

OPERATOR MEWBOURNE OIL COMPANY
WELL/LEASE MALAGA 13 DM FED COM 1H
COUNTY EDDY

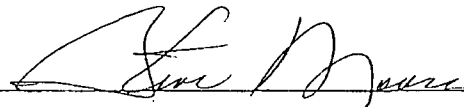
046-0090

STATE OF NEW MEXICO
DEVIATION REPORT

30-01541556

181	0.17
405	1.43
770	1.75
1,267	1.11
1,552	2.62
1,676	1.81
1,899	1.29
2,186	1.26
2,723	1.00
3,139	1.00
3,554	0.85
3,969	0.91
4,383	0.75
4,764	0.70
5,083	0.65
5,496	1.22
5,896	0.80
6,294	0.42
6,694	1.87
7,094	2.09

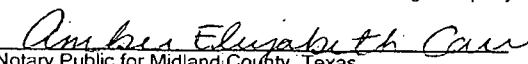
STATE OF TEXAS

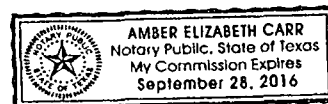
BY: 

COUNTY OF MIDLAND

The foregoing instrument was acknowledged before me on
Steve Moore on behalf of Patterson-UTI Drilling Company LLC.

12/16/13, by


Notary Public for Midland County, Texas
My Commission Expires:





Company: Mewbourne Oil Company
Lease/Well: Malaga 13 DM Federal Com/No. 001H



Rig Name: Patterson 46
State/County: New Mexico/Eddy
Latitude: 32.14, Longitude: -104.05
GRID North is 0.15 Degrees East of True North
VS-Azi: 0.00 Degrees

Depth Reference : RKB = 18 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: ... dm fed com 1h_gyro survey.ut

Minimum Curvature Method

Report Date/Time: 11/19/2013 / 16:24

Vaughn Energy Services

Midland, Texas

432-563-5444

Surveyor: Gene Heiss

Malagu 13 DM Federal Com No. 001H / API 30-015-41556

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.14	219.67	100.00	-0.09	-0.08	-0.09	0.12	219.67	0.14
200.00	0.77	274.87	200.00	-0.13	-0.82	-0.13	0.83	261.25	0.70
300.00	1.21	283.83	299.98	0.18	-2.52	0.18	2.53	274.15	0.46
400.00	1.22	287.94	399.96	0.76	-4.56	0.76	4.62	279.50	0.09
500.00	1.17	274.46	499.94	1.17	-6.59	1.17	6.69	280.07	0.28
600.00	0.85	323.13	599.92	1.85	-8.06	1.85	8.26	282.90	0.88
700.00	0.96	355.84	699.91	3.28	-8.56	3.28	9.17	290.94	0.52
800.00	1.22	352.70	799.89	5.17	-8.76	5.17	10.17	300.57	0.27
900.00	1.24	347.12	899.87	7.29	-9.14	7.29	11.69	308.59	0.12
1000.00	1.83	341.62	999.83	9.86	-9.88	9.86	13.96	314.95	0.61
1100.00	1.97	328.31	1099.78	12.85	-11.29	12.85	17.10	318.69	0.46
1200.00	1.68	304.30	1199.73	15.14	-13.40	15.14	20.22	318.47	0.81
1300.00	1.52	270.80	1299.69	15.98	-15.93	15.98	22.56	315.08	0.93
1400.00	1.68	256.71	1399.65	15.66	-18.68	15.66	24.38	309.97	0.43
1500.00	1.98	249.82	1499.60	14.73	-21.74	14.73	26.25	304.12	0.37
1600.00	2.08	245.74	1599.54	13.38	-25.01	13.38	28.37	298.15	0.17
1700.00	2.29	245.55	1699.47	11.81	-28.48	11.81	30.84	292.52	0.21
1800.00	2.00	235.53	1799.40	10.00	-31.74	10.00	33.27	287.49	0.48

Mewbourne Oil Co

Eddy County, New Mexico

Sec 12, T25S, R28E

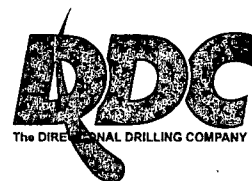
Malaga 13 DM Federal Com #1H (New SHL)

Wellbore #1

Design: Wellbore #1

DDC Survey Report

19 November, 2013



DDC
Survey Report



Company:	Mewbourne Oil Co.	Local Co-ordinate Reference:	Well: Malaga 13 DM Federal Com #1H (New SHL)
Project:	Eddy County New Mexico	TVD Reference:	WELL @ 2908.0usft (Patterson)
Site:	Sec 12, T25S, R28E	MD Reference:	WELL @ 2908.0usft (Patterson)
Well:	Malaga 13 DM Federal Com #1H (New SHL)	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project: Eddy County New Mexico			
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site: Sec 12, T25S, R28E					
Site Position:		Northing:	414,092.17 usft	Latitude:	32° 8' 17.261 N
From:	Map	Easting:	589,199.27 usft	Longitude:	104° 2' 42.563 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.15 °

Well	Malaga 13 DM Federal Com #1H (New SHL)					
Well Position	+N-S	0.0 usft	Northing:	414,092.17 usft	Latitude:	32° 8' 17.261 N
	+E-W	0.0 usft	Easting:	589,199.27 usft	Longitude:	104° 2' 42.563 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	2,888.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/13/2013	7.56	59.98	48,325

Design:	Wellbore #1				
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	188.79	

Survey/Program		Date 11/19/2013		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	7,690.0	Gyro (Wellbore #1)	Good_gyro	Good Gyro
7,745.0	13,305.0	MWD (Wellbore #1)	MWD default	MWD - Standard

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.14	219.67	100.0	-0.1	-0.1	0.1	0.14	0.14	0.00	
200.0	0.77	274.87	200.0	-0.1	-0.8	0.3	0.70	0.63	55.20	
300.0	1.21	283.83	300.0	0.2	-2.5	0.2	0.47	0.44	8.96	
400.0	1.22	287.94	400.0	0.8	-4.6	-0.1	0.09	0.01	4.11	
500.0	1.17	274.46	499.9	1.2	-6.6	-0.1	0.28	-0.05	-13.48	
600.0	0.85	323.13	599.9	1.8	-8.1	-0.6	0.88	-0.32	48.67	
700.0	0.96	355.84	699.9	3.3	-8.6	-1.9	0.52	0.11	32.71	
800.0	1.22	352.70	799.9	5.2	-8.8	-3.8	0.27	0.26	-3.14	

DDC
Survey Report



Company:	Mewbourne Oil Co	Local Co-ordinate Reference:	Well-Malaga 13 DM Federal Com #1H (New SHL)
Project:	Eddy County New Mexico	TVD Reference:	WELL @ 2908.0usft (Patterson)
Site:	Sec 12, T25S, R28E	MD Reference:	WELL @ 2908.0usft (Patterson)
Well:	Malaga 13 DM Federal Com #1H (New SHL)	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
900.0	1.24	347.12	899.9	7.3	-9.1	-5.8	0.12	0.02	-5.58	
1,000.0	1.83	341.62	999.8	9.8	-9.9	-8.2	0.61	0.59	-5.50	
1,100.0	1.97	328.31	1,099.8	12.8	-11.3	-10.9	0.46	0.14	-13.31	
1,200.0	1.68	304.30	1,199.7	15.1	-13.4	-12.9	0.81	-0.29	-24.01	
1,300.0	1.52	270.80	1,299.7	16.0	-15.9	-13.3	0.93	-0.16	-33.50	
1,400.0	1.68	256.71	1,399.7	15.6	-18.7	-12.6	0.42	0.16	-14.09	
1,500.0	1.98	249.82	1,499.6	14.7	-21.7	-11.2	0.37	0.30	-6.89	
1,600.0	2.08	245.74	1,599.5	13.4	-25.0	-9.4	0.18	0.10	-4.08	
1,700.0	2.29	245.55	1,699.5	11.8	-28.5	-7.3	0.21	0.21	-0.19	
1,800.0	2.00	235.53	1,799.4	10.0	-31.7	-5.0	0.47	-0.29	-10.02	
1,900.0	1.47	216.27	1,899.4	7.9	-33.9	-2.7	0.78	-0.53	-19.26	
2,000.0	1.11	183.77	1,999.3	5.9	-34.8	-0.6	0.80	-0.36	-32.50	
2,100.0	1.01	164.23	2,099.3	4.1	-34.6	1.2	0.37	-0.10	-19.54	
2,200.0	1.62	131.54	2,199.3	2.3	-33.3	2.8	0.94	0.61	-32.69	
2,300.0	2.37	114.00	2,299.2	0.6	-30.3	4.1	0.96	0.75	-17.54	
2,400.0	3.28	117.25	2,399.1	-1.6	-25.9	5.5	0.92	0.91	3.25	
2,500.0	2.50	119.91	2,499.0	-4.0	-21.5	7.2	0.79	-0.78	2.66	
2,600.0	1.53	125.38	2,598.9	-5.8	-18.5	8.6	0.99	-0.97	5.47	
2,700.0	1.17	127.52	2,698.9	-7.2	-16.6	9.7	0.36	-0.36	2.14	
2,800.0	1.07	119.86	2,798.9	-8.3	-15.0	10.5	0.18	-0.10	-7.66	
2,900.0	1.12	120.18	2,898.8	-9.3	-13.3	11.2	0.05	0.05	0.32	
3,000.0	0.89	124.31	2,998.8	-10.2	-11.8	11.9	0.24	-0.23	4.13	
3,100.0	0.61	127.26	3,098.8	-11.0	-10.8	12.5	0.28	-0.28	2.95	
3,200.0	0.61	121.71	3,198.8	-11.6	-9.9	12.9	0.06	0.00	-5.55	
3,300.0	0.76	133.41	3,298.8	-12.3	-9.0	13.5	0.20	0.15	11.70	
3,400.0	0.85	152.78	3,398.8	-13.4	-8.1	14.5	0.29	0.09	19.37	
3,500.0	0.62	172.49	3,498.8	-14.6	-7.7	15.6	0.34	-0.23	19.71	
3,600.0	0.54	174.86	3,598.8	-15.6	-7.6	16.6	0.08	-0.08	2.37	
3,700.0	0.53	173.83	3,698.8	-16.5	-7.5	17.5	0.01	-0.01	-1.03	
3,800.0	0.60	186.48	3,798.8	-17.5	-7.5	18.5	0.14	0.07	12.65	
3,900.0	0.57	188.16	3,898.8	-18.5	-7.7	19.5	0.03	-0.03	1.68	
4,000.0	0.54	201.98	3,998.8	-19.5	-7.9	20.5	0.14	-0.03	13.82	
4,100.0	0.58	206.68	4,098.8	-20.4	-8.3	21.4	0.06	0.04	4.70	
4,200.0	0.62	215.25	4,198.8	-21.3	-8.9	22.4	0.10	0.04	8.57	
4,300.0	0.70	223.73	4,298.8	-22.1	-9.6	23.3	0.13	0.08	8.48	
4,400.0	0.83	212.40	4,398.7	-23.2	-10.4	24.5	0.20	0.13	-11.33	
4,500.0	0.95	209.01	4,498.7	-24.5	-11.2	25.9	0.13	0.12	-3.39	
4,600.0	1.01	208.24	4,598.7	-26.0	-12.0	27.6	0.06	0.06	-0.77	
4,700.0	1.02	204.41	4,698.7	-27.6	-12.8	29.2	0.07	0.01	-3.83	
4,800.0	1.24	192.34	4,798.7	-29.5	-13.4	31.2	0.32	0.22	-12.07	
4,900.0	1.43	191.76	4,898.7	-31.8	-13.9	33.5	0.19	0.19	-0.58	
5,000.0	1.45	190.38	4,998.6	-34.2	-14.4	36.0	0.04	0.02	-1.38	

DDC
Survey Report



Company:	Mewbourne Oil Co	Local Co-ordinate Reference:	Well Malaga 13 DM Federal Com #1H (New SHL)
Project:	Eddy County, New Mexico	TVD Reference:	WELL @ 2908.0usft (Patterson)
Site:	Sec 12, T25S, R28E	MD Reference:	WELL @ 2908.0usft (Patterson)
Well:	Malaga 13 DM Federal Com #1H (New SHL)	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM:5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,100.0	1.54	188.98	5,098.6	-36.8	-14.8	38.6	0.10	0.09	-1.40	
5,200.0	1.19	186.52	5,198.6	-39.2	-15.1	41.0	0.35	-0.35	-2.46	
5,300.0	1.25	186.93	5,298.5	-41.3	-15.4	43.1	0.06	0.06	0.41	
5,400.0	1.22	187.03	5,398.5	-43.4	-15.6	45.3	0.03	-0.03	0.10	
5,500.0	1.32	194.55	5,498.5	-45.6	-16.1	47.5	0.19	0.10	7.52	
5,600.0	1.36	187.74	5,598.5	-47.9	-16.5	49.8	0.16	0.04	-6.81	
5,700.0	1.38	190.55	5,698.4	-50.2	-16.9	52.2	0.07	0.02	2.81	
5,800.0	1.33	189.51	5,798.4	-52.6	-17.3	54.6	0.06	-0.05	-1.04	
5,900.0	0.94	174.15	5,898.4	-54.5	-17.4	56.5	0.49	-0.39	-15.36	
6,000.0	1.03	175.11	5,998.4	-56.2	-17.2	58.2	0.09	0.09	0.96	
6,100.0	0.90	174.64	6,098.4	-57.9	-17.1	59.8	0.13	-0.13	-0.47	
6,200.0	0.91	173.73	6,198.3	-59.5	-16.9	61.4	0.02	0.01	-0.91	
6,300.0	0.90	173.81	6,298.3	-61.1	-16.8	62.9	0.01	-0.01	0.08	
6,400.0	0.94	172.25	6,398.3	-62.6	-16.6	64.4	0.05	0.04	-1.56	
6,500.0	0.54	243.64	6,498.3	-63.7	-16.9	65.5	0.92	-0.40	71.39	
6,600.0	1.04	271.18	6,598.3	-63.9	-18.2	65.9	0.61	0.50	27.54	
6,700.0	2.87	279.94	6,698.2	-63.4	-21.6	66.0	1.85	1.83	8.76	
6,800.0	3.32	288.75	6,798.1	-62.0	-26.8	65.4	0.65	0.45	8.81	
6,900.0	2.05	294.72	6,898.0	-60.4	-31.2	64.4	1.30	-1.27	5.97	
7,000.0	2.12	305.41	6,997.9	-58.5	-34.3	63.1	0.39	0.07	10.69	
7,100.0	1.63	314.30	7,097.9	-56.5	-36.8	61.4	0.57	-0.49	8.89	
7,200.0	1.25	346.95	7,197.8	-54.4	-38.1	59.6	0.89	-0.38	32.65	
7,300.0	1.16	10.10	7,297.8	-52.4	-38.1	57.6	0.49	-0.09	23.15	
7,400.0	1.21	5.18	7,397.8	-50.3	-37.9	55.5	0.11	0.05	-4.92	
7,500.0	1.26	16.17	7,497.8	-48.2	-37.5	53.4	0.24	0.05	10.99	
7,600.0	0.58	57.32	7,597.8	-46.9	-36.7	51.9	0.91	-0.68	41.15	
Tie In @ 7690' MD / 7688' TVD										
7,690.0	0.96	65.87	7,687.7	-46.3	-35.7	51.2	0.44	0.42	9.50	
7,745.0	6.10	186.50	7,742.6	-49.0	-35.6	53.9	12.07	9.35	219.33	
7,777.0	11.10	190.60	7,774.3	-53.8	-36.3	58.7	15.73	15.63	12.81	
7,808.0	15.90	192.80	7,804.4	-60.8	-37.8	65.9	15.57	15.48	7.10	
7,840.0	20.80	194.90	7,834.8	-70.6	-40.3	75.9	15.45	15.31	6.56	
7,872.0	24.40	195.10	7,864.3	-82.5	-43.4	88.2	11.25	11.25	0.63	
7,904.0	27.00	197.10	7,893.1	-95.8	-47.3	101.9	8.56	8.13	6.25	
7,935.0	28.10	197.10	7,920.6	-109.5	-51.5	116.1	3.55	3.55	0.00	
7,967.0	30.00	198.60	7,948.6	-124.3	-56.3	131.5	6.36	5.94	4.69	
7,999.0	33.10	199.90	7,975.9	-140.1	-61.8	147.9	9.92	9.69	4.06	
8,031.0	36.40	202.30	8,002.2	-157.1	-68.4	165.7	11.16	10.31	7.50	
8,062.0	40.30	203.70	8,026.5	-174.8	-75.9	184.4	12.89	12.58	4.52	
8,094.0	43.80	205.50	8,050.2	-194.3	-84.8	205.0	11.57	10.94	5.63	
8,126.0	47.20	206.60	8,072.7	-214.8	-94.9	226.8	10.90	10.63	3.44	
8,158.0	51.10	207.40	8,093.6	-236.4	-105.9	249.8	12.33	12.19	2.50	
8,189.0	54.70	209.50	8,112.3	-258.1	-117.7	273.0	12.81	11.61	6.77	

DDC
Survey Report



Company:	Mewbourne Oil Co.	Local Co-ordinate Reference:	Well: Malaga-13 DM: Federal Com #1H (New SHL)
Project:	Eddy County, New Mexico	TVD Reference:	WELL @ 2908.0usft (Patterson)
Site:	Sec 12, T25S, R28E	MD Reference:	WELL @ 2908.0usft (Patterson)
Well:	Malaga-13 DM: Federal Com #1H (New SHL)	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM-5000.1 Single User Db

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	N-S (usft)	E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,221.0	57.70	209.90	8,130.1	-281.2	-130.8	297.9	9.43	9.38	1.25
Crossed Lease Line @ 8243 MD / 8142 TVD									
8,243.4	59.38	210.04	8,141.8	-297.7	-140.4	315.7	7.52	7.50	0.63
8,253.0	60.10	210.10	8,146.6	-304.9	-144.5	323.4	7.52	7.50	0.61
8,285.0	63.10	209.40	8,161.8	-329.3	-158.5	349.7	9.57	9.38	-2.19
8,316.0	65.90	209.90	8,175.2	-353.7	-172.3	375.8	9.15	9.03	1.61
8,348.0	68.20	208.30	8,187.6	-379.4	-186.7	403.5	8.54	7.19	-5.00
8,380.0	69.50	208.70	8,199.2	-405.6	-200.9	431.6	4.23	4.06	1.25
8,412.0	71.10	207.30	8,210.0	-432.2	-215.0	460.0	6.48	5.00	-4.38
8,443.0	72.20	207.40	8,219.7	-458.4	-228.6	487.9	3.56	3.55	0.32
8,475.0	73.30	206.00	8,229.2	-485.7	-242.3	517.0	5.41	3.44	-4.38
8,507.0	74.90	205.70	8,238.0	-513.4	-255.7	546.4	5.08	5.00	-0.94
8,539.0	76.80	204.40	8,245.8	-541.5	-268.8	576.2	7.13	5.94	-4.06
8,570.0	78.90	201.30	8,252.3	-569.4	-280.6	605.6	11.89	6.77	-10.00
8,602.0	81.20	200.80	8,257.9	-598.8	-291.9	636.4	7.35	7.19	-1.56
Crossed Hard Line @ 8630 MD / 8262 TVD									
8,630.4	83.15	199.47	8,261.7	-625.2	-301.6	664.0	8.30	6.87	-4.69
8,634.0	83.40	199.30	8,262.2	-628.6	-302.8	667.5	8.30	6.88	-4.67
8,666.0	84.80	197.20	8,265.5	-658.8	-312.8	698.9	7.86	4.38	-6.56
8,697.0	85.60	194.30	8,268.0	-688.5	-321.1	729.5	9.67	2.58	-9.35
8,729.0	86.40	191.60	8,270.3	-719.7	-328.3	761.4	8.78	2.50	-8.44
8,760.0	86.40	189.30	8,272.2	-750.1	-333.9	792.3	7.40	0.00	-7.42
8,792.0	86.10	188.40	8,274.3	-781.6	-338.8	824.2	2.96	-0.94	-2.81
8,824.0	88.20	185.30	8,275.9	-813.4	-342.6	856.2	11.69	6.56	-9.69
8,856.0	89.40	184.60	8,276.6	-845.2	-345.4	888.1	4.34	3.75	-2.19
8,888.0	89.90	184.90	8,276.8	-877.1	-348.0	920.0	1.82	1.56	0.94
8,919.0	90.10	186.00	8,276.8	-908.0	-351.0	950.9	3.61	0.65	3.55
8,951.0	90.80	186.20	8,276.5	-939.8	-354.4	982.9	2.28	2.19	0.63
8,983.0	91.50	185.80	8,275.9	-971.6	-357.7	1,014.9	2.52	2.19	-1.25
9,006.0	91.30	186.70	8,275.3	-994.5	-360.2	1,037.8	4.01	-0.87	3.91
9,070.0	88.70	188.10	8,275.3	-1,057.9	-368.5	1,101.8	4.61	-4.06	2.19
9,134.0	87.10	188.60	8,277.7	-1,121.2	-377.8	1,165.8	2.62	-2.50	0.78
9,197.0	87.00	188.60	8,280.9	-1,183.4	-387.2	1,228.7	0.16	-0.16	0.00
9,260.0	87.80	187.40	8,283.8	-1,245.7	-395.9	1,291.6	2.29	1.27	-1.90
9,324.0	88.40	186.70	8,285.9	-1,309.2	-403.8	1,355.5	1.44	0.94	-1.09
9,387.0	88.50	186.30	8,287.6	-1,371.8	-410.9	1,418.5	0.65	0.16	-0.63
9,451.0	88.60	186.00	8,289.2	-1,435.4	-417.8	1,482.4	0.49	0.16	-0.47
9,514.0	89.00	185.30	8,290.5	-1,498.1	-424.0	1,545.3	1.28	0.63	-1.11
9,578.0	88.60	186.20	8,291.9	-1,561.7	-430.4	1,609.2	1.54	-0.63	1.41
9,641.0	88.00	187.40	8,293.7	-1,624.3	-437.8	1,672.1	2.13	-0.95	1.90
9,705.0	88.40	187.70	8,295.7	-1,687.7	-446.2	1,736.1	0.78	0.63	0.47
9,768.0	88.40	187.00	8,297.5	-1,750.1	-454.3	1,799.0	1.11	0.00	-1.11
9,832.0	88.70	186.70	8,299.1	-1,813.7	-461.9	1,863.0	0.66	0.47	-0.47

DDC Survey Report



Company:	Mewbourne Oil Co	Local Co-ordinate Reference:	Well: Malaga 13 DM Federal Com #1H (New SHL)
Project:	Eddy County, New Mexico	TVD Reference:	WELL @ 2908.0usft (Patterson)
Site:	Sec 12, T25S, R28E	MD Reference:	WELL @ 2908.0usft (Patterson)
Well:	Malaga 13 DM Federal Com #1H (New SHL)	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,896.0	89.10	186.50	8,300.4	-1,877.2	-469.3	1,926.9	0.70	0.63	-0.31
9,960.0	89.50	186.50	8,301.1	-1,940.8	-476.5	1,990.8	0.63	0.63	0.00
10,023.0	90.00	186.20	8,301.4	-2,003.4	-483.5	2,053.8	0.93	0.79	-0.48
10,087.0	90.30	186.00	8,301.2	-2,067.1	-490.3	2,117.7	0.56	0.47	-0.31
10,151.0	90.60	186.00	8,300.7	-2,130.7	-497.0	2,181.6	0.47	0.47	0.00
10,215.0	90.40	187.20	8,300.2	-2,194.3	-504.3	2,245.6	1.90	-0.31	1.88
10,278.0	89.70	188.40	8,300.1	-2,256.7	-512.9	2,308.6	2.21	-1.11	1.90
10,342.0	89.80	188.60	8,300.4	-2,320.0	-522.3	2,372.6	0.35	0.16	0.31
10,405.0	90.30	188.80	8,300.4	-2,382.3	-531.9	2,435.6	0.85	0.79	0.32
10,469.0	88.70	188.30	8,300.9	-2,445.6	-541.4	2,499.6	2.62	-2.50	-0.78
10,532.0	87.60	187.60	8,302.9	-2,507.9	-550.1	2,562.5	2.07	-1.75	-1.11
10,596.0	88.30	185.60	8,305.2	-2,571.4	-557.5	2,626.4	3.31	1.09	-3.13
10,660.0	90.30	183.40	8,306.0	-2,635.2	-562.5	2,690.2	4.65	3.13	-3.44
10,724.0	91.40	182.60	8,305.1	-2,699.1	-565.8	2,753.9	2.13	1.72	-1.25
10,788.0	91.70	182.50	8,303.3	-2,763.1	-568.7	2,817.5	0.49	0.47	-0.16
10,852.0	90.70	183.90	8,302.0	-2,826.9	-572.2	2,881.2	2.69	-1.56	2.19
10,916.0	89.20	185.50	8,302.1	-2,890.7	-577.5	2,945.0	3.43	-2.34	2.50
10,980.0	89.60	185.30	8,302.7	-2,954.4	-583.5	3,008.9	0.70	0.63	-0.31
11,043.0	90.20	184.80	8,302.8	-3,017.2	-589.0	3,071.8	1.24	0.95	-0.79
11,107.0	90.60	185.10	8,302.4	-3,080.9	-594.6	3,135.6	0.78	0.63	0.47
11,171.0	90.30	186.30	8,301.9	-3,144.6	-600.9	3,199.5	1.93	-0.47	1.88
11,234.0	89.70	187.00	8,301.9	-3,207.2	-608.2	3,262.5	1.46	-0.95	1.11
11,298.0	90.00	186.90	8,302.1	-3,270.7	-616.0	3,326.4	0.49	0.47	-0.16
11,362.0	90.80	186.50	8,301.6	-3,334.3	-623.4	3,390.4	1.40	1.25	-0.63
11,425.0	90.00	187.60	8,301.2	-3,396.8	-631.2	3,453.4	2.16	-1.27	1.75
11,489.0	90.30	187.00	8,301.0	-3,460.3	-639.3	3,517.3	1.05	0.47	-0.94
11,552.0	90.10	188.60	8,300.8	-3,522.7	-647.8	3,580.3	2.56	-0.32	2.54
11,615.0	90.30	189.30	8,300.6	-3,584.9	-657.6	3,643.3	1.16	0.32	1.11
11,679.0	88.80	189.50	8,301.1	-3,648.1	-668.1	3,707.3	2.36	-2.34	0.31
11,742.0	87.10	188.30	8,303.3	-3,710.3	-677.8	3,770.3	3.30	-2.70	-1.90
11,806.0	87.50	185.30	8,306.3	-3,773.7	-685.4	3,834.2	4.72	0.63	-4.69
11,869.0	89.30	184.20	8,308.1	-3,836.5	-690.6	3,897.0	3.35	2.86	-1.75
11,933.0	90.10	183.90	8,308.4	-3,900.3	-695.1	3,960.8	1.33	1.25	-0.47
11,996.0	90.50	183.40	8,308.1	-3,963.2	-699.2	4,023.5	1.02	0.63	-0.79
12,060.0	90.60	183.00	8,307.5	-4,027.1	-702.7	4,087.2	0.64	0.16	-0.63
12,123.0	91.70	183.80	8,306.2	-4,090.0	-706.5	4,149.9	2.16	1.75	1.27
12,187.0	92.10	184.20	8,304.1	-4,153.8	-710.9	4,213.6	0.88	0.63	0.63
12,250.0	92.70	185.10	8,301.5	-4,216.5	-716.0	4,276.4	1.72	0.95	1.43
12,314.0	91.70	186.00	8,299.0	-4,280.2	-722.2	4,340.3	2.10	-1.56	1.41
12,377.0	88.60	186.70	8,298.8	-4,342.8	-729.2	4,403.2	5.04	-4.92	1.11
12,441.0	88.10	186.20	8,300.7	-4,406.4	-736.4	4,467.1	1.10	-0.78	-0.78
12,504.0	89.00	186.20	8,302.3	-4,469.0	-743.2	4,530.0	1.43	1.43	0.00

DDC
Survey Report



Company:	Newbourne Oil Co	Local Co-ordinate Reference:	Well: Malaga 13 DM Federal Com #1H (New SHL)
Project:	Eddy County New Mexico	TVD Reference:	WELL @ 2908.0usft (Patterson)
Site:	Sec 12 T25S R28E	MD Reference:	WELL @ 2908.0usft (Patterson)
Well:	Malaga 13 DM Federal Com #1H (New SHL)	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,568.0	89.50	186.30	8,303.1	-4,532.6	-750.1	4,594.0	0.80	0.78	0.16
12,631.0	90.10	186.50	8,303.3	-4,595.2	-757.2	4,656.9	1.00	0.95	0.32
12,694.0	89.00	186.00	8,303.8	-4,657.8	-764.0	4,719.9	1.92	-1.75	-0.79
12,758.0	89.30	186.00	8,304.8	-4,721.4	-770.7	4,783.8	0.47	0.47	0.00
12,821.0	89.30	184.20	8,305.5	-4,784.2	-776.3	4,846.6	2.86	0.00	-2.86
12,885.0	90.20	184.10	8,305.8	-4,848.0	-780.9	4,910.4	1.41	1.41	-0.16
12,948.0	91.00	184.10	8,305.2	-4,910.9	-785.4	4,973.2	1.27	1.27	0.00
13,011.0	89.30	183.90	8,305.0	-4,973.7	-789.8	5,036.0	2.72	-2.70	-0.32
13,075.0	89.00	183.70	8,305.9	-5,037.6	-794.1	5,099.7	0.56	-0.47	-0.31
13,139.0	89.90	184.20	8,306.6	-5,101.4	-798.5	5,163.5	1.61	1.41	0.78
13,202.0	90.60	183.70	8,306.3	-5,164.2	-802.8	5,226.3	1.37	1.11	-0.79
13,254.0	91.10	183.50	8,305.5	-5,216.1	-806.1	5,278.1	1.04	0.96	-0.38
TD @ 13305' MD / 8305' TVD									
13,305.0	91.10	183.50	8,304.5	-5,267.0	-809.2	5,328.8	0.00	0.00	0.00

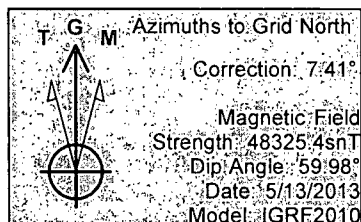
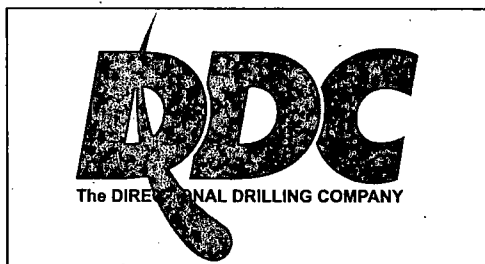
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,690.0	7,687.7	-46.3	-35.7	Tie In @ 7690' MD / 7688' TVD
8,243.4	8,141.8	-297.7	-140.4	Crossed Lease Line @ 8243' MD / 8142' TVD
8,630.4	8,261.7	-625.2	-301.6	Crossed Hard Line @ 8630' MD / 8262' TVD
13,305.0	8,304.5	-5,267.0	-809.2	TD @ 13305' MD / 8305' TVD

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

Company Name: Mewbourne Oil Co
 Malaga 13 DM Federal Com #1H (New SHL)
 Eddy County, New Mexico
 Rig: Patterson #46
 Created By: James Dawson
 Date: 11/19/2013

Malaga 13 DM Federal Com #1H (New SHL)
 Eddy County, New Mexico
 Q120835 & WT-13811
 Design #6 (Tie-In)

Mewbourne Oil Company



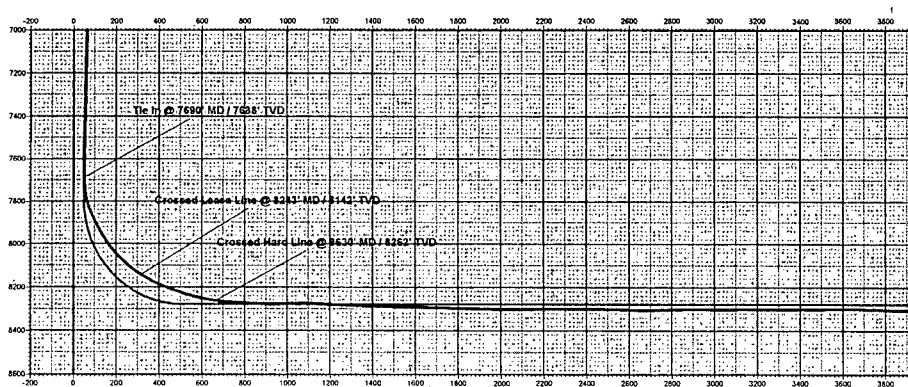
PROJECT DETAILS: Eddy County, New Mexico

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

WELL DETAILS: Malaga 13 DM Federal Com #1H (New SHL)					
Ground Level:	2898.0				
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	414092.17	589199.27	32° 8' 17.261 N	104° 2' 42.563 W

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
LP Malaga 13 DM Federal Com #1H Design #6	8278.0	-429.8	-217.0	413562.87	588982.27	32° 8' 12.026 N	104° 2' 46.104 W
- plan misses target center by 51.8in. at 8050.0in. MD (8278.0 TVD, -407.1 N, -203.6 E)							
PBFL Malaga 13 DM Federal Com #1H Design #6 8278.0	-5271.7	-519.0	408520.47	588584.27	32° 7' 25.111 N	104° 2' 62.205 W	
- plan hits target center							

ANNOTATIONS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	V'Sect	Departure	Annotation	
7690.0	0.96	65.87	7687.7	-46.3	-35.7	61.2	169.7	Tie In @ 7690' MD / 7688' TVD	
8245.4	59.38	210.04	8141.8	-297.7	-140.4	315.7	443.3	Crossed Lease Line @ 8243' MD / 8142' TVD	
8530.4	53.15	189.47	8251.7	-425.2	-301.6	464.0	808.9	Crossed Hard Line @ 8530' MD / 8262' TVD	
13305.0	91.10	183.50	8304.5	-4267.0	-809.2	5328.8	5481.9	TD @ 13305' MD / 8305' TVD	



Vertical Section at 188.79° (200 usf/in)

