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Murchison Oil & Gas

Eddy County (NAD27)

Carbon Valley 26 Federal Com

#1H

OH

30-D15-37683

Survey: MWD #1

Pathfinder X & Y Survey Report

19 May, 2010

PATHFINDER

Pathfinder

Pathfinder X & Y Survey Report



Company: Murchison Oil & Gas	Local Co-ordinate Reference: Well #1H
Project: Eddy County (NAD27)	TVD Reference: WELL @ 3509.00ft (18' KB Correction)
Site: Carbon Valley 26 Federal Com	MD Reference: WELL @ 3509.00ft (18' KB Correction)
Well: #1H	North Reference: Grid
Wellbore: OH	Survey Calculation Method: Minimum Curvature
Design: OH	Database: Midland Database

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 Carbon Valley 26 Federal Com	
Site Position:	Northings: 687,965.700 ft
From: Map	Eastings: 528,246.100 ft
Position Uncertainty: 0.00 ft	Slot Radius: "
	Latitude: 32° 53' 28.550 N
	Longitude: 104° 14' 28.731 W
	Grid Convergence: 0.05 °

Well #1H	
Well Position	Northings: 687,965.700 ft
+N/-S 0.00 ft	Eastings: 528,246.100 ft
+E/-W 0.00 ft	Wellhead Elevation: ft
Position Uncertainty 0.00 ft	Latitude: 32° 53' 28.550 N
	Longitude: 104° 14' 28.731 W
	Ground Level: 3,491.00 ft

Wellbore OH	
Magnetics	Model Name IGRF2010
	Sample Date 01/08/2010
	Declination (°) 8.12
	Dip Angle (°) 60.72
	Field Strength (nT) 49,084

Design OH	
Audit Notes:	
Version: 1.0	Phase: ACTUAL
Vertical Section:	Tie On Depth: 0.00
	Depth From (TVD)
	(ft) 0.00
	+N/-S (ft) 0.00
	+E/-W (ft) 0.00
	Direction (°) 272.04



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Survey Program Date 05/19/2010

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
100.00	5,700.00	GYRO (OH)	CB-GYRO-MS	Camera based gyro multishot
5,742.00	10,700.00	MWD #1 (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)
	5,700.00		91.33	5,699.89	2,190.89	-9.80	-5.85	5.50	0.00	687,955.90	528,240.25
	5,742.00	1.49	88.99	5,741.88	2,232.88	-9.80	-4.76	4.41	0.15	687,955.90	528,241.34
	5,774.00	0.44	251.25	5,773.88	2,264.88	-9.83	-4.46	4.11	5.98	687,955.87	528,241.64
	5,805.00	5.01	258.00	5,804.83	2,295.83	-10.15	-5.90	5.54	14.75	687,955.55	528,240.20
	5,837.00	9.32	259.94	5,836.58	2,327.58	-10.90	-9.82	9.43	13.49	687,954.80	528,236.28
	5,869.00	13.63	262.89	5,867.93	2,358.93	-11.82	-16.12	15.69	13.59	687,953.88	528,229.98
	5,901.00	17.06	263.69	5,898.78	2,389.78	-12.80	-24.53	24.06	10.74	687,952.90	528,221.57
	5,932.00	20.58	264.27	5,928.12	2,419.12	-13.84	-34.47	33.96	11.37	687,951.86	528,211.63
	5,964.00	24.27	265.77	5,957.70	2,448.70	-14.89	-46.63	46.07	11.67	687,950.81	528,199.47
	5,995.00	27.87	268.86	5,985.54	2,476.54	-15.50	-60.23	59.64	12.41	687,950.20	528,185.87
	6,027.00	32.10	270.31	6,013.25	2,504.25	-15.61	-76.22	75.62	13.41	687,950.09	528,169.88
	6,059.00	35.53	271.14	6,039.83	2,530.83	-15.38	-94.03	93.42	10.82	687,950.32	528,152.07
	6,091.00	39.39	271.41	6,065.23	2,556.23	-14.94	-113.48	112.88	12.07	687,950.76	528,132.62
	6,122.00	42.65	271.64	6,088.62	2,579.62	-14.40	-133.82	133.22	10.53	687,951.30	528,112.28
	6,154.00	46.60	272.05	6,111.39	2,602.39	-13.67	-156.28	155.69	12.38	687,952.03	528,089.82
	6,186.00	49.68	272.65	6,132.74	2,623.74	-12.69	-180.09	179.52	9.73	687,953.01	528,066.01
	6,218.00	51.88	272.79	6,152.97	2,643.97	-11.52	-204.85	204.31	6.88	687,954.18	528,041.25
	6,249.00	54.78	272.66	6,171.48	2,662.48	-10.33	-229.68	229.17	9.36	687,955.37	528,016.42
	6,281.00	59.27	272.96	6,188.89	2,679.89	-9.02	-256.49	256.01	14.05	687,956.68	527,989.61
	6,313.00	63.40	272.75	6,204.24	2,695.24	-7.62	-284.53	284.07	12.92	687,958.08	527,961.57
	6,345.00	68.06	272.27	6,217.39	2,708.39	-6.34	-313.66	313.24	14.63	687,959.36	527,932.44

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MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
6,377.00	70.43	271.79	6,228.73	2,719.73	-5.29	-343.56	343.16	7.54	687,960.41	527,902.54
6,408.00	74.92	272.04	6,237.96	2,728.96	-4.30	-373.13	372.74	14.50	687,961.40	527,872.97
6,440.00	78.44	272.79	6,245.33	2,736.33	-2.98	-404.24	403.88	11.23	687,962.72	527,841.86
6,469.00	82.26	273.36	6,250.19	2,741.19	-1.45	-432.78	432.46	13.31	687,964.25	527,813.32
6,501.00	86.25	273.83	6,253.39	2,744.39	0.55	-464.55	464.28	12.55	687,966.25	527,781.55
6,533.00	89.11	272.71	6,254.69	2,745.69	2.37	-496.47	496.24	9.60	687,968.07	527,749.63
6,565.00	89.72	272.19	6,255.02	2,746.02	3.74	-528.44	528.24	2.50	687,969.44	527,717.66
6,597.00	89.72	272.41	6,255.17	2,746.17	5.02	-560.41	560.24	0.69	687,970.72	527,685.69
6,628.00	89.50	272.25	6,255.38	2,746.38	6.28	-591.39	591.24	0.88	687,971.98	527,654.71
6,660.00	89.44	272.27	6,255.68	2,746.68	7.55	-623.36	623.23	0.20	687,973.25	527,622.74
6,691.00	90.39	271.60	6,255.73	2,746.73	8.59	-654.34	654.23	3.75	687,974.29	527,591.76
6,723.00	90.56	271.80	6,255.46	2,746.46	9.54	-686.33	686.23	0.82	687,975.24	527,559.77
6,755.00	90.67	271.38	6,255.12	2,746.12	10.43	-718.31	718.23	1.36	687,976.13	527,527.79
6,786.00	90.90	271.80	6,254.69	2,745.69	11.29	-749.30	749.23	1.54	687,976.99	527,496.80
6,818.00	90.78	272.65	6,254.22	2,745.22	12.53	-781.27	781.22	2.68	687,978.23	527,464.83
6,850.00	90.39	272.33	6,253.90	2,744.90	13.92	-813.24	813.22	1.58	687,979.62	527,432.86
6,881.00	90.56	271.79	6,253.64	2,744.64	15.04	-844.22	844.22	1.83	687,980.74	527,401.88
6,913.00	91.23	271.83	6,253.14	2,744.14	16.05	-876.20	876.21	2.10	687,981.75	527,369.90
6,945.00	91.46	271.64	6,252.39	2,743.39	17.02	-908.17	908.20	0.93	687,982.72	527,337.93
6,976.00	91.57	271.80	6,251.57	2,742.57	17.95	-939.15	939.19	0.63	687,983.65	527,306.95
7,008.00	91.62	272.27	6,250.68	2,741.68	19.08	-971.12	971.18	1.48	687,984.78	527,274.98
7,040.00	91.40	272.72	6,249.83	2,740.83	20.47	-1,003.07	1,003.17	1.56	687,986.17	527,243.03
7,072.00	91.34	272.61	6,249.07	2,740.07	21.96	-1,035.03	1,035.16	0.39	687,987.66	527,211.07
7,104.00	90.89	273.10	6,248.45	2,739.45	23.56	-1,066.99	1,067.15	2.08	687,989.26	527,179.11
7,135.00	90.95	273.09	6,247.95	2,738.95	25.23	-1,097.94	1,098.14	0.20	687,990.93	527,148.16
7,167.00	90.73	272.80	6,247.48	2,738.48	26.87	-1,129.89	1,130.13	1.14	687,992.57	527,116.21
7,199.00	90.90	272.16	6,247.02	2,738.02	28.26	-1,161.86	1,162.13	2.07	687,993.96	527,084.24

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7,230.00	91.34	272.26	6,246.42	2,737.42	29.45	-1,192.83	1,193.12	1.46	687,995.15	527,053.27
7,262.00	91.85	271.94	6,245.53	2,736.53	30.62	-1,224.79	1,225.11	1.88	687,996.32	527,021.31
7,294.00	91.29	272.01	6,244.65	2,735.65	31.73	-1,256.76	1,257.10	1.76	687,997.43	526,989.34
7,326.00	90.56	271.54	6,244.13	2,735.13	32.72	-1,288.74	1,289.09	2.71	687,998.42	526,957.36
7,358.00	90.34	271.47	6,243.88	2,734.88	33.56	-1,320.73	1,321.09	0.72	687,999.26	526,925.37
7,389.00	90.39	271.74	6,243.69	2,734.69	34.43	-1,351.72	1,352.09	0.89	688,000.13	526,894.38
7,421.00	90.28	271.66	6,243.50	2,734.50	35.38	-1,383.70	1,384.09	0.43	688,001.08	526,862.40
7,453.00	90.95	271.40	6,243.16	2,734.16	36.23	-1,415.69	1,416.08	2.25	688,001.93	526,830.41
7,485.00	92.13	272.00	6,242.30	2,733.30	37.18	-1,447.66	1,448.07	4.14	688,002.88	526,798.44
7,516.00	92.74	272.03	6,240.98	2,731.98	38.27	-1,478.62	1,479.04	1.97	688,003.97	526,767.48
7,548.00	92.80	271.57	6,239.43	2,730.43	39.27	-1,510.56	1,511.00	1.45	688,004.97	526,735.54
7,579.00	93.03	271.74	6,237.86	2,728.86	40.17	-1,541.51	1,541.96	0.92	688,005.87	526,704.59
7,611.00	92.13	272.11	6,236.41	2,727.41	41.24	-1,573.46	1,573.93	3.04	688,006.94	526,672.64
7,643.00	91.40	271.31	6,235.43	2,726.43	42.19	-1,605.43	1,605.91	3.38	688,007.89	526,640.67
7,675.00	90.95	271.56	6,234.77	2,725.77	43.00	-1,637.41	1,637.90	1.61	688,008.70	526,608.69
7,706.00	90.84	271.80	6,234.29	2,725.29	43.90	-1,668.39	1,668.90	0.85	688,009.60	526,577.71
7,738.00	91.18	271.59	6,233.72	2,724.72	44.85	-1,700.38	1,700.89	1.25	688,010.55	526,545.72
7,770.00	91.68	271.19	6,232.93	2,723.93	45.63	-1,732.36	1,732.88	2.00	688,011.33	526,513.74
7,802.00	91.79	271.26	6,231.96	2,722.96	46.31	-1,764.33	1,764.86	0.41	688,012.01	526,481.77
7,833.00	91.90	271.71	6,230.96	2,721.96	47.11	-1,795.31	1,795.85	1.49	688,012.81	526,450.79
7,865.00	92.41	272.03	6,229.76	2,720.76	48.16	-1,827.27	1,827.82	1.88	688,013.86	526,418.83
7,897.00	92.52	271.76	6,228.38	2,719.38	49.21	-1,859.22	1,859.79	0.91	688,014.91	526,386.88
7,929.00	92.75	271.45	6,226.91	2,717.91	50.11	-1,891.17	1,891.76	1.21	688,015.81	526,354.93
7,961.00	92.58	270.94	6,225.42	2,716.42	50.78	-1,923.13	1,923.72	1.68	688,016.48	526,322.97
7,992.00	92.80	271.32	6,223.97	2,714.97	51.39	-1,954.09	1,954.68	1.42	688,017.09	526,292.01
8,024.00	93.53	271.56	6,222.20	2,713.20	52.19	-1,986.03	1,986.63	2.40	688,017.89	526,260.07
8,056.00	93.81	271.34	6,220.15	2,711.15	53.00	-2,017.96	2,018.57	1.11	688,018.70	526,228.14

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8,087.00	93.59	271.18	6,218.15	2,709.15	53.68	-2,048.89	2,049.50	0.88	688,019.38	526,197.21
8,119.00	92.91	271.62	6,216.34	2,707.34	54.46	-2,080.82	2,081.44	2.53	688,020.16	526,165.28
8,151.00	92.41	271.79	6,214.85	2,705.85	55.41	-2,112.78	2,113.41	1.65	688,021.11	526,133.32
8,182.00	92.57	271.59	6,213.50	2,704.50	56.32	-2,143.73	2,144.38	0.83	688,022.02	526,102.37
8,213.00	93.14	272.28	6,211.96	2,702.96	57.37	-2,174.68	2,175.34	2.88	688,023.07	526,071.42
8,245.00	93.81	271.97	6,210.02	2,701.02	58.55	-2,206.60	2,207.28	2.31	688,024.25	526,039.50
8,308.00	94.31	271.42	6,205.56	2,696.56	60.41	-2,269.41	2,270.12	1.18	688,026.11	525,976.69
8,340.00	94.94	272.30	6,202.98	2,693.98	61.45	-2,301.29	2,302.02	3.37	688,027.15	525,944.81
8,372.00	95.44	271.90	6,200.09	2,691.09	62.61	-2,333.13	2,333.89	2.00	688,028.31	525,912.97
8,404.00	95.10	271.86	6,197.15	2,688.15	63.66	-2,364.98	2,365.75	1.07	688,029.36	525,881.12
8,435.00	94.60	272.27	6,194.52	2,685.52	64.77	-2,395.85	2,396.64	2.08	688,030.47	525,850.25
8,467.00	94.53	271.92	6,191.98	2,682.98	65.94	-2,427.73	2,428.54	1.11	688,031.64	525,818.37
8,499.00	94.42	272.22	6,189.48	2,680.48	67.09	-2,459.61	2,460.44	1.00	688,032.79	525,786.49
8,530.00	95.05	272.36	6,186.92	2,677.92	68.33	-2,490.48	2,491.33	2.08	688,034.03	525,755.62
8,562.00	94.93	272.39	6,184.14	2,675.14	69.65	-2,522.33	2,523.21	0.39	688,035.35	525,723.77
8,594.00	94.87	272.42	6,181.41	2,672.41	70.99	-2,554.19	2,555.09	0.21	688,036.69	525,691.91
8,626.00	94.98	272.28	6,178.66	2,669.66	72.29	-2,586.04	2,586.97	0.56	688,037.99	525,660.06
8,657.00	94.77	271.87	6,176.02	2,667.02	73.41	-2,616.91	2,617.86	1.48	688,039.11	525,629.19
8,689.00	94.59	272.26	6,173.41	2,664.41	74.56	-2,648.78	2,649.76	1.34	688,040.26	525,597.32
8,721.00	95.04	272.25	6,170.73	2,661.73	75.81	-2,680.64	2,681.64	1.41	688,041.51	525,565.46
8,753.00	95.44	272.03	6,167.80	2,658.80	77.00	-2,712.49	2,713.51	1.43	688,042.70	525,533.61
8,785.00	95.43	271.85	6,164.77	2,655.77	78.08	-2,744.32	2,745.36	0.56	688,043.78	525,501.78
8,816.00	95.22	272.09	6,161.90	2,652.90	79.14	-2,775.17	2,776.23	1.03	688,044.84	525,470.93
8,848.00	94.81	272.34	6,159.10	2,650.10	80.38	-2,807.03	2,808.11	1.50	688,046.08	525,439.07
8,880.00	94.76	272.13	6,156.43	2,647.43	81.62	-2,838.89	2,840.00	0.67	688,047.32	525,407.21
8,911.00	94.65	272.27	6,153.89	2,644.89	82.81	-2,869.76	2,870.89	0.57	688,048.51	525,376.34
8,943.00	94.59	272.75	6,151.31	2,642.31	84.20	-2,901.63	2,902.79	1.51	688,049.90	525,344.47

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	8,975.00	93.86	272.63	6,148.95	2,639.95	85.70	-2,933.51	2,934.70	2.31	688,051.40	525,312.59
	9,007.00	92.97	272.44	6,147.05	2,638.05	87.11	-2,965.42	2,966.64	2.84	688,052.81	525,280.68
	9,039.00	91.40	273.73	6,145.83	2,636.83	88.83	-2,997.35	2,998.61	6.35	688,054.53	525,248.75
	9,070.00	90.73	273.35	6,145.25	2,636.25	90.75	-3,028.28	3,029.59	2.48	688,056.45	525,217.82
	9,102.00	90.50	273.46	6,144.91	2,635.91	92.65	-3,060.22	3,061.58	0.80	688,058.35	525,185.88
	9,133.00	90.50	273.58	6,144.64	2,635.64	94.55	-3,091.16	3,092.57	0.39	688,060.25	525,154.94
	9,165.00	90.34	274.16	6,144.40	2,635.40	96.71	-3,123.09	3,124.55	1.88	688,062.41	525,123.01
	9,197.00	90.28	273.98	6,144.23	2,635.23	98.98	-3,155.01	3,156.53	0.59	688,064.68	525,091.09
	9,229.00	90.00	274.29	6,144.15	2,635.15	101.29	-3,186.93	3,188.51	1.31	688,066.99	525,059.17
	9,261.00	90.00	274.78	6,144.15	2,635.15	103.82	-3,218.82	3,220.48	1.53	688,069.52	525,027.28
	9,292.00	90.39	274.65	6,144.04	2,635.04	106.37	-3,249.72	3,251.45	1.33	688,072.07	524,996.38
	9,324.00	90.06	275.46	6,143.92	2,634.92	109.19	-3,281.59	3,283.40	2.73	688,074.89	524,964.51
	9,356.00	89.72	275.10	6,143.98	2,634.98	112.13	-3,313.46	3,315.35	1.55	688,077.83	524,932.64
	9,388.00	88.99	274.72	6,144.34	2,635.34	114.87	-3,345.34	3,347.31	2.57	688,080.57	524,900.76
	9,420.00	88.26	274.83	6,145.11	2,636.11	117.53	-3,377.22	3,379.26	2.31	688,083.23	524,868.88
	9,452.00	87.65	275.14	6,146.25	2,637.25	120.31	-3,409.08	3,411.20	2.14	688,086.01	524,837.02
	9,483.00	88.32	274.71	6,147.34	2,638.34	122.97	-3,439.94	3,442.14	2.57	688,088.67	524,806.16
	9,515.00	88.54	274.40	6,148.22	2,639.22	125.51	-3,471.83	3,474.10	1.19	688,091.21	524,774.27
	9,546.00	88.82	273.84	6,148.93	2,639.93	127.74	-3,502.74	3,505.07	2.02	688,093.44	524,743.36
	9,578.00	89.26	274.19	6,149.47	2,640.47	129.98	-3,534.66	3,537.05	1.76	688,095.68	524,711.44
	9,610.00	90.22	273.63	6,149.61	2,640.61	132.16	-3,566.58	3,569.03	3.47	688,097.86	524,679.52
	9,641.00	90.17	274.01	6,149.51	2,640.51	134.23	-3,597.51	3,600.01	1.24	688,099.93	524,648.59
	9,673.00	89.83	273.52	6,149.51	2,640.51	136.33	-3,629.44	3,632.00	1.86	688,102.03	524,616.66
	9,704.00	89.55	273.72	6,149.67	2,640.67	138.29	-3,660.38	3,662.99	1.11	688,103.99	524,585.72
	9,736.00	89.38	273.78	6,149.97	2,640.97	140.38	-3,692.31	3,694.97	0.56	688,106.08	524,553.79
	9,768.00	89.10	273.86	6,150.40	2,641.40	142.51	-3,724.24	3,726.95	0.91	688,108.21	524,521.86
	9,805.00	89.69	274.06	6,150.79	2,641.79	145.07	-3,761.15	3,763.93	1.68	688,110.77	524,484.95

Pathfinder

Pathfinder X & Y Survey Report



Company: Murchison Oil & Gas
 Project: Eddy County (NAD27)
 Site: Carbon Valley 26 Federal Com
 Well: #1H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #1H
 TVD Reference: WELL @ 3509.00ft (18' KB Correction)
 MD Reference: WELL @ 3509.00ft (18' KB Correction)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: Midland Database

Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	EW (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
9,837.00	90.92	273.43	6,150.62	2,641.62	147.16	-3,793.08	3,795.91	4.32	688,112.86	524,453.02
9,869.00	91.36	273.28	6,149.98	2,640.98	149.03	-3,825.02	3,827.90	1.45	688,114.73	524,421.08
9,901.00	92.33	273.47	6,148.95	2,639.95	150.91	-3,856.94	3,859.87	3.09	688,116.61	524,389.16
9,932.00	92.86	273.28	6,147.55	2,638.55	152.73	-3,887.86	3,890.83	1.82	688,118.43	524,358.24
9,964.00	93.47	273.21	6,145.78	2,636.78	154.54	-3,919.76	3,922.78	1.92	688,120.24	524,326.34
9,996.00	94.09	272.69	6,143.67	2,634.67	156.19	-3,951.65	3,954.70	2.53	688,121.89	524,294.45
10,028.00	94.70	272.34	6,141.22	2,632.22	157.59	-3,983.52	3,986.61	2.20	688,123.29	524,262.58
10,059.00	95.32	271.59	6,138.51	2,629.51	158.84	-4,014.38	4,017.49	3.13	688,124.34	524,231.72
10,091.00	95.32	271.65	6,135.54	2,626.54	159.55	-4,046.23	4,049.35	0.19	688,125.25	524,199.87
10,123.00	95.50	271.48	6,132.53	2,623.53	160.42	-4,078.08	4,081.21	0.77	688,126.12	524,168.02
10,154.00	95.67	271.61	6,129.51	2,620.51	161.25	-4,108.92	4,112.06	0.69	688,126.95	524,137.18
10,186.00	95.94	271.48	6,126.27	2,617.27	162.11	-4,140.75	4,143.89	0.94	688,127.81	524,105.35
10,218.00	95.23	271.87	6,123.16	2,614.16	163.04	-4,172.58	4,175.74	2.53	688,128.74	524,073.52
10,250.00	95.06	271.73	6,120.29	2,611.29	164.04	-4,204.44	4,207.61	0.69	688,129.74	524,041.66
10,282.00	94.44	271.61	6,117.64	2,608.64	164.97	-4,236.31	4,239.50	1.97	688,130.67	524,009.79
10,313.00	94.09	272.11	6,115.33	2,606.33	165.97	-4,267.21	4,270.41	1.97	688,131.67	523,978.89
10,345.00	94.35	271.90	6,112.98	2,603.98	167.09	-4,299.10	4,302.33	1.04	688,132.79	523,947.00
10,408.00	94.00	271.76	6,108.39	2,599.39	168.09	-4,361.90	4,365.16	0.60	688,134.79	523,884.20
10,439.00	93.65	272.12	6,106.33	2,597.33	170.14	-4,392.82	4,396.09	1.62	688,135.84	523,853.28
10,471.00	93.12	271.71	6,104.44	2,595.44	171.21	-4,424.74	4,428.03	2.09	688,136.91	523,821.36
10,503.00	92.42	271.66	6,102.89	2,593.89	172.15	-4,456.69	4,459.99	2.19	688,137.85	523,789.41
10,534.00	92.52	271.53	6,101.55	2,592.55	173.01	-4,487.65	4,490.97	0.53	688,138.71	523,758.45
10,566.00	92.59	271.88	6,100.13	2,591.13	173.96	-4,519.60	4,522.93	1.11	688,139.66	523,726.50
10,598.00	92.77	272.28	6,098.63	2,589.63	175.12	-4,551.55	4,554.90	1.37	688,140.82	523,694.55
10,630.00	92.77	272.15	6,097.08	2,588.08	176.36	-4,583.49	4,586.86	0.41	688,142.06	523,662.61
10,700.00	92.77	272.15	6,093.70	2,584.70	178.98	-4,653.36	4,656.78	0.00	688,144.68	523,592.74

BHL-10700.00°MD,92.77°INC,272.15°AZI, 6093.70°TVD, 4656.78°VS, 178.98°N, -4653.36°E

Pathfinder

Pathfinder X & Y Survey Report



Company: Murchison Oil & Gas
Project: Eddy County (NAD27)
Site: Carbon Valley 26 Federal Com
Well: #1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference:
 TVD Reference:
 MD Reference:
 North Reference:
 Survey Calculation Method:
 Database:

Well #1H
 WELL @ 3509.00ft (18' KB Correction)
 WELL @ 3509.00ft (18' KB Correction)
 Grid
 Minimum Curvature
 Midland Database

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL(CV26)	0.00	0.00	6,199.52	166.60	-4,672.20	688,132.300	523,573.900	32° 53' 30.236 N	104° 15' 23.525 W
- survey misses target center by 108.19ft at 10700.00ft MD (6093.70 TVD, 178.98 N, -4653.36 E)									
- Point									

Survey Annotations

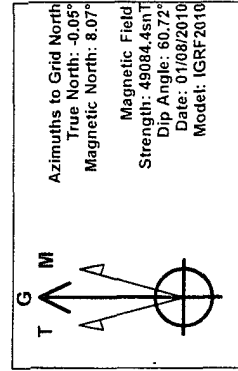
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
10,700.00	6,093.70	178.98	-4,653.36	BHL-10700.00MD,92.77°INC,272.15°AZI, 6093.70TVD, 4656.78VS, 1

Checked By: _____

Approved By: _____

Date: _____

Murchison Oil & Gas



WELL DETAILS: #1H

Ground Elevation: 3481.00
RKB Elevation: WELL @ 3505.00R (18" KB Correction)
Rig Name: 18" KB Correction

	North	East	Latitude	Longitude	Slur
+N/S	0.00	-E/W	0.00	32° 53' 28.559" N	104° 14' 20.711" W
	687965.700	528246.100			

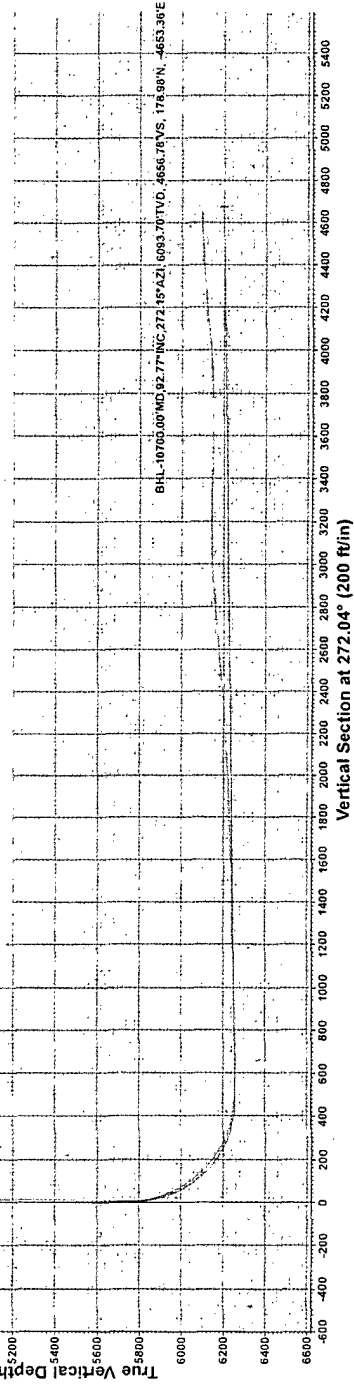
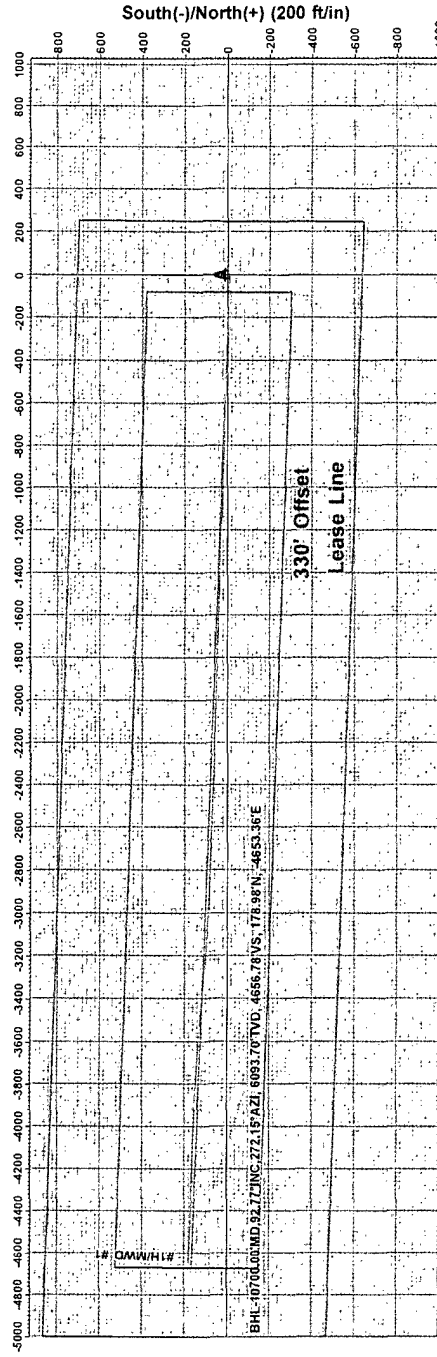
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/S	+E/W	DLeg	Trace	VSec	Target
1	5767.00	1.66	90.73	5766.87	-8.93	-4.02	0.00	0.00	3.66	
2	6337.30	90.80	272.16	6338.00	8.76	-487.44	12.00	-178.57	487.44	
3	10723.44	90.80	272.16	6193.52	166.50	-4672.20	0.00	0.00	4675.17	PBH(CV26)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/S	+E/W	Northing	Eastng	Shape
PBHL(CV26)	6193.52	166.50	-4672.20	688132.300	523573.900	Point

West(-)/East(+) (200 ft/in)



PROJECT DETAILS: Eddy County (NAD27)
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Local North: Grid

Plan: Plan #1 (#1H/OH)
Created By: Kate Bingham Date: 11/31, May 19 2010
Checked: _____ Date: _____