

Schlumberger

Oxy Avogato 30-31 State Com 35H gyro + MWD 0-22280'MD Survey Geodetic Report (Def Survey)



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Report Date: October 16, 2019 - 10:18 AM
Client: OXY
Field: NM Lea County (NAD 83)
Structure / Slot: Oxy Avogato 30-31 State Com 35H / Oxy Avogato 30-31 State Com 35H
Well: Oxy Avogato 30-31 State Com 35H
Borehole: Original Borehole
UWI / API#: Unknown / 30-025-45931
Survey Name: Oxy Avogato 30-31 State Com 35H gyro + MWD 0-22280'MD
Survey Date: September 08, 2019
Tort / AHD / DDI / ERD Ratio: 267.209' / 11072.161' / 6.735' / 0.912
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 22' 9.92565", W 103° 36' 31.81131"
Location Grid N/E Y/X: N 498885.200 RUS, E 765020.300 RUS
CRS Grid Convergence Angle: 0.3879°
Grid Scale Factor: 0.99996839
Version / Patch: 2.10.782.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 176.543° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3707.800 ft above MSL
Seabed / Ground Elevation: 3681.300 ft above MSL
Magnetic Declination: 6.602°
Total Gravity Field Strength: 988.4504mgm (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 48051.000 nT
Magnetic Dip Angle: 60.085°
Declination Date: September 16, 2019
Magnetic Declination Model: IFR1
North Reference: Grid North
Grid Convergence Used: 0.3879°
Total Corr Mag North->Grid: 6.2141°
North: Well Head
Local Coord Referenced To:

	MD	Incl	Azim Grid	TVD	VSEC	NS	EW	DLS	Northing	Easting	Latitude	Longitude
	(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft/100m)	(RUS)	(RUS)	(N/S ° ° ')	(E/W ° ° ')
WRP	0.00	0.00	102.00	0.00	0.00	0.00	0.00	0.00	498885.20	765020.30	N 32 22 9.93	W 103 36 31.81
	SHL	26.50	0.00	26.50	0.00	0.00	0.00	0.00	498885.20	765020.30	N 32 22 9.93	W 103 36 31.81
	105.60	0.11	351.31	105.60	-0.08	0.08	-0.01	0.14	498885.28	765020.29	N 32 22 9.93	W 103 36 31.81
	134.90	0.12	326.94	134.90	-0.13	0.13	-0.03	0.17	498885.33	765020.27	N 32 22 9.93	W 103 36 31.81
	161.50	0.15	320.45	161.50	-0.18	0.18	-0.07	0.13	498885.38	765020.23	N 32 22 9.93	W 103 36 31.81
	191.00	0.15	315.72	191.00	-0.24	0.24	-0.12	0.04	498885.44	765020.18	N 32 22 9.93	W 103 36 31.81
	216.90	0.14	297.26	216.90	-0.28	0.27	-0.17	0.18	498885.47	765020.13	N 32 22 9.93	W 103 36 31.81
	244.30	0.16	273.79	244.30	-0.31	0.29	-0.24	0.23	498885.49	765020.06	N 32 22 9.93	W 103 36 31.81
	275.80	0.20	241.11	275.80	-0.29	0.27	-0.33	0.34	498885.47	765019.97	N 32 22 9.93	W 103 36 31.82
	307.30	0.24	257.79	307.30	-0.25	0.23	-0.45	0.24	498885.43	765019.85	N 32 22 9.93	W 103 36 31.82
	338.80	0.31	254.88	338.80	-0.23	0.19	-0.59	0.23	498885.39	765019.71	N 32 22 9.93	W 103 36 31.82
	370.30	0.32	242.10	370.30	-0.17	0.13	-0.75	0.22	498885.33	765019.55	N 32 22 9.93	W 103 36 31.82
	401.80	0.37	243.27	401.80	-0.10	0.04	-0.92	0.16	498885.24	765019.38	N 32 22 9.93	W 103 36 31.82
	433.40	0.46	234.60	433.40	0.01	-0.08	-1.12	0.35	498885.12	765019.18	N 32 22 9.92	W 103 36 31.82
	464.90	0.54	233.89	464.90	0.16	-0.24	-1.34	0.25	498884.96	765018.96	N 32 22 9.92	W 103 36 31.83
	496.50	0.60	233.19	496.49	0.33	-0.42	-1.59	0.19	498884.78	765018.71	N 32 22 9.92	W 103 36 31.83
	527.90	0.70	231.77	527.89	0.53	-0.64	-1.87	0.32	498884.56	765018.43	N 32 22 9.92	W 103 36 31.83
	559.50	0.80	233.02	559.49	0.78	-0.89	-2.20	0.32	498884.31	765018.10	N 32 22 9.92	W 103 36 31.84
	591.00	0.89	236.44	590.99	1.01	-1.16	-2.58	0.33	498884.04	765017.72	N 32 22 9.91	W 103 36 31.84
	622.50	0.96	234.88	622.48	1.27	-1.45	-3.00	0.24	498883.75	765017.30	N 32 22 9.91	W 103 36 31.85
	654.10	1.07	230.44	654.08	1.58	-1.79	-3.44	0.43	498883.41	765016.88	N 32 22 9.91	W 103 36 31.85
	685.80	1.14	230.24	685.57	1.94	-2.18	-3.91	0.22	498883.02	765016.39	N 32 22 9.90	W 103 36 31.88
	717.10	1.19	229.62	717.06	2.33	-2.59	-4.40	0.16	498882.61	765015.90	N 32 22 9.90	W 103 36 31.88
	748.60	1.27	224.95	748.56	2.76	-3.05	-4.90	0.41	498882.15	765015.40	N 32 22 9.90	W 103 36 31.87
	780.10	1.33	225.22	780.05	3.23	-3.55	-5.40	0.19	498881.65	765014.90	N 32 22 9.89	W 103 36 31.87
	811.60	1.31	226.31	811.54	3.70	-4.06	-5.92	0.10	498881.14	765014.38	N 32 22 9.89	W 103 36 31.88
	843.20	1.32	223.79	843.13	4.19	-4.57	-6.44	0.19	498880.63	765013.86	N 32 22 9.88	W 103 36 31.89
	874.70	1.35	225.50	874.62	4.68	-5.09	-6.95	0.16	498880.11	765013.35	N 32 22 9.88	W 103 36 31.89
	906.20	1.30	224.60	906.12	5.18	-5.61	-7.47	0.17	498879.59	765012.83	N 32 22 9.87	W 103 36 31.90
	937.70	1.24	222.84	937.61	5.64	-6.11	-7.95	0.23	498879.09	765012.35	N 32 22 9.87	W 103 36 31.90
	969.20	1.26	221.02	969.10	6.12	-6.62	-8.41	0.14	498878.58	765011.89	N 32 22 9.86	W 103 36 31.91
	1000.80	1.24	222.14	1000.69	6.61	-7.14	-8.87	0.10	498878.06	765011.43	N 32 22 9.86	W 103 36 31.92
Last Gyro	1023.50	1.32	223.62	1023.39	6.96	-7.51	-9.21	0.38	498877.69	765011.09	N 32 22 9.85	W 103 36 31.92
	1147.00	0.44	246.23	1146.87	6.09	-8.73	-10.63	0.75	498876.47	765009.67	N 32 22 9.84	W 103 36 31.94
	1237.00	0.28	256.73	1236.87	6.25	-8.92	-11.16	0.19	498876.28	765009.14	N 32 22 9.84	W 103 36 31.94
	1327.00	0.21	251.96	1326.87	6.33	-9.02	-11.53	0.08	498876.18	765008.77	N 32 22 9.84	W 103 36 31.95
	1419.00	0.28	275.60	1418.87	6.34	-9.05	-11.91	0.13	498876.15	765008.39	N 32 22 9.84	W 103 36 31.95
	1601.00	0.26	242.70	1600.87	6.44	-9.20	-12.72	0.08	498876.00	765007.58	N 32 22 9.84	W 103 36 31.96
	1695.00	0.36	255.77	1694.86	6.58	-9.37	-13.20	0.13	498875.83	765007.10	N 32 22 9.83	W 103 36 31.97
	1789.00	0.35	274.11	1788.86	6.60	-9.42	-13.77	0.12	498875.78	765006.53	N 32 22 9.83	W 103 36 31.97
	1884.00	0.42	280.23	1883.86	6.48	-9.34	-14.40	0.09	498875.66	765005.90	N 32 22 9.83	W 103 36 31.98
	1978.00	0.25	256.21	1977.86	6.44	-9.33	-14.94	0.23	498875.67	765005.36	N 32 22 9.83	W 103 36 31.99
	2073.00	0.17	175.89	2072.86	6.61	-9.52	-15.13	0.29	498875.68	765005.17	N 32 22 9.83	W 103 36 31.99
	2167.00	0.34	147.03	2166.88	6.00	-9.89	-14.97	0.22	498875.31	765005.33	N 32 22 9.83	W 103 36 31.99
	2262.00	0.70	120.32	2261.85	9.56	-10.42	-14.32	0.45	498874.78	765005.08	N 32 22 9.82	W 103 36 31.98
	2356.00	0.95	120.59	2355.84	10.32	-11.11	-13.15	0.27	498874.10	765007.15	N 32 22 9.82	W 103 36 31.97
	2451.00	1.20	122.26	2450.83	11.34	-12.04	-11.63	0.27	498873.16	765008.67	N 32 22 9.81	W 103 36 31.95
	2545.00	1.30	126.95	2544.81	12.60	-13.20	-9.95	0.15	498872.00	765010.35	N 32 22 9.80	W 103 36 31.93
	2640.00	1.41	130.94	2639.78	14.11	-14.62	-8.20	0.15	498870.58	765012.10	N 32 22 9.78	W 103 36 31.91
	2735.00	1.64	122.43	2734.74	15.72	-16.11	-6.17	0.34	498869.09	765014.13	N 32 22 9.77	W 103 36 31.88
	2829.00	2.04	119.97	2828.70	17.43	-17.67	-3.59	0.43	498867.53	765016.71	N 32 22 9.75	W 103 36 31.85
	2924.00	2.08	127.51	2923.64	19.47	-19.55	-0.77	0.28	498865.65	765019.53	N 32 22 9.73	W 103 36 31.82
	3018.00	2.60	145.29	3017.56	22.40	-22.33	1.79	0.95	498862.87	765022.09	N 32 22 9.70	W 103 36 31.79
	3113.00	3.22	154.81	3112.44	26.72	-28.52	4.15	0.83	498859.68	765024.45	N 32 22 9.66	W 103 36 31.77
	3207.00	4.17	150.34	3206.24	32.23	-31.88	6.98	1.06	498853.32	765027.26	N 32 22 9.61	W 103 36 31.73
	3301.00	4.89	149.97	3299.95	38.68	-38.32	10.66	0.77	498846.88	765030.96	N 32 22 9.55	W 103 36 31.69
	3395.00	4.48	147.60	3393.63	45.67	-44.89	14.63	0.46	498840.32	765034.93	N 32 22 9.48	W 103 36 31.64
	3489.00	3.48	145.87	3487.40	51.33	-50.35	18.20	1.07	498834.85	765038.50	N 32 22 9.43	W 103 36 31.60
	3584.00	2.28	150.21	3582.28	55.50	-54.37	20.76	1.29	498830.83	765041.06	N 32 22 9.39	W 103 36 31.57
	3678.00	1.36	147.55	3676.23	58.15	-56.94	22.28	0.99	498828.26	765042.58	N 32 22 9.36	W 103 36 31.56
	3772.00	0.78	142.62	3770.22	59.65	-58.39	23.27	0.62	498826.81	765043.57	N 32 22 9.35	W 103 36 31.54
	3867.00	0.70	120.61	3865.21	60.51	-59.20	24.16	0.31	498826.00	765044.46	N 32 22 9.34	W 103 36 31.53
	3961.00	0.91	101.31	3959.20	61.02	-59.64	25.39	0.36	498825.57	765045.69	N 32 22 9.33	W 103 36 31.52
	4056.00	0.94	74.00	4054.19	61.04	-59.57	26.88	0.46	498825.63	765047.18	N 32 22 9.33	W 103 36 31.50
	4150.00	0.57	79.27	4148.18	60.81	-59.27	28.08	0.40	498825.93	765048.38	N 32 22 9.34	W 103 36 31.49
	4245.00	0.70	96.30	4243.17	60.85	-59.25	29.12	0.24	498825.96	765049.42	N 32 22 9.34	W 103 36 31.48
	4339.00	1.27	112.29	4337.16	61.40	-59.70	30.65	0.67	498825.50	765050.95	N 32 22 9.33	W 103 36 31.46
	4434.00	1.46	112.40	4432.13	62.38	-60.56	32.75	0.20	498824.64	765053.05	N 32 22 9.32	W 103 36 31.43
	4528.00	1.79	108.96	4526.10	63.41	-61.45	35.26	0.39	498823.75	765055.56	N 32 22 9.32	W 103 36 31.41
	4622.00	0.93	103.64	4620.07	64.14	-62.06	37.40	0.92	498823.15	765057.70	N 32 22 9.31	W 103 36 31.38
	4717.00	0.18	153.97	4715.06	64.50	-62.37	38.22	0.87	498822.83	765058.52	N 32 22 9.31	W 103 36 31.37
	4811.00	0.11	241.18	4809.06	64.68	-62.55	38.20	0.22	498822.65	765058.50	N 32 22 9.30	W 103 36 31.37
	4906.00	0.06	226.61	4904.06	64.75	-62.63	38.09	0.06	498822.58	765058.39	N 32 22 9.30	W 103 36 31.37
	5001.00	0.13	210.90	4999.06	64.87	-62.75	38.00	0.06	498822.45	765058.30	N 32 22 9.30	W 103 36 31.37
	5095.00	0.20	263.12	5093.0								

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 ° ' '')
	5474.00	0.45	217.40	5472.06	68.27	-64.24	38.53	0.13	498820.97	765058.83	N 32 22 9.29 W	103 36 31.39
	5569.00	0.28	217.03	5567.05	68.73	-64.72	38.16	0.18	498820.48	765058.46	N 32 22 9.28 W	103 36 31.39
	5663.00	0.39	230.59	5661.05	67.09	-65.11	35.78	0.14	498820.10	765058.08	N 32 22 9.28 W	103 36 31.40
	5758.00	0.41	232.17	5756.05	67.47	-65.52	35.26	0.02	498819.68	765055.66	N 32 22 9.28 W	103 36 31.41
	5852.00	0.42	222.56	5850.05	67.90	-65.98	34.76	0.07	498819.22	765055.06	N 32 22 9.27 W	103 36 31.41
	5947.00	0.44	244.98	5945.05	68.28	-66.39	34.19	0.16	498818.81	765054.49	N 32 22 9.27 W	103 36 31.42
	6041.00	0.47	266.38	6039.04	68.41	-66.57	33.48	0.16	498818.64	765053.78	N 32 22 9.26 W	103 36 31.43
	6136.00	1.07	326.34	6134.04	67.65	-65.85	32.60	0.98	498819.35	765052.90	N 32 22 9.27 W	103 36 31.44
	6230.00	2.12	333.77	6228.00	65.29	-63.56	31.35	1.14	498821.64	765051.64	N 32 22 9.29 W	103 36 31.45
	6324.00	2.84	337.20	6321.91	61.49	-59.86	29.68	0.78	498825.35	765049.97	N 32 22 9.33 W	103 36 31.47
	6419.00	3.47	339.20	6416.78	56.53	-55.00	27.74	0.87	498830.20	765048.04	N 32 22 9.38 W	103 36 31.49
	6513.00	2.54	332.77	6510.63	51.91	-50.49	25.78	1.05	498834.71	765046.08	N 32 22 9.42 W	103 36 31.51
	6607.00	1.82	327.61	6604.57	48.70	-47.37	24.03	0.79	498837.83	765044.33	N 32 22 9.46 W	103 36 31.53
	6702.00	1.21	320.96	6699.53	46.57	-45.32	22.59	0.67	498839.88	765042.89	N 32 22 9.48 W	103 36 31.55
	6796.00	0.64	319.41	6793.52	45.34	-44.15	21.62	0.61	498841.05	765041.92	N 32 22 9.49 W	103 36 31.56
	6891.00	0.42	339.47	6888.52	44.59	-43.42	21.15	0.30	498841.78	765041.45	N 32 22 9.49 W	103 36 31.57
	6985.00	0.47	315.84	6982.51	43.97	-42.82	20.76	0.20	498842.38	765041.06	N 32 22 9.50 W	103 36 31.57
	7080.00	0.19	310.19	7077.51	43.56	-42.44	20.37	0.30	498842.76	765040.67	N 32 22 9.50 W	103 36 31.58
	7174.00	0.23	300.69	7171.51	43.35	-42.25	20.09	0.06	498842.96	765040.39	N 32 22 9.51 W	103 36 31.58
	7268.00	0.12	259.72	7265.51	43.26	-42.17	19.83	0.17	498843.03	765040.13	N 32 22 9.51 W	103 36 31.58
	7363.00	0.24	229.74	7360.51	43.39	-42.31	19.58	0.16	498842.89	765039.88	N 32 22 9.51 W	103 36 31.59
	7553.00	0.19	223.18	7550.51	43.84	-42.80	19.06	0.03	498842.40	765039.36	N 32 22 9.50 W	103 36 31.59
	7648.00	0.16	254.43	7645.51	43.98	-42.95	18.83	0.10	498842.25	765039.13	N 32 22 9.50 W	103 36 31.60
	7742.00	0.27	238.82	7739.51	44.12	-43.11	18.51	0.14	498842.09	765038.81	N 32 22 9.50 W	103 36 31.60
	7837.00	0.29	250.59	7834.51	44.30	-43.31	18.10	0.07	498841.89	765038.40	N 32 22 9.50 W	103 36 31.60
	7884.00	0.19	268.44	7881.51	44.31	-43.34	17.99	0.44	498841.87	765038.29	N 32 22 9.50 W	103 36 31.60
	7877.00	0.42	268.78	7874.51	44.31	-43.34	17.92	1.77	498841.86	765038.22	N 32 22 9.50 W	103 36 31.61
	8070.00	3.28	75.16	8067.41	43.19	-41.95	22.52	1.90	498843.25	765042.82	N 32 22 9.51 W	103 36 31.55
	8259.00	7.32	67.65	8255.57	38.20	-35.99	38.86	2.17	498849.21	765059.16	N 32 22 9.57 W	103 36 31.38
	8448.00	8.98	59.92	8442.66	27.65	-24.02	62.76	1.05	498861.18	765083.06	N 32 22 9.68 W	103 36 31.08
	8638.00	8.95	58.76	8630.34	14.07	-8.92	88.23	0.10	498876.28	765108.53	N 32 22 9.83 W	103 36 30.78
	8827.00	9.42	61.94	8818.92	0.73	5.98	114.45	0.37	498891.18	765134.74	N 32 22 9.98 W	103 36 30.48
	9017.00	8.41	62.07	9004.62	-11.54	19.80	140.45	0.53	498905.00	765160.74	N 32 22 10.11 W	103 36 30.17
	9208.00	8.17	48.40	9191.66	-25.42	35.02	162.88	0.97	498920.22	765183.15	N 32 22 10.26 W	103 36 29.91
	9396.00	7.40	61.61	9379.92	-38.77	49.62	183.87	0.96	498934.82	765204.16	N 32 22 10.40 W	103 36 29.66
	9585.00	9.22	79.86	9566.96	-45.71	58.08	209.49	1.68	498943.28	765229.78	N 32 22 10.49 W	103 36 29.36
	9775.00	10.94	66.50	9754.05	-53.72	67.95	241.01	1.52	498953.15	765261.31	N 32 22 10.58 W	103 36 29.00
	9869.00	10.82	53.24	9846.37	-61.65	76.79	256.27	2.86	498961.98	765278.56	N 32 22 10.67 W	103 36 28.82
	9963.00	9.78	31.55	9938.89	-73.04	88.86	267.51	4.25	498974.06	765287.80	N 32 22 10.79 W	103 36 28.69
	10152.00	8.65	28.09	10125.46	-98.31	115.05	282.58	0.68	499000.25	765302.87	N 32 22 11.05 W	103 36 28.51
	10247.00	7.98	44.96	10219.47	-108.79	126.02	290.61	2.65	499011.22	765310.90	N 32 22 11.15 W	103 36 28.41
	10342.00	8.20	63.33	10313.54	-115.86	133.73	301.32	2.72	499018.93	765321.61	N 32 22 11.23 W	103 36 28.29
	10436.00	8.48	81.38	10406.56	-119.15	137.76	314.17	2.79	499022.88	765334.45	N 32 22 11.27 W	103 36 28.14
	10531.00	7.29	87.37	10500.67	-118.71	139.11	327.11	1.52	499024.30	765347.40	N 32 22 11.28 W	103 36 27.99
	10625.00	8.53	97.70	10593.78	-118.30	138.45	339.98	2.00	499023.64	765360.27	N 32 22 11.27 W	103 36 27.84
	10814.00	8.83	104.80	10780.62	-111.09	132.86	367.90	0.59	499018.06	765388.19	N 32 22 11.22 W	103 36 27.51
	10909.00	9.41	103.55	10874.41	-106.56	129.18	382.50	0.65	499014.38	765402.78	N 32 22 11.18 W	103 36 27.34
	11003.00	10.43	103.44	10967.01	-101.86	125.40	398.24	1.09	499010.60	765418.53	N 32 22 11.14 W	103 36 27.16
	11192.00	10.26	102.11	11152.94	-92.43	117.89	431.34	0.16	499003.09	765451.63	N 32 22 11.06 W	103 36 26.77
	11287.00	8.89	107.15	11248.61	-87.60	113.95	446.63	1.69	498999.15	765468.91	N 32 22 11.02 W	103 36 26.60
	11477.00	6.78	145.94	11434.95	-72.81	100.32	466.95	2.93	498985.52	765487.24	N 32 22 10.89 W	103 36 26.36
	11520.00	5.78	143.87	11477.70	-68.80	96.47	469.65	2.38	498981.67	765489.94	N 32 22 10.85 W	103 36 26.33
	11709.00	10.96	154.35	11664.63	-44.16	72.57	483.05	2.85	498957.77	765503.33	N 32 22 10.61 W	103 36 26.17
	11804.00	24.62	152.53	11754.87	-17.61	46.75	496.15	14.39	498931.85	765516.43	N 32 22 10.35 W	103 36 26.02
	11898.00	34.59	156.50	11836.51	25.42	4.80	515.87	10.80	498890.00	765536.16	N 32 22 9.94 W	103 36 25.80
	11993.00	44.81	160.52	11909.51	83.06	-51.65	537.85	11.09	498833.55	765558.13	N 32 22 9.38 W	103 36 25.54
	12048.38	52.68	165.60	11948.00	123.48	-91.43	549.85	15.79	498793.77	765570.13	N 32 22 8.98 W	103 36 25.41
	12088.00	58.43	168.61	11968.42	155.71	-123.29	557.12	15.79	498761.91	765577.40	N 32 22 8.67 W	103 36 25.33
	12183.00	70.14	174.07	12009.59	240.76	-207.75	569.78	13.36	498677.46	765590.06	N 32 22 7.83 W	103 36 25.18
	12278.00	83.59	177.82	12031.14	333.04	-299.81	576.14	14.69	498585.40	765596.42	N 32 22 6.92 W	103 36 25.12
	12320.00	86.21	177.91	12034.87	374.85	-341.61	577.66	8.23	498543.60	765597.94	N 32 22 6.51 W	103 36 25.10
	12372.00	89.45	177.90	12036.84	426.80	-393.53	579.58	6.23	498491.68	765599.84	N 32 22 5.99 W	103 36 25.09
	12419.00	89.13	178.27	12037.42	473.78	-440.50	581.13	1.04	498444.71	765601.41	N 32 22 5.53 W	103 36 25.07
	12512.00	89.19	177.99	12038.79	568.74	-533.44	584.16	0.31	498351.78	765604.44	N 32 22 4.61 W	103 36 25.04
	12606.00	89.23	174.97	12040.08	660.72	-627.25	589.93	3.21	498257.98	765610.21	N 32 22 3.68 W	103 36 24.98
	12699.00	89.78	174.99	12040.89	753.67	-719.89	598.07	0.59	498165.34	765618.35	N 32 22 2.76 W	103 36 24.90
	12792.00	90.09	175.93	12040.99	846.65	-812.59	605.43	1.06	498072.64	765625.71	N 32 22 1.84 W	103 36 24.82
	12885.00	91.53	179.40	12039.68	939.61	-905.49	609.22	4.04	497979.74	765629.50	N 32 22 0.93 W	103 36 24.78
	12978.00	91.15	185.07	12037.50	1032.11	-998.36	605.60	8.11	497886.88	765625.87	N 32 22 0.01 W	103 36 24.83
	13071.00	91.33	185.86	12035.49	1123.98	-1090.91	596.74	0.87	497794.33	765617.02	N 32 21 59.09 W	103 36 24.94
	13165.00	90.88	185.17	12033.68	1216.84	-1184.46	587.71	0.88	497700.79	765607.99	N 32 21 58.17 W	103 36 25.05
	13202.00	90.94	185.20	12033.09	1253.43	-1221.30	584.37	0.18	497663.94	765604.65	N 32 21 57.80 W	103 36 25.09
	13351.00	91.19	185.30	12030.32	1400.72	-1369.65	570.74	0.18	497515.60	765591.02	N 32 21 56.34 W	103 36 25.27
	13444.00	90.78	185.52	12028.72	1462.22	-1462.22	561.97	0.50	497423.03	765582.25	N 32 21 55.42 W	103 36 25.37
	13538.00	90.78	183.72	12027.44	1585.70	-1555.90	554.40	1.91	497329.35	765574.66	N 32 21 54.49 W	103 36 25.47
	13631.00	90.87	183.88	12026.26	1677.97	-1648.69	548.26	0.19	497236.59	765568.54	N 32 21 53.58 W	103 36 25.55
	13724.00	91.05	182.91	12024.86	1770.32	-1741.52	542.77	1.10	497143.74	765563.05	N 32 21 52.66 W	103 36 25.62
	13818.00	90.81	181.34	12023.34	1863.87	-1835.44	538.28	1.69	497049.8			

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ° ' '')	Longitude (E/W ° ° ' '')
	17036.00	88.88	179.30	12052.94	5076.73	-5052.83	556.18	1.24	493832.55	765576.46	N 32 21 19.89	W 103 36 25.73
	17131.00	88.92	179.47	12054.76	5171.81	-5147.81	557.20	0.18	493737.57	765577.48	N 32 21 18.95	W 103 36 25.72
	17320.00	88.81	179.66	12058.50	5360.32	-5336.77	558.84	0.12	493548.62	765578.92	N 32 21 17.08	W 103 36 25.72
	17415.00	88.81	179.06	12060.64	5455.19	-5431.74	559.70	0.67	493453.66	765579.98	N 32 21 16.14	W 103 36 25.72
	17509.00	88.95	179.46	12062.64	5549.07	-5525.71	560.91	0.56	493359.69	765581.19	N 32 21 15.21	W 103 36 25.71
	17603.00	88.85	179.10	12064.45	5642.95	-5618.68	562.09	0.40	493265.72	765582.37	N 32 21 14.28	W 103 36 25.70
	17698.00	88.75	179.14	12066.44	5737.85	-5714.65	563.55	0.11	493170.75	765583.93	N 32 21 13.34	W 103 36 25.69
	17792.00	88.88	179.07	12068.38	5831.74	-5808.62	565.02	0.16	493076.79	765585.30	N 32 21 12.41	W 103 36 25.68
	17887.00	89.37	178.70	12069.83	5926.65	-5903.59	566.87	0.65	492981.82	765587.15	N 32 21 11.47	W 103 36 25.67
	17981.00	90.05	179.45	12070.31	6020.57	-5997.57	568.38	1.08	492887.84	765588.68	N 32 21 10.54	W 103 36 25.66
	18076.00	89.92	179.37	12070.33	6115.46	-6092.57	569.38	0.16	492792.85	765589.64	N 32 21 9.60	W 103 36 25.66
	18171.00	90.02	180.15	12070.38	6210.31	-6187.57	569.76	0.83	492697.85	765590.04	N 32 21 8.66	W 103 36 25.66
	18266.00	89.95	179.79	12070.41	6305.15	-6282.57	569.81	0.39	492602.88	765590.09	N 32 21 7.72	W 103 36 25.66
	18361.00	89.37	179.19	12070.97	6400.03	-6377.56	570.68	0.88	492507.87	765590.94	N 32 21 6.78	W 103 36 25.66
	18456.00	89.06	179.04	12072.27	6494.94	-6472.54	572.12	0.36	492412.89	765592.40	N 32 21 5.84	W 103 36 25.65
	18551.00	89.50	179.56	12073.47	6589.83	-6567.53	573.28	0.72	492317.91	765593.56	N 32 21 4.90	W 103 36 25.65
	18645.00	89.33	179.79	12074.43	6683.69	-6661.52	573.82	0.30	492223.92	765594.10	N 32 21 3.97	W 103 36 25.65
	18740.00	88.75	179.19	12076.02	6778.56	-6756.50	574.68	0.88	492128.94	765594.94	N 32 21 3.03	W 103 36 25.65
	18835.00	88.82	178.38	12078.03	6873.47	-6851.46	576.68	0.88	492033.99	765596.96	N 32 21 2.09	W 103 36 25.63
	18929.00	88.75	178.47	12080.03	6968.40	-6946.40	579.28	0.12	491940.05	765599.54	N 32 21 1.16	W 103 36 25.61
	19024.00	88.64	178.90	12082.19	7062.32	-7040.35	581.44	0.47	491845.10	765601.72	N 32 21 0.22	W 103 36 25.59
	19118.00	88.78	179.56	12084.30	7156.20	-7134.32	582.70	0.72	491751.14	765602.98	N 32 20 59.29	W 103 36 25.58
	19308.00	88.99	178.11	12088.00	7346.02	-7324.24	586.56	0.77	491561.22	765606.84	N 32 20 57.42	W 103 36 25.55
	19403.00	88.99	178.31	12089.68	7440.94	-7419.20	588.70	1.28	491466.27	765608.98	N 32 20 56.48	W 103 36 25.53
	19592.00	88.99	178.60	12093.01	7629.68	-7608.16	590.50	0.15	491277.31	765610.78	N 32 20 54.61	W 103 36 25.53
	19782.00	88.71	178.75	12096.82	7819.46	-7798.10	593.23	0.47	491087.38	765613.51	N 32 20 52.73	W 103 36 25.51
	19876.00	89.37	178.06	12098.40	7913.40	-7892.05	595.85	1.02	490993.43	765616.13	N 32 20 51.80	W 103 36 25.49
	19969.00	88.99	178.20	12099.73	8008.33	-7985.01	598.07	1.29	490900.47	765618.35	N 32 20 50.88	W 103 36 25.47
	20064.00	88.99	178.58	12101.40	8101.21	-8079.99	599.10	0.38	490805.50	765619.38	N 32 20 49.94	W 103 36 25.47
	20159.00	88.61	178.17	12103.39	8196.08	-8174.96	600.15	0.57	490710.53	765620.43	N 32 20 49.00	W 103 36 25.46
	20254.00	88.61	178.61	12105.70	8290.94	-8269.93	601.17	0.46	490615.56	765621.44	N 32 20 48.06	W 103 36 25.46
	20324.00	88.67	179.21	12107.36	8360.84	-8339.91	601.89	0.58	490545.59	765622.16	N 32 20 47.36	W 103 36 25.45
	20419.00	89.56	177.26	12108.83	8455.79	-8434.84	604.81	2.26	490450.66	765625.09	N 32 20 46.42	W 103 36 25.43
	20608.00	88.70	180.33	12111.70	8644.61	-8623.76	608.79	1.69	490261.75	765629.06	N 32 20 44.56	W 103 36 25.40
	20703.00	87.78	176.64	12114.61	8739.50	-8718.66	611.30	4.00	490166.85	765631.57	N 32 20 43.62	W 103 36 25.37
	20797.00	87.29	177.34	12118.66	8833.41	-8812.44	616.23	0.91	490073.07	765636.50	N 32 20 42.69	W 103 36 25.32
	20892.00	89.12	178.20	12121.63	8928.34	-8907.32	619.92	2.13	489978.20	765640.20	N 32 20 41.75	W 103 36 25.29
	20987.00	89.32	179.28	12122.93	9023.26	-9002.29	622.01	1.16	489883.23	765642.29	N 32 20 40.81	W 103 36 25.27
	21081.00	87.74	179.27	12125.34	9117.13	-9096.25	623.20	1.68	489789.28	765643.48	N 32 20 39.88	W 103 36 25.26
	21176.00	89.87	175.49	12127.32	9212.08	-9191.10	627.54	4.57	489694.42	765647.82	N 32 20 38.94	W 103 36 25.22
	21270.00	90.60	174.75	12128.93	9306.04	-9284.76	635.54	1.11	489600.77	765653.81	N 32 20 38.01	W 103 36 25.14
	21365.00	89.32	174.33	12127.00	9400.98	-9378.33	644.58	1.42	489506.21	765664.85	N 32 20 37.08	W 103 36 25.04
Exit Target Box 2	21392.50	89.37	174.62	12127.31	9428.46	-9406.70	647.22	1.07	489478.84	765667.50	N 32 20 36.81	W 103 36 25.01
	21460.00	89.50	175.33	12127.98	9495.82	-9473.93	653.14	1.07	489411.60	765673.41	N 32 20 36.14	W 103 36 24.95
	21555.00	87.84	178.67	12130.18	9580.88	-9568.76	658.11	3.93	489316.78	765678.38	N 32 20 35.20	W 103 36 24.90
	21649.00	86.91	181.98	12134.49	9684.57	-9662.65	657.58	3.65	489222.90	765677.85	N 32 20 34.27	W 103 36 24.91
	21744.00	86.33	183.82	12140.09	9778.84	-9757.36	652.78	2.03	489128.19	765673.05	N 32 20 33.34	W 103 36 24.97
Enter Target Box 2	21766.50	86.86	184.64	12141.43	9801.10	-9779.75	651.12	4.33	489105.79	765671.40	N 32 20 33.11	W 103 36 24.99
	21839.00	88.57	187.27	12144.32	9872.58	-9851.80	643.61	4.33	489033.75	765683.88	N 32 20 32.40	W 103 36 25.09
	21933.00	90.11	188.62	12145.40	9964.75	-9944.88	630.62	2.18	488940.67	765650.89	N 32 20 31.48	W 103 36 25.25
	22028.00	90.25	187.62	12145.10	10057.84	-10038.93	617.20	1.06	488846.83	765637.48	N 32 20 30.55	W 103 36 25.41
	22123.00	91.59	187.21	12143.58	10151.16	-10133.12	604.94	1.48	488752.44	765625.22	N 32 20 29.62	W 103 36 25.56
100' FSL Crossed	22206.00	91.63	185.68	12141.25	10232.91	-10215.56	595.62	1.84	488670.00	765615.90	N 32 20 28.81	W 103 36 25.67
	22217.00	91.63	185.48	12140.94	10243.77	-10226.50	594.55	1.84	488659.06	765614.83	N 32 20 28.70	W 103 36 25.69
Final MWD	22238.00	91.63	185.60	12140.34	10264.51	-10247.40	592.53	0.57	488638.17	765612.81	N 32 20 28.49	W 103 36 25.71
Proj to TD	22280.00	91.63	185.60	12139.15	10305.98	-10289.18	588.43	0.00	488596.39	765608.71	N 32 20 28.08	W 103 36 25.76

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 35H gyro + MWD 0-22280'MD
	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 35H gyro + MWD 0-22280'MD
	1	26.500	1023.500	Act Stns	30.000	30.000	GYD_GC+DROP+OH	Original Borehole / Oxy Avogato 30-31 State Com 35H gyro + Original Borehole / Oxy Avogato
	1	1023.500	7864.000	Act Stns	30.000	30.000	A010Mb_MWD+IFR1+SAG+MS	30-31 State Com 35H gyro + MWD 0-22280'MD
	1	7864.000	11520.000	Act Stns	30.000	30.000	B001Mb_MWD+HRGM	Original Borehole / Oxy Avogato 30-31 State Com 35H gyro + Original Borehole / Oxy Avogato
	1	11520.000	22280.000	Act Stns	30.000	30.000	A010Mb_MWD+IFR1+SAG+MS	30-31 State Com 35H gyro + MWD 0-22280'MD

...Original Borehole/Oxy Avogato 30-31 State Com 35H gyro + MWD 0-22280'MD

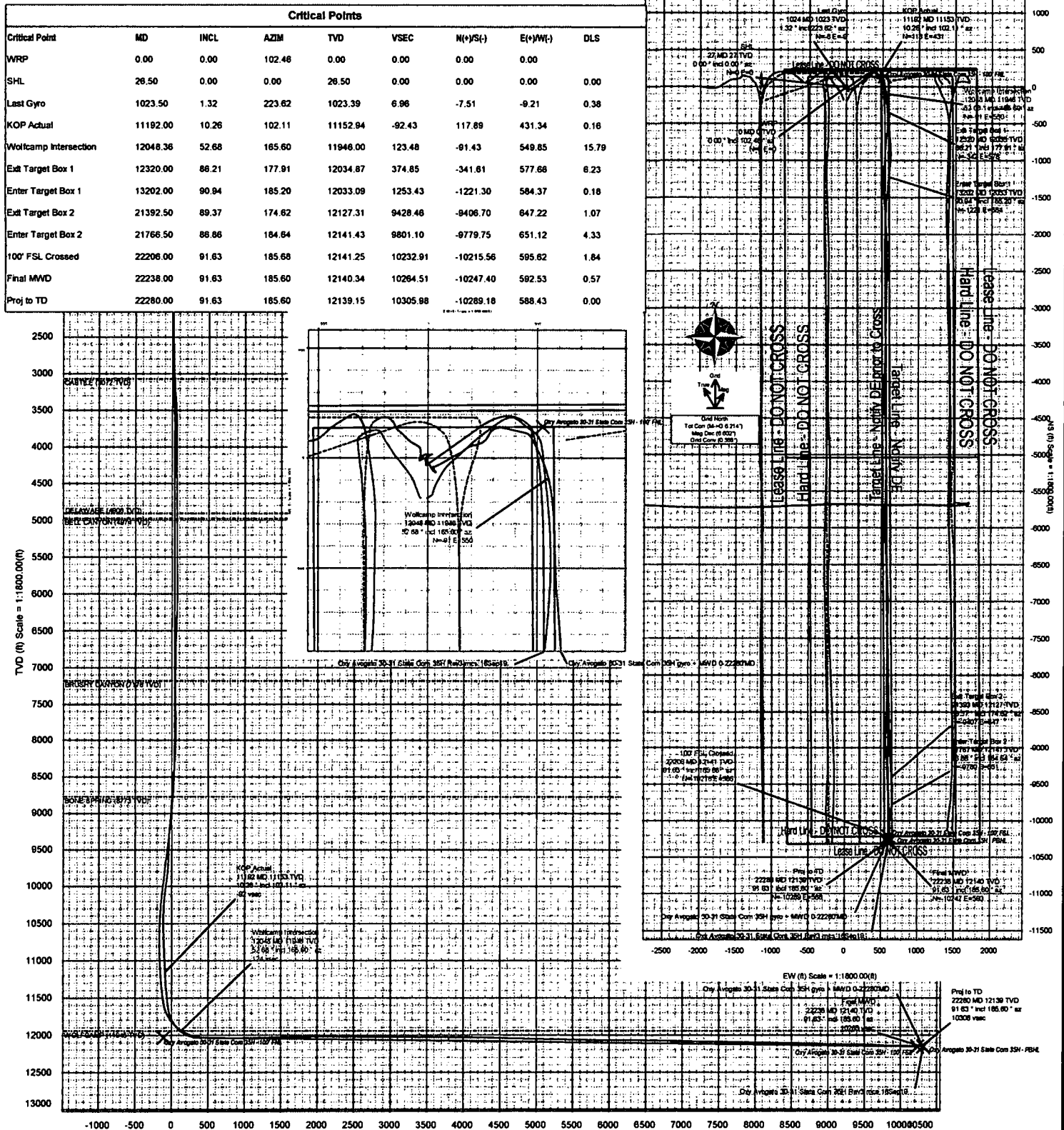
Schlumberger

OXY



Borehole:	Well:	Field:	Structure:
Original Borehole	Oxy Avogato 30-31 State Com 35H	NM Lea County (NAD 83)	Oxy Avogato 30-31 State Com 35H

Gravity & Magnetic Parameters				Surface Location				Miscellaneous			
Model:	IFR1	Dip:	60.08°	Date:	18-Sep-2018	Lat:	N 32 22 9.93	Northing:	488885.27US	Grid Conv:	0.3879°
MagDec:	6.602°	FB:	48061mT	Gravity FB:	998.45mgals (9.80665 Based)	Lon:	W 103 38 31.91	Easting:	765020.37US	Scale Fact:	0.9999839
								Oxy Avogato 30-31 State Com 35H			
								TVD Ref: RKB(3707.81 above MSL)			
								Plan: Oxy Avogato 30-31 State Com 35H gyro + MWD 0-22280MD			



Vertical Section (ft) Azim = 176.64° Scale = 1:1800.00(ft) Origin = 0N/-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 31, 2019

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

S30, T22S, R33E Lea, NM
N 32.36942 W -103.60884

Re:

CLIENT: Oxy USA Inc
WELL: Avogato 30 31 State Com 35H
FIELD: Upper Wolfcamp

RIG: H&P 617
COUNTY: Lea
API NO: 30-025-45931
JOB NO: 19MLH0359

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>
Steven McDonough FS	Avogato 30 31 State Com 35H Original Hole	1147.00 Ft to 22238.00 Ft	September 19, 2019 to October 16, 2019	TelePacer, SlimPulse 3rd Party Corrected

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 32.36942 W -103.60884

I, Steven McDonough certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of September 19, 2019 through October 16, 2019, conduct or supervise the taking of the TelePacer, SlimPulse & 3rd Party Corrected surveys from a depth of 1147.00 feet to a depth of 22238.00 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 35H Well (Original Hole) API No. 30-025-45931 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
Steven McDonough
FS

Steven McDonough

Subscribed and Sworn to before me this 31 day of October (month) 2019 (yr)

My Commission expires:

6/14/2023

Notary Public

Jean-Paul Langlois

(County State)

(signature)

