

Schlumberger

Oxy Avogato 30-31 State Com 12H Gyro + MWD 0-19873 MD Survey Geodetic Report (Def Survey)



Report Date: October 12, 2019 - 06:35 PM
Client: OXY
Field: NM Lea County (NAD 83)
Structure / Slot: Oxy Avogato 30-31 State Com 12H / Oxy Avogato 30-31 State Com 12H
Well: Oxy Avogato 30-31 State Com 12H
Borehole: Original Borehole
UWI / API#: Unknown / 30-025-45357
Survey Name: Oxy Avogato 30-31 State Com 12H Gyro + MWD 0-19873 MD
Survey Date: September 11, 2019
Tort / AHD / DDI / ERD Ratio: 233.822' / 10882.314 ft / 8.721' / 1.132
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 22' 10.74979", W 103° 37' 0.53143"
Location Grid N/E Y/X: N 488951.900 NUS, E 762558.600 NUS
CRS Grid Convergence Angle: 0.3836°
Grid Scale Factor: 0.99998514
Version / Patch: 2.10.782.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 177.437° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB=26.5'
TVD Reference Elevation: 3732.100 ft above MSL
Seabed / Ground Elevation: 3705.600 ft above MSL
Magnetic Declination: 6.612°
Total Gravity Field Strength: 998.4482mgm (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 48052.900 nT
Magnetic Dip Angle: 60.088°
Declination Date: September 20, 2019
Magnetic Declination Model: IFR1
North Reference: Grid North
Grid Convergence Used: 0.3836°
Total Corr Mag North-Grid: 6.2284°
North: Well Head
Local Coord Referenced To:

HOBBS OCD
DEC 02 2019
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Comments	MD (ft)	Incl (°)	Azbn Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
RKB	0.00	0.00	177.44	0.00	0.00	0.00	0.00	0.00	488951.90	762556.60	N 32 22 10.75	W 103 37 0.53
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	488951.90	762556.60	N 32 22 10.75	W 103 37 0.53
	115.70	0.23	242.89	115.70	0.07	-0.08	-0.16	0.26	488951.82	762556.44	N 32 22 10.75	W 103 37 0.53
	176.70	0.38	240.29	176.70	0.22	-0.24	-0.44	0.25	488951.68	762556.16	N 32 22 10.75	W 103 37 0.54
	263.70	0.53	237.63	263.70	0.55	-0.60	-1.03	0.17	488951.30	762555.57	N 32 22 10.74	W 103 37 0.54
	353.70	0.50	236.19	353.69	0.98	-1.04	-1.71	0.04	488950.86	762554.89	N 32 22 10.74	W 103 37 0.55
	447.70	0.41	245.26	447.69	1.30	-1.41	-2.36	0.12	488950.49	762554.24	N 32 22 10.74	W 103 37 0.56
	542.70	0.19	288.99	542.69	1.37	-1.50	-2.82	0.32	488950.40	762553.78	N 32 22 10.74	W 103 37 0.56
	636.70	0.23	357.28	636.69	1.12	-1.26	-2.97	0.25	488950.64	762553.63	N 32 22 10.74	W 103 37 0.57
	731.70	0.33	28.82	731.69	0.70	-0.83	-2.85	0.19	488951.07	762553.75	N 32 22 10.74	W 103 37 0.56
	825.70	0.29	61.93	825.69	0.37	-0.48	-2.51	0.19	488951.42	762554.09	N 32 22 10.75	W 103 37 0.56
	920.70	0.31	89.02	920.68	0.27	-0.36	-2.04	0.15	488951.54	762554.56	N 32 22 10.75	W 103 37 0.56
	1008.70	0.36	102.40	1008.68	0.35	-0.42	-1.53	0.11	488951.48	762555.07	N 32 22 10.75	W 103 37 0.55
	1074.00	0.49	108.87	1073.98	0.50	-0.55	-1.07	0.21	488951.35	762555.53	N 32 22 10.74	W 103 37 0.54
	1258.00	0.25	355.46	1257.98	0.39	-0.40	-0.36	0.34	488951.50	762556.24	N 32 22 10.75	W 103 37 0.54
	1414.00	0.18	49.06	1413.98	-0.10	0.09	-0.20	0.13	488951.99	762556.40	N 32 22 10.75	W 103 37 0.53
	1570.00	0.22	25.80	1569.98	-0.52	0.53	0.12	0.06	488952.43	762556.72	N 32 22 10.75	W 103 37 0.53
	1725.00	0.74	181.14	1724.97	0.22	-0.21	0.23	0.61	488951.69	762556.83	N 32 22 10.75	W 103 37 0.53
	1819.00	0.20	353.65	1818.97	0.66	-0.65	0.20	1.00	488951.25	762556.80	N 32 22 10.74	W 103 37 0.53
	1913.00	0.10	340.39	1912.97	0.42	-0.41	0.15	0.11	488951.49	762556.75	N 32 22 10.75	W 103 37 0.53
	2008.00	0.23	105.43	2007.97	0.40	-0.38	0.31	0.31	488951.52	762556.91	N 32 22 10.75	W 103 37 0.53
	2102.00	0.13	186.92	2101.97	0.56	-0.54	0.48	0.26	488951.36	762557.08	N 32 22 10.74	W 103 37 0.53
	2197.00	0.12	114.38	2196.97	0.71	-0.69	0.55	0.16	488951.21	762557.15	N 32 22 10.74	W 103 37 0.53
	2291.00	0.13	129.28	2290.97	0.83	-0.80	0.73	0.04	488951.10	762557.33	N 32 22 10.74	W 103 37 0.52
	2385.00	0.22	91.96	2384.97	0.91	-0.87	0.99	0.15	488951.03	762557.59	N 32 22 10.74	W 103 37 0.52
	2480.00	0.24	89.20	2479.97	0.93	-0.87	1.37	0.02	488951.03	762557.97	N 32 22 10.74	W 103 37 0.52
	2574.00	0.19	53.58	2573.97	0.85	-0.78	1.69	0.15	488951.12	762558.29	N 32 22 10.74	W 103 37 0.51
	2763.00	0.36	13.32	2762.97	0.11	-0.01	2.08	0.13	488951.89	762558.68	N 32 22 10.75	W 103 37 0.51
	2857.00	0.36	2.25	2856.96	-0.47	0.57	2.16	0.07	488952.47	762558.76	N 32 22 10.76	W 103 37 0.51
	2951.00	0.31	27.72	2950.96	-0.98	1.09	2.29	0.17	488952.99	762558.89	N 32 22 10.76	W 103 37 0.50
	3046.00	0.14	150.37	3045.96	-1.10	1.22	2.47	0.42	488953.12	762559.07	N 32 22 10.76	W 103 37 0.50
	3235.00	2.01	140.58	3234.92	1.75	-1.55	4.69	0.99	488950.35	762561.29	N 32 22 10.73	W 103 37 0.48
	3329.00	2.44	134.92	3328.85	4.55	-4.23	7.15	0.51	488947.87	762563.75	N 32 22 10.71	W 103 37 0.45
	3423.00	3.28	124.38	3422.73	7.64	-7.16	10.79	1.05	488944.74	762567.39	N 32 22 10.68	W 103 37 0.41
	3518.00	3.85	117.53	3517.55	10.87	-10.17	15.86	0.75	488941.73	762572.46	N 32 22 10.65	W 103 37 0.35
	3613.00	4.29	106.91	3612.31	13.68	-12.68	22.09	0.82	488939.22	762576.69	N 32 22 10.62	W 103 37 0.27
	3707.00	4.94	98.08	3706.01	15.58	-14.27	29.46	1.02	488937.63	762586.06	N 32 22 10.61	W 103 37 0.19
	3896.00	7.57	87.03	3893.87	16.99	-14.77	49.95	1.52	488937.13	762606.55	N 32 22 10.60	W 103 36 59.95
	4037.00	8.42	80.69	4033.50	15.71	-12.62	69.41	0.87	488939.28	762626.01	N 32 22 10.62	W 103 36 59.72
	4179.00	8.46	74.43	4173.97	12.14	-8.13	89.74	0.65	488943.77	762646.33	N 32 22 10.66	W 103 36 59.49
	4273.00	8.28	73.94	4268.97	9.00	-4.41	102.90	0.21	488947.49	762659.50	N 32 22 10.70	W 103 36 59.33
	4367.00	7.65	73.56	4360.06	5.92	-0.76	115.41	0.67	488951.14	762672.00	N 32 22 10.73	W 103 36 59.19
	4461.00	6.81	72.37	4453.31	2.97	2.70	126.72	0.91	488954.60	762683.32	N 32 22 10.77	W 103 36 59.05
	4556.00	5.39	70.93	4547.77	0.24	5.88	136.31	1.50	488957.78	762692.90	N 32 22 10.80	W 103 36 58.94
	4650.00	3.83	66.46	4641.46	-2.14	8.56	143.36	1.70	488960.48	762699.95	N 32 22 10.82	W 103 36 58.86
	4744.00	3.34	57.45	4735.28	-4.83	11.28	148.54	0.79	488963.18	762705.14	N 32 22 10.85	W 103 36 58.80
	4839.00	3.01	48.29	4830.13	-7.59	14.43	152.74	0.64	488966.33	762709.33	N 32 22 10.88	W 103 36 58.75
	4933.00	2.63	34.96	4924.02	-10.88	17.84	155.82	0.80	488969.74	762712.41	N 32 22 10.92	W 103 36 58.71
	5028.00	0.86	16.03	5018.97	-13.26	20.31	157.26	1.93	488972.21	762713.86	N 32 22 10.94	W 103 36 58.70
	5122.00	0.39	357.95	5112.97	-14.25	21.31	157.45	0.54	488973.21	762714.04	N 32 22 10.95	W 103 36 58.69
	5311.00	0.22	41.62	5301.87	-15.15	22.23	157.68	0.15	488974.12	762714.26	N 32 22 10.96	W 103 36 58.69
	5500.00	0.24	18.69	5490.96	-15.79	22.88	158.02	0.05	488974.78	762714.81	N 32 22 10.97	W 103 36 58.69
	5689.00	0.25	0.15	5679.96	-16.57	23.67	158.13	0.04	488975.57	762714.73	N 32 22 10.97	W 103 36 58.69
	5783.00	0.22	44.54	5773.96	-16.90	24.00	158.26	0.19	488975.90	762714.85	N 32 22 10.98	W 103 36 58.68
	5972.00	0.19	40.30	5962.96	-17.38	24.50	158.72	0.02	488976.40	762715.31	N 32 22 10.98	W 103 36 58.68
	6066.00	0.30	47.59	6056.96	-17.73	24.86	158.76	0.25	488976.76	762715.36	N 32 22 10.99	W 103 36 58.68
	6255.00	0.27	24.36	6245.96	-18.62	25.75	158.84	0.10	488977.65	762715.44	N 32 22 10.99	W 103 36 58.68
	6349.00	0.29	340.00	6339.96	-19.04	26.17	158.85	0.23	488978.07	762715.45	N 32 22 11.00	W 103 36 58.68
	6443.00	0.25	344.66	6443.96	-19.47	26.59	158.72	0.05	488978.49	762715.31	N 32 22 11.00	W 103 36 58.68
	6537.00	0.16	328.93	6527.95	-19.78	26.90	158.59	0.11	488978.80	762715.19	N 32 22 11.01	W 103 36 58.68
	6632.00	0.16	317.34	6622.95	-20.00	27.11	158.44	0.03	488979.01	762715.03	N 32 22 11.01	W 103 36 58.68
	6726.00	0.10	304.44	6716.95	-20.15	27.26	158.28	0.07	488979.16	762714.87	N 32 22 11.01	W 103 36 58.68
	6820.00	0.13	313.34	6810.95	-20.28	27.38	158.13	0.04	488979.28	762714.73	N 32 22 11.01	W 103 36 58.69
	6915.00	0.19	273.80	6905.95	-20.37	27.46	157.90	0.13	488979.36	762714.49	N 32 22 11.01	W 103 36 58.69
	7009.00	0.31	235.49	6999.95	-20.26	27.33	157.53	0.21	488979.23	762714.13	N 32 22 11.01	W 103 36 58.69
	7103.00	0.32	257.26	7093.95	-20.07	27.13	157.07	0.13	488979.03	762713.66	N 32 22 11.01	W 103 36 58.70
	7198.00	0.40	239.23	7188.95	-19.87	26.90	156.52	0.14	488978.60	762713.12	N 32 22 11.01	W 103 36 58.70
	7292.00	0.47	239.00	7282.95	-19.53	26.53	155.91	0.07	488978.43	762712.51	N 32 22 11.00	W 103 36 58.71
	7387.00	0.59	210.06	7377.94	-18.94	25.91	155.33	0.30	488977.81	762711.93	N 32 22 11.00	W 103 36 58.72
	7481.00	0.83	214.75	7471.94	-18.12	25.06	154.80	0.07	488976.96	762711.39	N 32 22 10.99	W 103 36 58.72
	7576.00	0.69	233.95	7566.93	-17.39	24.30	154.04	0.24	488976.20	762710.83	N 32 22 10.98	W 103 36 58.73
	7668.00	0.85	230.32	7656.92	-16.68	23.55	153.08	0.19	488975.45	762709.68	N 32 22 10.97	W 103 36 58.74
	7760.00	0.42	107.40	7750.92	-16.15	23.00	152.88	1.21	488974.90	762709.47	N 32 22 10.97	W 103 36 58.75
	7855.00	1.98	66.07	7845.90	-16.07	23.01	154.85	1.68	488974.91	762711.44	N 32 22 10.97	W 103 36 58.72

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ft)	Easting (ft)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	8327.00	10.97	76.44	8313.06	-23.77	33.20	210.07	0.85	498985.09	762766.87	N 32 22 11.06	W 103 36 58.08
	8422.00	11.50	74.66	8407.14	-27.59	37.82	227.99	0.67	498989.72	762784.59	N 32 22 11.11	W 103 36 57.87
	8516.00	11.40	73.93	8499.27	-31.83	42.87	245.86	0.19	498994.77	762802.55	N 32 22 11.16	W 103 36 57.68
	8611.00	11.23	71.55	8592.42	-36.55	48.40	263.76	0.52	499000.30	762820.35	N 32 22 11.21	W 103 36 57.45
	8705.00	11.50	67.70	8684.58	-42.22	54.85	281.11	0.86	499006.75	762837.70	N 32 22 11.27	W 103 36 57.25
	8799.00	11.28	64.16	8776.73	-49.02	62.41	298.05	0.78	499014.31	762854.84	N 32 22 11.35	W 103 36 57.05
	8815.00	11.26	63.37	8792.42	-50.28	63.79	300.86	0.97	499015.69	762857.45	N 32 22 11.36	W 103 36 57.02
	8900.00	11.65	61.83	8875.73	-57.37	71.57	315.84	0.58	499023.46	762872.43	N 32 22 11.44	W 103 36 56.84
	8995.00	10.78	61.10	8968.91	-65.46	80.39	332.07	0.93	499032.28	762888.66	N 32 22 11.52	W 103 36 56.65
	9090.00	10.02	103.24	9062.48	-67.15	82.79	347.92	7.87	499034.69	762904.51	N 32 22 11.55	W 103 36 56.47
	9185.00	18.36	134.34	9154.62	-53.93	70.40	366.72	11.60	499022.30	762923.31	N 32 22 11.42	W 103 36 56.25
100' FNL Crossing	9218.00	19.75	144.62	9185.82	-45.45	62.22	373.67	10.99	499014.12	762930.28	N 32 22 11.34	W 103 36 56.17
	9260.00	23.63	159.88	9243.47	-24.78	41.99	384.03	10.99	498993.89	762940.61	N 32 22 11.14	W 103 36 56.05
	9374.00	24.84	176.89	9329.36	12.82	4.69	391.59	7.46	498956.59	762948.17	N 32 22 10.77	W 103 36 55.97
	9469.00	31.06	177.65	9413.31	57.18	-39.61	393.67	6.77	498912.29	762950.25	N 32 22 10.33	W 103 36 55.94
	9515.00	35.87	177.95	9451.67	82.54	-64.95	394.64	10.46	498888.95	762951.22	N 32 22 10.08	W 103 36 55.94
	9563.00	44.38	180.43	9488.34	113.42	-95.85	395.01	18.04	498856.05	762951.60	N 32 22 9.78	W 103 36 55.93
	9658.00	64.73	183.34	9543.15	190.14	-172.78	392.23	21.56	498779.13	762948.82	N 32 22 9.01	W 103 36 55.97
	9752.00	75.47	179.94	9575.11	278.15	-260.98	389.80	11.92	498690.93	762946.38	N 32 22 8.14	W 103 36 56.01
	9847.00	88.06	178.41	9588.69	371.94	-354.80	391.17	13.35	498597.11	762947.75	N 32 22 7.21	W 103 36 56.00
	9872.00	87.86	176.99	9589.58	396.92	-379.77	392.17	5.73	498572.15	762948.76	N 32 22 6.97	W 103 36 55.99
	9977.00	87.32	180.25	9594.00	501.79	-484.63	394.70	3.14	498467.29	762951.28	N 32 22 5.93	W 103 36 55.97
	10072.00	89.29	182.43	9596.81	596.52	-579.55	392.48	3.09	498372.37	762949.08	N 32 22 4.99	W 103 36 56.00
	10166.00	90.37	181.43	9597.09	690.23	-673.49	389.31	1.57	498278.43	762945.90	N 32 22 4.08	W 103 36 56.05
	10261.00	90.18	184.15	9596.63	784.81	-768.37	384.69	2.87	498183.56	762941.27	N 32 22 3.12	W 103 36 56.11
	10355.00	91.06	181.45	9595.61	878.38	-862.24	380.10	3.02	498089.69	762936.68	N 32 22 2.19	W 103 36 56.17
	10450.00	90.17	177.77	9594.59	973.29	-957.22	380.74	3.99	497994.72	762937.33	N 32 22 1.25	W 103 36 56.17
	10544.00	89.68	182.07	9594.72	1067.18	-1051.20	380.87	4.60	497900.74	762937.48	N 32 22 0.32	W 103 36 56.17
	10641.00	90.35	178.41	9594.69	1164.01	-1148.18	379.62	2.83	497803.76	762936.21	N 32 21 59.36	W 103 36 56.20
	10736.00	89.97	182.77	9594.43	1258.80	-1243.15	377.81	3.56	497708.80	762934.40	N 32 21 58.42	W 103 36 56.22
	10830.00	90.48	183.13	9594.06	1352.36	-1337.02	372.98	0.66	497614.93	762929.56	N 32 21 57.50	W 103 36 56.29
	10925.00	90.55	181.73	9593.20	1447.00	-1431.93	368.95	1.48	497520.02	762925.53	N 32 21 56.56	W 103 36 56.34
	11019.00	90.13	181.16	9592.64	1540.76	-1525.90	366.58	0.75	497426.08	762923.16	N 32 21 55.63	W 103 36 56.38
	11114.00	90.21	178.75	9592.36	1635.63	-1620.69	365.82	1.49	497331.07	762922.41	N 32 21 54.69	W 103 36 56.39
	11208.00	90.39	179.49	9591.87	1729.56	-1714.69	366.45	0.34	497237.07	762923.03	N 32 21 53.78	W 103 36 56.39
	11302.00	90.32	177.82	9591.29	1823.53	-1808.86	365.65	1.78	497143.11	762925.24	N 32 21 52.83	W 103 36 56.37
	11397.00	90.31	176.24	9590.77	1918.53	-1903.73	373.58	1.66	497048.24	762930.16	N 32 21 51.89	W 103 36 56.32
	11491.00	90.33	175.50	9590.24	2012.49	-1997.48	380.35	0.79	496954.49	762936.93	N 32 21 50.96	W 103 36 56.25
	11586.00	89.34	175.75	9590.51	2107.44	-2092.20	387.59	1.07	496859.78	762944.18	N 32 21 50.02	W 103 36 56.18
	11680.00	89.23	178.18	9591.69	2201.42	-2188.05	392.57	2.59	496765.93	762949.15	N 32 21 49.09	W 103 36 56.13
	11774.00	89.65	178.68	9592.61	2295.40	-2280.01	395.16	0.68	496671.97	762951.75	N 32 21 48.18	W 103 36 56.10
	11868.00	89.00	178.83	9593.71	2389.37	-2373.98	397.22	0.71	496578.00	762953.80	N 32 21 47.23	W 103 36 56.09
	11962.00	89.21	178.69	9595.16	2483.34	-2467.95	399.25	0.27	496484.04	762955.84	N 32 21 46.30	W 103 36 56.07
	12057.00	89.20	179.83	9596.50	2578.28	-2562.93	400.48	1.20	496389.06	762957.06	N 32 21 45.38	W 103 36 56.08
	12151.00	89.18	179.31	9597.83	2672.20	-2656.92	401.18	0.55	496295.08	762957.77	N 32 21 44.43	W 103 36 56.08
	12246.00	89.13	179.32	9599.23	2767.14	-2751.90	402.32	0.05	496200.10	762958.91	N 32 21 43.49	W 103 36 56.08
	12340.00	89.85	179.10	9600.07	2861.09	-2845.89	403.62	0.80	496106.12	762960.20	N 32 21 42.56	W 103 36 56.05
	12434.00	89.76	179.58	9600.39	2955.04	-2939.88	404.70	0.52	496012.13	762961.28	N 32 21 41.63	W 103 36 56.04
	12528.00	89.16	178.95	9601.27	3048.99	-3033.87	405.90	0.93	495918.14	762962.49	N 32 21 40.70	W 103 36 56.04
	12623.00	89.92	179.62	9602.04	3143.93	-3128.86	407.09	1.07	495823.16	762963.68	N 32 21 39.76	W 103 36 56.03
	12717.00	90.28	180.28	9601.87	3237.84	-3222.86	407.17	0.80	495729.16	762963.76	N 32 21 38.83	W 103 36 56.04
	12818.00	89.82	179.40	9601.96	3338.75	-3323.85	407.45	1.09	495628.17	762964.04	N 32 21 37.83	W 103 36 56.04
	12906.00	90.04	178.28	9602.22	3436.72	-3411.83	409.24	1.36	495540.19	762965.82	N 32 21 36.96	W 103 36 56.03
	13001.00	90.28	178.18	9601.96	3521.71	-3506.79	412.17	0.27	495445.24	762968.75	N 32 21 36.02	W 103 36 56.00
	13095.00	89.65	178.11	9602.01	3615.71	-3600.74	415.21	0.67	495351.29	762971.80	N 32 21 35.09	W 103 36 55.97
	13189.00	90.01	178.86	9602.29	3709.69	-3694.70	417.70	0.89	495257.33	762974.28	N 32 21 34.16	W 103 36 55.95
	13284.00	89.33	178.18	9602.84	3804.67	-3789.67	420.15	1.01	495162.37	762976.74	N 32 21 33.22	W 103 36 55.93
	13378.00	89.19	178.53	9604.05	3898.65	-3883.62	422.85	0.40	495068.42	762979.43	N 32 21 32.29	W 103 36 55.91
	13467.00	89.87	179.57	9605.60	4087.56	-4072.59	425.98	0.66	494979.46	762982.57	N 32 21 30.42	W 103 36 55.88
	13561.00	89.70	179.30	9605.96	4181.51	-4166.58	426.91	0.34	494885.47	762983.49	N 32 21 29.49	W 103 36 55.88
	13641.00	90.47	178.94	9605.84	4261.47	-4246.57	428.14	1.06	494705.48	762984.72	N 32 21 28.70	W 103 36 55.87
	13744.00	89.55	180.27	9605.82	4344.39	-4349.57	428.85	1.57	494602.49	762985.43	N 32 21 27.68	W 103 36 55.87
	13839.00	89.53	181.85	9606.58	4429.20	-4444.54	427.09	1.66	494507.52	762983.68	N 32 21 26.74	W 103 36 55.90
	14033.00	89.56	183.13	9607.33	4525.83	-4538.45	423.01	1.38	494413.62	762979.59	N 32 21 25.82	W 103 36 55.95
	14128.00	89.55	182.98	9608.07	4617.37	-4633.31	417.96	0.18	494318.76	762974.55	N 32 21 24.88	W 103 36 56.02
	14222.00	89.28	182.48	9609.03	4710.96	-4727.20	413.50	0.59	494224.87	762970.09	N 32 21 23.95	W 103 36 56.08
	14316.00	89.56	182.16	9609.98	4804.62	-4821.12	409.70	0.45	494130.96	762966.28	N 32 21 23.02	W 103 36 56.13
	14414.00	89.25	182.61	9611.00	4903.25	-4919.03	405.62	0.56	494033.05	762962.20	N 32 21 22.05	W 103 36 56.19
	14508.00	89.84	182.98	9611.74	5005.83	-5012.91	401.03	0.74	493939.17	762957.62	N 32 21 21.12	W 103 36 56.25
	14603.00	90.23	181.63	9611.68	5102.49	-5107.83	397.21	1.48	493844.25	762953.80	N 32 21 20.18	W 103 36 56.30
	14697.00	89.99	178.98	9611.50	5204.36	-5201.82	396.71	2.83	493750.27	762953.30	N 32 21 19.25	W 103 36 56.31
	14886.00	90.00	179.03	9611.52	5303.29	-5300.80	400.00	0.03	493661.30	762956.58	N 32 21 17.38	W 103 36 56.29
	14980.00	89.88	178.77	9611.62	5407.26	-5404.78	401.80	0.30	493567.32	762958.39	N 32 21 16.45	W 103 36 56.28
	15074.00	89.83	178.63	9611.86	5511.24	-5507.75	403.93	0.16	493473.35	762960.52	N 32 21 15.52	W 103 36 56.26
	15168.00	89.90	179.07	9612.08	5615.21	-5612.74	405.82	0.47	493379.37	762962.40	N 32 21 14.59	W 103 36 56.24
	15263.00	89.99	178.77	9612.17	5719.18	-5716.71	407.61	0.33				

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 ° ' ")
	18377.00	89.94	179.30	9608.20	8893.26	-8880.93	474.42	0.63	489071.30	763031.00	N 32 20 42.84	W 103 38 55.89
	18471.00	89.54	179.50	9608.62	8987.20	-8974.92	475.40	0.48	489977.31	763031.98	N 32 20 41.91	W 103 38 55.89
	18565.00	89.92	179.39	9609.07	9081.14	-9068.92	476.31	0.42	489883.32	763032.89	N 32 20 40.98	W 103 38 55.89
	18650.00	89.79	179.58	9609.31	9178.08	-9163.91	477.17	0.24	489788.33	763033.75	N 32 20 40.04	W 103 38 55.88
	18754.00	89.80	179.24	9609.64	9270.03	-9257.91	478.13	0.36	489694.33	763034.72	N 32 20 39.11	W 103 38 55.88
	18849.00	90.07	178.52	9609.75	9365.00	-9352.89	478.99	0.81	489599.36	763036.57	N 32 20 38.17	W 103 38 55.87
	18943.00	89.87	178.42	9609.80	9458.98	-9446.85	482.50	0.24	489505.39	763039.08	N 32 20 37.24	W 103 38 55.84
	19038.00	89.23	177.67	9610.55	9553.97	-9541.80	485.74	1.04	489410.46	763042.32	N 32 20 36.30	W 103 38 55.81
	19132.00	89.33	178.39	9611.73	9647.96	-9635.73	488.97	0.77	489316.52	763045.55	N 32 20 35.37	W 103 38 55.58
	19226.00	89.95	179.04	9612.32	9741.93	-9729.71	491.08	0.98	489222.55	763047.66	N 32 20 34.44	W 103 38 55.57
	19320.00	89.47	179.01	9612.79	9835.89	-9823.69	492.68	0.51	489128.57	763049.28	N 32 20 33.51	W 103 38 55.56
	19415.00	89.99	178.72	9613.24	9930.86	-9918.87	494.56	0.63	489033.60	763051.14	N 32 20 32.57	W 103 38 55.54
	19509.00	89.85	178.61	9613.37	10024.84	-10012.84	496.75	0.19	488939.62	763053.33	N 32 20 31.64	W 103 38 55.52
	19604.00	89.96	178.53	9613.53	10119.82	-10107.81	499.12	0.14	488844.66	763055.70	N 32 20 30.70	W 103 38 55.50
	19698.00	90.04	178.46	9613.53	10213.81	-10201.58	501.59	0.11	488750.69	763058.17	N 32 20 29.77	W 103 38 55.48
	19782.00	89.94	178.58	9613.55	10307.79	-10295.55	504.02	0.17	488656.73	763060.60	N 32 20 28.84	W 103 38 55.48
100' FSL	19793.00	89.94	178.59	9613.55	10308.79	-10296.55	504.04	0.71	488655.73	763060.63	N 32 20 28.83	W 103 38 55.48
Crossed												
Final MWD	19844.00	89.70	178.86	9613.71	10359.78	-10347.54	505.18	0.71	488604.74	763061.78	N 32 20 28.33	W 103 38 55.45
Proj to TD	19873.00	89.70	178.86	9613.86	10368.77	-10376.53	505.76	0.00	488575.75	763062.34	N 32 20 28.04	W 103 38 55.45

Survey Type: Def Survey

Survey Error Model: ISCWSA Rev 3 *** 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	GYD_GC+DROP+OH-Depth Only	Original Borehole / Oxy Avogato 30-31 State Com 12H Gyro + MWD 0-19873MD
	1	26.500	26.500	Act Stns	30.000	30.000	GYD_GC+DROP+OH-Depth Only	Original Borehole / Oxy Avogato 30-31 State Com 12H Gyro + MWD 0-19873MD
	1	26.500	1008.700	Act Stns	30.000	30.000	GYD_GC+DROP+OH	Original Borehole / Oxy Avogato 30-31 State Com 12H Gyro + Original Borehole / Oxy Avogato
	1	1008.700	8815.000	Act Stns	30.000	30.000	A010Mb_MWD+IFR1+SAG+MS	30-31 State Com 12H Gyro + MWD 0-19873MD
	1	8815.000	9469.000	Act Stns	30.000	30.000	B001Mb_MWD+HRGM	Original Borehole / Oxy Avogato 30-31 State Com 12H Gyro + Original Borehole / Oxy Avogato
	1	9469.000	19873.000	Act Stns	30.000	30.000	A010Mb_MWD+IFR1+SAG+MS	30-31 State Com 12H Gyro + MWD 0-19873MD

...Original Borehole/Oxy Avogato 30-31 State Com 12H Gyro + MWD 0-19873MD

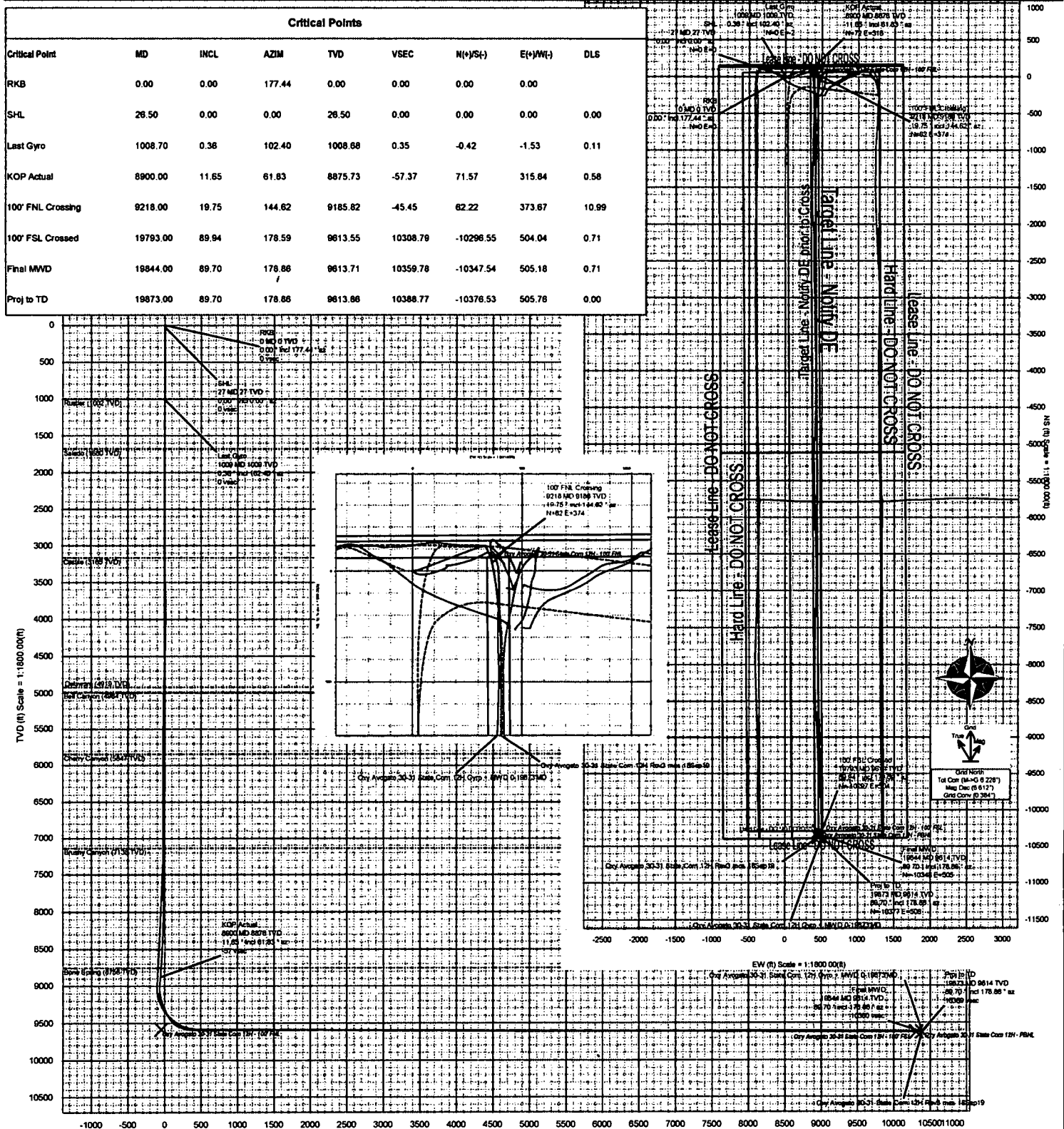
Schlumberger

OXY



Borehole:	Well:	Field:	Structure:
Original Borehole	Oxy Avogato 30-31 State Com 12H	NM Lea County (NAD 83)	Oxy Avogato 30-31 State Com 12H

Gravity & Magnetic Parameters			Surface Location			NAD83 New Mexico State Plane, Eastern Zone, US Feet			Miscellaneous		
Model:	GR1	Dip: 60.08°	Date: 25-Sep-2019	Lat:	N 32 22 10.78	Northing:	498991.89US	Grid Conv:	0.3836°	Stat:	Oxy Avogato 30-31 State Com 12H
MagDec:	6.81°	FS: 49062.1nT	Gravity FS: 896.448mgals (8.9085 Based)	Lon:	W 103 37 0.53	Easting:	782598.69US	Scale Fact:	0.99996314	Plan:	Oxy Avogato 30-31 State Com 12H Gyro + MWD 0-19873MD



Vertical Section (ft) Azim = 177.44° Scale = 1:1800.00(ft) Origin = ON-S, 0E-W

Oilfield Services, Central U.S. Land
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)
Fax : (432) 742-5606 (Shared)

Schlumberger

October 30, 2019

Oxy USA Inc
P.O. BOX 2289
Houston, TX 77252

Re:

30, 22S, 33E, Lea NM
N 32.36965 W -103.61681

CLIENT: Oxy USA Inc
WELL: Avogato 30-31 State Com 12H
FIELD: Red Tank; Bone Spring, East

RIG: H&P 657
COUNTY: Lea
API NO: 30-025-45957
JOB NO: 19MLH0360

Enclosed, please find the original copy of the survey performed on the referenced well by Drilling & Measurements, a division of Schlumberger Technology Corporation (P-5 No. 754900).
Other information required by your office is as follows.

<u>Name & Title of Surveyor</u>	<u>Drainhole Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
Maria Zapata FE	Avogato 30-31 State Com 12H Original Hole	1074.00 Ft to 19844.00 Ft	September 23, 2019 to October 10, 2019	TelePacer Xbolt

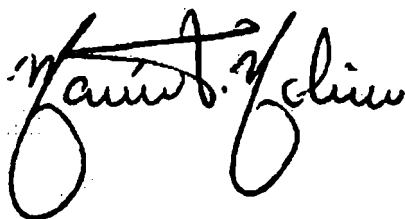
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Drilling Group
Geo Market Area: South West Texas Basin
7220 W I-H 20
Midland, Texas 79706
Phone : (432) 742-5400 (Main)
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Schlumberger

Well Reference:
30, 22S, 33E, Lea NM
N 32.36965 W -103.61681

I, Maria Zapata certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of September 23, 2019 through October 10, 2019, conduct or supervise the taking of the TelePacer & Xbolt surveys from a depth of 1074.00 feet to a depth of 19844.00 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 Avogato 30-31 State Com 12H Well (Original Hole) API No. 30-025-45957 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
Maria Zapata
FE



Subscribed and Sworn to before me this 30 day of October (month) 2019 (yr)

My Commission expires:

6/14/2023

Jean-Paul Langlois

Notary Public

(signature)

Converse, Oklahoma

(County State)

