



Scientific Drilling

OXY Permian

Lost Tank

Lost Tank 3 Federal #19

LT3F#19

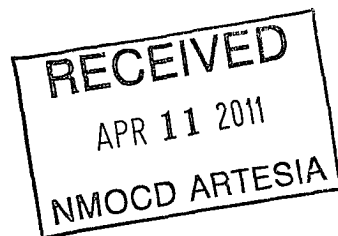
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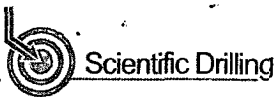
Original Wellbore

Design: Actual

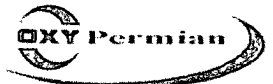
Standard Survey Report

08 February, 2011





Scientific Drilling Survey Report



Company:	OXY Permian	Local Co-ordinate Reference:	Well LT3F#19
Project:	Lost Tank	TVD Reference:	DFE @ 3482.60usft (H&P-346)
Site:	Lost Tank 3.Federal #19	MD Reference:	DFE @ 3482.60usft (H&P-346)
Well:	LT3F#19	North Reference:	Grid
Wellbore:	Original Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDMMPF

Project	Lost Tank, 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	Lost Tank 3.Federal #19, Section 3, T22S, R31E NMPM		
Site Position:	Northings:	517,203.00 usft	Latitude: 32° 25' 14.374 N
From: Map	Easting:	672,847.60 usft	Longitude: 103° 46' 23.456 W
Position Uncertainty:	0.00 usft	Slot Radius: 0 "	Grid Convergence: 0.30 °

Well	LT3F#19		
Well Position	+N/-S	0.00 usft	Northings: 517,203.00 usft
	+E/-W	0.00 usft	Easting: 672,847.60 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
			Ground Level: 3,466.10 usft

Design	Actual		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°)
			167.28

Survey Program	Date 02/08/11		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
102.50	658.50	SDI Gyro (Original Wellbore)	SDI Standard Keeper 103
737.00	3,257.00	SDI MWD (Int.) (Original Wellbore)	SDI MWD
3,600.00	3,799.00	SDI Gyro (Bottom Int) (Original Wellbore)	SDI Standard Keeper 103
4,022.00	8,741.00	SDI MWD (Prod) (Original Wellbore)	SDI MWD
			Description
			SDI Standard Wireline Keeper ver 1.0.3
			SDI MWD - Standard ver 1.0.1
			SDI Standard Wireline Keeper ver 1.0.3
			SDI MWD - Standard ver 1.0.1

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
102.50	0.28	107.99	102.50	-0.08	0.24	0.13	0.27	0.27	0.00
198.00	0.33	95.51	198.00	-0.18	0.73	0.33	0.09	0.05	-13.07
289.50	0.23	97.29	289.50	-0.22	1.18	0.48	0.11	-0.11	1.95
381.80	0.19	113.04	381.80	-0.31	1.50	0.63	0.08	-0.04	17.06
474.00	0.10	139.03	474.00	-0.43	1.70	0.79	0.12	-0.10	28.19
566.30	0.17	210.59	566.30	-0.61	1.68	0.96	0.18	0.08	77.53
658.50	0.19	217.43	658.50	-0.85	1.52	1.16	0.03	0.02	7.42
737.00	0.17	354.60	737.00	-0.83	1.43	1.13	0.43	-0.03	174.74
827.00	0.11	306.74	827.00	-0.65	1.35	0.93	0.14	-0.07	-53.18
917.00	0.10	353.06	917.00	-0.52	1.27	0.79	0.09	-0.01	51.47
1,007.00	0.30	305.46	1,006.99	-0.30	1.06	0.53	0.27	0.22	-52.89
1,097.00	0.24	44.12	1,096.99	-0.03	1.00	0.25	0.46	-0.07	109.62

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Site:	Lost Tank 3/Federal #19	MD Reference:	DFE @ 3482.60usft (H&P:346)
Well:	LT3F#19	North Reference:	Grid
Wellbore:	Original Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDMMPF

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)
1,188.00	0.24	49.36	1,187.99	0.23	1.28	0.06	0.02	0.00	5.76
1,278.00	0.14	61.91	1,277.99	0.40	1.52	-0.06	0.12	-0.11	13.94
1,368.00	0.14	13.97	1,367.99	0.56	1.65	-0.19	0.13	0.00	-53.27
1,458.00	0.05	112.64	1,457.99	0.65	1.71	-0.26	0.17	-0.10	109.63
1,548.00	0.10	67.43	1,547.99	0.67	1.82	-0.25	0.08	0.06	-50.23
1,638.00	0.15	28.06	1,637.99	0.80	1.94	-0.35	0.11	0.06	-43.74
1,728.00	0.24	68.09	1,727.99	0.98	2.17	-0.47	0.18	0.10	44.48
1,818.00	0.18	97.25	1,817.99	1.03	2.49	-0.46	0.13	-0.07	32.40
1,908.00	0.24	79.65	1,907.99	1.04	2.82	-0.40	0.10	0.07	-19.56
1,998.00	0.29	80.76	1,997.99	1.12	3.23	-0.38	0.06	0.06	1.23
2,088.00	0.38	91.09	2,087.99	1.15	3.75	-0.29	0.12	0.10	11.48
2,178.00	0.44	307.23	2,177.99	1.35	3.77	-0.49	0.87	0.07	-159.84
2,268.00	0.79	304.92	2,267.98	1.91	2.99	-1.21	0.39	0.39	-2.57
2,358.00	0.56	333.11	2,357.98	2.66	2.28	-2.09	0.44	-0.26	31.32
2,448.00	0.54	346.59	2,447.97	3.47	1.98	-2.94	0.15	-0.02	14.98
2,538.00	0.44	311.91	2,537.97	4.11	1.63	-3.65	0.34	-0.11	-38.53
2,628.00	0.27	287.95	2,627.97	4.41	1.17	-4.04	0.25	-0.19	-26.62
2,718.00	0.28	46.60	2,717.97	4.62	1.13	-4.26	0.53	0.01	131.83
2,807.00	0.47	39.52	2,806.96	5.05	1.52	-4.59	0.22	0.21	-7.96
2,897.00	0.34	33.60	2,896.96	5.56	1.90	-5.01	0.15	-0.14	-6.58
2,987.00	0.45	13.91	2,986.96	6.13	2.13	-5.51	0.19	0.12	-21.88
3,167.00	0.44	89.28	3,166.96	6.82	2.99	-5.99	0.30	-0.01	41.87
3,257.00	0.56	139.81	3,256.95	6.49	3.62	-5.53	0.49	0.13	56.14
3,600.00	0.91	80.61	3,599.93	5.65	7.39	-3.89	0.23	0.10	-17.26
3,700.00	1.77	86.79	3,699.90	5.87	9.72	-3.58	0.87	0.86	6.18
3,799.00	2.14	99.96	3,798.84	5.63	13.06	-2.62	0.59	0.37	13.30
4,022.00	1.44	94.77	4,021.73	4.68	19.96	-0.17	0.32	-0.31	-2.33
4,112.00	1.71	112.60	4,111.70	4.07	22.32	0.95	0.62	0.30	19.81
4,202.00	2.96	142.00	4,201.63	1.72	25.00	3.82	1.88	1.39	32.67
4,292.00	4.83	161.70	4,291.42	-3.71	27.62	9.70	2.53	2.08	21.89
4,382.00	6.03	170.40	4,381.01	-11.96	29.59	18.19	1.61	1.33	9.67
4,472.00	7.66	174.50	4,470.37	-22.60	30.96	28.86	1.89	1.81	4.56
4,561.00	8.88	173.90	4,558.44	-35.33	32.26	41.57	1.37	1.37	-0.67
4,651.00	9.56	173.20	4,647.28	-49.66	33.88	55.90	0.77	0.76	-0.78
4,741.00	11.14	168.69	4,735.81	-65.61	36.47	72.03	1.97	1.76	-5.01
4,831.00	12.94	167.48	4,823.83	-83.97	40.36	90.80	2.02	2.00	-1.34
4,921.00	13.77	167.52	4,911.40	-104.27	44.86	111.59	0.92	0.92	0.04
5,011.00	15.25	167.16	4,998.52	-126.27	49.80	134.14	1.65	1.64	-0.40
5,101.00	17.16	165.89	5,084.94	-150.69	55.67	159.25	2.16	2.12	-1.41
5,191.00	18.66	166.28	5,170.58	-177.55	62.32	186.92	1.67	1.67	0.43
5,281.00	20.68	167.39	5,255.32	-207.05	69.21	217.21	2.28	2.24	1.23
5,371.00	22.39	168.80	5,339.04	-239.38	76.01	250.24	1.98	1.90	1.57
5,461.00	24.73	168.87	5,421.53	-274.67	82.97	286.20	2.60	2.60	0.08

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Survey									
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5,551.00	26.23	168.45	5,502.77	-312.63	90.59	324.90	1.68	1.67	-0.47
5,641.00	28.08	168.65	5,582.85	-352.88	98.74	365.96	2.06	2.06	0.22
5,731.00	30.03	167.98	5,661.52	-395.68	107.60	409.66	2.20	2.17	-0.74
5,821.00	31.68	167.99	5,738.78	-440.83	117.21	455.82	1.83	1.83	0.01
5,911.00	32.45	167.56	5,815.05	-487.52	127.33	503.59	0.89	0.86	-0.48
6,001.00	33.03	166.74	5,890.75	-534.97	138.15	552.27	0.81	0.64	-0.91
6,091.00	34.44	167.40	5,965.60	-583.69	149.33	602.25	1.62	1.57	0.73
6,182.00	36.41	168.20	6,039.75	-635.24	160.47	654.99	2.22	2.16	0.88
6,272.00	38.97	168.30	6,110.96	-689.11	171.67	710.00	2.85	2.84	0.11
6,362.00	39.36	168.44	6,180.74	-744.78	183.13	766.83	0.44	0.43	0.16
6,451.00	38.52	169.06	6,249.96	-799.64	194.05	822.75	1.04	-0.94	0.70
6,541.00	37.89	169.66	6,320.69	-854.35	204.33	878.37	0.81	-0.70	0.67
6,632.00	39.34	169.40	6,391.79	-910.19	214.65	935.12	1.60	1.59	-0.29
6,722.00	38.17	169.86	6,461.97	-965.61	224.79	991.41	1.34	-1.30	0.51
6,812.00	36.27	170.29	6,533.64	-1,019.23	234.18	1,045.78	2.13	-2.11	0.48
6,902.00	36.35	169.13	6,606.16	-1,071.67	243.70	1,099.02	0.77	0.09	-1.29
6,992.00	36.78	168.57	6,678.45	-1,124.27	254.07	1,152.62	0.60	0.48	-0.62
7,082.00	34.07	169.48	6,751.78	-1,175.47	264.01	1,204.76	3.07	-3.01	1.01
7,172.00	35.39	167.20	6,825.75	-1,225.68	274.39	1,256.01	2.06	1.47	-2.53
7,263.00	33.84	166.24	6,900.64	-1,275.99	286.25	1,307.70	1.81	-1.70	-1.05
7,352.00	34.38	168.26	6,974.33	-1,324.66	297.26	1,357.60	1.41	0.61	2.27
7,442.00	37.24	169.25	7,047.31	-1,376.30	307.51	1,410.24	3.24	3.18	1.10
7,532.00	38.65	168.86	7,118.28	-1,430.64	318.02	1,465.55	1.59	1.57	-0.43
7,622.00	39.70	167.50	7,188.05	-1,486.28	329.68	1,522.39	1.51	1.17	-1.51
7,713.00	40.78	165.05	7,257.52	-1,543.37	343.64	1,581.16	2.11	1.19	-2.69
7,802.00	39.68	164.86	7,325.47	-1,598.88	358.55	1,638.59	1.24	-1.24	-0.21
7,892.00	39.58	164.40	7,394.78	-1,654.23	373.77	1,695.93	0.34	-0.11	-0.51
7,983.00	38.94	164.88	7,465.24	-1,709.76	389.03	1,753.46	0.78	-0.70	0.53
8,073.00	37.59	166.46	7,535.91	-1,763.76	402.83	1,809.17	1.85	-1.50	1.76
8,163.00	36.86	165.89	7,607.57	-1,816.63	415.84	1,863.60	0.90	-0.81	-0.63
8,253.00	37.54	168.25	7,679.26	-1,869.65	428.00	1,918.01	1.76	0.76	2.62
8,343.00	37.56	168.10	7,750.61	-1,923.34	439.24	1,972.85	0.10	0.02	-0.17
8,433.00	35.86	168.12	7,822.76	-1,975.98	450.33	2,026.64	1.89	-1.89	0.02
8,523.00	37.71	169.02	7,894.84	-2,028.81	461.00	2,080.52	2.14	2.06	1.00
8,614.00	37.46	168.85	7,966.95	-2,083.28	471.65	2,136.00	0.30	-0.27	-0.19
8,689.00	34.60	168.53	8,027.60	-2,126.53	480.30	2,180.10	3.82	-3.81	-0.43
8,741.00	34.60	168.53	8,070.40	-2,155.47	486.17	2,209.62	0.00	0.00	0.00