

Schlumberger Drilling and Measurements

Drilling Group

Geo Market Area: South West Texas Basin

7220 W I-H 20

Midland, Texas 79706

Phone : (432) 742-5400 (Main)

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Schlumberger

Well Reference:

N 32.36953 W -103.60393

I, Cen Chen certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of November 25, 2017 through December 16, 2017, conduct or supervise the taking of the TelePacer surveys from a depth of 242.00 feet to a depth of 20565.00 feet referenced to driller's depth; that the data is true, correct, complete and within the limitations of the tool as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I am authorized and qualified to make this report; that this survey was conducted at the request of OXY USA INC. for the Red Tank 30-31 State Com 24Y Well (Original Hole) API No. 30-025-44161 in New Mexico; and that I have reviewed this report and find that it conforms to the principals and procedures as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation.

By
Cen Chen
FE

Subscribed and Sworn to before me this 16 day of January (month) 2018 (yr)

My Commission expires:

12-20-2020

J. Allemand
Notary Public

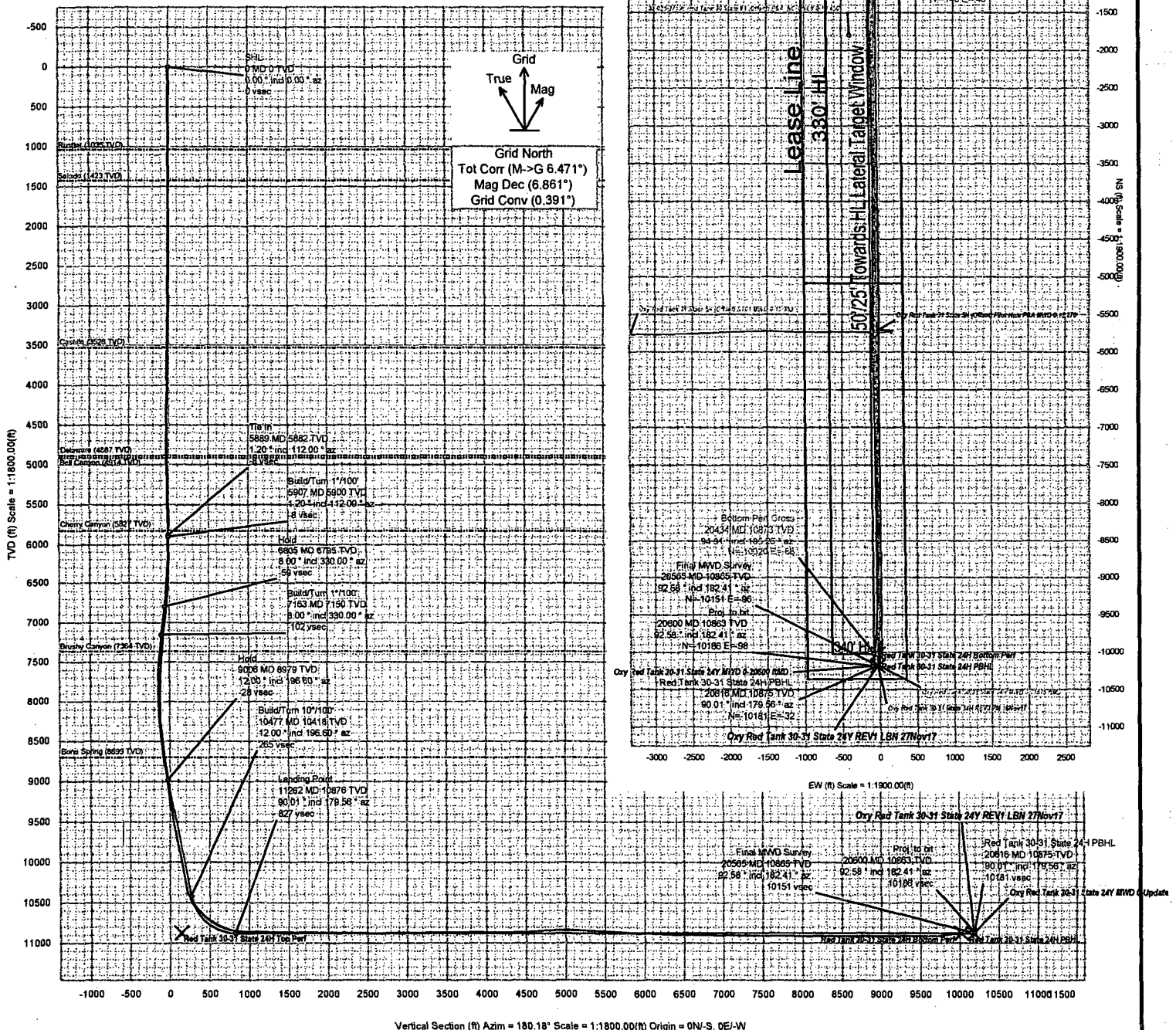
(signature)

Adams County Colorado
(County State)

JENNIFER ALLEMAND
Notary Public
State of Colorado
Notary ID # 20164047962
My Commission Expires 12-20-2020



HOBBS OCD
MAY 10 2018
RECEIVED





Oxy Red Tank 30-31 State 24Y MWD 0-20600 ftMD Survey Geodetic Report

(Def Survey)

Report Date: December 14, 2017 - 09:32 AM
 Client: OXY
 Field: NM Lea County (NAD 83)
 Structure / Slot: Oxy Red Tank 30-31 State 24Y / Oxy Red Tank 30-31 State 24Y
 Well: Oxy Red Tank 30-31 State 24Y
 Borehole: Original Borehole
 UWI / API#: Unknown / Unknown
 Survey Name: Oxy Red Tank 30-31 State 24Y MWD 0-20600 ftMD
 Survey Date: November 27, 2017
 Tort / AHD / DDI / ERD Ratio: 263.021 ° / 10748.445 ft / 6.727 / 0.985
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 22' 10.30177", W 103° 36' 14.14710"
 Location Grid N/E Y/X: N 498933.500 ftUS, E 766534.990 ftUS
 CRS Grid Convergence Angle: 0.3905 °
 Grid Scale Factor: 0.99996717
 Version / Patch: 2.10.565.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 180.180 ° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB=26.5'
 TVD Reference Elevation: 3686.600 ft above MSL
 Seabed / Ground Elevation: 3660.100 ft above MSL
 Magnetic Declination: 6.861 °
 Total Gravity Field Strength: 998.4524mgm (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 48197.871 nT
 Magnetic Dip Angle: 60.192 °
 Declination Date: November 27, 2017
 Magnetic Declination Model: HDGM 2017
 North Reference: Grid North
 Grid Convergence Used: 0.3905 °
 Total Corr Mag North->Grid North: 6.4705 °
 Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azlm Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
SHL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	498933.50	766534.99	N 32 22 10.30	W 103 36 14.15
	123.00	0.40	290.80	123.00	-0.15	0.15	-0.40	0.33	498933.65	766534.59	N 32 22 10.30	W 103 36 14.15
	242.00	0.51	17.34	242.00	-0.80	0.81	-0.63	0.53	498934.31	766534.36	N 32 22 10.31	W 103 36 14.15
	400.00	0.22	349.57	399.99	-1.77	1.78	-0.48	0.21	498935.28	766534.51	N 32 22 10.32	W 103 36 14.15
	514.00	0.41	349.59	513.99	-2.39	2.39	-0.59	0.17	498935.89	766534.40	N 32 22 10.33	W 103 36 14.15
	608.00	0.45	318.48	607.99	-3.00	3.00	-0.90	0.25	498936.50	766534.09	N 32 22 10.33	W 103 36 14.16
	796.00	0.76	199.41	795.98	-2.37	2.38	-1.80	0.56	498935.88	766533.19	N 32 22 10.33	W 103 36 14.17
	891.00	0.68	270.91	890.98	-1.78	1.79	-2.57	0.89	498935.29	766532.42	N 32 22 10.32	W 103 36 14.18
	1060.00	0.55	270.91	1059.97	-1.81	1.82	-4.39	0.08	498935.32	766530.60	N 32 22 10.32	W 103 36 14.20
	1152.00	0.94	259.25	1151.96	-1.67	1.69	-5.57	0.45	498935.19	766529.42	N 32 22 10.32	W 103 36 14.21
	1242.00	0.98	256.06	1241.95	-1.34	1.36	-7.04	0.07	498934.86	766527.95	N 32 22 10.32	W 103 36 14.23
	1332.00	0.79	269.94	1331.94	-1.15	1.18	-8.41	0.32	498934.68	766526.58	N 32 22 10.31	W 103 36 14.25
	1423.00	0.93	267.58	1422.93	-1.11	1.14	-9.77	0.16	498934.64	766525.22	N 32 22 10.31	W 103 36 14.26
	1514.00	0.85	279.85	1513.92	-1.19	1.23	-11.18	0.23	498934.73	766523.81	N 32 22 10.31	W 103 36 14.28
	1605.00	0.66	299.52	1604.91	-1.56	1.60	-12.30	0.35	498935.10	766522.69	N 32 22 10.32	W 103 36 14.29
	1699.00	0.75	297.03	1698.90	-2.11	2.15	-13.32	0.10	498935.65	766521.67	N 32 22 10.33	W 103 36 14.30
	1888.00	0.73	326.65	1887.89	-3.67	3.72	-15.08	0.20	498937.22	766519.91	N 32 22 10.34	W 103 36 14.32
	1982.00	0.75	350.87	1981.88	-4.78	4.82	-15.51	0.33	498938.32	766519.48	N 32 22 10.35	W 103 36 14.33
	2077.00	0.72	10.94	2076.87	-5.98	6.02	-15.49	0.27	498939.52	766519.50	N 32 22 10.36	W 103 36 14.33
	2172.00	0.71	16.63	2171.86	-7.13	7.17	-15.21	0.08	498940.67	766519.78	N 32 22 10.37	W 103 36 14.32
	2361.00	0.75	47.99	2360.85	-9.08	9.12	-13.96	0.21	498942.62	766521.03	N 32 22 10.39	W 103 36 14.31
	2550.00	0.79	67.64	2549.83	-10.41	10.45	-11.83	0.14	498943.95	766523.16	N 32 22 10.41	W 103 36 14.28
	2739.00	1.15	74.62	2738.80	-11.42	11.45	-8.80	0.20	498944.95	766526.19	N 32 22 10.42	W 103 36 14.25
	2928.00	1.67	75.31	2927.75	-12.63	12.65	-4.31	0.28	498946.15	766530.68	N 32 22 10.43	W 103 36 14.20
	3022.00	2.07	76.68	3021.70	-13.38	13.39	-1.33	0.43	498946.89	766533.66	N 32 22 10.43	W 103 36 14.16
	3116.00	2.39	74.79	3115.62	-14.30	14.29	2.21	0.35	498947.79	766537.20	N 32 22 10.44	W 103 36 14.12
	3305.00	2.42	80.04	3304.46	-16.05	16.02	9.95	0.12	498949.51	766544.94	N 32 22 10.46	W 103 36 14.03
	3400.00	1.58	85.01	3399.40	-16.52	16.48	13.23	0.90	498949.98	766548.22	N 32 22 10.46	W 103 36 13.99
	3589.00	2.29	81.63	3588.29	-17.31	17.25	19.56	0.38	498950.75	766554.55	N 32 22 10.47	W 103 36 13.92
	3684.00	2.66	85.47	3683.20	-17.78	17.70	23.63	0.43	498951.20	766558.62	N 32 22 10.48	W 103 36 13.87
	3872.00	1.96	73.99	3871.05	-19.03	18.93	31.07	0.44	498952.43	766566.06	N 32 22 10.49	W 103 36 13.78
	4062.00	3.93	74.05	4060.79	-21.75	21.62	40.46	1.04	498955.12	766575.45	N 32 22 10.51	W 103 36 13.67
	4157.00	4.94	75.91	4155.50	-23.66	23.51	47.55	1.07	498957.01	766582.54	N 32 22 10.53	W 103 36 13.59
	4346.00	6.38	85.36	4343.58	-26.55	26.34	65.92	0.91	498959.84	766600.90	N 32 22 10.56	W 103 36 13.38
	4441.00	6.69	90.78	4437.96	-26.93	26.69	76.71	0.73	498960.19	766611.70	N 32 22 10.56	W 103 36 13.25
	4535.00	6.65	93.95	4531.33	-26.52	26.24	87.61	0.99	498959.74	766622.60	N 32 22 10.56	W 103 36 13.12
	4630.00	6.23	94.29	4625.73	-25.79	25.48	98.24	0.44	498958.98	766633.23	N 32 22 10.55	W 103 36 13.00
	4724.00	5.69	96.29	4719.22	-24.93	24.59	107.96	0.62	498958.09	766642.95	N 32 22 10.54	W 103 36 12.89
	4819.00	5.21	98.96	4813.79	-23.77	23.40	116.90	0.57	498956.90	766651.89	N 32 22 10.53	W 103 36 12.78
	4913.00	4.87	99.25	4907.43	-22.49	22.09	125.06	0.36	498955.59	766660.04	N 32 22 10.51	W 103 36 12.69
	5008.00	4.53	101.17	5002.11	-21.13	20.72	132.72	0.39	498954.22	766667.70	N 32 22 10.50	W 103 36 12.60
	5102.00	4.24	100.91	5095.83	-19.78	19.34	139.77	0.31	498952.84	766674.76	N 32 22 10.48	W 103 36 12.52
	5196.00	3.85	103.43	5189.60	-18.41	17.95	146.25	0.46	498951.45	766681.24	N 32 22 10.47	W 103 36 12.44
	5291.00	3.55	106.46	5284.40	-16.85	16.38	152.18	0.38	498949.88	766687.16	N 32 22 10.45	W 103 36 12.37
	5386.00	3.23	109.82	5379.23	-15.13	14.64	157.51	0.40	498948.13	766692.50	N 32 22 10.44	W 103 36 12.31
	5480.00	2.76	111.37	5473.11	-13.42	12.91	162.11	0.51	498946.41	766697.10	N 32 22 10.42	W 103 36 12.26
	5575.00	2.26	112.68	5568.01	-11.88	11.36	165.97	0.53	498944.86	766700.96	N 32 22 10.40	W 103 36 12.21
	5670.00	1.85	114.16	5662.95	-10.54	10.01	169.10	0.44	498943.51	766704.08	N 32 22 10.39	W 103 36 12.17
	5764.00	1.51	113.85	5756.91	-9.42	8.89	171.62	0.36	498942.39	766706.60	N 32 22 10.38	W 103 36 12.15
	5859.00	1.36	118.03	5851.88	-8.39	7.85	173.76	0.19	498941.35	766708.74	N 32 22 10.37	W 103 36 12.12
	5954.00	0.95	118.95	5946.86	-7.49	6.94	175.44	0.43	498940.44	766710.42	N 32 22 10.36	W 103 36 12.10
	6049.00	0.40	84.92	6041.86	-7.14	6.59	176.46	0.69	498940.09	766711.44	N 32 22 10.36	W 103 36 12.09
	6144.00	0.45	16.48	6136.85	-7.53	6.97	176.90	0.51	498940.47	766711.88	N 32 22 10.36	W 103 36 12.08
	6238.00	1.08	349.88	6230.85	-8.75	8.20	176.84	0.75	498941.70	766711.83	N 32 22 10.37	W 103 36 12.08
	6333.00	1.57	340.54	6325.82	-10.86	10.31	176.25	0.56	498943.81	766711.24	N 32 22 10.39	W 103 36 12.09
	6427.00	2.22	339.84	6419.77	-13.78	13.23	175.20	0.69	498946.73	766710.18	N 32 22 10.42	W 103 36 12.10
	6522.00	2.96	340.65	6514.67	-17.82	17.27	173.75	0.78	498950.77	766708.73	N 32 22 10.46	W 103 36 12.12
	6616.00	3.92	338.65	6608.50	-23.09	22.56	171.78	1.03	498956.05	766706.76	N 32 22 10.51	W 103 36 12.14
	6711.00	4.92	339.75	6703.22	-29.93	29.40	169.18	1.06	498962.90	766704.17	N 32 22 10.58	W 103 36 12.17
	6756.00	5.55	339.96	6748.03	-33.78	33.26	167.77	1.40	498966.76	766702.75	N 32 22 10.62	W 103 36 12.19
	6877.00	7.16	338.59	6868.28	-46.29	45.78	163.01	1.34	498979.27	766698.00	N 32 22 10.74	W 103 36 12.24
	6972.00	8.56	327.97	6962.39	-57.78	57.28	157.10	2.12	498990.78	766692.09	N 32 22 10.86	W 103 36 12.31
	7067.00	8.54	325.27	7056.34	-69.54	69.07	149.33	0.42	499002.57	766684.32	N 32 22 10.98	W 103 36 12.40
	7161.00	7.96	325.14	7149.36	-80.59	80.15	141.64	0.62	499013.65	766676.62	N 32 22 11.09	W 103 36 12.49
	7256.00	6.91	311.11	7243.57	-89.72	89.31	133.57	2.20	499022.80	766668.55	N 32 22 11.18	W 103 36 12.58
	7351.00	6.12	311.46	7337.96	-96.81	96.42	125.47	0.83	499029.91	766660.45	N 32 22 11.25	W 103 36 12.68
	7445.00	5.68	311.14	7431.46	-103.17	102.79	118.21	0.47	499036.29	766653.20	N 32 22 11.31	W 103 36 12.76
	7540.00	5.07	310.39	7526.04	-108.96	108.61	111.47	0.65	499042.10	766646.46	N 32 22 11.37	W 103 36 12.84
	7635.00	4.91	307.68	7620.68	-114.14	113.81	105.06	0.30	499047.31	766640.04	N 32 22 11.42	W 103 36 12.91
	7729.00	4.14	307.76	7714.39	-118.66	118.35	99.19	0.82	499051.85	766634.18	N 32 22 11.47	W 103 36 12.98
	7824.00	4.81	292.07	7809.10	-122.24	121.95	92.79	1.46	499055.44	766627.78	N 32 22 11.50	W 103 36 13.06
	7918.00	4.16	281.17	7902.81	-124.36	124.09	85.79	1.14	499057.58	766620.78	N 32 22 11.52	W 103 36 13.14

MD	Incl	Azim	TVD	VSEC	NS	EW	DLS	Nothing	Easting	Latitude	Longitude
(ft)	(°)	Grid	(ft)	(ft)	(ft)	(ft)	(1/100)	(ft)	(ft)	(N-S)	(E-W)
8013.00	5.02	278.24	7397.51	-125.45	125.21	78.28	1.00	493058.70	76613.27	N 32 22 11.54	W 103 36 13.22
8108.00	5.177	260.48	8092.99	-124.87	124.87	69.44	1.74	493058.36	76600.42	N 32 22 11.53	W 103 36 13.33
8202.00	6.74	247.66	8185.53	-122.18	121.99	69.67	1.80	493055.49	76594.66	N 32 22 11.50	W 103 36 13.44
8297.00	6.75	233.22	8279.88	-116.68	116.53	50.05	1.78	493050.02	76585.03	N 32 22 11.45	W 103 36 13.55
8392.00	7.66	225.87	8374.13	-108.90	108.78	41.09	1.36	493042.27	76576.02	N 32 22 11.45	W 103 36 13.66
8487.00	8.38	214.94	8468.21	-98.79	98.69	32.52	1.77	493032.19	76567.51	N 32 22 11.28	W 103 36 13.77
8581.00	8.58	205.20	8561.19	-86.81	86.73	25.61	1.54	493020.23	76559.60	N 32 22 11.16	W 103 36 13.84
8675.00	8.30	200.82	8654.17	-74.11	74.05	20.21	1.77	493007.54	76555.20	N 32 22 11.03	W 103 36 13.91
8770.00	9.46	197.79	8748.03	-60.25	60.20	15.39	1.32	489993.70	76550.38	N 32 22 10.90	W 103 36 13.96
8864.00	8.24	195.69	8840.91	-46.40	46.36	11.21	1.34	489979.86	76546.20	N 32 22 10.83	W 103 36 14.01
8955.00	8.25	191.71	8934.53	-33.16	33.13	7.98	1.84	489854.76	76543.75	N 32 22 10.51	W 103 36 14.05
9053.00	6.81	189.07	9028.12	-21.28	21.26	4.97	1.01	489830.07	76540.93	N 32 22 10.40	W 103 36 14.14
9146.00	7.77	189.25	9122.95	-8.88	9.83	0.84	1.75	489830.07	76535.83	N 32 22 10.51	W 103 36 14.14
9243.00	9.41	201.15	9216.28	3.45	-3.47	-0.08	1.01	489830.07	76530.91	N 32 22 10.40	W 103 36 14.14
9337.00	10.59	199.64	9308.85	13.77	-18.73	-9.76	1.29	489814.77	76525.23	N 32 22 10.12	W 103 36 14.19
9432.00	10.59	209.98	9402.86	33.52	-33.47	-16.45	2.42	489800.03	76518.54	N 32 22 9.57	W 103 36 14.24
9527.00	10.76	203.15	9496.03	48.22	-48.14	-23.70	2.33	489800.03	76513.29	N 32 22 9.44	W 103 36 14.34
9621.00	13.18	189.84	9588.00	66.87	-66.78	-28.98	3.89	489868.73	76506.01	N 32 22 9.44	W 103 36 14.49
9716.00	11.97	190.50	9680.72	87.24	-87.13	-32.63	1.28	489846.37	76502.36	N 32 22 9.44	W 103 36 14.53
9811.00	11.05	193.18	9773.81	105.80	-105.69	-36.50	1.12	489827.82	76498.49	N 32 22 9.26	W 103 36 14.58
9906.00	10.79	194.33	9863.10	123.11	-122.98	-40.73	0.96	489810.52	76494.26	N 32 22 9.09	W 103 36 14.63
10000.00	11.67	200.18	9959.29	140.76	-140.62	-46.25	1.51	489792.89	76488.75	N 32 22 8.81	W 103 36 14.70
10095.00	12.67	198.34	10052.15	153.69	-159.52	-52.84	1.13	489773.98	76482.15	N 32 22 8.73	W 103 36 14.78
10189.00	12.43	198.20	10143.91	179.11	-179.92	-59.24	0.26	489754.59	76475.75	N 32 22 8.54	W 103 36 14.85
10284.00	12.58	197.62	10236.65	198.70	-198.49	-65.57	0.21	489735.01	76469.43	N 32 22 8.34	W 103 36 14.93
10355.00	11.25	195.48	10306.12	212.69	-212.47	-72.53	0.87	489712.47	76465.00	N 32 22 8.20	W 103 36 14.98
10401.00	11.17	195.48	10350.24	221.27	-221.04	-77.25	0.87	489684.05	76457.75	N 32 22 8.12	W 103 36 15.07
10466.00	24.30	186.59	10441.55	249.70	-249.46	-81.26	14.07	489684.05	76457.75	N 32 22 7.84	W 103 36 15.07
10590.00	36.41	183.66	10522.51	298.94	-298.69	-86.25	12.98	489635.82	76448.75	N 32 22 7.57	W 103 36 15.12
10696.00	43.93	165.53	10595.06	397.99	-397.72	-88.25	8.02	489635.82	76448.75	N 32 22 7.57	W 103 36 15.12
10779.00	51.57	168.38	10658.21	492.16	-496.87	-93.49	8.16	489606.65	76441.50	N 32 22 6.98	W 103 36 15.27
10874.00	53.54	166.46	10715.97	502.13	-501.81	-101.92	2.07	489431.70	76441.50	N 32 22 6.08	W 103 36 15.47
10969.00	60.27	184.57	10767.82	581.33	-580.99	-109.43	7.30	489431.70	76441.50	N 32 22 5.80	W 103 36 15.62
11063.00	68.79	182.45	10808.20	665.98	-665.62	-126.31	0.47	489431.70	76441.50	N 32 22 5.80	W 103 36 15.62
11158.00	75.27	179.74	10837.50	756.27	-755.91	-141.57	0.84	489255.53	76440.47	N 32 22 4.56	W 103 36 15.72
11252.00	84.28	179.78	10854.17	848.68	-848.32	-151.35	7.39	489255.53	76440.47	N 32 22 4.56	W 103 36 15.72
11347.00	87.87	180.41	10860.67	943.44	-943.08	-161.62	9.59	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
11406.00	87.53	180.82	10863.12	1004.39	-1004.03	-161.62	3.84	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
11503.00	89.55	181.74	10863.94	1099.34	-1099.97	-161.67	0.65	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
11599.00	89.55	182.38	10866.29	1193.91	-1193.91	-161.63	0.65	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
11692.00	89.55	182.82	10867.03	1288.20	-1287.81	-161.63	2.43	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
11787.00	89.66	182.03	10867.98	1383.12	-1382.72	-161.63	0.67	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
11882.00	89.61	181.18	10868.29	1478.09	-1477.68	-161.63	0.44	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
11976.00	89.61	180.77	10868.93	1572.08	-1571.66	-161.63	0.44	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
12071.00	89.66	180.70	10869.53	1667.07	-1666.65	-161.63	0.09	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
12156.00	89.61	178.75	10870.74	1765.05	-1765.64	-161.63	1.03	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
12250.00	89.89	178.19	10871.15	1850.01	-1850.60	-161.63	0.57	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
12344.00	89.55	177.77	10871.61	1934.91	-1934.50	-161.63	0.67	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
12440.00	89.55	177.16	10872.99	2024.94	-2024.54	-161.63	0.57	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
12534.00	89.61	177.57	10873.51	2134.86	-2134.48	-161.63	0.51	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
12638.00	89.50	176.60	10874.25	2234.64	-2234.28	-161.63	0.72	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
12732.00	89.50	176.64	10875.19	2334.82	-2334.46	-161.63	1.03	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
12822.00	89.72	176.05	10876.32	2517.39	-2517.06	-161.63	0.78	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
12912.00	90.31	176.30	10876.78	2612.35	-2612.03	-161.63	1.38	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
13011.00	90.11	177.92	10876.78	2706.31	-2706.00	-161.63	1.69	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
13106.00	90.50	177.28	10876.53	2801.26	-2800.95	-161.63	0.82	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
13206.00	90.50	177.28	10876.53	2896.17	-2895.88	-161.63	1.23	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
13301.00	90.62	177.04	10874.71	2990.04	-2989.76	-161.63	1.29	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
13396.00	90.43	177.53	10873.82	3084.91	-3084.65	-161.63	0.82	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
13490.00	90.50	178.87	10873.03	3179.85	-3179.60	-161.63	1.45	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
13585.00	90.56	179.64	10872.16	3274.83	-3274.59	-161.63	0.81	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
13680.00	90.62	179.76	10871.19	3369.82	-3369.58	-161.63	0.81	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
13774.00	90.62	179.95	10870.16	3464.82	-3464.57	-161.63	0.14	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
13869.00	90.62	179.95	10869.13	3559.81	-3559.57	-161.63	0.20	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
13964.00	90.45	179.75	10868.25	3654.80	-3654.56	-161.63	0.26	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
14059.00	90.90	180.17	10867.13	3749.80	-3749.55	-161.63	0.19	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
14153.00	90.56	180.42	10866.34	3844.79	-3844.55	-161.63	0.65	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
14248.00	89.38	180.10	10867.26	3939.78	-3939.54	-161.63	0.82	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
14343.00	89.66	180.15	10868.06	4034.79	-4034.54	-161.63	0.40	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
14438.00	89.83	180.21	10868.48	4129.78	-4129.54	-161.63	0.30	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
14532.00	89.66	180.15	10868.06	4224.78	-4224.54	-161.63	0.40	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
14627.00	89.83	180.21	10868.48	4319.78	-4319.54	-161.63	0.19	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
14721.00	89.66	180.10	10868.06	4414.78	-4414.54	-161.63	0.84	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
14816.00	89.86	180.10	10867.08	4509.78	-4509.54	-161.63	0.22	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
14911.00	92.92	181.13	10864.71	4604.78	-4604.54	-161.63	1.84	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
15006.00	93.70	181.23	10865.29	4699.78	-4699.54	-161.63	0.84	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
15101.00	96.01	182.10	10861.25	4794.78	-4794.54	-161.63	2.60	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
15296.00	91.51	180.41	10863.85	4889.78	-4889.54	-161.63	2.54	489177.62	76441.84	N 32 22 2.83	W 103 36 15.84
15391.00	88.32	179.53	10863.14								

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	19165.00	90.34	180.07	10910.48	8756.18	-8756.09	-41.72	0.52	490177.72	766493.27	N 32 20 43.67	W 103 36 15.33
	19354.00	90.00	179.12	10909.92	8945.16	-8945.08	-40.38	0.53	489988.73	766494.61	N 32 20 41.80	W 103 36 15.33
	19544.00	90.06	179.72	10909.82	9135.14	-9135.07	-38.46	0.32	489798.75	766496.53	N 32 20 39.92	W 103 36 15.32
	19733.00	89.61	179.18	10910.36	9324.13	-9324.06	-36.64	0.37	489609.77	766498.35	N 32 20 38.05	W 103 36 15.31
	19922.00	90.34	185.75	10910.44	9512.87	-9512.78	-44.77	3.50	489421.05	766490.22	N 32 20 36.18	W 103 36 15.42
	20016.00	91.01	178.87	10909.34	9606.74	-9606.64	-48.55	7.35	489327.20	766486.44	N 32 20 35.25	W 103 36 15.48
	20205.00	95.90	186.80	10897.93	9794.99	-9794.86	-57.84	4.92	489138.98	766477.15	N 32 20 33.39	W 103 36 15.60
	20300.00	97.13	189.27	10887.15	9888.48	-9888.31	-71.03	2.89	489045.54	766463.96	N 32 20 32.46	W 103 36 15.76
	20394.00	95.78	186.28	10876.58	9981.05	-9980.84	-83.66	3.47	488953.01	766451.33	N 32 20 31.55	W 103 36 15.91
	20489.00	93.48	183.87	10868.91	10075.39	-10075.15	-92.03	3.50	488858.70	766442.96	N 32 20 30.62	W 103 36 16.02
Final MWD Survey	20565.00	92.58	182.41	10864.89	10151.18	-10150.92	-96.19	2.25	488782.93	766438.80	N 32 20 29.87	W 103 36 16.07
Proj. to bit	20600.00	92.58	182.41	10863.32	10186.11	-10185.86	-97.66	0.00	488748.00	766437.33	N 32 20 29.52	W 103 36 16.09

Survey Type: Def Survey

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	26.500	1/98.425	30.000	30.000	NAL_MWD_PLUS_0.5_DEG- Depth Only	Original Borehole / Oxy Red Tank 30-31 State 24Y MWD 0-20600 RMD
	1	26.500	26.500	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG- Depth Only	Original Borehole / Oxy Red Tank 30-31 State 24Y MWD 0-20600 RMD
	1	26.500	20600.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Red Tank 30-31 State 24Y MWD 0-20600