

OPERATOR
WELL/LEASE
COUNTY

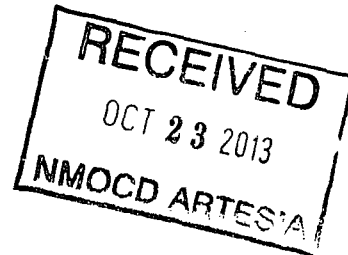
MEWBOURNE OIL COMPANY
DERRINGER 18 DA FED 1H
EDDY

041-0113

STATE OF NEW MEXICO
DEVIATION REPORT

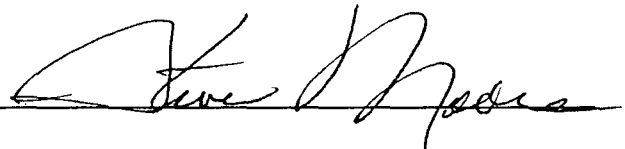
30015-41431

239	0.80
494	1.28
794	1.50
1,089	0.91
1,467	1.50
1,908	1.25
2,349	1.50
2,822	1.65
3,308	3.50
4,129	2.91
4,349	2.72
4,601	3.07
4,853	2.71
5,169	3.35
5,519	0.20
5,927	1.59
6,463	2.00



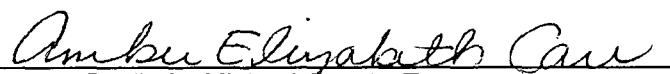
STATE OF TEXAS

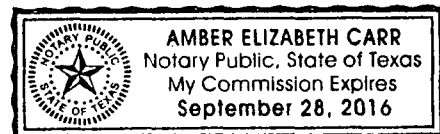
COUNTY OF MIDLAND

BY: 

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

8/2/13, by


Notary Public for Midland County, Texas
My Commission Expires:





SURVEY CALCULATION PROGRAM

v1.00.02

OPERATOR:		MEWBORNE							Supervisors:								
WELL:		DERRINGER 18 D.A. FEDERAL #1H							CLAYTON THOMAS								
LOCATION:		EDDY COUNTY, NM							RANDALL SKIPWORTH								
JOB NUMBER:		WL-13578			API #:		30-051-41431										
COMMENTS:																	
DISPALCEMENT OF 246.32FT AT 274.24 DEGREES								MAG DEC.(-/+)		7.61E							
								GRID CORR.(-/+)									
								TOTAL CORR.(-/+)		7.61E							
DATE: 7-21-13				TIME: 5:00am													
MINIMUM CURVATURE CALCULATIONS(SPE-336) PROPOSED DIRECTION 89.35 TARGET TRACKING																	
SVY		TRUE						DLS/		TO CENTER		CLOSURE		BUILD		WALK	
NUM	MD	INC	AZM	TVD	SECT	N-S	E-W	100	ABOVE(+)	RIGHT(+)	DIR	DISTANCE	RATE/	RATE/			
									BELOW(-)	LEFT(-)	(DEG AZ)	(FEET)	%/100'	%/100'			
TIE	0	0.00	0.00	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
1	100	0.25	266.16	100.00	-0.22	-0.01	-0.22	0.3	-100.0	0.0	266.2	0.2	0.2	0.2	0.2	0.2	
2	200	0.43	15.86	200.00	-0.33	0.33	-0.33	0.6	-200.0	-0.3	314.9	0.5	0.2	0.2	-0.6	-0.6	
3	300	0.29	56.08	300.00	-0.01	0.83	-0.02	0.3	-300.0	-0.8	358.6	0.8	-0.1	0.2	0.2	0.2	
4	400	0.59	60.69	399.99	0.65	1.23	0.64	0.3	-400.0	-1.2	27.5	1.4	0.3	0.0	0.0	0.0	
5	500	0.82	59.50	499.99	1.72	1.84	1.70	0.2	-500.0	-1.8	42.8	2.5	0.2	0.0	0.0	0.0	
6	600	1.60	65.63	599.96	3.62	2.78	3.59	0.8	-600.0	-2.7	52.2	4.5	0.8	0.1	0.1	0.1	
7	700	1.71	67.32	699.92	6.29	3.93	6.24	0.1	-699.9	-3.9	57.8	7.4	0.1	0.0	0.0	0.0	
8	800	1.33	58.65	799.89	8.67	5.11	8.61	0.4	-799.9	-5.0	59.3	10.0	-0.4	-0.2	-0.2	-0.2	
9	900	0.78	60.43	899.87	10.26	6.05	10.19	0.6	-899.9	-5.9	59.3	11.9	-0.6	0.0	0.0	0.0	
10	1000	0.58	11.12	999.86	10.96	6.88	10.88	0.6	-999.9	-6.8	57.7	12.9	-0.2	-0.5	-0.5	-0.5	
11	1100	0.27	333.45	1099.86	10.96	7.59	10.87	0.4	-1099.9	-7.5	55.1	13.3	-0.3	0.2	0.2	0.2	
12	1200	0.44	292.65	1199.86	10.50	7.95	10.41	0.3	-1199.9	-7.8	52.6	13.1	0.2	-0.2	-0.2	-0.2	
13	1300	0.38	342.13	1299.86	10.05	8.41	9.96	0.3	-1299.9	-8.3	49.8	13.0	-0.1	0.3	0.3	0.3	
14	1400	0.69	359.46	1399.85	9.96	9.33	9.85	0.3	-1399.9	-9.2	46.5	13.6	0.3	0.1	0.1	0.1	
15	1500	0.63	358.59	1499.84	9.95	10.48	9.83	0.1	-1499.8	-10.4	43.2	14.4	-0.1	0.0	0.0	0.0	
16	1600	2.93	323.28	1599.79	8.44	13.08	8.29	2.4	-1599.8	-13.0	32.4	15.5	2.3	-1.0	-1.0	-1.0	
17	1700	3.02	315.07	1699.66	5.09	17.00	4.90	0.4	-1699.7	-16.9	16.1	17.7	0.1	-0.4	-0.4	-0.4	
18	1800	3.29	310.72	1799.51	1.10	20.73	0.87	0.4	-1799.5	-20.7	2.4	20.8	0.3	-0.2	-0.2	-0.2	
19	1900	3.46	268.43	1899.35	-4.07	22.52	-4.33	2.4	-1899.3	-22.6	349.1	22.9	0.2	-2.2	-2.2	-2.2	
20	2000	4.34	261.29	1999.12	-10.83	21.87	-11.08	1.0	-1999.1	-22.0	333.1	24.5	0.9	-0.4	-0.4	-0.4	
21	2100	4.46	253.13	2098.82	-18.31	20.16	-18.54	0.6	-2098.8	-20.4	317.4	27.4	0.1	-0.6	-0.6	-0.6	
22	2200	4.67	259.94	2198.50	-26.06	18.33	-26.27	0.6	-2198.5	-18.6	304.9	32.0	0.2	0.5	0.5	0.5	
23	2300	4.65	262.94	2298.17	-34.11	17.12	-34.30	0.2	-2298.2	-17.5	296.5	38.3	0.0	0.2	0.2	0.2	
24	2400	4.73	275.09	2397.84	-42.24	16.98	-42.43	1.0	-2397.8	-17.5	291.8	45.7	0.1	0.9	0.9	0.9	
25	2500	5.47	269.66	2497.45	-51.11	17.32	-51.31	0.9	-2497.4	-17.9	288.7	54.2	0.7	-0.4	-0.4	-0.4	
26	2600	5.15	272.97	2597.02	-60.35	17.53	-60.56	0.4	-2597.0	-18.2	286.1	63.0	-0.3	0.3	0.3	0.3	
27	2700	5.03	273.96	2696.62	-69.20	18.06	-69.41	0.1	-2696.6	-18.8	284.6	71.7	-0.1	0.1	0.1	0.1	
28	2800	4.78	280.35	2796.26	-77.66	19.11	-77.88	0.6	-2796.3	-20.0	283.8	80.2	-0.2	0.5	0.5	0.5	
29	2900	4.93	285.06	2895.90	-85.89	20.98	-86.13	0.4	-2895.9	-22.0	283.7	88.6	0.1	0.4	0.4	0.4	
30	3000	4.44	288.66	2995.56	-93.68	23.33	-93.95	0.6	-2995.6	-24.4	283.9	96.8	-0.5	0.3	0.3	0.3	
31	3100	4.04	293.45	3095.29	-100.55	25.97	-100.85	0.5	-3095.3	-27.1	284.4	104.1	-0.4	0.3	0.3	0.3	
32	3200	3.60	292.34	3195.07	-106.65	28.57	-106.98	0.4	-3195.1	-29.8	285.0	110.7	-0.4	-0.1	-0.1	-0.1	
33	3300	3.15	286.12	3294.90	-112.17	30.52	-112.53	0.6	-3294.9	-31.8	285.2	116.6	-0.5	-0.3	-0.3	-0.3	
34	3400	3.02	284.71	3394.75	-117.34	31.96	-117.71	0.2	-3394.8	-33.3	285.2	122.0	-0.1	-0.1	-0.1	-0.1	
35	3500	3.02	288.90	3494.61	-122.37	33.48	-122.75	0.2	-3494.6	-34.9	285.3	127.2	0.0	0.2	0.2	0.2	
36	3600	2.60	280.95	3594.49	-127.07	34.76	-127.47	0.6	-3594.5	-36.2	285.3	132.1	-0.4	-0.3	-0.3	-0.3	
37	3700	2.55	286.92	3694.39	-131.41	35.84	-131.83	0.3	-3694.4	-37.3	285.2	136.6	-0.1	0.2	0.2	0.2	
38	3800	2.67	276.42	3794.29	-135.84	36.75	-136.27	0.5	-3794.3	-38.3	285.1	141.1	0.1	-0.4	-0.4	-0.4	
39	3900	2.81	272.21	3894.17	-140.60	37.10	-141.03	0.2	-3894.2	-38.7	284.7	145.8	0.1	-0.2	-0.2	-0.2	
40	4000	2.67	268.26	3994.06	-145.38	37.13	-145.81	0.2	-3994.1	-38.8	284.3	150.5	-0.1	-0.2	-0.2	-0.2	
41	4100	2.74	276.16	4093.95	-150.08	37.31	-150.52	0.4	-4093.9	-39.0	283.9	155.1	0.1	0.3	0.3	0.3	
42	4200	2.59	275.99	4193.84	-154.70	37.80	-155.14	0.2	-4193.8	-39.6	283.7	159.7	-0.2	0.0	0.0	0.0	
43	4300	2.41	269.22	4293.74	-159.05	38.01	-159.49	0.3	-4293.7	-39.8	283.4	164.0	-0.2	-0.3	-0.3	-0.3	
44	4400	2.29	263.25	4393.66	-163.14	37.75	-163.58	0.3	-4393.7	-39.6	283.0	167.9	-0.1	-0.2	-0.2	-0.2	
45	4500	2.86	261.26	4493.56	-167.59	37.13	-168.03	0.6	-4493.6	-39.0	282.5	172.1	0.6	-0.1	-0.1	-0.1	



SURVEY CALCULATION PROGRAM

v1.00.02

OPERATOR:	MEWBOURNE		Supervisors:	
WELL:	DERRINGER 18 D.A. FEDERAL #1H		CLAYTON THOMAS	
LOCATION:	EDDY COUNTY, NM		RANDALL SKIPWORTH	
JOB NUMBER:	WL-13578	API #:	30-051-41431	
COMMENTS:				
DISPALCEMENT OF 246.32FT AT 274.24 DEGREES			MAG DEC. (-/+)	7.61E
			GRID CORR. (-/+)	
			TOTAL CORR. (-/+)	7.61E
DATE: 7-21-13		TIME: 5:00am		

MINIMUM CURVATURE CALCULATIONS(SPE-336)										PROPOSED DIRECTION	89.35	TARGET TRACKING		CLOSURE	CLOSURE	BUILD	WALK
												TO CENTER		DIR	DISTANCE	RATE/	RATE/
SVY	MD	INC	TRUE	TVD	SECT	N-S	E-W	DLS/	100	ABOVE(+)	RIGHT(+)	BELOW(-)	LEFT(-)	(DEG AZ)	(FEET)	%/100'	%/100'
NUM			AZM														
46	4600	3.16	255.12	4593.42	-172.74	36.05	-173.16	0.4		-4593.4	-38.0			281.8	176.9	0.3	-0.3
47	4700	2.72	256.99	4693.29	-177.72	34.81	-178.13	0.5		-4693.3	-36.8			281.1	181.5	-0.4	0.1
48	4800	2.52	254.53	4793.19	-182.17	33.69	-182.56	0.2		-4793.2	-35.8			280.5	185.6	-0.2	-0.1
49	4900	2.86	256.11	4893.07	-186.72	32.50	-187.10	0.3		-4893.1	-34.6			279.9	189.9	0.3	0.1
50	5000	2.60	251.58	4992.96	-191.31	31.18	-191.68	0.3		-4993.0	-33.4			279.2	194.2	-0.3	-0.2
51	5100	2.49	245.59	5092.86	-195.46	29.57	-195.81	0.3		-5092.9	-31.8			278.6	198.0	-0.1	-0.2
52	5200	2.22	254.34	5192.78	-199.32	28.15	-199.65	0.4		-5192.8	-30.4			278.0	201.6	-0.3	0.3
53	5300	2.16	250.75	5292.71	-202.97	27.01	-203.29	0.1		-5292.7	-29.3			277.6	205.1	-0.1	-0.1
54	5400	2.34	254.43	5392.63	-206.73	25.84	-207.04	0.2		-5392.6	-28.2			277.1	208.6	0.2	0.1
55	5500	2.15	251.95	5492.55	-210.49	24.71	-210.79	0.2		-5492.6	-27.1			276.7	212.2	-0.2	-0.1
56	5600	1.95	256.83	5592.49	-213.95	23.74	-214.23	0.3		-5592.5	-26.2			276.3	215.5	-0.2	0.2
57	5700	1.87	253.34	5692.43	-217.18	22.88	-217.45	0.1		-5692.4	-25.3			276.0	218.6	-0.1	-0.1
58	5800	1.87	253.42	5792.38	-220.31	21.95	-220.58	0.0		-5792.4	-24.5			275.7	221.7	0.0	0.0
59	5900	1.80	265.52	5892.33	-223.45	21.36	-223.70	0.4		-5892.3	-23.9			275.5	224.7	-0.1	0.3
60	6000	1.75	268.38	5992.28	-226.54	21.20	-226.80	0.1		-5992.3	-23.8			275.3	227.8	-0.1	0.1
61	6100	1.58	258.73	6092.24	-229.42	20.88	-229.68	0.3		-6092.2	-23.5			275.2	230.6	-0.2	-0.3
62	6200	1.10	259.86	6192.21	-231.73	20.44	-231.97	0.5		-6192.2	-23.1			275.0	232.9	-0.5	0.0
63	6300	1.35	270.24	6292.19	-233.85	20.28	-234.10	0.3		-6292.2	-22.9			275.0	235.0	0.2	0.2
64	6400	1.59	266.92	6392.2	-236.4	20.2	-236.7	0.3		-6392.2	-22.9			274.9	237.5	0.2	-0.1
65	6500	1.20	258.27	6492.1	-238.8	19.9	-239.1	0.4		-6492.1	-22.6			274.8	239.9	-0.4	-0.2
66	6600	0.90	244.64	6592.1	-240.6	19.4	-240.8	0.4		-6592.1	-22.1			274.6	241.6	-0.3	-0.2
67	6700	0.85	251.62	6692.1	-242.0	18.8	-242.2	0.1		-6692.1	-21.6			274.4	242.9	0.0	0.1
68	6800	0.60	247.31	6792.1	-243.2	18.4	-243.4	0.3		-6792.1	-21.1			274.3	244.1	-0.2	0.0
69	6900	0.84	268.50	6892.1	-244.4	18.1	-244.6	0.4		-6892.1	-20.9			274.2	245.3	0.2	0.2
70	6970	0.85	277.79	6962.1	-245.4	18.2	-245.6	0.2		-6962.1	-21.0			274.2	246.3	0.0	0.2

Mewbourne Oil Co

Eddy County, New Mexico (Nad 83)

Sec 18,T20S,R29E

Derringer #18 DA Fed. #1H

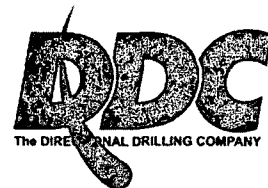
Wellbore #1

Survey: MWD



DDC Survey Report

01 August, 2013



DDC Survey Report



Company:	Mewbourne Oil Co	Local Co-ordinate Reference:	Well Derringer #18 DA Fed. #1H
Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3281.0usft (Patterson)
Site:	Sec 18,T20S,R29E	MD Reference:	WELL @ 3281.0usft (Patterson)
Well:	Derringer #18 DA Fed. #1H	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 (Nad 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Sec 18,T20S,R29E		
Site Position:		Northing:	574,535.70 usft
From:	Map	Easting:	606,553.80 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 34' 45.389 N
		Longitude:	104° 7' 17.790 W
		Grid Convergence:	0.11 °

Well	Derringer #18 DA Fed. #1H		
Well Position	+N/-S	0.0 usft	Northing: 574,535.70 usft
	+E/-W	0.0 usft	Easting: 606,553.80 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 34' 45.389 N
		Longitude:	104° 7' 17.790 W
		Ground Level:	3,261.0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	7/9/2013	7.61
			Dip Angle (°)
			60.37
			Field Strength (nT)
			48,564

Design	Wellbore #1		
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 (°)
			89.35

Survey Program	Date 7/31/2013		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.0	6,970.0	GYRO (Wellbore #1)	Good_gyro
7,074.0	12,130.0	MWD (Wellbore #1)	MWD default
			Description
			Good Gyro
			MWD - Standard

Survey									
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.25	266.16	100.0	0.0	-0.2	-0.2	0.25	0.25	0.00
200.0	0.43	15.86	200.0	0.3	-0.3	-0.3	0.57	0.18	109.70
300.0	0.29	56.08	300.0	0.8	0.0	0.0	0.28	-0.14	40.22
400.0	0.59	60.69	400.0	1.2	0.6	0.7	0.30	0.30	4.61
500.0	0.82	59.50	500.0	1.8	1.7	1.7	0.23	0.23	-1.19
600.0	1.60	65.63	600.0	2.8	3.6	3.6	0.79	0.78	6.13
700.0	1.71	67.32	699.9	3.9	6.2	6.3	0.12	0.11	1.69
800.0	1.33	58.65	799.9	5.1	8.6	8.7	0.44	-0.38	-8.67
900.0	0.78	60.43	899.9	6.1	10.2	10.3	0.55	-0.55	1.78

DDC
Survey Report



Company:	Mewbourne Oil Co	Local Co-ordinate Reference:	Well Derringer #18 DA Fed. #1H
Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3281.0usft (Patterson)
Site:	Sec 18 T20S R29E	MD Reference:	WELL @ 3281.0usft (Patterson)
Well:	Derringer #18 DA Fed. #1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM5000.1 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)
1,000.0	0.58	11.12	999.9	6.9	10.9	11.0	0.60	-0.20	-49.31
1,100.0	0.27	333.45	1,099.9	7.6	10.9	11.0	0.40	-0.31	-37.67
1,200.0	0.44	292.65	1,199.9	8.0	10.4	10.5	0.29	0.17	-40.80
1,300.0	0.38	342.13	1,299.9	8.4	10.0	10.1	0.35	-0.06	49.48
1,400.0	0.69	359.46	1,399.9	9.3	9.9	10.0	0.35	0.31	17.33
1,500.0	0.63	358.59	1,499.8	10.5	9.8	9.9	0.06	-0.06	-0.87
1,600.0	2.93	323.28	1,599.8	13.1	8.3	8.4	2.44	2.30	-35.31
1,700.0	3.02	315.07	1,699.7	17.0	4.9	5.1	0.44	0.09	-8.21
1,800.0	3.29	310.72	1,799.5	20.7	0.9	1.1	0.36	0.27	-4.35
1,900.0	3.46	268.43	1,899.3	22.5	-4.3	-4.1	2.44	0.17	-42.29
2,000.0	4.34	261.29	1,999.1	21.9	-11.1	-10.8	1.00	0.88	-7.14
2,100.0	4.46	253.13	2,098.8	20.2	-18.5	-18.3	0.64	0.12	-8.16
2,200.0	4.67	259.94	2,198.5	18.3	-26.3	-26.1	0.58	0.21	6.81
2,300.0	4.65	262.94	2,298.2	17.1	-34.3	-34.1	0.24	-0.02	3.00
2,400.0	4.73	275.09	2,397.8	17.0	-42.4	-42.2	0.99	0.08	12.15
2,500.0	5.47	269.66	2,497.4	17.3	-51.3	-51.1	0.88	0.74	-5.43
2,600.0	5.15	272.97	2,597.0	17.5	-60.6	-60.4	0.44	-0.32	3.31
2,700.0	5.03	273.96	2,696.6	18.1	-69.4	-69.2	0.15	-0.12	0.99
2,800.0	4.78	280.35	2,796.3	19.1	-77.9	-77.7	0.60	-0.25	6.39
2,900.0	4.93	285.06	2,895.9	21.0	-86.1	-85.9	0.43	0.15	4.71
3,000.0	4.44	288.66	2,995.6	23.3	-93.9	-93.7	0.57	-0.49	3.60
3,100.0	4.04	293.45	3,095.3	26.0	-100.8	-100.5	0.53	-0.40	4.79
3,200.0	3.60	292.34	3,195.1	28.6	-107.0	-106.7	0.45	-0.44	-1.11
3,300.0	3.15	286.12	3,294.9	30.5	-112.5	-112.2	0.58	-0.45	-6.22
3,400.0	3.02	284.71	3,394.8	32.0	-117.7	-117.3	0.15	-0.13	-1.41
3,500.0	3.02	288.90	3,494.6	33.5	-122.8	-122.4	0.22	0.00	4.19
3,600.0	2.60	280.95	3,594.5	34.8	-127.5	-127.1	0.57	-0.42	-7.95
3,700.0	2.55	286.92	3,694.4	35.8	-131.8	-131.4	0.27	-0.05	5.97
3,800.0	2.67	276.42	3,794.3	36.7	-136.3	-135.8	0.49	0.12	-10.50
3,900.0	2.81	272.21	3,894.2	37.1	-141.0	-140.6	0.25	0.14	-4.21
4,000.0	2.67	268.26	3,994.1	37.1	-145.8	-145.4	0.23	-0.14	-3.95
4,100.0	2.74	276.16	4,093.9	37.3	-150.5	-150.1	0.38	0.07	7.90
4,200.0	2.59	275.99	4,193.8	37.8	-155.1	-154.7	0.15	-0.15	-0.17
4,300.0	2.41	269.22	4,293.7	38.0	-159.5	-159.0	0.35	-0.18	-6.77
4,400.0	2.29	263.25	4,393.7	37.7	-163.6	-163.1	0.27	-0.12	-5.97
4,500.0	2.86	261.26	4,493.6	37.1	-168.0	-167.6	0.58	0.57	-1.99
4,600.0	3.16	255.12	4,593.4	36.0	-173.2	-172.7	0.44	0.30	-6.14
4,700.0	2.72	256.99	4,693.3	34.8	-178.1	-177.7	0.45	-0.44	1.87
4,800.0	2.52	254.53	4,793.2	33.7	-182.6	-182.2	0.23	-0.20	-2.46
4,900.0	2.86	256.11	4,893.1	32.5	-187.1	-186.7	0.35	0.34	1.58
5,000.0	2.60	251.58	4,993.0	31.2	-191.7	-191.3	0.34	-0.26	-4.53
5,100.0	2.49	245.59	5,092.9	29.6	-195.8	-195.5	0.29	-0.11	-5.99
5,200.0	2.22	254.34	5,192.8	28.1	-199.6	-199.3	0.45	-0.27	8.75

DDC Survey Report



Company: Mewbourne Oil Co	Local Co-ordinate Reference: Well Derringer #18 DA Fed. #1H
Project: Eddy County, New Mexico (Nad 83)	TVD Reference: WELL @ 3281.0usft (Patterson)
Site: Sec 18, T20S, R29E	MD Reference: WELL @ 3281.0usft (Patterson)
Well: Derringer #18 DA Fed. #1H	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)
5,300.0	2.16	250.75	5,292.7	27.0	-203.3	-203.0	0.15	-0.06	-3.59
5,400.0	2.34	254.43	5,392.6	25.8	-207.0	-206.7	0.23	0.18	3.68
5,500.0	2.15	251.95	5,492.6	24.7	-210.8	-210.5	0.21	-0.19	-2.48
5,600.0	1.95	256.83	5,592.5	23.7	-214.2	-213.9	0.27	-0.20	4.88
5,700.0	1.87	253.34	5,692.4	22.9	-217.4	-217.2	0.14	-0.08	-3.49
5,800.0	1.87	253.42	5,792.4	21.9	-220.6	-220.3	0.00	0.00	0.08
5,900.0	1.80	265.52	5,892.3	21.4	-223.7	-223.4	0.39	-0.07	12.10
6,000.0	1.75	268.38	5,992.3	21.2	-226.8	-226.5	0.10	-0.05	2.86
6,100.0	1.58	258.73	6,092.2	20.9	-229.7	-229.4	0.33	-0.17	-9.65
6,200.0	1.10	259.86	6,192.2	20.4	-232.0	-231.7	0.48	-0.48	1.13
6,300.0	1.35	270.24	6,292.2	20.3	-234.1	-233.9	0.33	0.25	10.38
6,400.0	1.59	266.92	6,392.2	20.2	-236.7	-236.4	0.25	0.24	-3.32
6,500.0	1.20	258.27	6,492.1	19.9	-239.1	-238.8	0.44	-0.39	-8.65
6,600.0	0.90	244.64	6,592.1	19.4	-240.8	-240.6	0.39	-0.30	-13.63
6,700.0	0.85	251.62	6,692.1	18.8	-242.2	-242.0	0.12	-0.05	6.98
6,800.0	0.60	247.31	6,792.1	18.4	-243.4	-243.2	0.26	-0.25	-4.31
6,900.0	0.84	268.50	6,892.1	18.1	-244.6	-244.4	0.35	0.24	21.19

TIE IN @ 6970' MD / 6962.1' TVD

6,970.0	0.85	277.79	6,962.1	18.2	-245.6	-245.4	0.20	0.01	13.27
7,074.0	3.50	72.50	7,066.0	19.3	-243.4	-243.1	4.12	2.55	148.76
7,106.0	7.60	72.20	7,097.9	20.2	-240.4	-240.2	12.81	12.81	-0.94
7,138.0	12.10	74.70	7,129.4	21.7	-235.2	-234.9	14.12	14.06	7.81
7,169.0	16.00	76.20	7,159.4	23.6	-227.9	-227.6	12.63	12.58	4.84
7,201.0	20.00	79.20	7,189.9	25.7	-218.2	-217.9	12.83	12.50	9.38
7,232.0	24.30	82.60	7,218.6	27.5	-206.7	-206.4	14.47	13.87	10.97
7,264.0	28.70	84.10	7,247.2	29.1	-192.5	-192.2	13.91	13.75	4.69
7,295.0	32.50	84.30	7,273.9	30.7	-176.8	-176.5	12.26	12.26	0.65
7,327.0	35.00	83.30	7,300.5	32.7	-159.1	-158.8	8.00	7.81	-3.13

CROSSED LEASE LINE @ 7343.5' TVD

7,343.5	36.49	83.35	7,313.9	33.8	-149.6	-149.2	9.03	9.03	0.33
7,358.0	37.80	83.40	7,325.4	34.8	-140.9	-140.5	9.03	9.03	0.31
7,390.0	40.80	84.00	7,350.2	37.0	-120.7	-120.3	9.45	9.38	1.88
7,421.0	43.50	84.10	7,373.2	39.2	-100.0	-99.6	8.71	8.71	0.32
7,453.0	46.20	85.70	7,395.9	41.2	-77.6	-77.1	9.14	8.44	5.00
7,484.0	47.80	90.30	7,417.0	41.9	-54.9	-54.4	12.01	5.16	14.84
7,516.0	48.20	92.60	7,438.4	41.3	-31.2	-30.7	5.49	1.25	7.19
7,547.0	49.60	91.90	7,458.8	40.4	-7.8	-7.4	4.83	4.52	-2.26
7,579.0	52.50	91.20	7,478.9	39.8	17.1	17.5	9.22	9.06	-2.19
7,610.0	55.40	90.60	7,497.2	39.4	42.1	42.6	9.48	9.35	-1.94
7,642.0	58.00	91.00	7,514.7	39.0	68.9	69.3	8.19	8.13	1.25
7,673.0	59.00	92.10	7,530.9	38.3	95.3	95.7	4.42	3.23	3.55
7,705.0	61.70	92.90	7,546.8	37.1	123.1	123.5	8.71	8.44	2.50
7,736.0	64.10	92.90	7,560.9	35.7	150.6	151.0	7.74	7.74	0.00

CROSSED HARDLINE @ 7768' MD / 7574.1' TVD

DDC Survey Report



Company:	Mewbourne Oil Co	Local Co-ordinate Reference:	Well Derringer #18 DA Fed #1H
Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3281.0usft (Patterson)
Site:	Sec 18 T20S R29E	MD Reference:	WELL @ 3281.0usft (Patterson)
Well:	Derringer #18 DA Fed #1H	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)
7,768.0	67.30	93.10	7,574.1	34.1	179.7	180.1	10.02	10.00	0.63
7,799.0	70.50	92.40	7,585.2	32.8	208.6	209.0	10.54	10.32	-2.26
7,831.0	73.40	91.50	7,595.1	31.7	239.0	239.4	9.45	9.06	-2.81
7,863.0	75.70	90.30	7,603.6	31.2	269.9	270.2	8.05	7.19	-3.75
7,894.0	78.40	89.80	7,610.6	31.2	300.1	300.4	8.85	8.71	-1.61
7,926.0	81.90	89.40	7,616.1	31.4	331.6	331.9	11.01	10.94	-1.25
7,957.0	83.30	89.40	7,620.1	31.8	362.3	362.7	4.52	4.52	0.00
8,033.0	86.60	90.60	7,626.7	31.8	438.0	438.4	4.62	4.34	1.58
8,128.0	87.70	91.00	7,631.5	30.4	532.9	533.2	1.23	1.16	0.42
8,223.0	89.70	89.80	7,633.6	29.8	627.9	628.2	2.45	2.11	-1.26
8,318.0	90.30	89.80	7,633.6	30.1	722.9	723.2	0.63	0.63	0.00
8,412.0	89.30	91.30	7,634.0	29.2	816.9	817.1	1.92	-1.06	1.60
8,507.0	88.70	93.10	7,635.6	25.5	911.8	912.0	2.00	-0.63	1.89
8,602.0	87.80	91.50	7,638.5	21.7	1,006.6	1,006.8	1.93	-0.95	-1.68
8,697.0	88.60	91.00	7,641.5	19.7	1,101.6	1,101.7	0.99	0.84	-0.53
8,792.0	88.80	92.20	7,643.7	17.0	1,196.5	1,196.6	1.28	0.21	1.26
8,887.0	89.20	90.30	7,645.3	14.9	1,291.5	1,291.6	2.04	0.42	-2.00
8,981.0	88.90	90.50	7,646.9	14.3	1,385.5	1,385.5	0.38	-0.32	0.21
9,076.0	89.70	88.50	7,648.0	15.1	1,480.4	1,480.5	2.27	0.84	-2.11
9,171.0	90.00	88.20	7,648.3	17.9	1,575.4	1,575.5	0.45	0.32	-0.32
9,266.0	88.90	88.20	7,649.2	20.8	1,670.3	1,670.5	1.16	-1.16	0.00
9,360.0	89.10	88.40	7,650.8	23.6	1,764.3	1,764.4	0.30	0.21	0.21
9,455.0	88.40	88.70	7,652.9	26.0	1,859.2	1,859.4	0.80	-0.74	0.32
9,550.0	88.30	88.70	7,655.6	28.2	1,954.2	1,954.4	0.11	-0.11	0.00
9,645.0	88.50	89.60	7,658.3	29.6	2,049.1	2,049.3	0.97	0.21	0.95
9,740.0	88.80	90.30	7,660.5	29.7	2,144.1	2,144.3	0.80	0.32	0.74
9,835.0	88.50	89.40	7,662.8	29.9	2,239.1	2,239.3	1.00	-0.32	-0.95
9,930.0	87.80	90.10	7,665.8	30.3	2,334.0	2,334.2	1.04	-0.74	0.74
10,025.0	87.20	89.90	7,670.0	30.3	2,428.9	2,429.1	0.67	-0.63	-0.21
10,120.0	88.60	88.20	7,673.5	31.9	2,523.8	2,524.0	2.32	1.47	-1.79
10,215.0	89.20	89.40	7,675.3	33.9	2,618.8	2,619.0	1.41	0.63	1.26
10,310.0	88.90	87.80	7,676.9	36.2	2,713.8	2,714.0	1.71	-0.32	-1.68
10,405.0	88.80	87.10	7,678.8	40.4	2,808.6	2,808.9	0.74	-0.11	-0.74
10,499.0	89.30	87.50	7,680.3	44.9	2,902.5	2,902.9	0.68	0.53	0.43
10,594.0	89.70	86.10	7,681.2	50.2	2,997.4	2,997.8	1.53	0.42	-1.47
10,689.0	89.90	86.40	7,681.5	56.4	3,092.2	3,092.6	0.38	0.21	0.32
10,784.0	89.30	88.20	7,682.2	60.9	3,187.1	3,187.5	2.00	-0.63	1.89
10,879.0	88.70	90.10	7,683.8	62.3	3,282.0	3,282.5	2.10	-0.63	2.00
10,973.0	89.80	89.90	7,685.0	62.3	3,376.0	3,376.5	1.19	1.17	-0.21
11,068.0	89.20	89.10	7,685.9	63.1	3,471.0	3,471.5	1.05	-0.63	-0.84
11,163.0	87.40	90.50	7,688.7	63.4	3,566.0	3,566.5	2.40	-1.89	1.47
11,257.0	86.00	91.00	7,694.1	62.2	3,659.8	3,660.3	1.58	-1.49	0.53
11,352.0	85.60	89.90	7,701.1	61.5	3,754.5	3,755.0	1.23	-0.42	-1.16

DDC Survey Report



Company:	Mewbourne Oil Co	Local Co-ordinate Reference:	Well Derringer #18 DA Fed #1H
Project:	Eddy County New Mexico (Nad 83)	TVD Reference:	WELL @ 3281.0usft (Patterson)
Site:	Sec 18 T20S R29E	MD Reference:	WELL @ 3281.0usft (Patterson)
Well:	Derringer #18 DA Fed #1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

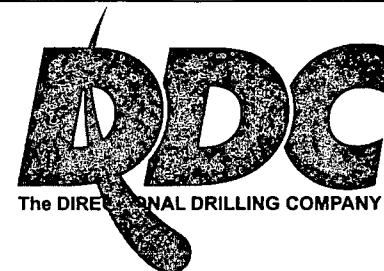
Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,447.0	87.90	89.80	7,706.4	61.7	3,849.4	3,849.8	2.42	2.42	-0.11
11,541.0	89.50	90.80	7,708.6	61.2	3,943.3	3,943.8	2.01	1.70	1.06
11,637.0	89.30	90.50	7,709.6	60.1	4,039.3	4,039.8	0.38	-0.21	-0.31
11,731.0	90.00	90.30	7,710.2	59.5	4,133.3	4,133.7	0.77	0.74	-0.21
11,826.0	89.00	91.00	7,711.0	58.4	4,228.3	4,228.7	1.28	-1.05	0.74
11,921.0	89.40	91.90	7,712.3	56.0	4,323.3	4,323.6	1.04	0.42	0.95
12,016.0	89.30	92.90	7,713.4	52.0	4,418.2	4,418.5	1.06	-0.11	1.05
12,080.0	89.20	92.90	7,714.2	48.8	4,482.1	4,482.4	0.16	-0.16	0.00
TD @ 12130' MD / 7714.9' TVD									
12,130.0	89.20	92.90	7,714.9	46.2	4,532.0	4,532.3	0.00	0.00	0.00

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,970.0	6,962.1	18.2	-245.6	TIE IN @ 6970' MD / 6962.1' TVD
7,343.5	7,313.9	33.8	-149.6	CROSSED LEASE LINE @ 7343.5' TVD
7,768.0	7,574.1	34.1	179.7	CROSSED HARDLINE @ 7768' MD / 7574.1' TVD
12,130.0	7,714.9	46.2	4,532.0	TD @ 12130' MD / 7714.9' TVD

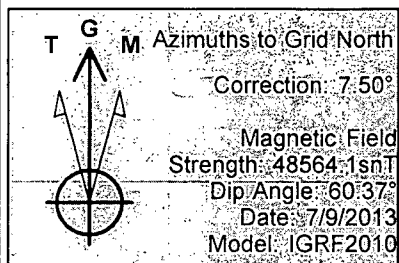
Checked By: _____ Approved By: _____ Date: _____

Company Name: Mewbourne Oil Co
Derringer #18 DA Fed. #1H
Eddy County, New Mexico (Nad 83)
Rig: Patterson
Created By: TIFFANI MIZELL
Date: 7/31/2013

Derringer #18 DA Fed. #1H
Eddy County, New Mexico (Nad 83)
Q130405 & WT-13542
Design #2



Mewbourne Oil Company



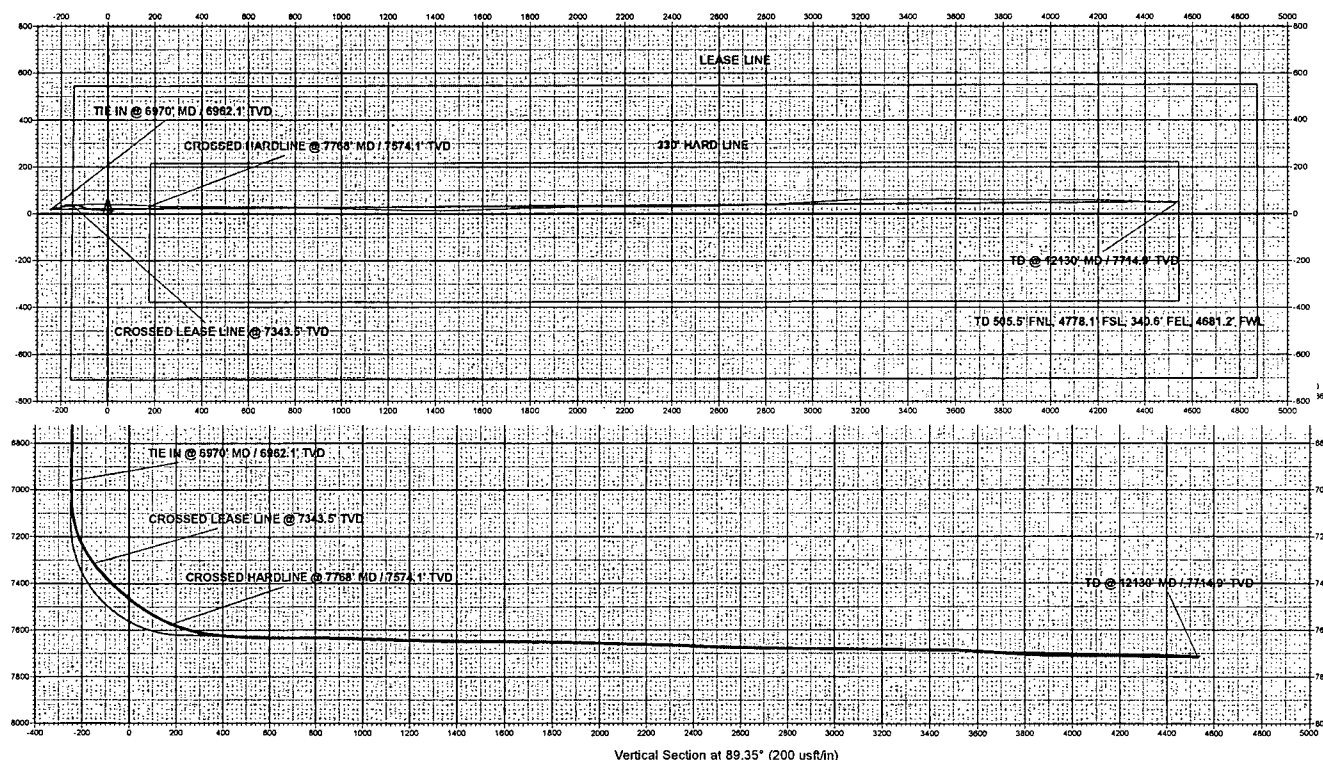
PROJECT DETAILS: Eddy County, New Mexico (Nad 83)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL Derringer #18DA Design #1 - plan hits target center	7711.0	51.9	4542.6	574587.60	611096.40	32° 34' 45.810 N	104° 6' 24.698 W

WELL DETAILS: Derringer #18 DA Fed. #1H						
Ground Level:		3261.0				
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.0	0.0	574535.70	605553.80	32° 34' 45.399 N	104° 7' 17.790 W	

ANNOTATIONS							
MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure
6370.0	0.85	277.79	6362.1	18.2	-245.6	-245.4	285.7
7343.5	36.49	83.35	7313.9	33.8	-149.6	-149.2	384.9
7768.0	67.30	93.10	7574.1	34.1	179.7	180.1	714.7
12130.0	89.20	92.90	7714.9	46.2	4532.0	4532.3	5068.5



Operating Company Mewbourne
 Well Name & Number Derringer 18 DA Fed 1H
 Sales Ticket Number _____
 Date 8/1/2013

Company Rep Joey / Paul
 Field _____
 BOT Service Rep Jorge Molinar, Jr.
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	Size	Weight	Grade	ID	Drift	Thread	Capacity	Length	Burst	Collapse
Casing	7.000	26.00	P-110	6.276	6.151	LT&C	0.03826	8,015.00	9,960	6,230
Top Liner	4.500	13.50	338000	3.920	3.795	LT&C	0.01492	4,333.00	12,410	10,680
Bott Liner										
TVD	12,130.00		KOP		7,050.00		Open Hole	6.125		
Carry Fluid Weight (ppg)	8.34		Propant Content (ppa)					Max Drill Out Size	0	

Comm. Number	Description	Depth	Length	OD	ID	Ball Seat ID	Shear Press	Max Rate (BPM)	Displ (BBL)
Liner Top	JR Setting Sleeve RH Profile	7756.87							

Zone Length									
	JR Sleeve S3 Hyd Set Packer		8.63	5.813	3.875				
30' 143'	4 1/2-13.5 LTC Nipple	7765.50	6.02	5.000	3.920				
	8 Joints of 4-1/2-13.5 LTC Casing	7771.52	307.77	5.000	3.920				
29' 126'	3.625 EX-C Frac Sleeve	8079.29	2.40	5.750	3.525	2286	311	0	
	2 Joint of 4-1/2-13.5 LTC Casing	8081.69	77.05	5.000	3.920				
28' 125'	Baker Open Hole Packer	8158.74	3.89	5.820	3.875	2154			
	1 Joints of 4-1/2-13.5 LTC Casing	8162.63	38.60	5.000	3.920				
27' 163'	3.500 EX-C Frac Sleeve	8201.23	2.40	5.750	3.448	2286	298	0	
	2 Joint of 4-1/2-13.5 LTC Casing	8203.63	77.10	5.000	3.920				
26' 125'	Baker Open Hole Packer	8280.73	3.89	5.820	3.875	2154			
	1 Joints of 4-1/2-13.5 LTC Casing	8284.62	38.14	5.000	3.920				
	3.438 EX-C Frac Sleeve	8322.76	2.40	5.750	3.385	2286	287	0	
	2 Joint of 4-1/2-13.5 LTC Casing	8325.16	77.13	5.000	3.920				
	Baker Open Hole Packer	8402.29	3.89	5.820	3.875	2154			
	2 Joints of 4-1/2-13.5 LTC Casing	8406.18	76.52	5.000	3.920				
	3.375 EX-C Frac Sleeve	8482.70	2.40	5.750	3.323	2286	277	0	
	2 Joint of 4-1/2-13.5 LTC Casing	8485.10	76.79	5.000	3.920				
	Baker Open Hole Packer	8561.89	3.89	5.820	3.875	2154			
	1 Joints of 4-1/2-13.5 LTC Casing	8565.78	38.45	5.000	3.920				
	3.313 EX-C Frac Sleeve	8604.23	2.40	5.750	3.260	2286	266	0	
	2 Joints of 4-1/2-13.5 LTC Casing	8606.63	76.62	5.000	3.920				
	Baker Open Hole Packer	8683.25	3.89	5.820	3.875	2154			

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	Size	Weight	Grade	ID	Drift	Thread	Capacity	Length	Burst	Collapse
Casing	7.000	26.00	P-110	6.276	6.151	LT&C	0.03826	8,015.00	9,960	6,230
Top Liner	4.500	13.50	338000	3.920	3.795	LT&C	0.01492	4,333.00	12,410	10,680
Bott Liner										
TVD	12,130.00		KOP		7,050.00		Open Hole		6.125	
Carry Fluid Weight (ppg)		8.34		Propan Content (ppa)				Max Drill Out Size		0

	Comm. Number	Description	Depth	Length	OD	ID	Ball Seat ID	Shear Press	Max Rate (BPM)	Displ (BBL)
		2 Joints of 4-1/2-13.5 LTC Casing	8687.14	76.92	5.000	3.920				
25		3.250 EX-C Frac Sleeve	8764.06	2.40	5.750		3.198	2286	256	0
164'		2 Joint of 4-1/2-13.5 LTC Casing	8766.46	77.19	5.000	3.920				
		Baker Open Hole Packer	8843.65	3.89	5.820	3.875		2154		
		1 Joints of 4-1/2-13.5 LTC Casing	8847.54	38.14	5.000	3.920				
24		3.188 EX-C Frac Sleeve	8885.68	2.40	5.750		3.135	2286	246	0
87'		1 Joints of 4-1/2-13.5 LTC Casing	8888.08	38.61	5.000	3.920				
		Baker Open Hole Packer	8926.89	3.89	5.820	3.875		2154		
		2 Joints of 4-1/2-13.5 LTC Casing	8930.58	77.52	5.000	3.920				
23		3.125 EX-C Frac Sleeve	9008.10	2.40	5.750		3.073	2286	237	0
164'		2 Joint of 4-1/2-13.5 LTC Casing	9010.50	76.61	5.000	3.920				
		Baker Open Hole Packer	9087.11	3.89	5.820	3.875		2154		
		2 Joints of 4-1/2-13.5 LTC Casing	9091.00	74.96	5.000	3.920				
22		3.063 EX-C Frac Sleeve	9165.96	2.40	5.750		3.010	2286	227	0
162'		2 Joints of 4-1/2-13.5 LTC Casing	9168.36	76.65	5.000	3.920				
		Baker Open Hole Packer	9245.01	3.89	5.820	3.875		2154		
		1 Joints of 4-1/2-13.5 LTC Casing	9248.90	38.35	5.000	3.920				
21		3.000 EX-C Frac sleeve	9287.25	2.40	5.750		2.948	2286	218	0
123'		2 Joint of 4-1/2-13.5 LTC Casing	9289.65	74.52	5.000	3.920				
		Baker Open Hole Packer	9364.17	3.89	5.820	3.875		2154		
		2 Joints of 4-1/2-13.5 LTC Casing	9368.06	77.02	5.000	3.920				
20		2.938 EX-C Frac Sleeve	9445.08	2.40	5.750		2.885	2286	208	0
126'		1 Joints of 4-1/2-13.5 LTC Casing	9447.48	38.42	5.000	3.920				
		Baker Open Hole Packer	9485.90	3.89	5.820	3.875		2154		
		2 Joint of 4-1/2-13.5 LTC Casing	9489.79	77.09	5.000	3.920				
19		2.875 EX-C Frac Sleeve	9566.88	2.40	5.750		2.823	2286	200	0

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	Size	Weight	Grade	ID	Drift	Thread	Capacity	Length	Burst	Collapse
Casing	7.000	26.00	P-110	6.276	6.451	LT&C	0.03826	8,015.00	9,960	6,230
Top Liner	4.500	13.50	338000	3.920	3.795	LT&C	0.01492	4,333.00	12,410	10,680
Bott Liner										

TVD	12,130.00	KOP	7,050.00	Open Hole	6.125		
Carry Fluid Weight (ppg)	8.34	Propant Content (ppa)		Max Drill Out Size	0		

	Comm. Number	Description	Depth	Length	OD	ID	Ball Seat ID	Shear Press.	Max Rate (BPM)	Displ. (BBL)
164'		2 Joints of 4-1/2-13.5 LTC Casing	9569.28	76.77	5.000	3.920				
		Baker Open Hole Packer	9648.05	3.89	5.820	3.875		2154		
		1 Joint of 4-1/2-13.5 LTC Casing	9649.94	38.54	5.000	3.920				
18		2.813 EX C/Frac Sleeve	9688.48	2.40	5.750		2.760	2286	191	0
126'		2 Joints of 4-1/2-13.5 LTC Casing	9690.88	76.98	5.000	3.920				
		Baker Open Hole Packer	9767.66	3.89	5.820	3.875		2154		
		2 Joint of 4-1/2-13.5 LTC Casing	9771.75	76.90	5.000	3.920				
17		2.750 EX C/Frac Sleeve	9848.65	2.40	5.750		2.698	2286	182	0
164'		2 Joints of 4-1/2-13.5 LTC Casing	9851.05	76.59	5.000	3.920				
		Baker Open Hole Packer	9927.64	3.89	5.820	3.875		2154		
		1 Joint of 4-1/2-13.5 LTC Casing	9931.53	38.53	5.000	3.920				
16		2.688 EX C/Frac Sleeve	9970.06	2.40	5.750		2.635	2286	174	0
125'		2 Joints of 4-1/2-13.5 LTC Casing	9972.46	76.62	5.000	3.920				
		Baker Open Hole Packer	10049.06	3.89	5.820	3.875		2154		
		1 Joints of 4-1/2-13.5 LTC Casing	10052.97	38.14	5.000	3.920				
15		2.625 EX C/Frac Sleeve	10091.11	2.40	5.750		2.573	2286	166	0
124'		2 Joint of 4-1/2-13.5 LTC Casing	10093.51	75.70	5.000	3.920				
		Baker Open Hole Packer	10169.21	3.89	5.820	3.875		2154		
		2 Joints of 4-1/2-13.5 LTC Casing	10173.10	77.06	5.000	3.920				
14		2.563 EX C/Frac Sleeve	10250.16	2.40	5.750		2.510	2286	158	0
126'		1 Joints of 4-1/2-13.5 LTC Casing	10252.56	38.60	5.000	3.920				
		Baker Open Hole Packer	10291.16	3.89	5.820	3.875		2154		
		2 Joints of 4-1/2-13.5 LTC Casing	10295.05	76.22	5.000	3.920				
13		2.500 EX C/Frac Sleeve	10371.27	2.40	5.750		2.448	2286	150	0
163'		2 Joint of 4-1/2-13.5 LTC Casing	10373.67	76.94	5.000	3.920				
		Baker Open Hole Packer	10450.61	3.89	5.820	3.875		2154		

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	Size	Weight	Grade	ID	Drift	Thread	Capacity	Length	Burst	Collapse
Casing	7.000	26.00	P-110	6.276	6.151	LT&C	0.03826	8,015.00	9,960	6,230
Top Liner	4.500	13.50	338000	3.920	3.795	LT&C	0.01492	4,333.00	12,410	10,680
Bott Liner										

TVD	12,130.00	KOP	7,050.00	Open Hole	6.125		
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Carry Fluid Weight (ppg)	8.34	Propant Content (ppa)		Max Drill Out Size	0
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	Comm. Number	Description	Depth	Length	OD	ID	Ball Seat ID	Shear Press	Max Rate (BPM)	Displ (BBL)
		1 Joints of 4-1/2-13.5 LTC Casing	10454.50	38.52	5.000	3.920				
12		2.438 EX C Frac Sleeve	10493.02	2.40	5.750		2.386	2286	143	0
124'		2 Joints of 4-1/2-13.5 LTC Casing	10495.42	75.70	5.000	3.920				
		Baker Open Hole Packer	10571.12	3.89	5.820	3.875		2154		
		2 Joints of 4-1/2-13.5 LTC Casing	10575.01	75.44	5.000	3.920				
11		2.375 EX C Frac Sleeve	10650.45	2.40	5.750		2.323	2286	135	0
162'		2 Joint of 4-1/2-13.5 LTC Casing	10652.85	76.76	5.000	3.920				
		Baker Open Hole Packer	10729.61	3.89	5.820	3.875		2154		
		1 Joints of 4-1/2-13.5 LTC Casing	10733.50	37.86	5.000	3.920				
10		2.313 EX C Frac Sleeve	10771.36	2.40	5.750		2.261	2286	128	0
123'		2 Joints of 4-1/2-13.5 LTC Casing	10773.76	74.73	5.000	3.920				
		Baker Open Hole Packer	10846.49	3.89	5.820	3.875		2154		
		1 Joints of 4-1/2-13.5 LTC Casing	10852.38	36.44	5.000	3.920				
9		2.250 EX Frac Sleeve	10888.82	2.40	5.750		2.150	2286	116	0
123'		2 Joint of 4-1/2-13.5 LTC Casing	10891.22	76.48	5.000	3.920				
		Baker Open Hole Packer	10967.70	3.89	5.820	3.875		2154		
		2 Joints of 4-1/2-13.5 LTC Casing	10971.59	77.03	5.000	3.920				
8		2.125 EX Frac Sleeve	11048.62	2.40	5.750		2.025	2286	103	0
202'		3 Joint of 4-1/2-13.5 LTC Casing	11051.02	114.97	5.000	3.920				
		Baker Open Hole Packer	11165.99	3.89	5.820	3.875		2154		
		2 Joints of 4-1/2-13.5 LTC Casing	11169.88	76.41	5.000	3.920				
7		2.000 EX Frac Sleeve	11246.29	2.40	5.750		1.900	2286	90	0
164'		2 Joints of 4-1/2-13.5 LTC Casing	11248.69	77.95	5.000	3.920				
		Baker Open Hole Packer	11326.64	3.89	5.820	3.875		2154		
		1 Joints of 4-1/2-13.5 LTC Casing	11330.53	36.38	5.000	3.920				
6		1.875 EX Frac Sleeve	11366.91	2.40	5.750		1.775	2286	79	0

Company Rep	Joey / Paul
Field	
BOT Service Rep	Jorge Molinar, Jr.
District Location	Odessa, Texas, USA



Carry Fluid Weight (ppg)	8.34	Propant Content (ppa)		Max Drill Out Size	0
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