



30-015-37646

BOPCO, L.P.

Eddy County(NAD27)

Poker Lake Unit

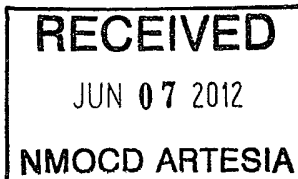
#303H

OH

Design: OH

PathfinderX & Y Report

02 April, 2012



PATHFINDER[®]

A Schlumberger Company



Pathfinder
PathfinderX & Y Report

PATHFINDER
A Schlumberger Company

Company:	BOPCO, L P	Local Co-ordinate Reference:	Well #303H
Project:	Eddy County(NAD27)	TVD Reference:	KB = 20 6 @ 3433 6usft (Latshaw #4)
Site:	Poker Lake Unit	MD Reference:	KB = 20 6 @ 3433 6usft (Latshaw #4)
Well:	#303H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	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	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	#303H					
Well Position	+N/-S	0 0 usft	Northing:	420,778 451 usft	Latitude:	32° 9' 20 313 N
	+E/-W	0 0 usft	Easting:	670,135 483 usft	Longitude:	103° 47' 0 862 W
Position Uncertainty	0 0 usft		Wellhead Elevation:	usft	Ground Level:	3,413 0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	1/27/2012	7 59	60 10	48,529

Design:		OH			
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	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											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
4,096 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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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
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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)	
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	



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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	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
PathfinderX & Y Report

PATHFINDER
A Schlumberger Company

Company:	BOPCO, L P	Local Co-ordinate Reference:	Well #303H
Project:	Eddy County(NAD27)	TVD Reference:	KB = 20 6 @ 3433 6usft (Latshaw #4)
Site:	Poker Lake Unit	MD Reference:	KB = 20 6 @ 3433 6usft (Latshaw #4)
Well:	#303H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	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											



Pathfinder
PathfinderX & Y Report

PATHFINDER
A Schlumberger Company

Company:	BOPCO, L P	Local Co-ordinate Reference:	Well #303H
Project:	Eddy County(NAD27)	TVD Reference:	KB = 20 6 @ 3433 6usft (Latshaw #4)
Site:	Poker Lake Unit	MD Reference:	KB = 20 6 @ 3433 6usft (Latshaw #4)
Well:	#303H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	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 _____

Schlumberger

Company: **Bopco, L.P.**

Well: **Poker Lake Unit #303H**

Field: **Poker Lake South (Delaware)**

COUNTY: **Eddy** STATE: **New Mexico**

COUNTY: Eddy	Field: Poker Lake South (Delaware)	Location: 1264' FSL & 2310' FWL	Well: Poker Lake Unit #303H	Company: Bopco, L.P.	Platform Express							
					Three Detector Litho-Density							
					Compensated Neutron							
					1264' FSL & 2310' FWL		Elev.: K.B. 3435.00 ft G.L. 3413.00 ft D.F. 3434.00 ft					
LOCATION					Permanent Datum: <u>Ground Level</u>		Elev.: <u>3413.00 ft</u>					
					Log Measured From: <u>Kelly Bushing</u>		22.00 ft above Perm. Datum					
					Drilling Measured From: <u>Kelly Bushing</u>							
					API Serial No. 30-015-37646		SECTION 4		TOWNSHIP 25S		RANGE 31E	
Logging Date					17-Mar-2012							
Run Number					One							
Depth Driller					8387 ft							
Schlumberger Depth					7789 ft							
Bottom Log Interval					7771 ft							
Top Log Interval					100 ft							
Casing Driller Size @ Depth					9.625 in @ 4319 ft							
Casing Schlumberger					4321 ft							
Bit Size					8.750 in							
Type Fluid In Hole					Brine / Starch / Salt Gel							
MUD	Density		Viscosity		8.65 lbm/gal		15 s					
	Fluid Loss		PH				9					
	Source Of Sample				Circulation Tank							
RM @ Measured Temperature					0.160 ohm.m		@ 72 degF		@			
RMF @ Measured Temperature					0.125 ohm.m		@ 72 degF		@			
RMC @ Measured Temperature							@		@			
Source RMF					RMC		Measured					
RM @ MRT					RMF @ MRT		0.096 @ 125		0.075 @ 125		@	
Maximum Recorded Temperatures					125 degF							
Circulation Stopped					Time		17-Mar-2012		8:00			
Logger On Bottom					Time		17-Mar-2012		21:30			
Unit Number					Location		2323 Roswell, N.M.					
Recorded By					Brian Hartel							
Witnessed By					Larry Ludwick							

Schlumberger

Company: Bopco, L.P.

Well: Poker Lake Unit #303H

Field: Poker Lake South (Delaware)

COUNTY: Eddy STATE: New Mexico

COUNTY: Eddy Field: Poker Lake South (Delaware) Location: 1264' FSL & 2310' FWL Well: Poker Lake Unit #303H Company: Bopco, L.P.	Platform Express			
	Array Induction Tool			
	Micro-CFL / Gamma Ray			
	1264' FSL & 2310' FWL		Elev.: K.B. 3435.00 ft G.L. 3413.00 ft D.F. 3434.00 ft	
	Permanent Datum: <u>Ground Level</u> Log Measured From: <u>Kelly Bushing</u> Drilling Measured From: <u>Kelly Bushing</u>		Elev.: <u>3413.00 ft</u> 22.00 ft above Perm Datum	
API Serial No. 30-015-37646		SECTION 4	TOWNSHIP 25S	RANGE 31E
Logging Date		17-Mar-2012		
Run Number		One		
Depth Driller		8387 ft		
Schlumberger Depth		7789 ft		
Bottom Log Interval		7789 ft		
Top Log Interval		4321 ft		
Casing Driller Size @ Depth		9.625 in @ 4319 ft		
Casing Schlumberger		4321 ft		
Bit Size		8.750 in		
Type Fluid In Hole		Brine / Starch / Salt Gel		
MUD	Density	Viscosity	8.65 lbm/gal	15 s
	Fluid Loss	PH	9	
	Source Of Sample		Circulation Tank	
	RM @ Measured Temperature		0.160 ohm.m @ 72 degF	
RMF @ Measured Temperature		0.125 ohm.m @ 72 degF		
RMC @ Measured Temperature		@		
Source RMF RMC		Measured		
RM @ MRT RMF @ MRT		0.096 @ 125 0.075 @ 125		
Maximum Recorded Temperatures		125 degF		
Circulation Stopped Time		17-Mar-2012 8:00		
Logger On Bottom Time		17-Mar-2012 21:30		
Unit Number Location		2323 Roswell, N.M.		
Recorded By		Brian Hartel		
Witnessed By		Larry Ludwick		

Schlumberger

Company: **Bopco, L.P.**

Well: **Poker Lake Unit #303H**

Field: **Poker Lake South (Delaware)**

COUNTY: **Eddy** STATE: **New Mexico**

COUNTY: Eddy Field: Poker Lake South (Delaware) Location: 1264' FSL & 2310' FWL Well: Poker Lake Unit #303H Company: Bopco, L.P.	Caliper Log				
	LOCATION	1264' FSL & 2310' FWL		Elev.: K.B. 3435.00 ft G.L. 3413.00 ft D.F. 3434.00 ft	
		Permanent Datum: <u>Ground Level</u>		Elev.: <u>3413.00 ft</u>	
		Log Measured From: <u>Kelly Bushing</u>		22.00 ft above Perm. Datum	
		Drilling Measured From: <u>Kelly Bushing</u>			
	API Serial No. 30-015-37646		SECTION 4	TOWNSHIP 25S	RANGE 31E
MUD	Logging Date		17-Mar-2012		
	Run Number		One		
	Depth Driller		8387 ft		
	Schlumberger Depth		7789 ft		
	Bottom Log Interval		7789 ft		
	Top Log Interval		4319 ft		
	Casing Driller Size @ Depth		9.625 in @ 4319 ft		@
	Casing Schlumberger		4321 ft		
	Bit Size		8.750 in		
	Type Fluid In Hole		Brine / Starch / Salt Gel		
	Density	Viscosity	8.65 lbm/gal	15 s	
	Fluid Loss	PH		9	
	Source Of Sample		Circulation Tank		
	RM @ Measured Temperature		0.160 ohm.m @ 72 degF		@
	RMF @ Measured Temperature		0.125 ohm.m @ 72 degF		@
	RMC @ Measured Temperature		@		@
	Source RMF	RMC	Measured		
	RM @ MRT	RMF @ MRT	0.096 @ 125	0.075 @ 125	@ @
	Maximum Recorded Temperatures		125 degF		
	Circulation Stopped	Time	17-Mar-2012	8:00	
Logger On Bottom	Time	17-Mar-2012	21:30		
Unit Number	Location	2323	Roswell, N.M.		
Recorded By		Brian Hartel			
Witnessed By		Larry Ludwick			