

Results of Directional Survey

API number:	30-025-41070		
OGRID:		Operator:	MURCHISON OIL & GAS INC
		Property:	MOGI 9 STATE COM # 3H

surface	ULSTR:	N	09	T	24S	R	33E
				200	FSL	1680	FWL

BH Loc	ULSTR:	C	09	T	24S	R	33E
15810	MD	11192.3	TVD	247	FNL	1699	FWL
				5033	FSL		

Top Perf/OH	ULSTR:	N	09	T	24S	R	33E
11400	MD	11182.1	TVD	625	FSL	1719	FWL

Bot Perf/OH	ULSTR:	C	09	T	24S	R	33E
15720	MD	11191.1	TVD	337	FNL	1699	FWL
				4943	FSL		

	MD	N/S	E/W	VD
	11378	403.40	39.20	11178.4
TOP PERFS/OH	11400	425.12	39.27	11182.09
	11409	434.00	39.30	11183.60
	15694	4716.80	19.30	11190.80
BOT PERFS/OH	15720	4742.80	19.34	11191.14
	15763	4785.80	19.40	11191.70

NEXT TO LAST	15763	4785.80	19.40	11191.70
LAST READING	15810	4832.80	19.40	11192.30
TD	15810	4832.80	19.40	11192.30

Surface Location	200	FS	1680	FW
Projected BHL	5033	FS	1699	FW
Location of				
Top Perfs/OH	625	FS	1719	FW
Bottom Perfs/OH	4943	FS	1699	FW

SUMMARY of Subsurface Locations

Surface Location	N-09-24S-33E	200	FS	1680	FW	Vert. Depth
Top Perfs/OH	N-09-24S-33E	625	FS	1719	FW	11182.09
Bottom Perfs/OH	C-09-24S-33E	4943	FS	1699	FW	11191.14
Projected TD	C-09-24S-33E	5033	FS	1699	FW	11192.30

JAN 28 2014

 MURCHISON OIL & GAS, INC.

Murchison Oil and Gas

Jackson Unit Section 9
MOGI 9 State Com 3H

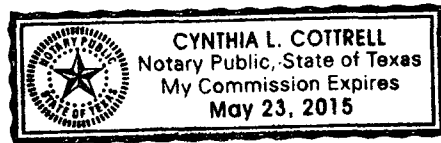
Survey: MOGI 9 State Com #3H

MOJO Standard Survey

30 October, 2013

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

Notarized this date 7th of November 2012. Cynthia L. Cottrell (Signature)
Signature County of Collin State of Texas Notary



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NOV 21 2013
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MOJO
DIRECTIONAL CORPORATION

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well MOGI 9 State Com #3H
Project:	Jackson Unit Section 9	TVD Reference:	WELL @ 3628.6usft (Original Well Elev)
Site:	MOGI 9 State Com 3H	MD Reference:	WELL @ 3628.6usft (Original Well Elev)
Well:	MOGI 9 State Com #3H	North Reference:	Grid
Wellbore:	MOGI 9 State Com #3H	Survey Calculation Method:	Minimum Curvature
Design:	MOGI 9 State Com #3H	Database:	EDM 5000.1 Single User Db

Project	Jackson Unit Section 9		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	MOGI 9 State Com 3H		
Site Position:		Northing:	446,570.23 usft
From:	Lat/Long	Easting:	774,180.72 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 13' 31.638 N
		Longitude:	103° 34' 49.290 W
		Grid Convergence:	0.40 °

Well	MOGI 9 State Com #3H		
Well Position	+N/-S	0.0 usft	Northing: 446,570.23 usft
	+E/-W	0.0 usft	Easting: 774,180.72 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 13' 31.638 N
		Longitude:	103° 34' 49.290 W
		Ground Level:	3,606.6 usft

Wellbore	MOGI 9 State Com #3H		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010	11/03/2013	7.38
			Dip Angle (°) 60.14
			Field Strength (nT) 48,441

Design	MOGI 9 State Com #3H		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction (°) 359.82

Survey Program	Date 30/10/2013		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
100.0	15,810.0	MOGI 9 State Com #3H (MOGI 9 State Co	MWD
			Description
			MWD - Standard

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Wellbore:	MOGI 9 State Com #3H	Survey Calculation Method:	Minimum Curvature
Design:	MOGI 9 State Com #3H	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)	
0.0	0.00	0.00	0.0	-3,628.6	0.0	0.0	0.0	0.00	446,570.23	774,180.72	
100.0	0.11	115.09	100.0	-3,528.6	0.0	0.1	0.0	0.11	446,570.19	774,180.81	
200.0	0.19	171.15	200.0	-3,428.6	-0.2	0.2	-0.2	0.16	446,569.98	774,180.92	
300.0	0.07	240.94	300.0	-3,328.6	-0.4	0.2	-0.4	0.18	446,569.79	774,180.89	
400.0	0.10	232.78	400.0	-3,228.6	-0.5	0.0	-0.5	0.03	446,569.71	774,180.77	
500.0	0.11	178.82	500.0	-3,128.6	-0.7	0.0	-0.7	0.10	446,569.56	774,180.70	
600.0	0.26	180.06	600.0	-3,028.6	-1.0	0.0	-1.0	0.15	446,569.23	774,180.70	
700.0	0.32	224.06	700.0	-2,928.6	-1.4	-0.2	-1.4	0.22	446,568.81	774,180.51	
800.0	0.31	190.30	800.0	-2,828.6	-1.9	-0.5	-1.9	0.18	446,568.34	774,180.26	
900.0	0.25	254.84	900.0	-2,728.6	-2.2	-0.7	-2.2	0.30	446,568.02	774,180.01	
1,000.0	0.38	227.32	1,000.0	-2,628.6	-2.5	-1.2	-2.5	0.20	446,567.73	774,179.55	
1,100.0	0.23	260.27	1,100.0	-2,528.6	-2.8	-1.6	-2.7	0.22	446,567.48	774,179.11	
1,200.0	0.12	251.05	1,200.0	-2,428.6	-2.8	-1.9	-2.8	0.11	446,567.41	774,178.81	
1,267.0	0.27	208.82	1,267.0	-2,361.6	-3.0	-2.0	-3.0	0.29	446,567.25	774,178.67	
13 3/8"											
1,270.0	0.28	208.08	1,270.0	-2,358.6	-3.0	-2.1	-3.0	0.29	446,567.23	774,178.66	
Rustler											
1,300.0	0.36	202.49	1,300.0	-2,328.6	-3.1	-2.1	-3.1	0.29	446,567.08	774,178.59	
1,400.0	0.14	331.01	1,400.0	-2,228.6	-3.3	-2.3	-3.3	0.46	446,566.90	774,178.41	
1,500.0	0.92	306.25	1,500.0	-2,128.6	-2.7	-3.0	-2.7	0.80	446,567.48	774,177.71	
1,600.0	0.89	320.04	1,600.0	-2,028.6	-1.7	-4.2	-1.7	0.22	446,568.55	774,176.56	
1,700.0	0.98	302.79	1,700.0	-1,928.6	-0.6	-5.4	-0.6	0.29	446,569.61	774,175.34	
1,800.0	1.00	317.14	1,799.9	-1,828.7	0.5	-6.7	0.5	0.25	446,570.71	774,174.03	
1,900.0	0.99	308.73	1,899.9	-1,728.7	1.7	-8.0	1.7	0.15	446,571.89	774,172.76	
2,000.0	0.92	323.56	1,999.9	-1,628.7	2.9	-9.1	2.9	0.26	446,573.08	774,171.61	
2,100.0	0.94	328.40	2,099.9	-1,528.7	4.2	-10.0	4.2	0.08	446,574.42	774,170.71	
2,200.0	1.14	318.81	2,199.9	-1,428.7	5.6	-11.1	5.7	0.26	446,575.87	774,169.62	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well MOGI 9 State Com #3H
Project:	Jackson Unit Section 9	TVD Reference:	WELL @ 3628.6usft (Original Well Elev)
Site:	MOGI 9 State Com 3H	MD Reference:	WELL @ 3628.6usft (Original Well Elev)
Well:	MOGI 9 State Com #3H	North Reference:	Grid
Wellbore:	MOGI 9 State Com #3H	Survey Calculation Method:	Minimum Curvature
Design:	MOGI 9 State Com #3H	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	1.16	325.75	2,299.9	-1,328.7	7.2	-12.3	7.3	0.14	446,577.46	774,168.40
2,400.0	1.10	329.92	2,399.8	-1,228.8	8.9	-13.4	8.9	0.10	446,579.12	774,167.35
2,500.0	0.99	334.88	2,499.8	-1,128.8	10.5	-14.2	10.6	0.14	446,580.74	774,166.50
2,600.0	0.92	341.82	2,599.8	-1,028.8	12.1	-14.8	12.1	0.14	446,582.28	774,165.88
2,700.0	1.04	348.02	2,699.8	-928.8	13.7	-15.3	13.8	0.16	446,583.93	774,165.44
2,800.0	1.06	352.82	2,799.8	-828.8	15.5	-15.6	15.6	0.09	446,585.74	774,165.14
2,900.0	1.09	356.00	2,899.8	-728.8	17.4	-15.8	17.4	0.07	446,587.60	774,164.96
3,000.0	0.86	355.53	2,999.8	-628.8	19.1	-15.9	19.1	0.23	446,589.30	774,164.83
3,100.0	0.91	18.79	3,099.7	-528.9	20.6	-15.7	20.6	0.36	446,590.80	774,165.03
3,200.0	0.82	30.50	3,199.7	-428.9	21.9	-15.1	22.0	0.20	446,592.17	774,165.65
3,300.0	0.97	11.32	3,299.7	-328.9	23.4	-14.5	23.4	0.33	446,593.62	774,166.18
3,400.0	1.18	17.81	3,399.7	-228.9	25.2	-14.1	25.2	0.24	446,595.43	774,166.66
3,500.0	1.17	18.74	3,499.7	-128.9	27.1	-13.4	27.2	0.02	446,597.37	774,167.30
3,600.0	1.26	24.32	3,599.7	-28.9	29.1	-12.6	29.2	0.15	446,599.34	774,168.08
3,700.0	1.14	0.86	3,699.6	71.0	31.1	-12.2	31.1	0.50	446,601.34	774,168.55
3,800.0	0.85	13.34	3,799.6	171.0	32.8	-12.0	32.9	0.36	446,603.06	774,168.73
3,900.0	0.50	342.90	3,899.6	271.0	34.0	-11.9	34.0	0.49	446,604.19	774,168.78
4,000.0	0.42	304.59	3,999.6	371.0	34.6	-12.4	34.6	0.31	446,604.82	774,168.35
4,100.0	0.58	261.44	4,099.6	471.0	34.7	-13.2	34.8	0.40	446,604.95	774,167.55
4,200.0	0.72	266.10	4,199.6	571.0	34.6	-14.3	34.7	0.15	446,604.83	774,166.42
4,300.0	1.43	264.06	4,299.6	671.0	34.4	-16.2	34.5	0.71	446,604.66	774,164.55
4,400.0	0.26	227.40	4,399.6	771.0	34.2	-17.6	34.2	1.23	446,604.38	774,163.14
4,500.0	1.70	122.71	4,499.6	871.0	33.2	-16.5	33.2	1.78	446,603.42	774,164.22
4,600.0	1.57	110.93	4,599.5	970.9	31.9	-14.0	31.9	0.36	446,602.13	774,166.75
4,700.0	2.54	114.62	4,699.5	1,070.9	30.5	-10.7	30.5	0.98	446,600.72	774,170.04
4,800.0	3.70	121.88	4,799.3	1,170.7	27.9	-5.9	27.9	1.22	446,598.09	774,174.80
4,900.0	4.37	123.12	4,899.1	1,270.5	24.1	0.0	24.1	0.68	446,594.31	774,180.73

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5,000.0	3.09	113.40	4,998.8	1,370.2	20.9	5.7	20.9	1.42	446,591.15	774,186.39
5,100.0	2.09	120.11	5,098.7	1,470.1	18.9	9.7	18.9	1.04	446,589.17	774,190.45
5,150.0	2.00	118.48	5,148.7	1,520.1	18.1	11.3	18.0	0.21	446,588.30	774,192.00
5,183.0	1.77	107.08	5,181.7	1,553.1	17.6	12.3	17.6	1.33	446,587.87	774,193.00
Delaware										
5,202.0	1.68	99.30	5,200.7	1,572.1	17.5	12.8	17.5	1.33	446,587.74	774,193.55
9 5/8"										
5,243.0	1.60	80.40	5,241.7	1,613.1	17.5	14.0	17.5	1.33	446,587.74	774,194.71
5,338.0	1.10	73.30	5,336.6	1,708.0	18.0	16.2	17.9	0.55	446,588.22	774,196.89
5,434.0	0.80	117.30	5,432.6	1,804.0	18.0	17.6	17.9	0.80	446,588.18	774,198.37
5,528.0	0.70	92.20	5,526.6	1,898.0	17.6	18.8	17.6	0.36	446,587.86	774,199.52
5,623.0	0.80	126.20	5,621.6	1,993.0	17.2	19.9	17.2	0.47	446,587.44	774,200.64
5,718.0	1.00	120.60	5,716.6	2,088.0	16.4	21.2	16.3	0.23	446,586.63	774,201.89
5,813.0	0.90	162.60	5,811.6	2,183.0	15.3	22.1	15.2	0.72	446,585.49	774,202.82
5,908.0	1.00	199.40	5,906.6	2,278.0	13.8	22.1	13.7	0.64	446,584.00	774,202.77
6,002.0	0.80	234.80	6,000.6	2,372.0	12.6	21.2	12.6	0.62	446,582.85	774,201.96
6,097.0	0.50	246.10	6,095.6	2,467.0	12.1	20.3	12.0	0.34	446,582.30	774,201.04
6,133.0	0.58	243.93	6,131.6	2,503.0	11.9	20.0	11.9	0.22	446,582.16	774,200.74
Cherry Canyon										
6,192.0	0.70	241.40	6,190.5	2,561.9	11.6	19.4	11.6	0.22	446,581.85	774,200.15
6,285.0	0.90	275.80	6,283.5	2,654.9	11.4	18.2	11.4	0.55	446,581.66	774,198.93
6,380.0	1.00	253.40	6,378.5	2,749.9	11.3	16.7	11.2	0.40	446,581.49	774,197.39
6,476.0	0.60	270.00	6,474.5	2,845.9	11.0	15.4	11.0	0.48	446,581.25	774,196.09
6,571.0	0.90	277.70	6,569.5	2,940.9	11.1	14.1	11.1	0.33	446,581.35	774,194.85
6,665.0	0.80	277.30	6,663.5	3,034.9	11.3	12.7	11.3	0.11	446,581.54	774,193.47
6,761.0	0.70	248.00	6,759.5	3,130.9	11.2	11.5	11.1	0.41	446,581.40	774,192.26
6,855.0	1.00	252.40	6,853.5	3,224.9	10.7	10.2	10.7	0.33	446,580.94	774,190.94

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6,950.0	1.00	259.50	6,948.5	3,319.9	10.3	8.6	10.3	0.13	446,580.54	774,189.34
7,045.0	0.80	267.10	7,043.5	3,414.9	10.1	7.1	10.1	0.24	446,580.35	774,187.86
7,139.0	1.00	251.50	7,137.4	3,508.8	9.8	5.7	9.8	0.33	446,580.06	774,186.43
7,233.0	0.70	241.50	7,231.4	3,602.8	9.3	4.4	9.3	0.35	446,579.52	774,185.15
7,328.0	0.70	235.90	7,326.4	3,697.8	8.7	3.4	8.7	0.07	446,578.92	774,184.16
7,422.0	1.00	234.10	7,420.4	3,791.8	7.9	2.3	7.9	0.32	446,578.12	774,183.02
7,516.0	0.70	227.50	7,514.4	3,885.8	7.0	1.2	7.0	0.34	446,577.25	774,181.93
7,524.0	0.73	228.06	7,522.4	3,893.8	7.0	1.1	7.0	0.33	446,577.18	774,181.85
Brushy Canyon										
7,610.0	1.00	232.30	7,608.4	3,979.8	6.1	0.1	6.1	0.33	446,576.36	774,180.86
7,703.0	0.20	247.10	7,701.4	4,072.8	5.6	-0.7	5.6	0.87	446,575.80	774,180.06
7,797.0	0.50	230.90	7,795.4	4,166.8	5.3	-1.1	5.3	0.33	446,575.48	774,179.59
7,891.0	0.60	230.00	7,889.4	4,260.8	4.7	-1.8	4.7	0.11	446,574.90	774,178.90
7,984.0	0.50	224.90	7,982.4	4,353.8	4.1	-2.5	4.1	0.12	446,574.30	774,178.24
8,079.0	0.40	172.60	8,077.4	4,448.8	3.5	-2.7	3.5	0.43	446,573.68	774,177.99
8,173.0	0.40	168.40	8,171.4	4,542.8	2.8	-2.6	2.8	0.03	446,573.03	774,178.10
8,267.0	0.30	193.30	8,265.4	4,636.8	2.2	-2.6	2.3	0.19	446,572.47	774,178.11
8,360.0	0.30	200.20	8,358.4	4,729.8	1.8	-2.8	1.8	0.04	446,572.01	774,177.97
8,454.0	0.70	224.00	8,452.4	4,823.8	1.1	-3.2	1.1	0.47	446,571.36	774,177.48
8,548.0	0.60	231.00	8,546.4	4,917.8	0.4	-4.0	0.4	0.14	446,570.64	774,176.70
8,641.0	0.70	203.20	8,639.4	5,010.8	-0.4	-4.6	-0.4	0.35	446,569.81	774,176.10
8,737.0	0.80	230.30	8,735.3	5,106.7	-1.4	-5.4	-1.4	0.38	446,568.85	774,175.35
8,831.0	0.80	198.40	8,829.3	5,200.7	-2.4	-6.1	-2.4	0.47	446,567.80	774,174.64
8,925.0	1.10	220.10	8,923.3	5,294.7	-3.7	-6.9	-3.7	0.49	446,566.49	774,173.85
9,020.0	0.90	211.10	9,018.3	5,389.7	-5.1	-7.8	-5.0	0.27	446,565.15	774,172.88
9,077.0	0.80	208.10	9,075.3	5,446.7	-5.8	-8.3	-5.8	0.19	446,564.42	774,172.46

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well MOGI 9 State Com #3H
Project:	Jackson Unit Section 9	TVD Reference:	WELL @ 3628.6usft (Original Well Elev)
Site:	MOGI 9 State Com 3H	MD Reference:	WELL @ 3628.6usft (Original Well Elev)
Well:	MOGI 9 State Com #3H	North Reference:	Grid
Wellbore:	MOGI 9 State Com #3H	Survey Calculation Method:	Minimum Curvature
Design:	MOGI 9 State Com #3H	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)
9,078.0	0.79	207.98	9,076.3	5,447.7	-5.8	-8.3	-5.8	0.73	446,564.41	774,172.46
Bone Spring										
9,171.0	0.20	158.60	9,169.3	5,540.7	-6.5	-8.5	-6.5	0.73	446,563.69	774,172.21
9,227.0	0.24	190.64	9,225.3	5,596.7	-6.7	-8.5	-6.7	0.23	446,563.48	774,172.23
Avalon Shale										
9,266.0	0.30	204.90	9,264.3	5,635.7	-6.9	-8.6	-6.9	0.23	446,563.31	774,172.17
9,361.0	0.30	214.30	9,359.3	5,730.7	-7.3	-8.8	-7.3	0.05	446,562.88	774,171.92
9,456.0	0.40	210.90	9,454.3	5,825.7	-7.8	-9.1	-7.8	0.11	446,562.39	774,171.61
9,551.0	0.50	192.20	9,549.3	5,920.7	-8.5	-9.4	-8.5	0.19	446,561.70	774,171.35
9,645.0	0.50	198.20	9,643.3	6,014.7	-9.3	-9.6	-9.3	0.06	446,560.91	774,171.14
9,741.0	0.50	252.10	9,739.3	6,110.7	-9.8	-10.1	-9.8	0.47	446,560.38	774,170.61
9,836.0	0.60	335.60	9,834.3	6,205.7	-9.5	-10.7	-9.5	0.78	446,560.71	774,170.01
9,929.0	0.30	322.20	9,927.3	6,298.7	-8.9	-11.1	-8.8	0.34	446,561.34	774,169.66
10,024.0	0.40	290.30	10,022.3	6,393.7	-8.6	-11.5	-8.5	0.23	446,561.65	774,169.20
10,119.0	0.80	270.00	10,117.3	6,488.7	-8.5	-12.5	-8.4	0.47	446,561.77	774,168.22
10,169.0	0.75	267.54	10,167.3	6,538.7	-8.5	-13.2	-8.4	0.13	446,561.75	774,167.55
1st Bone Spring Sand										
10,214.0	0.70	265.00	10,212.3	6,583.7	-8.5	-13.7	-8.5	0.13	446,561.72	774,166.98
10,309.0	0.80	341.70	10,307.3	6,678.7	-7.9	-14.5	-7.9	0.98	446,562.30	774,166.20
10,404.0	1.50	22.90	10,402.2	6,773.6	-6.2	-14.2	-6.1	1.10	446,564.07	774,166.47
10,498.0	1.50	25.50	10,496.2	6,867.6	-3.9	-13.2	-3.9	0.07	446,566.32	774,167.48
10,592.0	1.60	10.90	10,590.2	6,961.6	-1.5	-12.5	-1.5	0.43	446,568.72	774,168.26
10,678.0	3.40	6.20	10,676.1	7,047.5	2.2	-12.0	2.2	2.10	446,572.43	774,168.76
10,717.0	4.28	13.94	10,715.0	7,086.4	4.8	-11.5	4.8	2.61	446,574.99	774,169.23
7"										
10,718.0	4.30	14.10	10,716.0	7,087.4	4.8	-11.5	4.9	2.61	446,575.06	774,169.25
10,750.0	7.80	35.50	10,747.8	7,119.2	7.8	-9.9	7.8	12.83	446,578.00	774,170.81
10,781.0	12.70	48.40	10,778.3	7,149.7	11.7	-6.1	11.8	17.36	446,581.97	774,174.58

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well MOGI 9 State Com #3H
Project:	Jackson Unit Section 9	TVD Reference:	WELL @ 3628.6usft (Original Well Elev)
Site:	MOGI 9 State Com 3H	MD Reference:	WELL @ 3628.6usft (Original Well Elev)
Well:	MOGI 9 State Com #3H	North Reference:	Grid
Wellbore:	MOGI 9 State Com #3H	Survey Calculation Method:	Minimum Curvature
Design:	MOGI 9 State Com #3H	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)
10,813.0	19.20	49.30	10,809.1	7,180.5	17.5	0.5	17.5	20.33	446,587.75	774,181.21
10,844.0	21.60	42.90	10,838.1	7,209.5	25.0	8.2	25.0	10.56	446,595.25	774,188.96
10,867.0	22.45	32.35	10,859.5	7,230.9	31.8	13.5	31.8	17.56	446,602.07	774,194.19
2nd Bone Spring Sand										
10,875.0	22.90	28.90	10,866.8	7,238.2	34.5	15.0	34.4	17.56	446,604.72	774,195.76
10,907.0	26.10	17.20	10,896.0	7,267.4	46.7	20.1	46.6	18.12	446,616.91	774,200.86
10,938.0	29.90	15.80	10,923.3	7,294.7	60.6	24.3	60.6	12.44	446,630.86	774,204.98
10,970.0	32.80	12.00	10,950.7	7,322.1	76.8	28.2	76.7	10.96	446,647.02	774,208.95
11,003.0	37.40	10.10	10,977.7	7,349.1	95.4	31.9	95.3	14.33	446,665.64	774,212.57
11,035.0	41.70	4.80	11,002.3	7,373.7	115.6	34.4	115.5	17.07	446,685.83	774,215.17
11,064.0	43.70	359.00	11,023.7	7,395.1	135.2	35.1	135.1	15.21	446,705.46	774,215.80
11,097.0	46.70	358.40	11,046.9	7,418.3	158.6	34.5	158.5	9.18	446,728.87	774,215.27
11,124.0	49.10	359.30	11,065.0	7,436.4	178.7	34.1	178.6	9.23	446,748.90	774,214.87
11,158.0	53.50	1.50	11,086.3	7,457.7	205.2	34.3	205.1	13.89	446,775.42	774,215.07
11,192.0	57.80	1.60	11,105.4	7,476.8	233.2	35.1	233.1	12.65	446,803.48	774,215.83
11,221.0	61.20	1.40	11,120.2	7,491.6	258.2	35.8	258.1	11.74	446,828.45	774,216.48
11,252.0	63.80	2.00	11,134.5	7,505.9	285.7	36.6	285.6	8.56	446,855.93	774,217.30
11,284.0	66.20	1.80	11,148.0	7,519.4	314.7	37.5	314.6	7.52	446,884.92	774,218.26
11,315.0	68.20	1.50	11,160.0	7,531.4	343.3	38.4	343.1	6.51	446,913.48	774,219.08
11,346.0	72.70	0.70	11,170.4	7,541.8	372.5	38.9	372.3	14.72	446,942.68	774,219.64
11,378.0	78.30	0.40	11,178.4	7,549.8	403.4	39.2	403.3	17.52	446,973.65	774,219.93
11,409.0	82.20	0.00	11,183.6	7,555.0	434.0	39.3	433.8	12.64	447,004.19	774,220.04
11,440.0	83.30	0.10	11,187.5	7,558.9	464.7	39.3	464.6	3.56	447,034.95	774,220.07
11,470.0	86.90	358.90	11,190.1	7,561.5	494.6	39.1	494.5	12.64	447,064.83	774,219.81
11,502.0	91.20	358.30	11,190.6	7,562.0	526.6	38.3	526.5	13.57	447,096.81	774,219.02
11,565.0	92.00	358.10	11,188.9	7,560.3	589.5	36.3	589.4	1.31	447,159.75	774,217.05
11,628.0	90.10	358.60	11,187.7	7,559.1	652.5	34.5	652.4	3.12	447,222.71	774,215.23

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well MOGI 9 State Com #3H
Project:	Jackson Unit Section 9	TVD Reference:	WELL @ 3628.6usft (Original Well Elev)
Site:	MOGI 9 State Com 3H	MD Reference:	WELL @ 3628.6usft (Original Well Elev)
Well:	MOGI 9 State Com #3H	North Reference:	Grid
Wellbore:	MOGI 9 State Com #3H	Survey Calculation Method:	Minimum Curvature
Design:	MOGI 9 State Com #3H	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)
11,722.0	88.20	358.40	11,189.1	7,560.5	746.4	32.1	746.3	2.03	447,316.67	774,212.77
11,816.0	89.10	358.80	11,191.3	7,562.7	840.4	29.8	840.3	1.05	447,410.61	774,210.48
11,910.0	88.60	358.10	11,193.2	7,564.6	934.3	27.2	934.2	0.92	447,504.56	774,207.93
12,005.0	88.30	358.10	11,195.8	7,567.2	1,029.2	24.1	1,029.2	0.32	447,599.47	774,204.79
12,099.0	89.40	358.20	11,197.7	7,569.1	1,123.2	21.0	1,123.1	1.18	447,693.40	774,201.75
12,193.0	90.00	358.10	11,198.2	7,569.6	1,217.1	18.0	1,217.1	0.65	447,787.35	774,198.72
12,288.0	90.90	359.70	11,197.4	7,568.8	1,312.1	16.2	1,312.0	1.93	447,882.32	774,196.89
12,382.0	92.30	0.80	11,194.8	7,566.2	1,406.1	16.6	1,406.0	1.89	447,976.28	774,197.30
12,477.0	90.00	1.00	11,192.9	7,564.3	1,501.0	18.1	1,501.0	2.43	448,071.25	774,198.80
12,572.0	89.40	0.30	11,193.4	7,564.8	1,596.0	19.2	1,595.9	0.97	448,166.24	774,199.87
12,666.0	90.50	0.90	11,193.5	7,564.9	1,690.0	20.1	1,689.9	1.33	448,260.23	774,200.86
12,760.0	89.80	0.70	11,193.2	7,564.6	1,784.0	21.5	1,783.9	0.77	448,354.22	774,202.17
12,855.0	88.40	0.00	11,194.7	7,566.1	1,879.0	22.0	1,878.9	1.65	448,449.20	774,202.75
12,950.0	90.60	2.20	11,195.5	7,566.9	1,973.9	23.9	1,973.9	3.27	448,544.17	774,204.57
13,045.0	89.50	1.70	11,195.5	7,566.9	2,068.9	27.1	2,068.8	1.27	448,639.11	774,207.81
13,139.0	89.40	1.90	11,196.4	7,567.8	2,162.8	30.0	2,162.7	0.24	448,733.06	774,210.76
13,234.0	88.60	2.40	11,198.0	7,569.4	2,257.8	33.6	2,257.6	0.99	448,827.98	774,214.32
13,328.0	91.90	1.50	11,197.6	7,569.0	2,351.7	36.8	2,351.6	3.64	448,921.91	774,217.52
13,424.0	90.50	2.20	11,195.6	7,567.0	2,447.6	39.9	2,447.5	1.63	449,017.84	774,220.62
13,520.0	91.50	1.30	11,193.9	7,565.3	2,543.5	42.8	2,543.4	1.40	449,113.78	774,223.55
13,610.0	90.80	359.10	11,192.1	7,563.5	2,633.5	43.1	2,633.4	2.56	449,203.75	774,223.86
13,704.0	88.90	357.90	11,192.4	7,563.8	2,727.5	40.7	2,727.3	2.39	449,297.71	774,221.40
13,798.0	89.90	358.10	11,193.4	7,564.8	2,821.4	37.4	2,821.3	1.08	449,391.65	774,218.12
13,892.0	89.00	358.70	11,194.3	7,565.7	2,915.4	34.8	2,915.3	1.15	449,485.61	774,215.50
13,987.0	90.60	358.70	11,194.6	7,566.0	3,010.4	32.6	3,010.2	1.68	449,580.58	774,213.34
14,082.0	90.60	357.80	11,193.6	7,565.0	3,105.3	29.7	3,105.2	0.95	449,675.53	774,210.44
14,176.0	90.60	358.50	11,192.6	7,564.0	3,199.2	26.7	3,199.1	0.74	449,769.47	774,207.41

Company: Murchison Oil and Gas			Local Co-ordinate Reference:					Well MOGI 9 State Com #3H WELL @ 3628.6usft (Original Well Elev) WELL @ 3628.6usft (Original Well Elev) Grid Minimum Curvature EDM 5000.1 Single User Db			
Project: Jackson Unit Section 9											
Site: MOGI 9 State Com 3H											
Well: MOGI 9 State Com #3H											
Wellbore: MOGI 9 State Com #3H											
Design: MOGI 9 State Com #3H			TVD Reference:								
			MD Reference:								
			North Reference:								
			Survey Calculation Method:								
			Database:								
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)	
14,271.0	89.80	358.80	11,192.3	7,563.7	3,294.2	24.5	3,294.1	0.90	449,864.45	774,205.17	
14,366.0	88.40	357.90	11,193.8	7,565.2	3,389.2	21.7	3,389.1	1.75	449,959.39	774,202.44	
14,461.0	88.90	358.30	11,196.0	7,567.4	3,484.1	18.6	3,484.0	0.67	450,054.31	774,199.29	
14,556.0	92.20	359.50	11,195.1	7,566.5	3,579.0	16.7	3,579.0	3.70	450,149.28	774,197.46	
14,651.0	91.80	359.30	11,191.8	7,563.2	3,674.0	15.8	3,673.9	0.47	450,244.21	774,196.47	
14,746.0	89.60	359.90	11,190.6	7,562.0	3,769.0	15.1	3,768.9	2.40	450,339.20	774,195.81	
14,841.0	89.10	359.30	11,191.7	7,563.1	3,864.0	14.4	3,863.9	0.82	450,434.19	774,195.14	
14,936.0	90.00	0.80	11,192.4	7,563.8	3,959.0	14.5	3,958.9	1.84	450,529.18	774,195.23	
15,031.0	88.50	358.90	11,193.7	7,565.1	4,053.9	14.3	4,053.9	2.55	450,624.17	774,194.98	
15,126.0	90.10	0.50	11,194.8	7,566.2	4,148.9	13.8	4,148.9	2.38	450,719.15	774,194.48	
15,220.0	89.90	0.20	11,194.8	7,566.2	4,242.9	14.3	4,242.9	0.38	450,813.15	774,195.05	
15,315.0	92.00	1.70	11,193.3	7,564.7	4,337.9	15.9	4,337.8	2.72	450,908.11	774,196.63	
15,409.0	91.80	0.60	11,190.2	7,561.6	4,431.8	17.8	4,431.7	1.19	451,002.04	774,198.51	
15,505.0	89.40	359.90	11,189.1	7,560.5	4,527.8	18.2	4,527.7	2.60	451,098.03	774,198.93	
15,599.0	89.70	0.60	11,189.9	7,561.3	4,621.8	18.6	4,621.7	0.81	451,192.02	774,199.34	
15,608.0	89.65	0.56	11,189.9	7,561.3	4,630.8	18.7	4,630.7	0.67	451,201.02	774,199.43	
4 1/2"											
15,694.0	89.20	0.20	11,190.8	7,562.2	4,716.8	19.3	4,716.7	0.67	451,287.02	774,200.01	
15,763.0	89.30	0.00	11,191.7	7,563.1	4,785.8	19.4	4,785.7	0.32	451,356.01	774,200.13	
15,810.0	89.30	0.00	11,192.3	7,563.7	4,832.8	19.4	4,832.7	0.00	451,403.01	774,200.13	

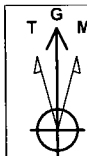
Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well MOGI 9 State Com #3H
Project:	Jackson Unit Section 9	TVD Reference:	WELL @ 3628.6usft (Original Well Elev)
Site:	MOGI 9 State Com 3H	MD Reference:	WELL @ 3628.6usft (Original Well Elev)
Well:	MOGI 9 State Com #3H	North Reference:	Grid
Wellbore:	MOGI 9 State Com #3H	Survey Calculation Method:	Minimum Curvature
Design:	MOGI 9 State Com #3H	Database:	EDM 5000.1 Single User Db

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
5,202.0	5,200.7	9 5/8"	9-5/8	12-1/4
15,608.0	11,189.9	4 1/2"	5-1/2	6
10,717.0	10,715.0	7"	7	8-1/2
1,267.0	1,267.0	13 3/8"	13-3/8	17-1/2

Formations			
Measured Depth (usft)	Vertical Depth (usft)	Name	Dip (°)
7,524.0	7,522.4	Brushy Canyon	0.00
10,867.0	10,859.5	2nd Bone Spring Sand	0.00
6,133.0	6,131.6	Cherry Canyon	0.00
10,169.0	10,167.3	1st Bone Spring Sand	0.00
1,270.0	1,270.0	Rustler	0.00
9,227.0	9,225.3	Avalon Shale	0.00
9,078.0	9,076.3	Bone Spring	0.00
5,183.0	5,181.7	Delaware	0.00

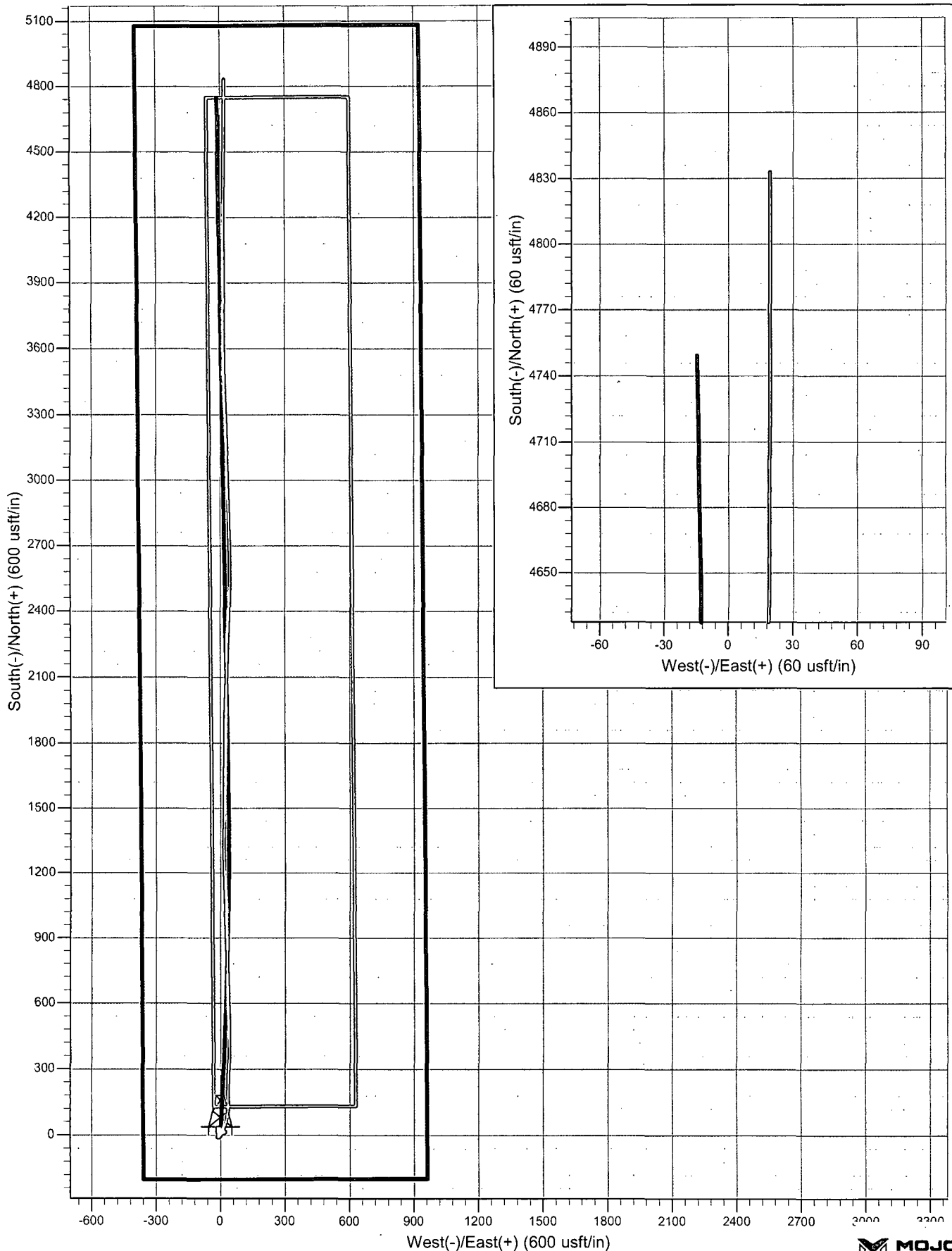
Checked By: _____	Approved By: _____	Date: _____
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Project: Jackson Unit Section 9
Site: MOGI 9 State Com 3H
Well: MOGI 9 State Com #3H
Wellbore: MOGI 9 State Com #3H
Design: MOGI 9 State Com #3H



Azimuths to Grid North
True North: -0.40°
Magnetic North: 6.97°

Magnetic Field
Strength: 48441.1nT
Dip Angle: 60.14°
Date: 11/03/2013
Model: IGRF2010



Project: Jackson Unit Section 9
 Site: MOGI 9 State Com 3H
 Well: MOGI 9 State Com #3H
 Wellbore: MOGI 9 State Com #3H
 Design: MOGI 9 State Com #3H

 **MURCHISON OIL & GAS, INC.**



Azimuths to Grid North
 True North: -0.40°
 Magnetic North: 6.97°
 Magnetic Field
 Strength: 48441.1nT
 Dip Angle: 60.14°
 Date: 11/03/2013
 Model: IGRF2010

