyon Y Sand		0.00	
2,108.0	2,108.0	Top of Salt		0.00	

Checked By: _____	Approved By: _____	Date: _____
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