



COG Operating LLC

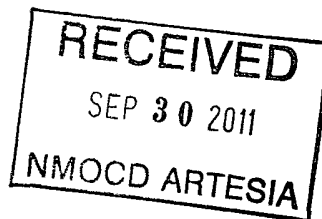
Eddy County (NAD83)
Rabbit Hunter 10 State
#2H
OH

30-015-39038

Survey: Survey #3

PathFinder X & Y

25 August, 2011



PATHFINDER[®]
A Schlumberger Company



Project: Eddy County (NAD83)
Site: Rabbit Hunter 10 State
Well: #2H
Wellbore: OH
Plan: Plan #4 (#2H/OH)



A Schlumberger Company

WELL DETAILS: #2H

Ground Elevation 2992.10
RKB Elevation 17' RKB - 2992.10' GL @ 3009 10ft (Patriot #2)
Rig Name Patriot #2

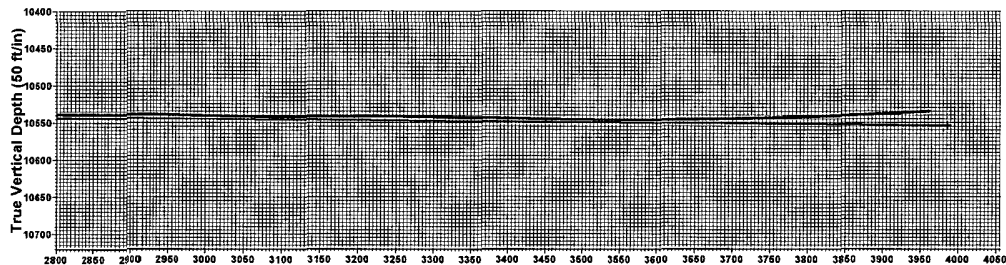
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	382622.55	622008.41	32° 3' 5.9107346 N	104° 4' 22.6161068 W

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

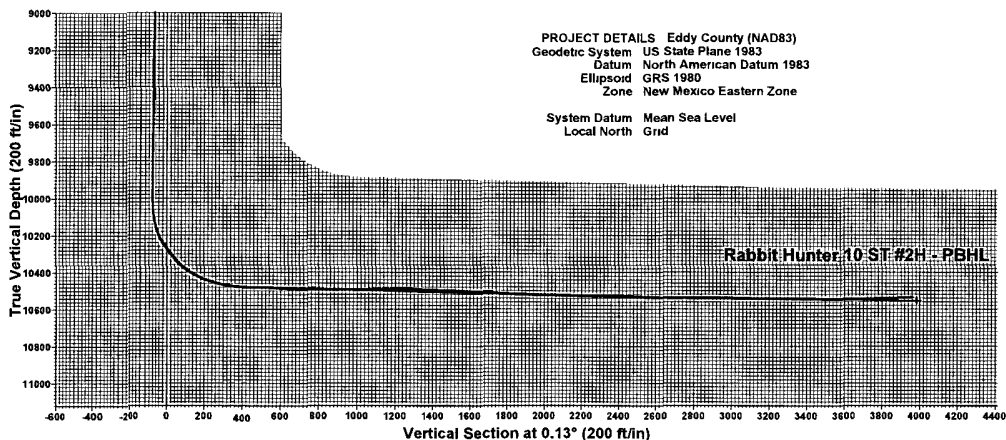
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Rabbit Hunter 10 ST #2H - PBHL	10554.00	3985.81	8.88	386608.36	622017.29	Point

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec
1	9900.00	1.43	275.51	9898.07	-77.99	-59.08	0.00	0.00	-78.12
2	10000.00	1.50	278.54	9998.03	-77.68	-61.62	0.10	49.42	-77.82
3	10008.35	1.50	278.54	10006.38	-77.65	-61.83	0.00	0.00	-77.78
4	10744.34	88.50	1.60	10482.02	-387.47	-60.89	12.00	83.10	-387.34
5	12998.52	88.50	1.60	10541.03	2640.00	2.02	0.00	0.00	2640.00
6	13081.86	89.48	0.25	10542.49	2723.32	3.37	2.00	-54.03	2723.32
7	14344.42	89.48	0.25	10553.95	3985.81	8.88	0.00	0.00	3985.82



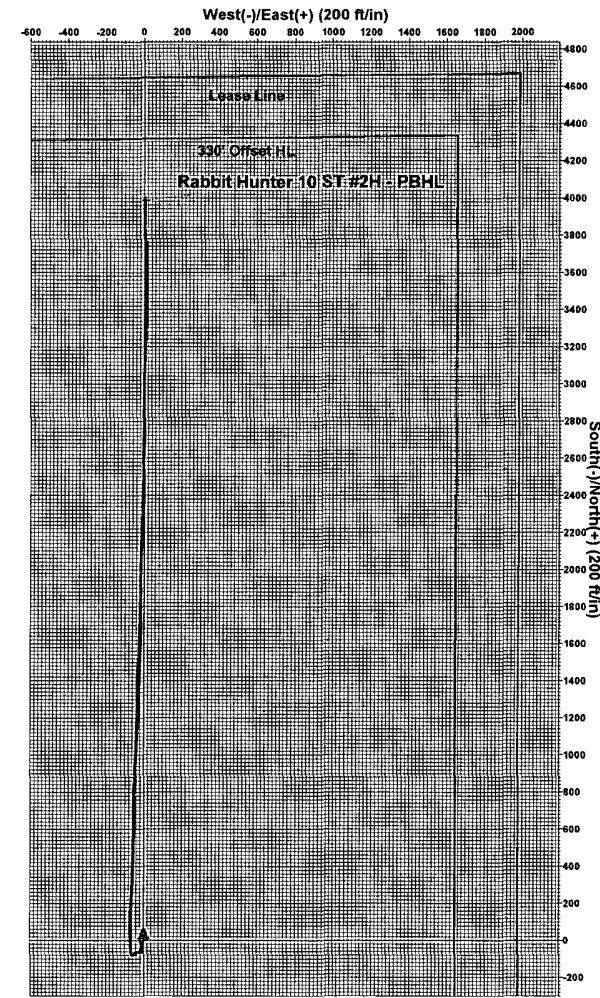
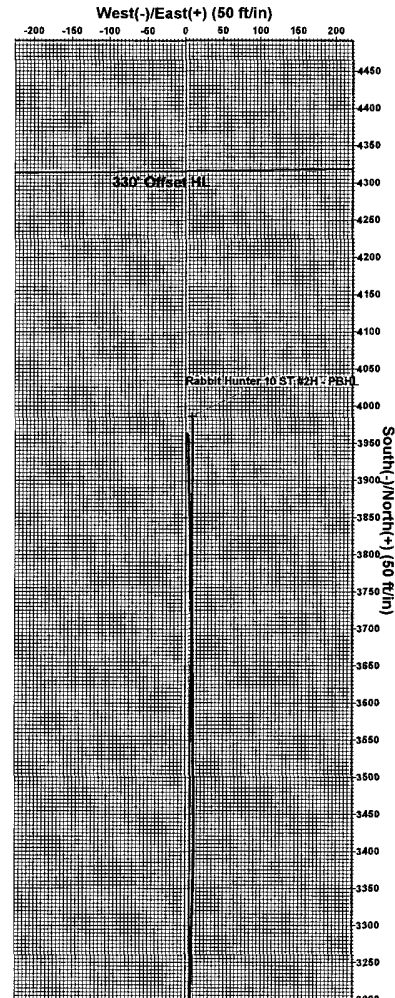
Vertical Section at 0.13° (50 ft/in)



Vertical Section at 0.13° (200 ft/in)

PROJECT DETAILS Eddy County (NAD83)
Geodetic System US State Plane 1983
Datum North American Datum 1983
Ellipsoid GRS 1980
Zone New Mexico Eastern Zone

System Datum Mean Sea Level
Local North Grid



Azimuths to Grid North
True North: -0.14°
Magnetic North: 7.63°

Magnetic Field
Strength: 48481.2 nT
Dip Angle: 59.96°
Date: 8/14/2011
Model: IGRF200510

EOW PVA

Plan Plan #4 (#2H/OH)

Created By James Anderson Date 9 52, August 25 2011



PathFinder A Schlumberger Company

PathFinder X & Y



A Schlumberger Company

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Eddy County (NAD83)	TVD Reference:	17' RKB - 2992.10' GL @ 3009.10ft (Patriot #2)
Site:	Rabbit Hunter 10 State	MD Reference:	17' RKB - 2992.10' GL @ 3009.10ft (Patriot #2)
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	1 Smith DB

Project	Eddy County (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Rabbit Hunter 10 State			
Site Position:		Northing:		382,622.55 ft	
From: Map		Easting:		622,008.41 ft	
Position Uncertainty: 0.00 ft		Slot Radius:		"	
				Latitude: 32° 3' 5.9107346 N	
				Longitude: 104° 4' 22.6161068 W	
				Grid Convergence: 0.14 °	

Well	#2H					
Well Position	+N/-S	0.00 ft	Northing:	382,622.55 ft	Latitude:	32° 3' 5.9107346 N
	+E/-W	0.00 ft	Easting:	622,008.41 ft	Longitude:	104° 4' 22.6161068 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	2,992.10 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	8/14/2011	7.77	59.96	48.481

Design		OH			
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.00	0.00	0.00	191.71	



PathFinder A Schlumberger Company
PathFinder X & Y



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Eddy County (NAD83)	TVD Reference:	17' RKB - 2992.10' GL @ 3009.10ft (Patriot #2)
Site:	Rabbit Hunter 10 State	MD Reference:	17' RKB - 2992.10' GL @ 3009.10ft (Patriot #2)
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	1 Smith DB

Survey Program		Date	8/25/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description		
100.00	6,240.00	Survey #1 (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s		
6,300.00	9,900.00	Survey #2 (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s		
9,966.00	14,325.00	Survey #3 (OH)	MWD	MWD - Standard		

Survey										
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
9,900.00	1.43	275.51	9,898.07	6,888.97	-77.99	-59.08	88.36	0.00	382,544.56	621,949.33
9,966.00	1.67	279.41	9,964.04	6,954.94	-77.76	-60.85	88.49	0.40	382,544.79	621,947.56
9,999.00	1.67	292.59	9,997.03	6,987.93	-77.49	-61.77	88.42	1.16	382,545.06	621,946.64
10,031.00	1.76	307.27	10,029.02	7,019.92	-77.02	-62.59	88.12	1.40	382,545.53	621,945.82
10,062.00	4.04	342.16	10,059.98	7,050.88	-75.69	-63.30	86.97	8.98	382,546.86	621,945.11
10,094.00	8.79	351.74	10,091.77	7,082.67	-72.19	-64.00	83.69	15.16	382,550.36	621,944.41
10,125.00	13.37	355.96	10,122.18	7,113.08	-66.27	-64.59	78.01	14.99	382,556.28	621,943.82
10,157.00	17.32	357.28	10,153.03	7,143.93	-57.82	-65.08	69.83	12.39	382,564.73	621,943.33
10,188.00	21.28	357.81	10,182.29	7,173.19	-47.59	-65.51	59.90	12.79	382,574.96	621,942.90
10,220.00	25.06	358.51	10,211.70	7,202.60	-35.00	-65.91	47.66	11.84	382,587.55	621,942.50
10,251.00	28.93	358.95	10,239.32	7,230.22	-20.94	-66.22	33.95	12.50	382,601.61	621,942.19
10,282.00	32.45	358.68	10,265.97	7,256.87	-5.12	-66.55	18.53	11.36	382,617.43	621,941.86
10,314.00	36.05	358.16	10,292.42	7,283.32	12.88	-67.05	1.00	11.29	382,635.43	621,941.36
10,346.00	39.92	359.39	10,317.64	7,308.54	32.56	-67.46	-18.19	12.32	382,655.11	621,940.95
10,377.00	43.88	359.48	10,340.70	7,331.60	53.26	-67.67	-38.41	12.78	382,675.81	621,940.74
10,408.00	48.63	359.48	10,362.13	7,353.03	75.65	-67.87	-60.29	15.32	382,698.20	621,940.54
10,440.00	52.94	0.27	10,382.36	7,373.26	100.44	-67.92	-84.55	13.60	382,722.99	621,940.49
10,472.00	57.16	0.44	10,400.69	7,391.59	126.66	-67.75	-110.26	13.19	382,749.21	621,940.66
10,503.00	61.91	1.50	10,416.40	7,407.30	153.37	-67.30	-136.51	15.60	382,775.92	621,941.11
10,536.00	67.62	2.46	10,430.46	7,421.36	183.19	-66.26	-165.92	17.50	382,805.74	621,942.15



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Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Eddy County (NAD83)	TVD Reference:	17' RKB - 2992.10' GL @ 3009.10ft (Patriot #2)
Site:	Rabbit Hunter 10 State	MD Reference:	17' RKB - 2992.10' GL @ 3009.10ft (Patriot #2)
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	1 Smith DB

Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
10,633.00	76.33	3.17	10,460.45	7,451.35	275.22	-61.72	-256.96	9.01	382,897.77	621,946.69
10,665.00	79.23	2.90	10,467.22	7,458.12	306.45	-60.06	-287.87	9.10	382,929.00	621,948.35
10,697.00	81.25	2.11	10,472.65	7,463.55	337.96	-58.69	-319.00	6.77	382,960.51	621,949.72
10,729.00	83.27	1.67	10,476.96	7,467.86	369.65	-57.64	-350.24	6.46	382,992.20	621,950.77
10,761.00	85.56	1.67	10,480.07	7,470.97	401.48	-56.71	-381.60	7.16	383,024.03	621,951.70
10,791.00	89.78	1.94	10,481.29	7,472.19	431.43	-55.77	-411.12	14.10	383,053.98	621,952.64
10,823.00	91.19	1.94	10,481.02	7,471.92	463.41	-54.69	-442.66	4.41	383,085.96	621,953.72
10,855.00	88.81	1.32	10,481.02	7,471.92	495.40	-53.78	-474.16	7.69	383,117.95	621,954.63
10,887.00	86.61	0.62	10,482.30	7,473.20	527.36	-53.23	-505.57	7.21	383,149.91	621,955.18
10,919.00	86.35	0.53	10,484.26	7,475.16	559.30	-52.91	-536.91	0.86	383,181.85	621,955.50
10,949.00	86.79	1.23	10,486.06	7,476.96	589.24	-52.45	-566.32	2.75	383,211.79	621,955.96
10,981.00	86.79	0.44	10,487.85	7,478.75	621.19	-51.99	-597.70	2.46	383,243.74	621,956.42
11,013.00	87.67	0.18	10,489.40	7,480.30	653.15	-51.82	-629.03	2.87	383,275.70	621,956.59
11,045.00	88.90	0.09	10,490.35	7,481.25	685.14	-51.74	-660.36	3.85	383,307.69	621,956.67
11,077.00	89.52	359.92	10,490.79	7,481.69	717.13	-51.74	-691.69	2.01	383,339.68	621,956.67
11,109.00	88.99	0.44	10,491.21	7,482.11	749.13	-51.64	-723.04	2.32	383,371.68	621,956.77
11,141.00	88.99	0.62	10,491.78	7,482.68	781.12	-51.34	-754.43	0.56	383,403.67	621,957.07
11,172.00	89.43	1.94	10,492.20	7,483.10	812.11	-50.65	-784.91	4.49	383,434.66	621,957.76
11,204.00	89.25	3.34	10,492.57	7,483.47	844.08	-49.17	-816.51	4.41	383,466.63	621,959.24
11,236.00	88.90	2.55	10,493.09	7,483.99	876.03	-47.53	-848.13	2.70	383,498.58	621,960.88
11,268.00	88.99	2.46	10,493.68	7,484.58	907.99	-46.13	-879.71	0.40	383,530.54	621,962.28
11,332.00	90.22	3.78	10,494.12	7,485.02	971.89	-42.65	-942.99	2.82	383,594.44	621,965.76
11,364.00	90.57	3.43	10,493.90	7,484.80	1,003.83	-40.64	-974.67	1.55	383,626.38	621,967.77
11,396.00	90.75	3.26	10,493.53	7,484.43	1,035.77	-38.77	-1,006.33	0.77	383,658.32	621,969.64
11,427.00	91.54	3.52	10,492.91	7,483.81	1,066.71	-36.94	-1,036.99	2.68	383,689.26	621,971.47
11,460.00	91.19	3.17	10,492.12	7,483.02	1,099.65	-35.01	-1,069.63	1.50	383,722.20	621,973.40
11,491.00	89.87	2.46	10,491.84	7,482.74	1,130.61	-33.49	-1,100.26	4.83	383,753.16	621,974.92



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PathFinder X & Y

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Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Eddy County (NAD83)	TVD Reference:	17' RKB - 2992.10' GL @ 3009.10ft (Patriot #2)
Site:	Rabbit Hunter 10 State	MD Reference:	17' RKB - 2992.10' GL @ 3009.10ft (Patriot #2)
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	1 Smith DB

Survey										
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
11,523.00	89.87	2.29	10,491.91	7,482.81	1,162.58	-32.16	-1,131.83	0.53	383,785.13	621,976.25
11,555.00	91.54	3.61	10,491.52	7,482.42	1,194.53	-30.52	-1,163.46	6.65	383,817.08	621,977.89
11,587.00	90.84	2.64	10,490.85	7,481.75	1,226.48	-28.77	-1,195.09	3.74	383,849.03	621,979.64
11,618.00	88.99	2.29	10,490.90	7,481.80	1,257.45	-27.44	-1,225.68	6.07	383,880.00	621,980.97
11,650.00	87.49	1.59	10,491.88	7,482.78	1,289.41	-26.36	-1,257.20	5.17	383,911.96	621,982.05
11,682.00	87.49	1.32	10,493.28	7,484.18	1,321.37	-25.55	-1,288.66	0.84	383,943.92	621,982.86
11,714.00	88.02	1.41	10,494.53	7,485.43	1,353.34	-24.78	-1,320.12	1.68	383,975.89	621,983.63
11,746.00	88.55	1.59	10,495.49	7,486.39	1,385.31	-23.95	-1,351.60	1.75	384,007.86	621,984.46
11,778.00	87.76	1.50	10,496.52	7,487.42	1,417.29	-23.08	-1,383.08	2.48	384,039.84	621,985.33
11,810.00	87.49	1.50	10,497.85	7,488.75	1,449.25	-22.25	-1,414.54	0.84	384,071.80	621,986.16
11,842.00	87.93	2.03	10,499.13	7,490.03	1,481.21	-21.26	-1,446.04	2.15	384,103.76	621,987.15
11,874.00	88.02	1.85	10,500.26	7,491.16	1,513.17	-20.18	-1,477.55	0.63	384,135.72	621,988.23
11,906.00	87.23	1.59	10,501.58	7,492.48	1,545.13	-19.22	-1,509.04	2.60	384,167.68	621,989.19
11,938.00	87.05	2.03	10,503.18	7,494.08	1,577.07	-18.21	-1,540.52	1.48	384,199.62	621,990.20
11,970.00	87.49	1.94	10,504.70	7,495.60	1,609.01	-17.10	-1,572.03	1.40	384,231.56	621,991.31
12,001.00	87.67	1.50	10,506.01	7,496.91	1,639.97	-16.17	-1,602.53	1.53	384,262.52	621,992.24
12,033.00	87.05	0.71	10,507.49	7,498.39	1,671.93	-15.56	-1,633.95	3.14	384,294.48	621,992.85
12,065.00	86.61	359.12	10,509.26	7,500.16	1,703.88	-15.60	-1,665.22	5.15	384,326.43	621,992.81
12,097.00	86.09	358.68	10,511.29	7,502.19	1,735.81	-16.22	-1,696.36	2.13	384,358.36	621,992.19
12,128.00	85.91	358.33	10,513.46	7,504.36	1,766.72	-17.02	-1,726.47	1.27	384,389.27	621,991.39
12,160.00	87.14	359.12	10,515.40	7,506.30	1,798.66	-17.74	-1,757.59	4.57	384,421.21	621,990.67
12,191.00	87.32	359.65	10,516.89	7,507.79	1,829.62	-18.07	-1,787.84	1.80	384,452.17	621,990.34
12,224.00	88.02	359.92	10,518.24	7,509.14	1,862.59	-18.19	-1,820.10	2.27	384,485.14	621,990.22
12,256.00	88.02	359.74	10,519.34	7,510.24	1,894.57	-18.29	-1,851.40	0.56	384,517.12	621,990.12
12,288.00	88.29	0.35	10,520.37	7,511.27	1,926.55	-18.26	-1,882.72	2.08	384,549.10	621,990.15
12,320.00	88.55	0.88	10,521.25	7,512.15	1,958.54	-17.92	-1,914.11	1.84	384,581.09	621,990.49
12,351.00	88.64	0.88	10,522.01	7,512.91	1,989.53	-17.44	-1,944.55	0.29	384,612.08	621,990.97



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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	1 Smith DB

Survey										
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
12,383.00	88.72	1.85	10,522.75	7,513.65	2,021.51	-16.68	-1,976.02	3.04	384,644.06	621,991.73
12,415.00	88.72	1.85	10,523.47	7,514.37	2,053.49	-15.65	-2,007.54	0.00	384,676.04	621,992.76
12,447.00	88.81	2.29	10,524.16	7,515.06	2,085.46	-14.49	-2,039.08	1.40	384,708.01	621,993.92
12,479.00	88.72	1.85	10,524.85	7,515.75	2,117.43	-13.34	-2,070.62	1.40	384,739.98	621,995.07
12,510.00	88.90	1.94	10,525.49	7,516.39	2,148.40	-12.31	-2,101.16	0.65	384,770.95	621,996.10
12,542.00	89.16	2.11	10,526.03	7,516.93	2,180.38	-11.18	-2,132.69	0.97	384,802.93	621,997.23
12,574.00	89.43	2.20	10,526.43	7,517.33	2,212.36	-9.98	-2,164.25	0.89	384,834.91	621,998.43
12,605.00	89.60	2.20	10,526.69	7,517.59	2,243.33	-8.79	-2,194.82	0.55	384,865.88	621,999.62
12,637.00	89.78	1.50	10,526.86	7,517.76	2,275.31	-7.75	-2,226.35	2.26	384,897.86	622,000.66
12,669.00	88.81	1.23	10,527.25	7,518.15	2,307.30	-6.99	-2,257.82	3.15	384,929.85	622,001.42
12,701.00	88.72	0.71	10,527.94	7,518.84	2,339.29	-6.45	-2,289.25	1.65	384,961.84	622,001.96
12,733.00	88.81	0.79	10,528.63	7,519.53	2,371.28	-6.03	-2,320.66	0.38	384,993.83	622,002.38
12,764.00	88.81	0.35	10,529.28	7,520.18	2,402.27	-5.72	-2,351.07	1.42	385,024.82	622,002.69
12,796.00	87.67	359.74	10,530.26	7,521.16	2,434.26	-5.70	-2,382.39	4.04	385,056.81	622,002.71
12,828.00	87.85	359.83	10,531.51	7,522.41	2,466.23	-5.82	-2,413.68	0.63	385,088.78	622,002.59
12,859.00	87.76	359.65	10,532.70	7,523.60	2,497.21	-5.96	-2,443.98	0.65	385,119.76	622,002.45
12,891.00	87.93	359.48	10,533.90	7,524.80	2,529.18	-6.20	-2,475.24	0.75	385,151.73	622,002.21
12,922.00	88.20	359.83	10,534.95	7,525.85	2,560.17	-6.39	-2,505.54	1.43	385,182.72	622,002.02
12,954.00	88.29	0.80	10,535.93	7,526.83	2,592.15	-6.21	-2,536.90	3.04	385,214.70	622,002.20
12,986.00	88.55	1.15	10,536.81	7,527.71	2,624.13	-5.67	-2,568.32	1.36	385,246.68	622,002.74
13,018.00	88.72	0.44	10,537.57	7,528.47	2,656.12	-5.22	-2,599.73	2.28	385,278.67	622,003.19
13,049.00	89.16	0.79	10,538.15	7,529.05	2,687.11	-4.89	-2,630.15	1.81	385,309.66	622,003.52
13,081.00	89.60	0.44	10,538.49	7,529.39	2,719.11	-4.55	-2,661.55	1.76	385,341.66	622,003.86
13,113.00	89.87	0.97	10,538.64	7,529.54	2,751.11	-4.15	-2,692.96	1.86	385,373.66	622,004.26
13,145.00	89.43	1.41	10,538.84	7,529.74	2,783.10	-3.49	-2,724.42	1.94	385,405.65	622,004.92
13,177.00	89.96	1.76	10,539.01	7,529.91	2,815.09	-2.60	-2,755.92	1.98	385,437.64	622,005.81
13,209.00	90.13	1.94	10,538.98	7,529.88	2,847.07	-1.57	-2,787.45	0.77	385,469.62	622,006.84



PathFinder A Schlumberger Company
PathFinder X & Y



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Eddy County (NAD83)	TVD Reference:	17' RKB - 2992.10' GL @ 3009.10ft (Patriot #2)
Site:	Rabbit Hunter 10 State	MD Reference:	17' RKB - 2992.10' GL @ 3009.10ft (Patriot #2)
Well:	#2H	North Reference:	Gnd
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	1 Smith DB

Survey										
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
13,241.00	89.87	1.41	10,538.98	7,529.88	2,879.06	-0.64	-2,818.96	1.84	385,501.61	622,007.77
13,272.00	89.96	1.15	10,539.03	7,529.93	2,910.05	0.06	-2,849.44	0.89	385,532.60	622,008.47
13,304.00	88.99	1.76	10,539.32	7,530.22	2,942.04	0.87	-2,880.93	3.58	385,564.59	622,009.28
13,336.00	88.72	1.23	10,539.96	7,530.86	2,974.02	1.70	-2,912.42	1.86	385,596.57	622,010.11
13,366.00	88.81	0.79	10,540.61	7,531.51	3,004.01	2.23	-2,941.89	1.50	385,626.56	622,010.64
13,398.00	88.72	1.23	10,541.30	7,532.20	3,035.99	2.80	-2,973.32	1.40	385,658.54	622,011.21
13,429.00	88.90	0.44	10,541.94	7,532.84	3,066.98	3.25	-3,003.76	2.61	385,689.53	622,011.66
13,461.00	89.34	0.97	10,542.43	7,533.33	3,098.98	3.64	-3,035.17	2.15	385,721.53	622,012.05
13,493.00	90.66	1.67	10,542.43	7,533.33	3,130.97	4.38	-3,066.64	4.67	385,753.52	622,012.79
13,525.00	90.57	2.03	10,542.09	7,532.99	3,162.95	5.41	-3,098.17	1.16	385,785.50	622,013.82
13,557.00	90.22	1.23	10,541.87	7,532.77	3,194.94	6.32	-3,129.67	2.73	385,817.49	622,014.73
13,589.00	89.60	1.50	10,541.92	7,532.82	3,226.93	7.08	-3,161.15	2.11	385,849.48	622,015.49
13,621.00	89.87	1.85	10,542.07	7,532.97	3,258.91	8.02	-3,192.66	1.38	385,881.46	622,016.43
13,653.00	89.08	1.50	10,542.36	7,533.26	3,290.90	8.96	-3,224.17	2.70	385,913.45	622,017.37
13,684.00	89.08	1.50	10,542.86	7,533.76	3,321.88	9.77	-3,254.67	0.00	385,944.43	622,018.18
13,716.00	88.81	1.23	10,543.45	7,534.35	3,353.87	10.53	-3,286.15	1.19	385,976.42	622,018.94
13,748.00	89.16	0.97	10,544.01	7,534.91	3,385.86	11.14	-3,317.59	1.36	386,008.41	622,019.55
13,780.00	88.81	359.74	10,544.58	7,535.48	3,417.85	11.34	-3,348.96	4.00	386,040.40	622,019.75
13,844.00	89.08	359.65	10,545.76	7,536.66	3,481.84	11.00	-3,411.55	0.44	386,104.39	622,019.41
13,907.00	89.69	359.30	10,546.43	7,537.33	3,544.83	10.42	-3,473.11	1.12	386,167.38	622,018.83
13,970.00	90.57	359.74	10,546.29	7,537.19	3,607.83	9.90	-3,534.69	1.56	386,230.38	622,018.31
14,034.00	90.84	359.48	10,545.50	7,536.40	3,671.82	9.46	-3,597.26	0.59	386,294.37	622,017.87
14,097.00	91.45	358.77	10,544.25	7,535.15	3,734.80	8.50	-3,658.73	1.49	386,357.35	622,016.91
14,224.00	92.42	358.42	10,539.96	7,530.86	3,861.69	5.39	-3,782.35	0.81	386,484.24	622,013.80
14,266.00	92.86	357.98	10,538.02	7,528.92	3,903.62	4.07	-3,823.14	1.48	386,526.17	622,012.48
14,325.00	92.86	357.98	10,535.08	7,525.98	3,962.51	1.99	-3,880.38	0.00	386,585.06	622,010.40
Rabbit Hunter 10 ST #2H - PBHL										



PathFinder A Schlumberger Company
PathFinder X & Y



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Eddy County (NAD83)	TVD Reference:	17' RKB - 2992.10' GL @ 3009.10ft (Patriot #2)
Site:	Rabbit Hunter 10 State	MD Reference:	17' RKB - 2992.10' GL @ 3009.10ft (Patriot #2)
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	1 Smith DB

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
Rabbit Hunter 10 ST #	0.00	0.00	10,554.00	3,985.81	8.88	386,608.36	622,017.29	32° 3' 45.3549905 N	4° 4' 22.4011831 W
- survey misses target center by 30.79ft at 14325.00ft MD (10535.08 TVD, 3962.51 N, 1.99 E)									
- Point									

Checked By: _____ Approved By: _____ Date: _____