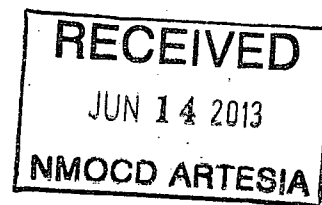


 MURCHISON OIL & GAS, INC.



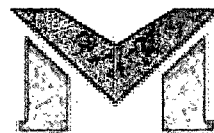
Murchison Oil and Gas

Paddock
Vandiver #1H

Plan: 130607 Vandiver #1

MOJO Standard Survey

07 June, 2013



MOJO
DIRECTIONAL CORPORATION

30-015-40589

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Vandiver #1H
Project:	Paddock	TVD Reference:	K.B. @ 3416.4usft
Site:	Vandiver #1H	MD Reference:	K.B. @ 3416.4usft
Well:	Vandiver #1H	North Reference:	Grid
Wellbore:	Vandiver #1H	Survey Calculation Method:	Minimum Curvature
Design:	130607 Vandiver #1	Database:	EDM 5000.1 Single User Db

Project: Paddock, Horizontal Development Wells

Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		Using geodetic scale factor

Site: Vandiver #1H

Site Position:		Northing:	636,030.65 usft	Latitude:	32° 44' 54.458 N
From:	Lat/Long	Easting:	517,233.07 usft	Longitude:	104° 24' 42.250 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.04 °

Well: Vandiver #1H

Well Position	+N/-S	0.0 usft	Northing:	636,030.65 usft	Latitude:	32° 44' 54.458 N
	+E/-W	0.0 usft	Easting:	517,233.07 usft	Longitude:	104° 24' 42.250 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,404.4 usft

Wellbore: Vandiver #1H

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	04/03/2013	7.79	60.51	48,711

Design: 130607 Vandiver #1

Audit Notes:

Version:	Phase:	PLAN	Tie On Depth:	0.0
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Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	87.63

Survey Tool Program Date 07/06/2013

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	6,984.3	130607 Vandiver #1 (Vandiver #1H)	MWD	MWD - Standard

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Vandiver #1H
Project:	Paddock	TVD Reference:	K.B. @ 3416.4usft
Site:	Vandiver #1H	MD Reference:	K.B. @ 3416.4usft
Well:	Vandiver #1H	North Reference:	Grid
Wellbore:	Vandiver #1H	Survey Calculation Method:	Minimum Curvature
Design:	130607 Vandiver #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)	
0.0	0.00	0.00	0.0	-3,416.4	0.0	0.0	0.0	0.00	636,030.65	517,233.07	
100.0	0.00	0.00	100.0	-3,316.4	0.0	0.0	0.0	0.00	636,030.65	517,233.07	
166.4	0.00	0.00	166.4	-3,250.0	0.0	0.0	0.0	0.00	636,030.65	517,233.07	
Queen											
200.0	0.00	0.00	200.0	-3,216.4	0.0	0.0	0.0	0.00	636,030.65	517,233.07	
300.0	0.00	0.00	300.0	-3,116.4	0.0	0.0	0.0	0.00	636,030.65	517,233.07	
400.0	0.00	0.00	400.0	-3,016.4	0.0	0.0	0.0	0.00	636,030.65	517,233.07	
500.0	0.00	0.00	500.0	-2,916.4	0.0	0.0	0.0	0.00	636,030.65	517,233.07	
581.4	0.00	0.00	581.4	-2,835.0	0.0	0.0	0.0	0.00	636,030.65	517,233.07	
Grayburg											
600.0	0.00	0.00	600.0	-2,816.4	0.0	0.0	0.0	0.00	636,030.65	517,233.07	
700.0	0.00	0.00	700.0	-2,716.4	0.0	0.0	0.0	0.00	636,030.65	517,233.07	
800.0	0.00	0.00	800.0	-2,616.4	0.0	0.0	0.0	0.00	636,030.65	517,233.07	
900.0	0.00	0.00	900.0	-2,516.4	0.0	0.0	0.0	0.00	636,030.65	517,233.07	
901.4	0.00	0.00	901.4	-2,515.0	0.0	0.0	0.0	0.00	636,030.65	517,233.07	
San Andres											
1,000.0	0.00	0.00	1,000.0	-2,416.4	0.0	0.0	0.0	0.00	636,030.65	517,233.07	
1,100.0	0.00	0.00	1,100.0	-2,316.4	0.0	0.0	0.0	0.00	636,030.65	517,233.07	
1,200.0	0.00	0.00	1,200.0	-2,216.4	0.0	0.0	0.0	0.00	636,030.65	517,233.07	
1,300.0	0.00	0.00	1,300.0	-2,116.4	0.0	0.0	0.0	0.00	636,030.65	517,233.07	
1,400.0	0.00	0.00	1,400.0	-2,016.4	0.0	0.0	0.0	0.00	636,030.65	517,233.07	
1,500.0	0.00	0.00	1,500.0	-1,916.4	0.0	0.0	0.0	0.00	636,030.65	517,233.07	
1,600.0	0.00	0.00	1,600.0	-1,816.4	0.0	0.0	0.0	0.00	636,030.65	517,233.07	
1,700.0	0.00	0.00	1,700.0	-1,716.4	0.0	0.0	0.0	0.00	636,030.65	517,233.07	
1,800.0	0.00	0.00	1,800.0	-1,616.4	0.0	0.0	0.0	0.00	636,030.65	517,233.07	
1,900.0	0.00	0.00	1,900.0	-1,516.4	0.0	0.0	0.0	0.00	636,030.65	517,233.07	
2,000.0	0.00	0.00	2,000.0	-1,416.4	0.0	0.0	0.0	0.00	636,030.65	517,233.07	
2,019.0	0.00	0.00	2,019.0	-1,397.4	0.0	0.0	0.0	0.00	636,030.65	517,233.07	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Vandiver #1H
Project:	Paddock	TVD Reference:	K.B. @ 3416.4usft
Site:	Vandiver #1H	MD Reference:	K.B. @ 3416.4usft
Well:	Vandiver #1H	North Reference:	Grid
Wellbore:	Vandiver #1H	Survey Calculation Method:	Minimum Curvature
Design:	130607 Vandiver #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)	
2,025.0	0.72	67.00	2,025.0	-1,391.4	0.0	0.0	0.0	12.00	636,030.67	517,233.11	
2,050.0	3.72	67.00	2,050.0	-1,366.4	0.4	0.9	0.9	12.00	636,031.04	517,234.00	
2,075.0	6.72	67.00	2,074.9	-1,341.5	1.3	3.0	3.1	12.00	636,031.93	517,236.09	
2,100.0	9.72	67.00	2,099.6	-1,316.8	2.7	6.3	6.4	12.00	636,033.33	517,239.38	
2,125.0	12.72	67.00	2,124.1	-1,292.3	4.6	10.8	11.0	12.00	636,035.23	517,243.86	
2,150.0	15.72	67.00	2,148.4	-1,268.0	7.0	16.4	16.7	12.00	636,037.63	517,249.51	
2,175.0	18.72	67.00	2,172.2	-1,244.2	9.9	23.3	23.6	12.00	636,040.52	517,256.32	
2,200.0	21.72	67.00	2,195.7	-1,220.7	13.2	31.2	31.7	12.00	636,043.90	517,264.27	
2,225.0	24.72	67.00	2,218.7	-1,197.7	17.1	40.3	40.9	12.00	636,047.75	517,273.34	
2,239.1	26.41	67.00	2,231.4	-1,185.0	19.5	45.9	46.6	12.00	636,050.13	517,278.95	
Glorieta											
2,250.0	27.72	67.00	2,241.1	-1,175.3	21.4	50.4	51.3	12.00	636,052.06	517,283.51	
2,275.0	30.72	67.00	2,262.9	-1,153.5	26.2	61.7	62.7	12.00	636,056.83	517,294.74	
2,279.1	31.21	67.00	2,266.4	-1,150.0	27.0	63.6	64.7	12.00	636,057.65	517,296.67	
Paddock											
2,300.0	33.72	67.00	2,284.1	-1,132.3	31.4	73.9	75.2	12.00	636,062.04	517,307.01	
2,325.0	36.72	67.00	2,304.5	-1,111.9	37.0	87.2	88.7	12.00	636,067.67	517,320.28	
2,350.0	39.72	67.00	2,324.1	-1,092.3	43.1	101.4	103.1	12.00	636,073.71	517,334.51	
2,375.0	42.72	67.00	2,342.9	-1,073.5	49.5	116.6	118.6	12.00	636,080.15	517,349.67	
2,400.0	45.72	67.00	2,360.8	-1,055.6	56.3	132.7	134.9	12.00	636,086.96	517,365.72	
2,425.0	48.72	67.00	2,377.8	-1,038.6	63.5	149.5	152.0	12.00	636,094.12	517,382.60	
2,450.0	51.72	67.00	2,393.8	-1,022.6	71.0	167.2	170.0	12.00	636,101.63	517,400.29	
2,475.0	54.72	67.00	2,408.8	-1,007.6	78.8	185.7	188.8	12.00	636,109.45	517,418.71	
2,500.0	57.72	67.00	2,422.7	-993.7	86.9	204.8	208.2	12.00	636,117.57	517,437.84	
2,525.0	60.72	67.00	2,435.5	-980.9	95.3	224.6	228.3	12.00	636,125.96	517,457.61	
2,550.0	63.72	67.00	2,447.1	-969.3	104.0	244.9	249.0	12.00	636,134.60	517,477.96	
2,575.0	66.72	67.00	2,457.6	-958.8	112.8	265.8	270.3	12.00	636,143.47	517,498.85	

Company: Murchison Oil and Gas
Project: Paddock
Site: Vandiver #1H
Well: Vandiver #1H
Wellbore: Vandiver #1H
Design: 130607 Vandiver #1

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

Well Vandiver #1H
K.B. @ 3416.4usft
K.B. @ 3416.4usft
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)
2,600.0	69.72	67.00	2,466.9	-949.5	121.9	287.2	292.0	12.00	636,152.54	517,520.22
2,625.0	72.72	67.00	2,474.9	-941.5	131.1	309.0	314.1	12.00	636,161.78	517,542.00
2,650.0	75.72	67.00	2,481.7	-934.7	140.5	331.1	336.6	12.00	636,171.18	517,564.14
2,675.0	78.72	67.00	2,487.2	-929.2	150.1	353.5	359.5	12.00	636,180.71	517,586.58
2,700.0	81.72	67.00	2,491.5	-924.9	159.7	376.2	382.5	12.00	636,190.33	517,609.25
2,725.0	84.72	67.00	2,494.4	-922.0	169.4	399.1	405.7	12.00	636,200.03	517,632.10
2,750.0	87.72	67.00	2,496.1	-920.3	179.1	422.0	429.1	12.00	636,209.77	517,655.06
2,760.7	89.00	67.00	2,496.4	-920.0	183.3	431.8	439.1	12.00	636,213.94	517,664.87
2,800.0	88.99	68.18	2,497.1	-919.3	198.3	468.2	476.0	3.00	636,228.93	517,701.22
2,900.0	88.98	71.18	2,498.8	-917.6	233.0	561.9	571.1	3.00	636,263.64	517,794.97
3,000.0	88.98	74.18	2,500.6	-915.8	262.8	657.4	667.7	3.00	636,293.40	517,890.40
3,100.0	88.97	77.18	2,502.4	-914.0	287.5	754.3	765.5	3.00	636,318.12	517,987.26
3,200.0	88.97	80.18	2,504.2	-912.2	307.1	852.3	864.3	3.00	636,337.74	518,085.28
3,300.0	88.97	83.18	2,506.0	-910.4	321.6	951.2	963.7	3.00	636,352.20	518,184.19
3,400.0	88.97	86.18	2,507.8	-908.6	330.8	1,050.7	1,063.5	3.00	636,361.47	518,283.72
3,500.0	88.98	89.18	2,509.6	-906.8	334.9	1,150.6	1,163.5	3.00	636,365.51	518,383.60
3,600.0	88.99	92.18	2,511.4	-905.0	333.7	1,250.6	1,263.4	3.00	636,364.32	518,483.56
3,624.5	88.99	92.92	2,511.8	-904.6	332.6	1,275.1	1,287.8	3.00	636,363.23	518,508.03
3,700.0	88.99	92.92	2,513.1	-903.3	328.8	1,350.5	1,362.9	0.00	636,359.38	518,583.41
3,800.0	88.99	92.92	2,514.9	-901.5	323.7	1,450.3	1,462.5	0.00	636,354.29	518,683.26
3,900.0	88.99	92.92	2,516.7	-899.7	318.6	1,550.2	1,562.0	0.00	636,349.20	518,783.10
4,000.0	88.99	92.92	2,518.4	-898.0	313.5	1,650.0	1,661.6	0.00	636,344.11	518,882.95
4,100.0	88.99	92.92	2,520.2	-896.2	308.4	1,749.9	1,761.2	0.00	636,339.02	518,982.79
4,200.0	88.99	92.92	2,522.0	-894.4	303.3	1,849.7	1,860.7	0.00	636,333.93	519,082.64
4,300.0	88.99	92.92	2,523.7	-892.7	298.2	1,949.6	1,960.3	0.00	636,328.84	519,182.49
4,400.0	88.99	92.92	2,525.5	-890.9	293.1	2,049.4	2,059.8	0.00	636,323.74	519,282.33
4,500.0	88.99	92.92	2,527.3	-889.1	288.0	2,149.3	2,159.4	0.00	636,318.65	519,382.18

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Vandiver #1H
Project:	Paddock	TVD Reference:	K.B. @ 3416.4usft
Site:	Vandiver #1H	MD Reference:	K.B. @ 3416.4usft
Well:	Vandiver #1H	North Reference:	Grid
Wellbore:	Vandiver #1H	Survey Calculation Method:	Minimum Curvature
Design:	130607 Vandiver #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)	
4,600.0	88.99	92.92	2,529.0	-887.4	282.9	2,249.2	2,258.9	0.00	636,313.56	519,482.02	
4,700.0	88.99	92.92	2,530.8	-885.6	277.8	2,349.0	2,358.5	0.00	636,308.47	519,581.87	
4,800.0	88.99	92.92	2,532.6	-883.8	272.8	2,448.9	2,458.1	0.00	636,303.38	519,681.71	
4,900.0	88.99	92.92	2,534.3	-882.1	267.7	2,548.7	2,557.6	0.00	636,298.29	519,781.56	
5,000.0	88.99	92.92	2,536.1	-880.3	262.6	2,648.6	2,657.2	0.00	636,293.20	519,881.41	
5,100.0	88.99	92.92	2,537.9	-878.5	257.5	2,748.4	2,756.7	0.00	636,288.11	519,981.25	
5,200.0	88.99	92.92	2,539.6	-876.8	252.4	2,848.3	2,856.3	0.00	636,283.02	520,081.10	
5,300.0	88.99	92.92	2,541.4	-875.0	247.3	2,948.1	2,955.9	0.00	636,277.92	520,180.94	
5,400.0	88.99	92.92	2,543.1	-873.3	242.2	3,048.0	3,055.4	0.00	636,272.83	520,280.79	
5,500.0	88.99	92.92	2,544.9	-871.5	237.1	3,147.8	3,155.0	0.00	636,267.74	520,380.63	
5,600.0	88.99	92.92	2,546.7	-869.7	232.0	3,247.7	3,254.5	0.00	636,262.65	520,480.48	
5,700.0	88.99	92.92	2,548.4	-868.0	226.9	3,347.6	3,354.1	0.00	636,257.56	520,580.33	
5,784.6	88.99	92.92	2,549.9	-866.5	222.6	3,432.1	3,438.3	0.00	636,253.25	520,664.83	
5,800.0	88.99	92.88	2,550.2	-866.2	221.8	3,447.4	3,453.6	0.24	636,252.47	520,680.17	
5,900.0	88.99	92.64	2,552.0	-864.4	217.0	3,547.3	3,553.2	0.24	636,247.66	520,780.03	
6,000.0	88.99	92.40	2,553.7	-862.7	212.6	3,647.2	3,652.8	0.24	636,243.27	520,879.91	
6,100.0	88.99	92.15	2,555.5	-860.9	208.7	3,747.1	3,752.5	0.24	636,239.30	520,979.81	
6,200.0	88.99	91.91	2,557.3	-859.1	205.1	3,847.0	3,852.2	0.24	636,235.76	521,079.72	
6,300.0	88.99	91.67	2,559.0	-857.4	202.0	3,946.9	3,951.9	0.24	636,232.64	521,179.65	
6,400.0	88.99	91.42	2,560.8	-855.6	199.3	4,046.9	4,051.7	0.24	636,229.95	521,279.59	
6,500.0	89.00	91.18	2,562.5	-853.9	197.0	4,146.8	4,151.4	0.24	636,227.68	521,379.54	
6,600.0	89.00	90.94	2,564.3	-852.1	195.2	4,246.8	4,251.2	0.24	636,225.84	521,479.49	
6,700.0	89.00	90.69	2,566.0	-850.4	193.8	4,346.8	4,351.1	0.24	636,224.42	521,579.46	
6,800.0	89.00	90.45	2,567.8	-848.6	192.8	4,446.8	4,450.9	0.24	636,223.42	521,679.43	
6,900.0	89.00	90.21	2,569.5	-846.9	192.2	4,546.7	4,550.8	0.24	636,222.85	521,779.40	
6,984.7	89.00	90.00	2,571.0	-845.4	192.1	4,631.4	4,635.4	0.24	636,222.70	521,864.06	

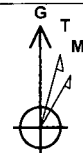
Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Vandiver #1H
Project:	Paddock	TVD Reference:	K.B. @ 3416.4usft
Site:	Vandiver #1H	MD Reference:	K.B. @ 3416.4usft
Well:	Vandiver #1H	North Reference:	Grid
Wellbore:	Vandiver #1H	Survey Calculation Method:	Minimum Curvature
Design:	130607 Vandiver #1	Database:	EDM 5000.1 Single User Db

Formations				
	Measured Depth (usft)	Vertical Depth (usft)	Name	Dip (°)
	2,239.1	2,231.4	Glorieta	0.00
	901.4	901.4	San Andres	0.00
	166.4	166.4	Queen	0.00
	2,279.1	2,266.4	Paddock	0.00
	581.4	581.4	Grayburg	0.00

Checked By: _____	Approved By: _____	Date: _____
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Project: Paddock
 Site: Vandiver #1H
 Well: Vandiver #1H
 Wellbore: Vandiver #1H
 Design: 130607 Vandiver #1

 **MURCHISON OIL & GAS, INC.**



Azimuths to Grid North
 True North: 0.04°
 Magnetic North: 7.83°
 Magnetic Field
 Strength: 48710.6nT
 Dip Angle: 60.51°
 Date: 04/03/2013
 Model: IGRF200510

