

Oxy Avogato 30-31 State Com 14H Gyro + IFR 0-19891'MD Survey

Geodetic Report

(Def Survey)



Report Date: October 02, 2019 - 12:58 PM
 Client: OXY
 Field: NM Lea County (NAD 83)
 Structure / Slot: Oxy Avogato 30-31 State Com 14H / Oxy Avogato 30-31 State Com 14H
 Well: Oxy Avogato 30-31 State Com 14H
 Borehole: Original Borehole
 UWI / API#: Unknown / 30-025-45959
 Survey Name: Oxy Avogato 30-31 State Com 14H Gyro + IFR 0-19891'MD
 Survey Date: September 06, 2019
 Tort / AHD / DDI / ERD Ratio: 206.471 * / 10802.477 R / 6.663 / 1.121
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 22' 10.72378", W 103° 36' 38.28323"
 Location Grid N/E Y/X: N 498962.100 RUS, E 764484.700 RUS
 CRS Grid Convergence Angle: 0.3869 °
 Grid Scale Factor: 0.99996811
 Version / Patch: 2.10.782.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 177.850 ° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB=26.5'
 TVD Reference Elevation: 3718.100 ft above MSL
 Seabed / Ground Elevation: 3691.600 ft above MSL
 Magnetic Declination: 6.605 °
 Total Gravity Field Strength: 998.4495mgm (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 48052.500 nT
 Magnetic Dip Angle: 60.086 °
 Declination Date: September 14, 2019
 Magnetic Declination Model: IFR1
 North Reference: Grid North
 Grid Convergence Used: 0.3869 °
 Total Corr Mag North->Grid North: 6.2181 °
 Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100m)	Northing (RUS)	Easting (RUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
WRP	0.00	0.00	177.85	0.00	0.00	0.00	0.00	N/A	498962.10	764484.70	N 32 22 10.72	W 103 36 38.28
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	498962.10	764484.70	N 32 22 10.72	W 103 36 38.28
	114.50	0.20	197.75	114.50	0.14	-0.15	-0.05	0.23	498961.95	764484.85	N 32 22 10.72	W 103 36 38.28
	168.50	0.28	202.12	168.50	0.34	-0.35	-0.12	0.12	498961.75	764484.58	N 32 22 10.72	W 103 36 38.28
	224.50	0.30	194.00	224.50	0.60	-0.61	-0.21	0.10	498961.49	764484.50	N 32 22 10.72	W 103 36 38.29
	278.50	0.33	206.02	278.50	0.86	-0.88	-0.30	0.14	498961.22	764484.40	N 32 22 10.72	W 103 36 38.29
	339.50	0.34	208.19	339.50	1.19	-1.20	-0.47	0.03	498960.90	764484.23	N 32 22 10.71	W 103 36 38.29
	402.50	0.36	210.42	402.50	1.51	-1.54	-0.68	0.04	498960.56	764484.04	N 32 22 10.71	W 103 36 38.29
	465.50	0.40	210.10	465.49	1.87	-1.90	-0.87	0.06	498960.20	764483.83	N 32 22 10.71	W 103 36 38.29
	528.50	0.36	207.97	528.49	2.22	-2.27	-1.07	0.07	498959.83	764483.63	N 32 22 10.70	W 103 36 38.30
	591.50	0.32	211.81	591.49	2.54	-2.59	-1.26	0.07	498959.51	764483.44	N 32 22 10.70	W 103 36 38.30
	654.50	0.34	209.69	654.49	2.84	-2.90	-1.45	0.04	498959.20	764483.26	N 32 22 10.70	W 103 36 38.30
	717.50	0.29	206.68	717.49	3.14	-3.21	-1.61	0.08	498958.89	764483.09	N 32 22 10.69	W 103 36 38.30
	780.50	0.33	208.38	780.49	3.44	-3.51	-1.77	0.07	498958.59	764482.93	N 32 22 10.69	W 103 36 38.30
	843.50	0.30	212.72	843.49	3.73	-3.81	-1.94	0.06	498958.29	764482.76	N 32 22 10.69	W 103 36 38.31
	907.50	0.30	216.26	907.49	4.00	-4.08	-2.13	0.03	498958.02	764482.57	N 32 22 10.68	W 103 36 38.31
	970.50	0.35	210.89	970.49	4.29	-4.38	-2.33	0.09	498957.72	764482.37	N 32 22 10.68	W 103 36 38.31
Last Gyro	1030.50	0.31	224.84	1030.49	4.55	-4.65	-2.54	0.15	498957.45	764482.16	N 32 22 10.68	W 103 36 38.31
	1124.00	0.33	209.14	1123.98	4.96	-5.07	-2.85	0.10	498957.03	764481.85	N 32 22 10.67	W 103 36 38.32
	1215.00	0.50	202.56	1214.98	5.54	-5.66	-3.13	0.19	498956.44	764481.57	N 32 22 10.67	W 103 36 38.32
	1396.00	0.15	235.20	1395.98	6.39	-6.53	-3.62	0.21	498955.57	764481.08	N 32 22 10.66	W 103 36 38.33
	1578.00	0.12	199.69	1577.98	6.69	-6.84	-3.88	0.05	498955.26	764480.82	N 32 22 10.66	W 103 36 38.33
	1759.00	0.11	269.05	1758.98	6.86	-7.02	-4.12	0.07	498955.08	764480.58	N 32 22 10.65	W 103 36 38.33
	1938.00	0.16	269.22	1937.98	6.86	-7.03	-4.54	0.03	498955.07	764480.16	N 32 22 10.65	W 103 36 38.34
	2028.00	0.06	38.60	2027.98	6.82	-7.00	-4.64	0.23	498955.10	764480.06	N 32 22 10.65	W 103 36 38.34
	2117.00	0.35	66.03	2116.98	6.68	-6.85	-4.36	0.33	498955.25	764480.34	N 32 22 10.66	W 103 36 38.33
	2207.00	0.69	64.59	2206.97	6.38	-6.50	-3.62	0.38	498955.60	764481.08	N 32 22 10.66	W 103 36 38.33
	2297.00	1.04	68.61	2296.96	5.88	-5.97	-2.37	0.39	498956.13	764482.33	N 32 22 10.66	W 103 36 38.31
	2387.00	1.34	72.58	2386.94	5.33	-5.36	-0.81	0.35	498956.74	764484.09	N 32 22 10.67	W 103 36 38.29
	2476.00	1.42	72.83	2475.92	4.77	-4.72	1.44	0.09	498957.38	764486.14	N 32 22 10.68	W 103 36 38.27
	2567.00	1.08	52.39	2566.90	3.99	-3.87	3.20	0.61	498958.23	764487.90	N 32 22 10.69	W 103 36 38.25
	2657.00	1.97	73.14	2656.88	3.10	-2.90	5.35	1.15	498959.20	764470.05	N 32 22 10.69	W 103 36 38.22
	2747.00	2.50	72.91	2746.79	2.20	-1.88	8.71	0.59	498960.22	764473.41	N 32 22 10.70	W 103 36 38.18
	2838.00	2.81	71.30	2837.70	1.05	-0.58	12.72	0.35	498961.52	764477.42	N 32 22 10.72	W 103 36 38.14
	2927.00	2.92	66.98	2926.59	-0.38	1.01	16.87	0.27	498963.11	764481.57	N 32 22 10.73	W 103 36 38.09
	3017.00	0.73	55.87	3016.53	-1.50	2.23	19.45	2.45	498964.33	764484.15	N 32 22 10.74	W 103 36 38.06
	3106.00	0.10	91.48	3105.53	-1.79	2.54	20.00	0.73	498964.64	764484.70	N 32 22 10.75	W 103 36 38.05
	3196.00	0.06	41.60	3195.53	-1.82	2.58	20.11	0.09	498964.68	764484.81	N 32 22 10.75	W 103 36 38.05
	3291.00	0.10	203.90	3290.53	-1.78	2.54	20.11	0.17	498964.64	764484.81	N 32 22 10.75	W 103 36 38.05
	3385.00	0.06	253.24	3384.53	-1.70	2.45	20.03	0.08	498964.55	764484.73	N 32 22 10.75	W 103 36 38.05
	3479.00	0.02	252.47	3478.53	-1.68	2.43	19.97	0.04	498964.53	764484.66	N 32 22 10.75	W 103 36 38.05
	3574.00	0.07	88.35	3573.53	-1.67	2.43	20.01	0.09	498964.53	764484.71	N 32 22 10.75	W 103 36 38.05
	3668.00	0.12	140.51	3667.53	-1.60	2.35	20.13	0.10	498964.45	764484.83	N 32 22 10.75	W 103 36 38.05
	3858.00	0.06	320.30	3857.53	-1.52	2.28	20.19	0.09	498964.38	764484.89	N 32 22 10.74	W 103 36 38.05
	3952.00	0.06	35.13	3951.53	-1.59	2.35	20.19	0.08	498964.45	764484.89	N 32 22 10.75	W 103 36 38.05
	4047.00	0.06	54.92	4046.53	-1.66	2.42	20.26	0.02	498964.52	764484.96	N 32 22 10.75	W 103 36 38.05
	4142.00	0.07	21.99	4141.53	-1.74	2.51	20.32	0.04	498964.61	764485.02	N 32 22 10.75	W 103 36 38.05
	4236.00	0.06	80.87	4235.53	-1.80	2.57	20.39	0.07	498964.67	764485.09	N 32 22 10.75	W 103 36 38.05
	4331.00	0.06	179.73	4330.53	-1.78	2.52	20.44	0.10	498964.62	764485.14	N 32 22 10.75	W 103 36 38.04
	4520.00	0.86	97.55	4519.52	-1.42	2.24	21.85	0.45	498964.34	764488.54	N 32 22 10.74	W 103 36 38.03
	4614.00	0.17	108.48	4613.52	-1.25	2.10	22.68	0.74	498964.20	764487.38	N 32 22 10.74	W 103 36 38.02
	4709.00	0.06	300.41	4708.52	-1.23	2.08	22.77	0.24	498964.18	764487.47	N 32 22 10.74	W 103 36 38.02
	4803.00	0.23	148.82	4802.52	-1.09	1.95	22.83	0.30	498964.05	764487.53	N 32 22 10.74	W 103 36 38.02
	4898.00	0.13	236.30	4897.52	-0.87	1.73	22.84	0.28	498963.83	764487.54	N 32 22 10.74	W 103 36 38.02
	4992.00	0.10	267.94	4991.52	-0.82	1.67	22.67	0.07	498963.77	764487.37	N 32 22 10.74	W 103 36 38.02
	5087.00	0.14	103.10	5086.52	-0.79	1.64	22.70	0.25	498963.74	764487.40	N 32 22 10.74	W 103 36 38.02
	5181.00	0.06	327.06	5180.52	-0.80	1.65	22.79	0.20	498963.75	764487.49	N 32 22 10.74	W 103 36 38.02
5276.00	0.06	6.70	5275.52	-0.89	1.75	22.77	0.04	498963.85	764487.47	N 32 22 10.74	W 103 36 38.02	
5370.00	0.06	215.62	5369.52	-0.90	1.75	22.74	0.12	498963.85	764487.44	N 32 22 10.74	W 103 36 38.02	
5465.00	0.06	237.83	5464.52	-0.84	1.69	22.67	0.02	498963.79	764487.37	N 32 22 10.74	W 103 36 38.02	
5560.00	0.11	81.05	5559.52	-0.82	1.68	22.72	0.18	498963.78	764487.42	N 32 22 10.74	W 103 36 38.02	
5749.00	0.11	276.84	5748.52	-0.87	1.72	22.72	0.12	498963.82	764487.42	N 32 22 10.74	W 103 36 38.02	
5844.00	0.06	247.60	5843.52	-0.87	1.72	22.58	0.07	498963.82	764487.28	N 32 22 10.74	W 103 36 38.02	
5938.00	0.06	142.27	5937.52	-0.81	1.68	22.57	0.10	498963.76	764487.27	N 32 22 10.74	W 103 36 38.02	
6033.00	0.10	259.97	6032.52	-0.78	1.81	22.52	0.15	498963.71	764487.22	N 32 22 10.74	W 103 36 38.02	
6127.00	0.06	284.22	6126.52	-0.78	1.80	22.39	0.05	498963.70	764487.09	N 32 22 10.74	W 103 36 38.02	
6221.00	0.11	212.27	6220.52	-0.70	1.54	22.29	0.11	498963.64	764486.99	N 32 22 10.74	W 103 36 38.02	
6316.00	0.14	51.36	6315.52	-0.70	1.53	22.33	0.26	498963.63	764487.03	N 32 22 10.74	W 103 36 38.02	
6410.00	0.14	70.49	6409.52	-0.80	1.64	22.53	0.05	498963.74	764487.23	N 32 22 10.74	W 103 36 38.02	
6505.00	0.06	73.84	6504.52	-0.84	1.70	22.69	0.08	498963.80	764487.39	N 32 22 10.74	W 103 36 38.02	
6600.00	0.14	254.72	6599.52	-0.83	1.68	22.63	0.21	498963.78	764487.32	N 32 22 10.74	W 103 36 38.02	
6789.00	0.14	63.43	6788.52	-0.87	1.72	22.61	0.15	498963.82	764487.31	N 32 22 10.74	W 103 36 38.02	
6884.00	0.11	214.94	6883.52	-0.85	1.70	22.66	0.26	498963.80	764487.36	N 32 22 10.74	W 103 36 38.02	
6978.00	0.06	96.52	6987.52	-0.77	1.62	22.68	0.18	498963.72	764487.36	N 32 22 10.74	W 103 36 38.02	
7073.00	0.20	247.42	7072.52	-0.70	1.55	22.55	0.27	498963.65	764487.25	N 32 22 10.74	W 103 36 38.02	
7168.00	0.29	145.70	7167.52	-0.44	1.29	22.54	0.40	498963.39	764487.24	N 32 22 10.74	W 103 36 38.02	
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Comments	MD (ft)	Incl (°)	Azimuth (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northings (ft)	Easting (ft)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7451.00	2.46	77.06	7450.42	-1.01	2.09	28.88	0.68	498964.19	764493.58	N 32 22 10.74	W 103 36 37.95
	7546.00	3.14	75.20	7545.31	-1.96	3.21	33.39	0.72	498965.31	764498.09	N 32 22 10.75	W 103 36 37.89
	7640.00	3.71	73.78	7639.14	-3.26	4.72	38.80	0.61	498966.82	764503.50	N 32 22 10.77	W 103 36 37.83
	7734.00	4.37	67.69	7732.90	-5.23	6.93	45.03	0.84	498969.03	764509.73	N 32 22 10.79	W 103 36 37.76
	7829.00	4.85	63.10	7827.60	-8.16	10.12	51.98	0.64	498972.22	764516.66	N 32 22 10.82	W 103 36 37.68
	7924.00	5.82	54.89	7922.20	-12.38	14.81	59.35	1.13	498976.71	764524.04	N 32 22 10.88	W 103 36 37.59
	8018.00	7.24	51.07	8015.61	-18.43	20.98	67.72	1.78	498983.08	764532.42	N 32 22 10.93	W 103 36 37.49
	8112.00	9.21	48.20	8108.64	-26.77	29.72	77.94	2.14	498991.82	764542.63	N 32 22 11.01	W 103 36 37.37
	8162.00	9.92	46.85	8157.94	-32.15	35.33	84.06	1.49	498997.43	764548.78	N 32 22 11.07	W 103 36 37.30
	8239.00	10.90	48.05	8233.67	-41.16	44.73	94.32	1.30	499006.83	764559.01	N 32 22 11.16	W 103 36 37.18
	8301.00	10.94	47.97	8294.55	-48.69	52.59	103.05	0.07	499014.69	764567.74	N 32 22 11.24	W 103 36 37.08
	8396.00	11.33	52.32	8387.76	-59.89	64.33	117.13	0.97	499026.43	764581.82	N 32 22 11.35	W 103 36 36.91
	8491.00	11.37	55.16	8480.91	-70.37	75.39	132.20	0.59	499037.48	764596.89	N 32 22 11.48	W 103 36 36.74
	8585.00	10.88	57.45	8573.14	-79.86	85.44	147.27	0.72	499047.54	764611.96	N 32 22 11.56	W 103 36 36.58
	8680.00	10.24	60.02	8666.54	-88.33	94.48	162.13	0.82	499056.57	764626.82	N 32 22 11.65	W 103 36 36.39
	8688.00	8.98	57.75	8651.90	-103.49	110.86	189.01	0.70	499072.75	764653.70	N 32 22 11.81	W 103 36 36.07
	8915.00	9.07	55.52	8898.31	-107.31	114.71	195.17	0.77	499078.81	764659.86	N 32 22 11.85	W 103 36 36.00
	9081.00	7.58	86.30	9062.64	-114.61	122.83	216.89	2.79	499084.93	764681.58	N 32 22 11.92	W 103 36 35.74
	9178.00	15.23	128.68	9155.84	-106.60	115.42	232.93	11.44	499077.51	764697.63	N 32 22 11.85	W 103 36 35.56
	9270.00	25.81	151.30	9243.94	-80.24	89.78	252.41	13.69	499051.88	764717.10	N 32 22 11.60	W 103 36 35.33
100' FNL Crossed	9335.00	30.54	163.19	9301.32	-51.66	61.61	263.95	11.43	499023.71	764728.64	N 32 22 11.32	W 103 36 35.20
	9365.00	33.10	167.51	9326.81	-36.23	46.31	267.93	11.43	499008.41	764732.62	N 32 22 11.16	W 103 36 35.18
	9460.00	44.23	170.38	9400.88	22.33	-11.87	279.12	11.88	498950.23	764743.81	N 32 22 10.59	W 103 36 35.03
	9554.00	52.27	171.73	9463.42	91.91	-81.09	289.98	8.62	498881.01	764754.87	N 32 22 9.90	W 103 36 34.91
	9649.00	58.40	171.88	9517.43	169.58	-158.39	301.11	6.45	498803.71	764765.80	N 32 22 9.14	W 103 36 34.79
	9743.00	66.75	175.11	9560.70	252.69	-241.21	310.48	9.39	498720.90	764775.15	N 32 22 8.32	W 103 36 34.68
	9838.00	78.08	178.74	9589.36	343.07	-331.48	315.22	12.47	498630.83	764779.91	N 32 22 7.42	W 103 36 34.63
	9933.00	81.94	181.25	9605.84	436.54	-425.01	315.22	4.82	498537.10	764779.91	N 32 22 6.50	W 103 36 34.64
	10027.00	86.47	181.10	9613.69	530.01	-518.82	313.30	6.95	498443.50	764779.91	N 32 22 5.57	W 103 36 34.67
	10101.00	92.10	181.17	9613.32	603.87	-592.59	311.63	4.91	498369.53	764779.91	N 32 22 4.64	W 103 36 34.69
	10126.00	92.09	180.34	9612.41	628.82	-617.57	311.50	3.32	498344.55	764779.19	N 32 22 4.59	W 103 36 34.71
	10198.00	91.78	180.45	9609.95	701.71	-699.53	310.88	0.47	498271.60	764775.67	N 32 22 3.87	W 103 36 34.71
	10269.00	89.73	181.99	9608.76	791.53	-789.49	309.04	2.83	498181.64	764773.73	N 32 22 2.98	W 103 36 34.74
	10379.00	88.68	183.02	9610.01	881.23	-870.39	305.11	1.83	498091.74	764769.80	N 32 22 2.09	W 103 36 34.79
	10470.00	86.67	184.05	9612.11	971.75	-961.19	299.50	1.13	498000.94	764764.19	N 32 22 1.19	W 103 36 34.87
	10559.00	86.83	183.60	9613.98	1060.25	-1049.98	293.56	0.58	497912.16	764758.25	N 32 22 0.31	W 103 36 34.94
	10738.00	86.87	180.24	9617.26	1238.74	-1228.82	287.57	1.88	497733.33	764752.26	N 32 21 58.55	W 103 36 35.03
	10827.00	86.75	179.09	9619.03	1327.68	-1317.80	288.09	1.32	497644.35	764752.78	N 32 21 57.67	W 103 36 35.03
	10828.00	86.75	179.03	9619.05	1328.68	-1318.80	288.10	6.00	497643.35	764752.78	N 32 21 57.66	W 103 36 35.03
	10923.00	88.40	178.33	9621.41	1423.64	-1413.74	290.29	0.82	497548.41	764754.98	N 32 21 56.72	W 103 36 35.01
	11017.00	89.04	178.14	9623.51	1517.61	-1507.67	293.19	0.71	497454.48	764757.88	N 32 21 55.79	W 103 36 34.98
	11112.00	89.05	177.92	9625.10	1612.60	-1602.60	296.45	0.23	497358.55	764761.14	N 32 21 54.85	W 103 36 34.95
	11207.00	89.05	178.06	9626.67	1707.59	-1697.53	299.78	0.15	497264.63	764764.47	N 32 21 53.91	W 103 36 34.92
	11301.00	89.01	177.94	9628.26	1801.57	-1791.46	303.06	0.13	497170.70	764767.75	N 32 21 52.98	W 103 36 34.89
	11396.00	88.95	178.02	9629.95	1896.56	-1886.39	306.41	0.11	497075.78	764771.10	N 32 21 52.04	W 103 36 34.88
	11491.00	89.16	178.00	9631.52	1991.54	-1981.32	309.71	0.22	496980.85	764774.40	N 32 21 51.10	W 103 36 34.83
	11585.00	89.05	178.19	9633.99	2085.53	-2075.25	312.83	0.23	496886.92	764777.52	N 32 21 50.17	W 103 36 34.80
	11680.00	89.14	178.17	9634.49	2180.52	-2170.19	315.85	0.10	496791.98	764780.54	N 32 21 49.23	W 103 36 34.77
	11775.00	89.22	178.36	9635.85	2275.51	-2265.14	318.73	0.22	496697.04	764783.42	N 32 21 48.29	W 103 36 34.75
	11869.00	89.53	180.97	9636.87	2369.44	-2359.13	319.28	2.80	496603.06	764783.97	N 32 21 47.36	W 103 36 34.75
	11964.00	89.81	181.61	9637.42	2464.27	-2454.10	317.14	0.74	496508.09	764781.83	N 32 21 46.42	W 103 36 34.78
	12059.00	90.11	180.48	9637.49	2559.12	-2549.08	315.41	1.23	496413.11	764780.09	N 32 21 45.48	W 103 36 34.81
	12153.00	90.44	179.52	9637.04	2653.05	-2643.08	315.41	1.08	496318.11	764780.09	N 32 21 44.55	W 103 36 34.81
	12248.00	90.16	179.07	9636.54	2748.02	-2738.07	316.57	0.56	496224.13	764781.26	N 32 21 43.61	W 103 36 34.81
	12343.00	90.07	180.36	9636.35	2842.97	-2833.07	317.05	1.36	496129.13	764781.74	N 32 21 42.67	W 103 36 34.81
	12532.00	90.01	180.00	9636.22	3031.81	-3022.07	316.45	0.19	495940.14	764781.14	N 32 21 40.80	W 103 36 34.83
	12626.00	90.06	180.03	9636.16	3125.74	-3116.07	316.43	0.06	495846.15	764781.12	N 32 21 39.87	W 103 36 34.84
	12720.00	90.24	180.27	9635.91	3219.67	-3210.07	316.18	0.32	495752.15	764780.87	N 32 21 38.94	W 103 36 34.85
	12815.00	90.08	181.21	9635.65	3314.55	-3305.06	314.98	1.00	495657.16	764779.64	N 32 21 38.00	W 103 36 34.87
	12909.00	90.27	180.91	9635.38	3408.40	-3399.04	313.22	0.38	495563.18	764777.91	N 32 21 37.07	W 103 36 34.90
	13004.00	91.03	179.68	9634.28	3503.30	-3494.03	312.73	1.52	495468.20	764777.42	N 32 21 36.13	W 103 36 34.91
	13099.00	90.85	180.22	9633.72	3598.23	-3589.02	312.81	0.60	495373.21	764777.50	N 32 21 35.19	W 103 36 34.92
	13288.00	91.03	179.11	9629.62	3787.10	-3777.98	313.92	0.59	495184.25	764778.60	N 32 21 33.32	W 103 36 34.92
	13382.00	90.97	179.49	9627.98	3881.06	-3871.96	315.06	0.41	495090.28	764779.75	N 32 21 32.39	W 103 36 34.92
	13478.00	91.29	180.29	9626.13	3974.98	-3965.84	315.24	0.92	494996.30	764779.93	N 32 21 31.46	W 103 36 34.92
	13665.00	90.84	180.35	9622.62	4163.77	-4154.91	314.19	0.24	494807.34	764778.88	N 32 21 29.59	W 103 36 34.95
	13759.00	90.89	180.56	9621.20	4257.66	-4248.89	313.44	0.23	494713.36	764778.13	N 32 21 28.66	W 103 36 34.96
	13853.00	90.69	179.09	9619.90	4351.60	-4342.88	313.73	1.58	494619.37	764778.42	N 32 21 27.73	W 103 36 34.97
	13948.00	90.38	177.40	9619.03	4446.59	-4437.83	316.64	1.81	494524.43	764781.33	N 32 21 26.79	W 103 36 34.94
	14042.00	90.70	177.97	9618.16	4540.58	-4531.75	320.44	0.71	494430.51	764785.12	N 32 21 25.86	W 103 36 34.90
	14136.00	90.52	177.41	9617.16	4634.57	-4625.67	324.22	0.63	494336.60	764788.91	N 32 21 24.93	W 103 36 34.87
	14231.00	90.80	177.29	9616.07	4729.56	-4720.56	328.62	0.32	494241.71	764793.30	N 32 21 23.99	W 103 36 34.82
	14326.00	90.81	177.99	9614.73	4824.55	-4815.47	332.53	0.74	494146.80	764797.22	N 32 21 23.05	W 103 36 34.79
	14420.00	91.00	177.89	9613.25	4918.54	-4909.40	335.91	0.23	494052.88	764800.59	N 32 21 22.12	W 103 36 34.75
	14515.00	90.78	177.73	9611.77	5013.53	-5004.31	339.54	0.29	493957.96	764804.22	N 32 21 21.18	W 103 36 34.72
	14609.00	90.78	178.17	9610.51	5107.52	-5098.25	342.90	0.47	493864.04	764807.59	N 32 21 20.26	W 103 36 34.69
</												

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 ° ' ")
	16195.00	91.17	178.63	9548.47	8690.61	-8662.23	386.33	0.30	490280.18	764851.01	N 32 20 44.79	W 103 36 34.46
	16289.00	90.81	178.60	9548.84	8784.59	-8778.19	388.60	0.38	490188.23	764853.28	N 32 20 43.86	W 103 36 34.44
	16384.00	90.74	177.80	9545.56	8879.58	-8871.13	391.58	0.85	490091.29	764856.27	N 32 20 42.92	W 103 36 34.42
	16478.00	91.04	177.70	9544.10	8973.57	-8965.05	395.27	0.34	489997.37	764859.96	N 32 20 41.99	W 103 36 34.38
	16572.00	90.25	177.63	9543.04	9067.56	-9056.96	399.10	0.84	489903.46	764863.79	N 32 20 41.06	W 103 36 34.34
	16667.00	90.50	177.33	9542.42	9162.55	-9153.87	403.28	0.41	489808.56	764867.96	N 32 20 40.12	W 103 36 34.30
	16761.00	90.46	177.46	9541.63	9256.55	-9247.77	407.55	0.14	489714.66	764872.24	N 32 20 39.19	W 103 36 34.26
	16856.00	90.27	178.30	9541.03	9351.55	-9342.70	411.06	0.91	489619.73	764875.75	N 32 20 38.25	W 103 36 34.23
	16950.00	90.53	179.81	9540.37	9445.52	-9436.68	412.61	1.63	489525.76	764877.30	N 32 20 37.32	W 103 36 34.22
	19045.00	90.29	180.71	9539.69	9540.43	-9531.68	412.18	0.98	489430.76	764876.87	N 32 20 36.38	W 103 36 34.23
	19139.00	90.45	182.23	9539.08	9634.24	-9625.64	409.77	1.63	489336.80	764874.46	N 32 20 35.45	W 103 36 34.26
	19233.00	91.05	181.98	9537.85	9727.97	-9719.57	406.32	0.69	489242.88	764871.01	N 32 20 34.52	W 103 36 34.31
	19327.00	90.52	181.36	9536.57	9821.75	-9813.52	403.58	0.87	489148.93	764868.27	N 32 20 33.59	W 103 36 34.35
	19422.00	90.31	181.85	9535.88	9916.55	-9908.48	400.92	0.56	489053.97	764865.61	N 32 20 32.66	W 103 36 34.39
	19516.00	90.61	181.89	9535.12	10010.31	-10002.43	397.85	0.32	488960.03	764862.54	N 32 20 31.73	W 103 36 34.43
	19611.00	90.44	182.05	9534.25	10105.06	-10097.37	394.59	0.25	488865.09	764859.27	N 32 20 30.79	W 103 36 34.48
	19705.00	90.57	182.48	9533.42	10198.78	-10191.29	390.87	0.48	488771.18	764855.56	N 32 20 29.86	W 103 36 34.53
	19800.00	90.32	182.22	9532.69	10293.48	-10286.21	386.98	0.38	488676.26	764851.66	N 32 20 28.92	W 103 36 34.58
100' FSL	19810.00	90.33	182.23	9532.63	10303.45	-10296.20	386.59	0.13	488666.27	764851.28	N 32 20 28.82	W 103 36 34.59
Crossed												
Final MWD	19861.00	90.37	182.28	9532.32	10354.30	-10347.16	384.58	0.13	488615.31	764849.27	N 32 20 28.32	W 103 36 34.61
Proj to TD	19891.00	90.37	182.28	9532.12	10384.21	-10377.14	383.39	0.00	488585.34	764848.08	N 32 20 28.02	W 103 36 34.63

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 14H Gyro + IFR 0-19891'MD
	1	26.500	26.500	Act Strs	30.000	30.000	GYD_GC+DROP+OH-Depth Only	Original Borehole / Oxy Avogato 30-31 State Com 14H Gyro + IFR 0-19891'MD
	1	26.500	1030.500	Act Strs	30.000	30.000	GYD_GC+DROP+OH	Original Borehole / Oxy Avogato 30-31 State Com 14H Gyro + IFR Original Borehole / Oxy Avogato
	1	1030.500	19891.000	Act Strs	30.000	30.000	A010Mb_MWD+IFR1+SAG+MS	30-31 State Com 14H Gyro + IFR 0-19891'MD

...Original Borehole/Oxy Avogato 30-31 State Com 14H Gyro + IFR 0-19891'MD

Schlumberger

OXY

NOV 14 2019

RECEIVED

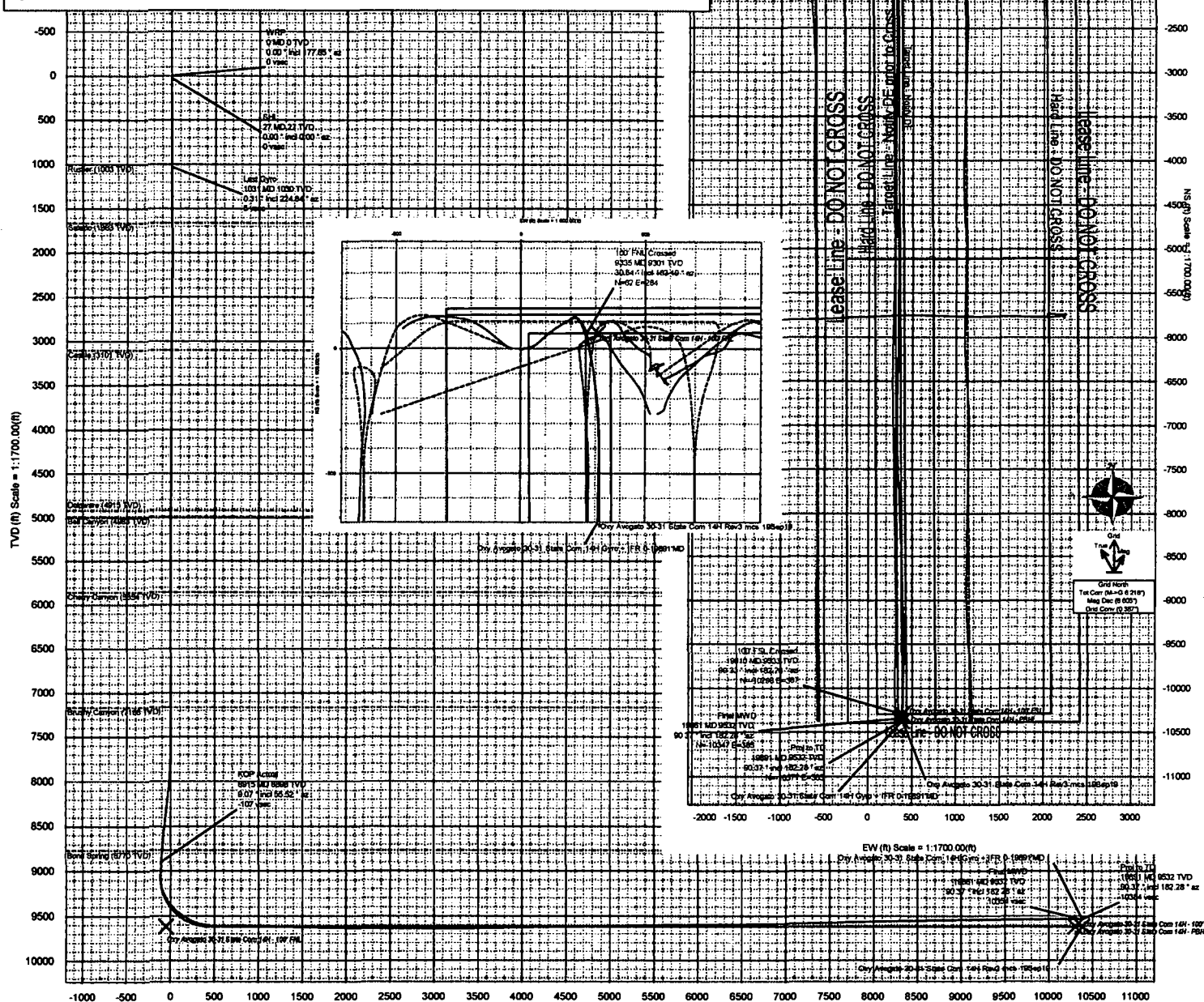


Borehole:	Well:	Field:	Structure:
Original Borehole	Oxy Avogato 30-31 State Com 14H	NM Lea County (NAD 83)	Oxy Avogato 30-31 State Com 14H

Gravity & Magnetic Parameters				Surface Location				NAD83 New Mexico State Plane, Eastern Zone, US Feet				Miscellaneous			
Model:	IFR1	Dip:	60.088°	Date:	14-Sep-2019	Lat:	N 32 22 10.72	Northing:	489362.176US	Grid Conv:	0.3889°	Shot:	Oxy Avogato 30-31 State Com 14H	TVD Ref:	RKB=26.5 (73718.1 ft above MSL)
MagnDec:	6.800°	FB:	0.0052.8mT	Gravity FB:	988.448mg (9.80665 Based)	Lon:	W 103 36 39.28	Easting:	784464.776US	Scale Fact:	0.9898911	Plan:	Oxy Avogato 30-31 State Com 14H Gyro + IFR 0-18891MD		

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
WRP	0.00	0.00	177.85	0.00	0.00	0.00	0.00	
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00
Last Gyro	1030.50	0.31	224.84	1030.49	4.55	-4.65	-2.54	0.15
KOP Actual	8915.00	9.07	55.52	8898.31	-107.31	114.71	185.17	0.77
100' FNL Crossed	9335.00	30.54	163.19	9301.32	-51.66	81.61	263.95	11.43
100' FSL Crossed	19810.00	90.33	182.23	9532.63	10303.45	-10298.20	386.59	0.13
Final MWD	19881.00	90.37	182.28	9532.32	10354.30	-10347.16	384.58	0.13
Proj to TD	19891.00	90.37	182.28	9532.12	10384.21	-10377.14	383.39	0.00



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

November 8, 2019

Oxy USA Inc
P.O. Box 4294
Houston, TX 77210-4294

Re:

S30, T22S, R33E Lea, NM
N 32.369646 W -103.610634

CLIENT: Chevron USA INC.
WELL: Avogato 30 31 State Com 14H
FIELD: Red Tank; Bone Spring, East

RIG: H&P 656
COUNTY: Lea
API NO: 30-025-45959
JOB NO: 19MLH0357

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>
Hossam Elezaby FS	Avogato 30 31 State Com 14H Original Hole	1124.00 Ft 19861.00 Ft	August 5, 2019 to August 19, 2019	TelePacer 3rd Party Corrected

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

Well Reference:

S30, T22S, R33E Lea, NM
N 32.369646 W -103.610634

I, Hossam Elezaby certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of August 05, 2019 through August 19, 2019, conduct or supervise the taking of the TelePacer & 3rd Party Corrected surveys from a depth of 1124.00 feet to a depth of 19861.00 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 Chevron USA INC. for the Avogato 30 31 State Com 14H Well (Original Hole) API No. 30-025-45959 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
Hossam Elezaby
FS

Hossam Elezaby

Subscribed and Sworn to before me this 8 day of November (month) 2019 (yr)

My Commission expires:

6/14/2023

Jean Paul Langlois
Notary Public

(signature)

Comanche, Oklahoma
(County State)

