

Results of Directional Survey

API number:	30-025-41229		
OGRID:		Operator:	MURCHISON OIL & GAS INC
		Property:	JACKSON UNIT # 23H

surface	ULSTR:	N	22	T 24S	R 33E
				200 FSL	1670 FWL

BH Loc	ULSTR:	C	22	T 24S	R 33E
15729	MD	11111.0	TVD	253 FNL	1657 FWL
				5027 FSL	1657 FWL

Top Perf/OH	ULSTR:	N	22	T 24S	R 33E
11310	MD	11120.5	TVD	612 FSL	1728 FWL

Bot Perf/OH	ULSTR:	C	22	T 24S	R 33E
15450	MD	11116.8	TVD	532 FNL	1671 FWL
				4748 FSL	1671 FWL

	MD	N/S	E/W	VD
	11285	387.90	54.90	11114.3
TOP PERFS/OH	11310	411.88	58.03	11120.47
	11317	418.60	58.90	11122.20
	15417	4515.10	3.00	11117.00
BOT PERFS/OH	15450	4548.03	1.47	11116.79
	15512	4609.90	-1.40	11116.40

NEXT TO LAST	15677	4774.70	-10.30	11112.80
LAST READING	15729	4826.60	-13.10	11111.00
TD	15729	4826.60	-13.10	11111.00

Surface Location	200	FS	1670	FW
Projected BHL	5027	FS	1657	FW
Location of				
Top Perfs/OH	612	FS	1728	FW
Bottom Perfs/OH	4748	FS	1671	FW

SUMMARY of Subsurface Locations

Surface Location	N-22-24S-33E	200	FS	1670	FW	Vert. Depth
Top Perfs/OH	N-22-24S-33E	612	FS	1728	FW	11120.47
Bottom Perfs/OH	C-22-24S-33E	4748	FS	1671	FW	11116.79
Projected TD	C-22-24S-33E	5027	FS	1657	FW	11111.00

SEP 16 2014

 MURCHISON OIL & GAS, INC.

Murchison Oil and Gas

Jackson Unit Section 22

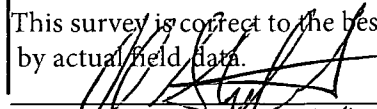
Jackson Unit 23H

Survey: Jackson Unit 23H

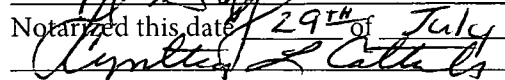
MOJO Standard Survey

28 July, 2014

This survey is correct to the best of my knowledge and is supported
by actual field data.

 (Signature)

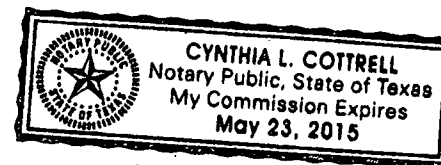
Notarized this date 29th of July, 2014


Notary Signature County of Collin State of Texas

RECEIVED
SEP 02 2014
HOBBS OCD



MOJO
DIRECTIONAL CORPORATION



Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Jackson Unit 23H
Project:	Jackson Unit Section 22	TVD Reference:	WELL @ 3551.0usft (Original Well Elev)
Site:	Jackson Unit 23H	MD Reference:	WELL @ 3551.0usft (Original Well Elev)
Well:	Jackson Unit 23H	North Reference:	Grid
Wellbore:	Jackson Unit 23H	Survey Calculation Method:	Minimum Curvature
Design:	Jackson Unit 23H	Database:	EDM 5000.1 Single User Db

Project		Jackson Unit Section 22	
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Jackson Unit 23H				
Site Position:		Northing:	436,040.36	usft	Latitude:	32° 11' 47.068 N
From:	Lat/Long	Easting:	779,525.94	usft	Longitude:	103° 33' 47.945 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16	"	Grid Convergence:	0.41 °

Well		Jackson Unit 23H				
Well Position	+N/-S	0.0 usft	Northing:	436,040.36 usft	Latitude:	32° 11' 47.068 N
	+E/-W	0.0 usft	Easting:	779,525.94 usft	Longitude:	103° 33' 47.945 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,529.0 usft

Wellbore	Jackson Unit 23H				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	09/09/2013	7.30	60.11	48,376

Design		Jackson Unit 23H			
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	359.95	

Survey Program		Date 28/07/2014		
From: (usft)	To: (usft)	Survey (Wellbore)	Tool Name	Description
100.0	15,729.0	Jackson Unit 23H (Jackson Unit 23H)	MWD	MWD - Standard

Company: Murchison Oil and Gas		Local Co-ordinate Reference:				Well: Jackson Unit 23H	
Project: Jackson Unit Section 22		TVD Reference:				Wellbore: Jackson Unit 23H	
Site: Jackson Unit 23H		MD Reference:				Design: Jackson Unit 23H	
Well: Jackson Unit 23H		North Reference:				Survey Calculation Method:	
Wellbore: Jackson Unit 23H		Database:				Grid	
Design: Jackson Unit 23H						Minimum Curvature	
						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)	
0.0	0.00	0.00	0.0	-3,551.0	0.0	0.0	0.0	0.00	436,040.36	779,525.94	
100.0	0.69	331.61	100.0	-3,451.0	0.5	-0.3	0.5	0.69	436,040.89	779,525.66	
200.0	0.68	336.42	200.0	-3,351.0	1.6	-0.8	1.6	0.06	436,041.96	779,525.13	
300.0	0.80	334.94	300.0	-3,251.0	2.8	-1.3	2.8	0.12	436,043.14	779,524.60	
400.0	0.87	326.16	400.0	-3,151.0	4.0	-2.1	4.0	0.15	436,044.40	779,523.88	
500.0	1.12	325.99	500.0	-3,051.0	5.5	-3.0	5.5	0.25	436,045.84	779,522.91	
600.0	1.35	333.74	599.9	-2,951.1	7.3	-4.1	7.4	0.28	436,047.71	779,521.84	
700.0	1.44	341.72	699.9	-2,851.1	9.6	-5.0	9.6	0.21	436,049.96	779,520.93	
800.0	1.38	354.28	799.9	-2,751.1	12.0	-5.5	12.0	0.31	436,052.35	779,520.41	
900.0	1.17	339.18	899.8	-2,651.2	14.1	-6.0	14.1	0.39	436,054.50	779,519.93	
1,000.0	1.64	322.65	999.8	-2,551.2	16.2	-7.2	16.2	0.62	436,056.59	779,518.70	
1,100.0	1.88	330.33	1,099.8	-2,451.2	18.8	-8.9	18.8	0.34	436,059.15	779,517.02	
1,200.0	1.62	340.21	1,199.7	-2,351.3	21.6	-10.2	21.6	0.40	436,061.91	779,515.73	
1,206.3	1.60	339.73	1,206.0	-2,345.0	21.7	-10.3	21.7	0.34	436,062.07	779,515.67	
Rustler											
1,261.5	1.46	335.07	1,261.2	-2,289.8	23.1	-10.8	23.1	0.34	436,063.44	779,515.10	
13 3/8"											
1,300.0	1.37	331.27	1,299.7	-2,251.3	23.9	-11.3	23.9	0.34	436,064.29	779,514.68	
1,400.0	0.95	211.15	1,399.7	-2,151.3	24.3	-12.3	24.3	2.02	436,064.63	779,513.67	
1,500.0	1.02	206.03	1,499.7	-2,051.3	22.8	-13.1	22.8	0.11	436,063.12	779,512.85	
1,600.0	0.27	182.74	1,599.7	-1,951.3	21.7	-13.5	21.7	0.78	436,062.08	779,512.45	
1,700.0	0.43	50.00	1,699.7	-1,851.3	21.7	-13.2	21.7	0.64	436,062.09	779,512.73	
1,800.0	1.18	43.03	1,799.6	-1,751.4	22.7	-12.2	22.7	0.75	436,063.08	779,513.72	
1,900.0	0.59	104.78	1,899.6	-1,651.4	23.3	-11.0	23.4	1.04	436,063.70	779,514.92	
2,000.0	0.93	221.17	1,999.6	-1,551.4	22.6	-11.1	22.6	1.30	436,062.96	779,514.88	
2,100.0	0.91	258.39	2,099.6	-1,451.4	21.8	-12.4	21.8	0.59	436,062.19	779,513.57	
2,200.0	0.89	339.37	2,199.6	-1,351.4	22.4	-13.4	22.4	1.17	436,062.76	779,512.52	

Company: Murchison Oil and Gas		Local Co-ordinate Reference: Well Jackson Unit 23H			
Project: Jackson Unit Section 22		TVD Reference: WELL @ 3551.0usft (Original Well Elev)			
Site: Jackson Unit 23H		MD Reference: WELL @ 3551.0usft (Original Well Elev)			
Well: Jackson Unit 23H		North Reference: Grid			
Wellbore: Jackson Unit 23H		Survey Calculation Method: Minimum Curvature			
Design: Jackson Unit 23H		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)	
2,300.0	0.77	352.33	2,299.6	-1,251.4	23.8	-13.8	23.8	0.22	436,064.15	779,512.15	
2,400.0	0.79	336.72	2,399.6	-1,151.4	25.1	-14.1	25.1	0.21	436,065.45	779,511.79	
2,500.0	1.25	336.37	2,499.6	-1,051.4	26.7	-14.9	26.7	0.46	436,067.08	779,511.08	
2,600.0	1.54	356.31	2,599.5	-951.5	29.1	-15.4	29.1	0.56	436,069.42	779,510.56	
2,700.0	0.48	73.91	2,699.5	-851.5	30.5	-15.1	30.5	1.51	436,070.88	779,510.87	
2,800.0	0.05	61.66	2,799.5	-751.5	30.7	-14.6	30.7	0.43	436,071.02	779,511.32	
2,900.0	0.38	31.56	2,899.5	-651.5	31.0	-14.4	31.0	0.34	436,071.32	779,511.53	
3,000.0	0.53	77.38	2,999.5	-551.5	31.3	-13.8	31.4	0.38	436,071.70	779,512.15	
3,100.0	0.35	81.02	3,099.5	-451.5	31.5	-13.0	31.5	0.18	436,071.85	779,512.91	
3,200.0	0.46	23.90	3,199.5	-351.5	31.9	-12.6	31.9	0.40	436,072.27	779,513.37	
3,300.0	0.84	49.03	3,299.5	-251.5	32.8	-11.9	32.8	0.47	436,073.11	779,514.09	
3,400.0	0.75	81.82	3,399.5	-151.5	33.3	-10.7	33.3	0.46	436,073.69	779,515.29	
3,500.0	1.76	210.06	3,499.5	-51.5	32.1	-10.8	32.1	2.30	436,072.45	779,515.17	
3,600.0	1.14	240.07	3,599.5	48.5	30.3	-12.4	30.3	0.96	436,070.63	779,513.53	
3,700.0	0.91	233.17	3,699.4	148.4	29.3	-13.9	29.3	0.26	436,069.65	779,512.04	
3,800.0	1.24	237.99	3,799.4	248.4	28.2	-15.5	28.3	0.34	436,068.60	779,510.48	
3,900.0	1.35	260.40	3,899.4	348.4	27.5	-17.5	27.5	0.51	436,067.83	779,508.40	
4,000.0	0.85	290.70	3,999.4	448.4	27.5	-19.4	27.6	0.75	436,067.90	779,506.55	
4,100.0	0.68	19.92	4,099.4	548.4	28.4	-19.9	28.4	1.08	436,068.72	779,506.06	
4,200.0	0.35	46.48	4,199.4	648.4	29.1	-19.5	29.1	0.40	436,069.49	779,506.48	
4,300.0	0.37	2.05	4,299.4	748.4	29.7	-19.2	29.7	0.27	436,070.02	779,506.71	
4,400.0	0.85	29.46	4,399.4	848.4	30.6	-18.9	30.6	0.55	436,070.99	779,507.09	
4,500.0	1.35	69.58	4,499.3	948.3	31.7	-17.4	31.7	0.89	436,072.05	779,508.56	
4,600.0	1.08	132.57	4,599.3	1,048.3	31.5	-15.6	31.5	1.29	436,071.82	779,510.36	
4,700.0	1.29	167.68	4,699.3	1,148.3	29.7	-14.6	29.7	0.74	436,070.08	779,511.29	
4,800.0	1.47	157.90	4,799.3	1,248.3	27.4	-13.9	27.5	0.30	436,067.79	779,512.01	
4,900.0	2.11	143.40	4,899.2	1,348.2	24.8	-12.3	24.8	0.78	436,065.13	779,513.59	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Jackson Unit 23H
Project:	Jackson Unit Section 22	TVD Reference:	WELL @ 3551.0usft (Original Well Elev)
Site:	Jackson Unit 23H	MD Reference:	WELL @ 3551.0usft (Original Well Elev)
Well:	Jackson Unit 23H	North Reference:	Grid
Wellbore:	Jackson Unit 23H	Survey Calculation Method:	Minimum Curvature
Design:	Jackson Unit 23H	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)	
5,000.0	2.53	146.92	4,999.2	1,448.2	21.4	-10.0	21.5	0.44	436,061.80	779,515.90	
5,100.0	1.47	185.85	5,099.1	1,548.1	18.3	-9.0	18.3	1.67	436,058.67	779,516.97	
5,175.0	1.49	203.74	5,174.1	1,623.1	16.5	-9.5	16.5	0.61	436,056.82	779,516.48	
9 5/8"											
5,191.9	1.52	207.59	5,191.0	1,640.0	16.1	-9.7	16.1	0.61	436,056.42	779,516.29	
Delaware											
5,231.0	1.60	215.90	5,230.0	1,679.0	15.2	-10.2	15.2	0.61	436,055.52	779,515.73	
5,327.0	1.50	215.00	5,326.0	1,775.0	13.1	-11.7	13.1	0.11	436,053.41	779,514.22	
5,421.0	1.40	228.90	5,420.0	1,869.0	11.3	-13.3	11.3	0.39	436,051.64	779,512.65	
5,517.0	1.30	210.00	5,516.0	1,965.0	9.6	-14.7	9.6	0.47	436,049.93	779,511.22	
5,612.0	1.70	215.80	5,610.9	2,059.9	7.5	-16.1	7.5	0.45	436,047.85	779,509.86	
5,707.0	1.40	201.20	5,705.9	2,154.9	5.3	-17.3	5.3	0.52	436,045.63	779,508.61	
5,802.0	1.70	217.80	5,800.9	2,249.9	3.1	-18.6	3.1	0.57	436,043.43	779,507.33	
5,896.0	1.30	217.90	5,894.8	2,343.8	1.1	-20.1	1.2	0.43	436,041.49	779,505.82	
5,990.0	1.40	216.30	5,988.8	2,437.8	-0.6	-21.5	-0.6	0.11	436,039.72	779,504.49	
6,085.0	1.00	161.20	6,083.8	2,532.8	-2.4	-21.9	-2.3	1.23	436,038.00	779,504.07	
6,157.2	0.77	169.34	6,156.0	2,605.0	-3.4	-21.6	-3.4	0.36	436,036.93	779,504.36	
Cherry Canyon											
6,180.0	0.70	173.00	6,178.8	2,627.8	-3.7	-21.5	-3.7	0.36	436,036.64	779,504.40	
6,276.0	1.30	108.10	6,274.8	2,723.8	-4.6	-20.4	-4.6	1.24	436,035.72	779,505.51	
6,371.0	1.20	104.50	6,369.7	2,818.7	-5.2	-18.4	-5.2	0.13	436,035.14	779,507.50	
6,466.0	1.40	97.10	6,464.7	2,913.7	-5.6	-16.3	-5.6	0.27	436,034.75	779,509.61	
6,561.0	1.00	91.20	6,559.7	3,008.7	-5.8	-14.3	-5.8	0.44	436,034.59	779,511.59	
6,657.0	1.40	102.30	6,655.7	3,104.7	-6.0	-12.4	-6.0	0.48	436,034.32	779,513.58	
6,752.0	1.00	99.90	6,750.6	3,199.6	-6.4	-10.4	-6.4	0.42	436,033.93	779,515.53	
6,847.0	1.20	92.80	6,845.6	3,294.6	-6.6	-8.6	-6.6	0.25	436,033.74	779,517.34	
6,942.0	1.30	108.50	6,940.6	3,389.6	-7.0	-6.6	-7.0	0.37	436,033.35	779,519.35	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Jackson Unit 23H
Project:	Jackson Unit Section 22	TVD Reference:	WELL @ 3551.0usft (Original Well Elev)
Site:	Jackson Unit 23H	MD Reference:	WELL @ 3551.0usft (Original Well Elev)
Well:	Jackson Unit 23H	North Reference:	Grid
Wellbore:	Jackson Unit 23H	Survey Calculation Method:	Minimum Curvature
Design:	Jackson Unit 23H	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)	
7,038.0	0.80	115.20	7,036.6	3,485.6	-7.6	-4.9	-7.6	0.54	436,032.72	779,520.99	
7,133.0	0.90	113.90	7,131.6	3,580.6	-8.2	-3.7	-8.2	0.11	436,032.13	779,522.27	
7,228.0	0.90	98.90	7,226.6	3,675.6	-8.6	-2.2	-8.6	0.25	436,031.71	779,523.69	
7,324.0	1.10	122.50	7,322.6	3,771.6	-9.3	-0.7	-9.3	0.47	436,031.10	779,525.22	
7,420.0	1.20	115.20	7,418.5	3,867.5	-10.2	1.0	-10.2	0.18	436,030.18	779,526.90	
7,514.0	1.00	113.20	7,512.5	3,961.5	-10.9	2.6	-10.9	0.22	436,029.44	779,528.55	
7,610.0	0.80	124.50	7,608.5	4,057.5	-11.6	3.9	-11.6	0.28	436,028.73	779,529.87	
7,610.5	0.80	124.66	7,609.0	4,058.0	-11.6	3.9	-11.6	0.47	436,028.72	779,529.87	
Brushy Canyon											
7,705.0	1.00	150.30	7,703.5	4,152.5	-12.7	4.9	-12.7	0.47	436,027.63	779,530.83	
7,800.0	0.10	152.20	7,798.5	4,247.5	-13.5	5.3	-13.5	0.95	436,026.84	779,531.28	
7,896.0	1.00	127.70	7,894.5	4,343.5	-14.1	6.0	-14.1	0.95	436,026.25	779,531.98	
7,991.0	0.20	305.30	7,989.5	4,438.5	-14.5	6.6	-14.5	1.26	436,025.84	779,532.50	
8,086.0	0.30	317.90	8,084.5	4,533.5	-14.2	6.3	-14.2	0.12	436,026.12	779,532.20	
8,180.0	0.30	228.10	8,178.5	4,627.5	-14.2	5.9	-14.2	0.45	436,026.14	779,531.85	
8,276.0	0.50	189.10	8,274.5	4,723.5	-14.8	5.7	-14.8	0.34	436,025.56	779,531.59	
8,371.0	0.40	215.90	8,369.5	4,818.5	-15.5	5.4	-15.5	0.24	436,024.88	779,531.33	
8,465.0	0.30	212.60	8,463.5	4,912.5	-16.0	5.1	-16.0	0.11	436,024.41	779,531.01	
8,561.0	0.50	161.80	8,559.5	5,008.5	-16.6	5.1	-16.6	0.40	436,023.80	779,531.01	
8,656.0	1.90	90.30	8,654.4	5,103.4	-17.0	6.8	-17.0	1.90	436,023.39	779,532.71	
8,751.0	5.90	100.70	8,749.2	5,198.2	-17.9	13.1	-17.9	4.26	436,022.48	779,539.09	
8,847.0	4.30	112.20	8,844.8	5,293.8	-20.2	21.3	-20.2	1.97	436,020.20	779,547.27	
8,941.0	2.20	174.30	8,938.7	5,387.7	-23.3	24.8	-23.3	4.05	436,017.07	779,550.71	
9,035.0	1.50	290.50	9,032.7	5,481.7	-24.6	23.8	-24.7	3.36	436,015.71	779,549.74	
9,124.4	1.69	298.65	9,122.0	5,571.0	-23.6	21.5	-23.6	0.33	436,016.75	779,547.49	
Bone Spring											
9,130.0	1.70	299.10	9,127.6	5,576.6	-23.5	21.4	-23.5	0.33	436,016.83	779,547.34	

Company: Murchison Oil and Gas		Local Co-ordinate Reference:						Well Jackson Unit 23H		
Project: Jackson Unit Section 22		TVD Reference:						WELL @ 3551.0usft (Original Well Elev)		
Site: Jackson Unit 23H		MD Reference:						WELL @ 3551.0usft (Original Well Elev)		
Well: Jackson Unit 23H		North Reference:						Grid		
Wellbore: Jackson Unit 23H		Survey Calculation Method:						Minimum Curvature		
Design: Jackson Unit 23H		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)	
9,225.0	1.70	295.90	9,222.6	5,671.6	-22.2	18.9	-22.2	0.10	436,018.13	779,544.84	
9,240.4	1.67	296.87	9,238.0	5,687.0	-22.0	18.5	-22.0	0.29	436,018.33	779,544.44	
Avalon Shale											
9,319.0	1.50	302.50	9,316.6	5,765.6	-21.0	16.6	-21.0	0.29	436,019.40	779,542.55	
9,414.0	1.20	323.60	9,411.5	5,860.5	-19.5	15.0	-19.5	0.61	436,020.87	779,540.91	
9,509.0	1.20	316.40	9,506.5	5,955.5	-18.0	13.7	-18.0	0.16	436,022.39	779,539.63	
9,605.0	1.50	335.30	9,602.5	6,051.5	-16.1	12.5	-16.1	0.56	436,024.26	779,538.42	
9,701.0	1.40	357.50	9,698.5	6,147.5	-13.8	11.9	-13.8	0.59	436,026.57	779,537.84	
9,796.0	1.30	330.70	9,793.4	6,242.4	-11.7	11.3	-11.7	0.67	436,028.67	779,537.26	
9,892.0	1.00	313.00	9,889.4	6,338.4	-10.2	10.2	-10.2	0.48	436,030.19	779,536.12	
9,987.0	0.90	301.40	9,984.4	6,433.4	-9.2	8.9	-9.2	0.23	436,031.15	779,534.87	
10,083.0	0.70	293.90	10,080.4	6,529.4	-8.6	7.8	-8.6	0.23	436,031.78	779,533.69	
10,141.6	0.82	288.62	10,139.0	6,588.0	-8.3	7.0	-8.3	0.24	436,032.06	779,532.97	
1st Bone Spring Sand											
10,179.0	0.90	286.00	10,176.4	6,625.4	-8.1	6.5	-8.1	0.24	436,032.22	779,532.43	
10,271.0	0.80	297.80	10,268.4	6,717.4	-7.6	5.2	-7.6	0.22	436,032.72	779,531.17	
10,366.0	0.80	298.30	10,363.4	6,812.4	-7.0	4.1	-7.0	0.01	436,033.35	779,530.00	
10,455.0	0.50	345.23	10,452.3	6,901.3	-6.3	3.4	-6.3	0.66	436,034.02	779,529.35	
7"											
10,462.0	0.50	350.50	10,459.3	6,908.3	-6.3	3.4	-6.3	0.66	436,034.08	779,529.34	
10,493.0	2.50	5.40	10,490.3	6,939.3	-5.5	3.4	-5.5	6.52	436,034.88	779,529.38	
10,525.0	4.70	12.30	10,522.3	6,971.3	-3.5	3.8	-3.5	6.99	436,036.86	779,529.73	
10,557.0	7.10	15.40	10,554.1	7,003.1	-0.3	4.6	-0.3	7.56	436,040.05	779,530.53	
10,588.0	10.00	15.30	10,584.8	7,033.8	4.1	5.8	4.1	9.35	436,044.49	779,531.75	
10,619.0	12.30	12.30	10,615.2	7,064.2	10.0	7.2	10.0	7.65	436,050.32	779,533.16	
10,651.0	13.90	9.50	10,646.3	7,095.3	17.1	8.6	17.1	5.38	436,057.44	779,534.52	
10,683.0	15.00	5.00	10,677.3	7,126.3	25.0	9.6	25.0	4.91	436,065.35	779,535.52	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Jackson Unit 23H
Project:	Jackson Unit Section 22	TVD Reference:	WELL @ 3551.0usft (Original Well Elev)
Site:	Jackson Unit 23H	MD Reference:	WELL @ 3551.0usft (Original Well Elev)
Well:	Jackson Unit 23H	North Reference:	Grid
Wellbore:	Jackson Unit 23H	Survey Calculation Method:	Minimum Curvature
Design:	Jackson Unit 23H	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)	
10,714.0	14.50	3.50	10,707.3	7,156.3	32.9	10.2	32.9	2.03	436,073.22	779,536.11	
10,746.0	15.30	3.80	10,738.2	7,187.2	41.1	10.7	41.1	2.51	436,081.44	779,536.63	
10,777.0	16.80	6.30	10,768.0	7,217.0	49.6	11.5	49.6	5.33	436,089.97	779,537.39	
10,809.0	19.00	4.70	10,798.5	7,247.5	59.4	12.4	59.4	7.04	436,099.76	779,538.33	
10,841.0	21.70	1.40	10,828.5	7,277.5	70.5	13.0	70.5	9.16	436,110.87	779,538.90	
10,864.4	24.72	4.22	10,850.0	7,299.0	79.7	13.4	79.7	13.72	436,120.09	779,539.37	
2nd Bone Spring sand											
10,872.0	25.70	5.00	10,856.8	7,305.8	82.9	13.7	82.9	13.72	436,123.30	779,539.63	
10,904.0	29.70	4.30	10,885.2	7,334.2	97.8	14.9	97.8	12.54	436,138.12	779,540.83	
10,935.0	33.90	5.00	10,911.5	7,360.5	114.0	16.2	114.0	13.60	436,154.40	779,542.15	
10,961.0	38.04	6.00	10,932.6	7,381.6	129.2	17.7	129.2	16.09	436,169.60	779,543.62	
Cross South Hard Boundary at 10961ftMD											
10,967.0	39.00	6.20	10,937.2	7,386.2	133.0	18.1	132.9	16.09	436,173.31	779,544.02	
10,999.0	41.50	7.30	10,961.7	7,410.7	153.5	20.5	153.5	8.12	436,193.84	779,546.46	
11,031.0	43.50	7.90	10,985.3	7,434.3	174.9	23.4	174.9	6.38	436,215.27	779,549.32	
11,062.0	47.90	8.60	11,006.9	7,455.9	196.9	26.6	196.8	14.29	436,237.22	779,552.51	
11,094.0	52.00	7.80	11,027.5	7,476.5	221.1	30.1	221.1	12.95	436,261.46	779,555.99	
11,126.0	55.60	8.90	11,046.4	7,495.4	246.6	33.8	246.6	11.59	436,287.00	779,559.75	
11,158.0	58.20	9.40	11,063.9	7,512.9	273.1	38.1	273.1	8.23	436,313.47	779,564.01	
11,190.0	61.60	8.60	11,079.9	7,528.9	300.5	42.4	300.4	10.84	436,340.81	779,568.34	
11,221.0	66.20	8.60	11,093.5	7,542.5	328.0	46.6	327.9	14.84	436,368.33	779,572.50	
11,253.0	72.10	7.70	11,104.9	7,553.9	357.6	50.8	357.5	18.62	436,397.92	779,576.73	
11,285.0	73.90	7.90	11,114.3	7,563.3	387.9	54.9	387.8	5.66	436,428.23	779,580.89	
11,317.0	77.40	6.80	11,122.2	7,571.2	418.6	58.9	418.6	11.43	436,458.97	779,584.85	
11,348.0	81.70	5.00	11,127.8	7,576.8	448.9	62.0	448.9	15.00	436,489.29	779,587.98	
11,385.0	84.40	3.30	11,132.3	7,581.3	485.6	64.7	485.5	8.61	436,525.92	779,590.64	
11,417.0	84.50	1.50	11,135.4	7,584.4	517.4	66.0	517.3	5.61	436,557.74	779,591.97	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Jackson Unit 23H
Project:	Jackson Unit Section 22	TVD Reference:	WELL @ 3551.0usft (Original Well Elev)
Site:	Jackson Unit 23H	MD Reference:	WELL @ 3551.0usft (Original Well Elev)
Well:	Jackson Unit 23H	North Reference:	Grid
Wellbore:	Jackson Unit 23H	Survey Calculation Method:	Minimum Curvature
Design:	Jackson Unit 23H	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)
11,448.0	84.80	359.20	11,138.3	7,587.3	548.2	66.2	548.2	7.45	436,588.60	779,592.16
11,480.0	86.00	358.20	11,140.9	7,589.9	580.1	65.5	580.1	4.87	436,620.49	779,591.43
11,511.0	87.90	357.40	11,142.5	7,591.5	611.1	64.3	611.0	6.65	436,651.42	779,590.25
11,543.0	90.20	357.00	11,143.0	7,592.0	643.0	62.7	643.0	7.30	436,683.38	779,588.68
11,606.0	90.80	357.90	11,142.5	7,591.5	706.0	59.9	705.9	1.72	436,746.31	779,585.88
11,702.0	90.60	356.70	11,141.3	7,590.3	801.8	55.4	801.8	1.27	436,842.19	779,581.36
11,797.0	89.80	356.80	11,141.0	7,590.0	896.7	50.0	896.6	0.85	436,937.04	779,575.97
11,891.0	90.20	357.90	11,141.0	7,590.0	990.6	45.7	990.5	1.25	437,030.94	779,571.63
11,987.0	90.90	358.20	11,140.1	7,589.1	1,086.5	42.4	1,086.5	0.79	437,126.88	779,568.36
12,082.0	91.80	0.90	11,137.8	7,586.8	1,181.5	41.7	1,181.4	3.00	437,221.84	779,567.61
12,178.0	90.30	0.40	11,136.1	7,585.1	1,277.5	42.8	1,277.4	1.65	437,317.81	779,568.70
12,274.0	91.30	359.90	11,134.7	7,583.7	1,373.4	43.0	1,373.4	1.16	437,413.80	779,568.95
12,369.0	91.10	359.90	11,132.7	7,581.7	1,468.4	42.8	1,468.4	0.21	437,508.78	779,568.79
12,465.0	88.50	359.30	11,133.1	7,582.1	1,564.4	42.2	1,564.4	2.78	437,604.77	779,568.12
12,561.0	89.00	358.90	11,135.2	7,584.2	1,660.4	40.7	1,660.3	0.67	437,700.73	779,566.61
12,657.0	89.80	358.50	11,136.2	7,585.2	1,756.3	38.5	1,756.3	0.93	437,796.70	779,564.43
12,753.0	90.20	357.10	11,136.2	7,585.2	1,852.3	34.8	1,852.2	1.52	437,892.63	779,560.75
12,848.0	91.50	357.80	11,134.8	7,583.8	1,947.2	30.6	1,947.1	1.55	437,987.52	779,556.52
12,944.0	90.90	356.00	11,132.8	7,581.8	2,043.0	25.4	2,043.0	1.98	438,083.36	779,551.33
13,039.0	90.50	357.30	11,131.6	7,580.6	2,137.8	19.8	2,137.8	1.43	438,178.18	779,545.78
13,134.0	88.90	0.00	11,132.1	7,581.1	2,232.8	17.6	2,232.8	3.30	438,273.14	779,543.54
13,230.0	89.10	1.10	11,133.8	7,582.8	2,328.8	18.5	2,328.8	1.16	438,369.12	779,544.46
13,325.0	90.10	1.20	11,134.4	7,583.4	2,423.7	20.4	2,423.7	1.06	438,464.10	779,546.37
13,421.0	90.70	1.00	11,133.8	7,582.8	2,519.7	22.3	2,519.7	0.66	438,560.08	779,548.21
13,516.0	91.40	0.40	11,132.0	7,581.0	2,614.7	23.4	2,614.7	0.97	438,655.06	779,549.37
13,612.0	92.40	0.50	11,128.8	7,577.8	2,710.6	24.2	2,710.6	1.05	438,751.00	779,550.13
13,707.0	90.50	359.90	11,126.4	7,575.4	2,805.6	24.5	2,805.6	2.10	438,845.96	779,550.46

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Jackson Unit 23H
Project:	Jackson Unit Section 22	TVD Reference:	WELL @ 3551.0usft (Original Well Elev)
Site:	Jackson Unit 23H	MD Reference:	WELL @ 3551.0usft (Original Well Elev)
Well:	Jackson Unit 23H	North Reference:	Grid
Wellbore:	Jackson Unit 23H	Survey Calculation Method:	Minimum Curvature
Design:	Jackson Unit 23H	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)
13,801.0	92.00	359.60	11,124.4	7,573.4	2,899.6	24.1	2,899.6	1.63	438,939.94	779,550.05
13,895.0	91.20	0.70	11,121.8	7,570.8	2,993.5	24.4	2,993.5	1.45	439,033.90	779,550.29
13,990.0	89.10	0.50	11,121.5	7,570.5	3,088.5	25.3	3,088.5	2.22	439,128.89	779,551.29
14,084.0	89.80	0.50	11,122.4	7,571.4	3,182.5	26.2	3,182.5	0.74	439,222.88	779,552.11
14,179.0	90.50	0.60	11,122.2	7,571.2	3,277.5	27.1	3,277.5	0.74	439,317.87	779,553.02
14,273.0	91.20	359.40	11,120.8	7,569.8	3,371.5	27.1	3,371.5	1.48	439,411.86	779,553.02
14,368.0	89.80	359.70	11,119.9	7,568.9	3,466.5	26.3	3,466.5	1.51	439,506.85	779,552.28
14,462.0	90.60	359.20	11,119.6	7,568.6	3,560.5	25.4	3,560.5	1.00	439,600.85	779,551.37
14,558.0	91.60	359.00	11,117.8	7,566.8	3,656.5	23.9	3,656.4	1.06	439,696.82	779,549.87
14,653.0	90.20	359.60	11,116.3	7,565.3	3,751.4	22.8	3,751.4	1.60	439,791.79	779,548.70
14,749.0	90.50	359.50	11,115.7	7,564.7	3,847.4	22.0	3,847.4	0.33	439,887.79	779,547.95
14,845.0	91.40	359.50	11,114.1	7,563.1	3,943.4	21.2	3,943.4	0.94	439,983.77	779,547.11
14,940.0	88.90	358.80	11,113.8	7,562.8	4,038.4	19.8	4,038.4	2.73	440,078.75	779,545.70
15,036.0	89.80	358.70	11,114.9	7,563.9	4,134.4	17.7	4,134.3	0.94	440,174.72	779,543.61
15,131.0	90.60	358.10	11,114.6	7,563.6	4,229.3	15.0	4,229.3	1.05	440,269.68	779,540.96
15,227.0	88.80	357.70	11,115.1	7,564.1	4,325.3	11.5	4,325.2	1.92	440,365.61	779,537.44
15,322.0	89.40	357.40	11,116.6	7,565.6	4,420.2	7.4	4,420.2	0.71	440,460.51	779,533.38
15,417.0	90.10	357.30	11,117.0	7,566.0	4,515.1	3.0	4,515.1	0.74	440,555.41	779,528.99
15,512.0	90.60	357.30	11,116.4	7,565.4	4,609.9	-1.4	4,609.9	0.53	440,650.30	779,524.51
15,605.0	91.29	356.71	11,114.9	7,563.9	4,702.8	-6.3	4,702.8	0.98	440,743.16	779,519.65
4 1/2"										
15,606.0	91.30	356.70	11,114.9	7,563.9	4,703.8	-6.3	4,703.8	0.98	440,744.16	779,519.59
15,649.0	91.72	356.82	11,113.7	7,562.7	4,746.7	-8.8	4,746.7	1.03	440,787.08	779,517.16
Cross North Hard Boundary at 15649ftMD										
15,677.0	92.00	356.90	11,112.8	7,561.8	4,774.7	-10.3	4,774.7	1.03	440,815.02	779,515.63
15,729.0	92.00	356.90	11,111.0	7,560.0	4,826.6	-13.1	4,826.6	0.00	440,866.91	779,512.82

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Jackson Unit 23H
Project:	Jackson Unit Section 22	TVD Reference:	WELL @ 3551.0usft (Original Well Elev)
Site:	Jackson Unit 23H	MD Reference:	WELL @ 3551.0usft (Original Well Elev)
Well:	Jackson Unit 23H	North Reference:	Grid
Wellbore:	Jackson Unit 23H	Survey Calculation Method:	Minimum Curvature
Design:	Jackson Unit 23H	Database:	EDM 5000.1 Single User Db

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
5,175.0	5,174.1	9 5/8"	9-5/8	12-1/4	
1,261.5	1,261.2	13 3/8"	13-3/8	16	
10,455.0	10,452.3	7"	7	8-1/2	
15,605.0	11,114.9	4 1/2"	4-1/2	8-1/2	

Formations				
Measured Depth (usft)	Vertical Depth (usft)	Name	Dip (°)	
6,157.2	6,156.0	Cherry Canyon	0.00	
1,206.3	1,206.0	Rustler	0.00	
5,191.9	5,191.0	Delaware	0.00	
10,141.6	10,139.0	1st Bone Spring Sand	0.00	
10,864.4	10,850.0	2nd Bone Spring sand	0.00	
9,124.4	9,122.0	Bone Spring	0.00	
9,240.4	9,238.0	Avalon Shale	0.00	
7,610.5	7,609.0	Brushy Canyon	0.00	

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,961.0	10,932.6	129.2	17.7	Cross South Hard Boundary at 10961ftMD
15,649.0	11,113.7	4,746.7	-8.8	Cross North Hard Boundary at 15649ftMD

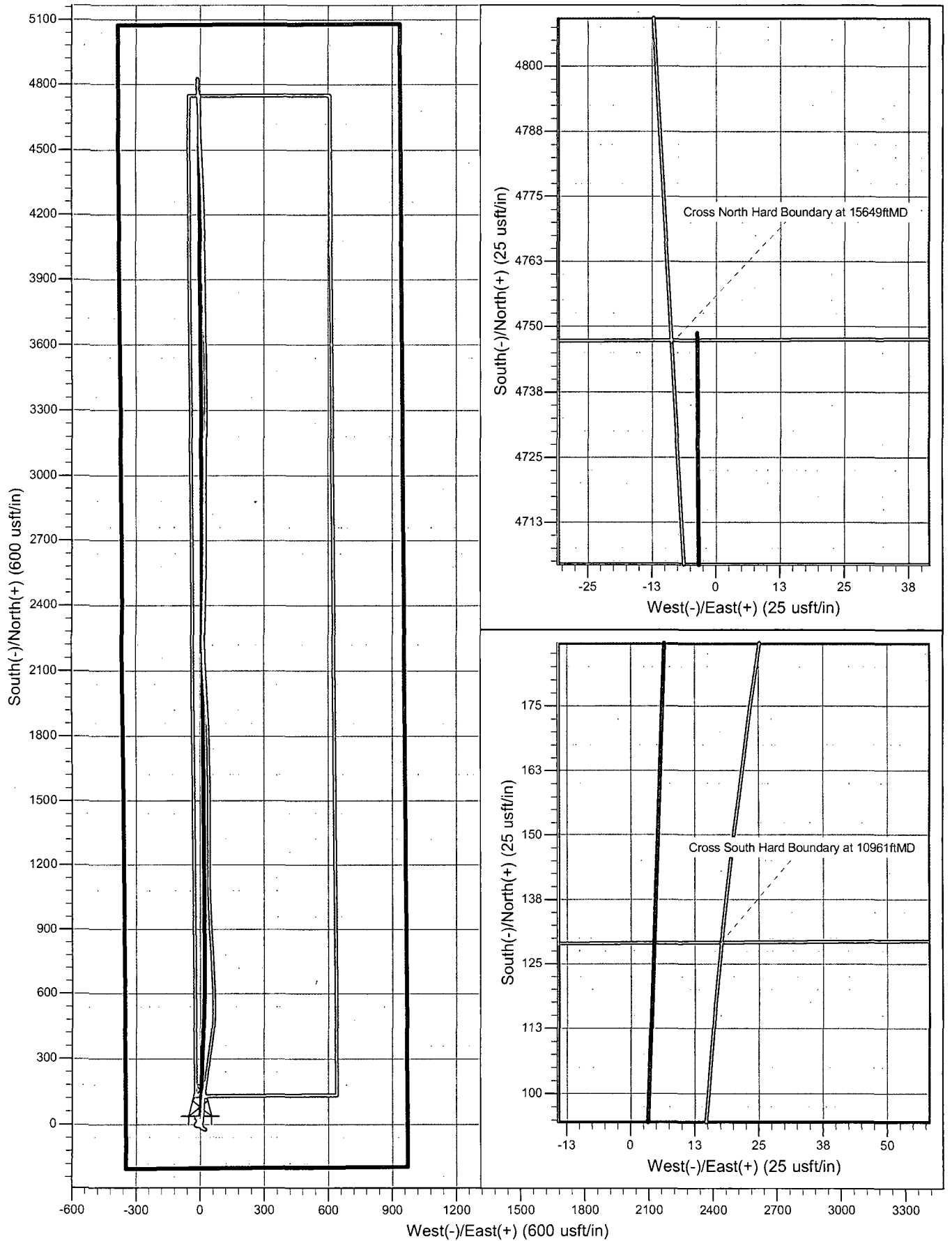
Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------

Project: Jackson Unit Section 22
 Site: Jackson Unit 23H
 Well: Jackson Unit 23H
 Wellbore: Jackson Unit 23H
 Design: Jackson Unit 23H

 MURCHISON OIL & GAS, INC.



Azimuths to Grid North
 True North: -0.41°
 Magnetic North: 6.89°
 Magnetic Field
 Strength: 48376.1nT
 Dip Angle: 60.11°
 Date: 09/09/2013
 Model: IGRF2010

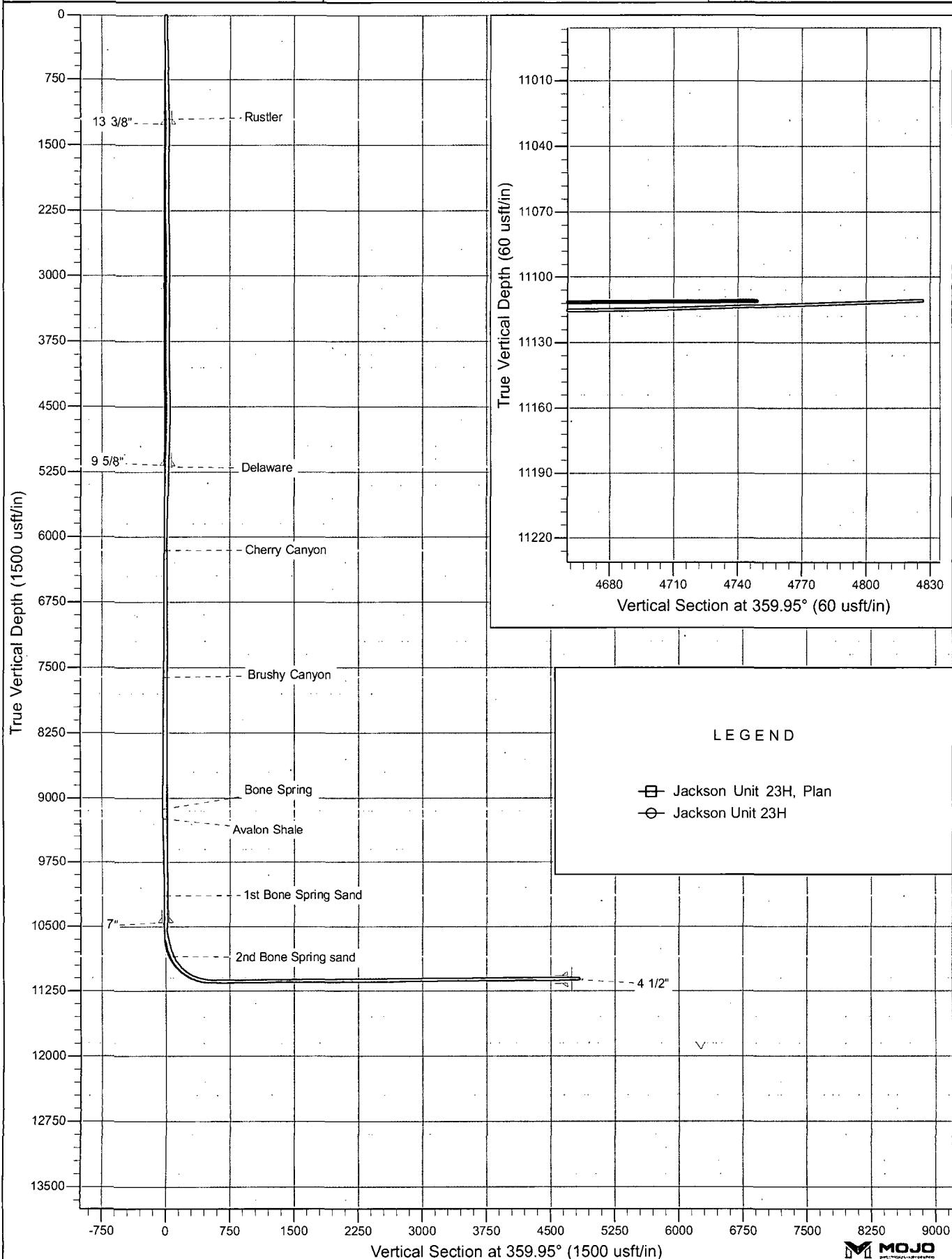


Project: Jackson Unit Section 22
 Site: Jackson Unit 23H
 Well: Jackson Unit 23H
 Wellbore: Jackson Unit 23H
 Design: Jackson Unit 23H



Azimuths to Grid North
 True North: -0.41°
 Magnetic North: 6.89°

Magnetic Field
 Strength: 48376.1snT
 Dip Angle: 60.11°
 Date: 09/09/2013
 Model: IGRF2010





Job Number: SVM0-140879
 Company: Murchison Oil & Gas
 Lease/Well: Jackson Unit 23H
 Location: Lea County, NM
 Rig Name: Nabors #M29
 RKB: 22'
 G.L. or M.S.L.: GL

State/Country: New Mexico/USA
 Declination: 6.89°
 Grid: East To Grid North
 File name: Y:\WINSER~1\2014SU~1\MURCHI~1\MOJACUNI~1\23H.SVY
 Date/Time: 30-Jun-14 / 16:29
 Curve Name: Surface - 5100' M.D. (Rate Gyro)

RECEIVED

SEP 02 2014

MOBBS OGD

MS Survey

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane 359.95
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

We hereby certify that our survey data from
Surface MD to 5100' MD is, to the best of
 our knowledge a true and accurate account of
 the well bore.
Travis Pack 6/30/14
 MS Energy Services Date

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
100.00	.69	331.61	100.00	.53	-.29	.53	.60	331.61	.69
200.00	.68	336.42	199.99	1.60	-.81	1.60	1.80	333.20	.06
300.00	.80	334.94	299.98	2.78	-1.34	2.78	3.09	334.21	.12
400.00	.87	326.16	399.97	4.04	-2.06	4.04	4.54	332.98	.15
500.00	1.12	325.99	499.96	5.48	-3.03	5.49	6.27	331.07	.25
600.00	1.35	333.74	599.93	7.35	-4.10	7.35	8.42	330.85	.28
700.00	1.44	341.72	699.90	9.60	-5.01	9.60	10.83	332.42	.21
800.00	1.38	354.28	799.87	11.99	-5.53	12.00	13.20	335.25	.31
900.00	1.17	339.18	899.85	14.14	-6.01	14.15	15.37	336.97	.39

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
1000.00	1.64	322.65	999.82	16.23	-7.24	16.24	17.78	335.96	.62
1100.00	1.88	330.33	1099.77	18.80	-8.92	18.81	20.81	334.61	.34
1200.00	1.62	340.21	1199.73	21.55	-10.21	21.56	23.85	334.65	.40
1300.00	1.37	331.27	1299.69	23.93	-11.27	23.94	26.45	334.79	.34
1400.00	.95	211.15	1399.68	24.27	-12.27	24.28	27.20	333.18	2.02
1500.00	1.02	206.03	1499.67	22.76	-13.09	22.77	26.26	330.10	.11
1600.00	.27	182.74	1599.66	21.73	-13.49	21.74	25.57	328.16	.78
1700.00	.43	50.00	1699.66	21.73	-13.21	21.74	25.43	328.70	.64
1800.00	1.18	43.03	1799.65	22.73	-12.22	22.74	25.80	331.72	.75
1900.00	.59	104.78	1899.64	23.35	-11.02	23.36	25.82	334.72	1.04
2000.00	.93	221.17	1999.63	22.60	-11.06	22.61	25.17	333.93	1.30
2100.00	.91	258.39	2099.62	21.83	-12.37	21.84	25.10	330.46	.59
2200.00	.89	339.37	2199.61	22.40	-13.42	22.41	26.12	329.07	1.17
2300.00	.77	352.33	2299.60	23.79	-13.79	23.81	27.50	329.91	.22
2400.00	.79	336.72	2399.59	25.09	-14.15	25.11	28.81	330.58	.21
2500.00	1.25	336.37	2499.58	26.73	-14.86	26.74	30.58	330.93	.46
2600.00	1.54	356.31	2599.55	29.07	-15.38	29.08	32.89	332.11	.56
2700.00	.48	73.91	2699.53	30.52	-15.07	30.54	34.04	333.73	1.51
2800.00	.05	61.66	2799.53	30.66	-14.63	30.67	33.97	334.50	.43
2900.00	.38	31.56	2899.53	30.96	-14.41	30.98	34.15	335.04	.34
3000.00	.53	77.38	2999.53	31.35	-13.79	31.36	34.25	336.26	.38
3100.00	.35	81.02	3099.52	31.50	-13.04	31.51	34.09	337.51	.18
3200.00	.46	23.90	3199.52	31.91	-12.57	31.92	34.30	338.50	.40
3300.00	.84	49.03	3299.52	32.76	-11.86	32.77	34.84	340.10	.47
3400.00	.75	81.82	3399.51	33.33	-10.65	33.34	34.99	342.27	.46
3500.00	1.76	210.06	3499.49	32.10	-10.78	32.10	33.86	341.44	2.30
3600.00	1.14	240.07	3599.46	30.27	-12.41	30.28	32.71	337.71	.96
3700.00	.91	233.17	3699.45	29.30	-13.90	29.31	32.43	334.61	.26
3800.00	1.24	237.99	3799.43	28.25	-15.46	28.26	32.20	331.31	.34

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
3900.00	1.35	260.40	3899.40	27.48	-17.54	27.49	32.60	327.45	.51
4000.00	.85	290.70	3999.38	27.54	-19.39	27.56	33.69	324.85	.75
4100.00	.68	19.92	4099.38	28.36	-19.88	28.38	34.64	324.97	1.08
4200.00	.35	46.48	4199.37	29.13	-19.46	29.15	35.03	326.26	.40
4300.00	.37	2.05	4299.37	29.66	-19.23	29.68	35.35	327.05	.27
4400.00	.85	29.46	4399.37	30.63	-18.85	30.65	35.97	328.39	.55
4500.00	1.35	69.58	4499.35	31.69	-17.38	31.71	36.14	331.25	.89
4600.00	1.08	132.57	4599.33	31.46	-15.58	31.48	35.11	333.65	1.29
4700.00	1.29	167.68	4699.31	29.73	-14.65	29.74	33.14	333.76	.74
4800.00	1.47	157.90	4799.28	27.44	-13.93	27.45	30.77	333.09	.30
4900.00	2.11	143.40	4899.23	24.77	-12.35	24.78	27.68	333.51	.78
5000.00	2.53	146.92	4999.15	21.44	-10.04	21.45	23.68	334.90	.44
Last Survey Depth Recorded									
5100.00	1.47	185.85	5099.09	18.32	-8.97	18.33	20.40	333.91	1.67