Schlumberger

Oxy Iridium MDP1 28-21 Fed Com 5H Gyros+MWD 0'- 20599' MD Survey
Geodetic Report
(Def Survey)

Report Date:	April 01, 2019 - 11:43 AM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	OXY	**Vertical Section Azimuth:**	352.015 ° (Grid North)
Field:	NM Eddy County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Oxy Iridium MDP1 28-21 Federal Com 5H / Oxy Iridium MDP1 28-21 Federal Com 5H	**TVD Reference Datum:**	RKB
Well:	Oxy Iridium MDP1 28-21 Federal Com 5H	**TVD Reference Elevation:**	3429.500 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3403.000 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.824 °
Survey Name:	Oxy Iridium MDP1 28-21 Fed Com 5H Gyros+MWD 0'- 20599' MD	**Total Gravity Field Strength:**	998.4488mgn (9.80665 Based)
Survey Date:	February 21, 2019	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	222.833 ° / 12157.236 ft / 6.748 / 1.220	**Total Magnetic Field Strength:**	47993.100 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.988 °
Location Lat / Long:	N 32° 16' 2.72620", W 103° 46' 34.52860"	**Declination Date:**	March 24, 2019
Location Grid N/E Y/X:	N 461468.770 ftUS, E 713522.300 ftUS	**Magnetic Declination Model:**	IFR1
CRS Grid Convergence Angle:	0.2974 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99994305	**Grid Convergence Used:**	0.2974 °
Version / Patch:	2.10.753.0	**Total Corr Mag North->Grid North:**	6.5266 °
		Local Coord Referenced To:	Well Head

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 ° ' ")
WRP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	461468.77	713522.30	N 32 16 2.73	W 103 46 34.53
SHL	26.50	0.12	99.15	26.50	-0.01	0.00	0.03	0.45	461468.77	713522.33	N 32 16 2.73	W 103 46 34.53
	99.50	0.45	99.15	99.50	-0.12	-0.06	0.39	0.45	461468.71	713522.69	N 32 16 2.73	W 103 46 34.52
	130.50	0.49	106.84	130.50	-0.21	-0.12	0.63	0.24	461468.65	713522.93	N 32 16 2.72	W 103 46 34.52
	214.50	0.40	135.07	214.50	-0.59	-0.43	1.18	0.28	461468.34	713523.48	N 32 16 2.72	W 103 46 34.51
	304.50	0.29	156.17	304.49	-1.06	-0.86	1.50	0.18	461467.91	713523.80	N 32 16 2.72	W 103 46 34.51
	398.50	0.50	183.65	398.49	-1.69	-1.49	1.57	0.29	461467.28	713523.87	N 32 16 2.71	W 103 46 34.51
	493.50	0.55	192.02	493.49	-2.53	-2.35	1.45	0.10	461466.42	713523.75	N 32 16 2.70	W 103 46 34.51
Last Gyro	565.50	0.58	204.61	565.48	-3.16	-3.02	1.22	0.18	461465.75	713523.52	N 32 16 2.70	W 103 46 34.51
	681.00	0.91	226.73	680.97	-4.18	-4.18	0.31	0.37	461464.59	713522.61	N 32 16 2.68	W 103 46 34.53
	772.00	0.76	232.56	771.96	-4.90	-5.04	-0.69	0.19	461463.73	713521.61	N 32 16 2.68	W 103 46 34.54
	863.00	0.51	233.17	862.96	-5.39	-5.65	-1.50	0.27	461463.12	713520.80	N 32 16 2.67	W 103 46 34.55
	955.00	0.05	227.01	954.96	-5.61	-5.92	-1.85	0.50	461462.85	713520.45	N 32 16 2.67	W 103 46 34.55
	1048.00	0.35	226.34	1047.96	-5.80	-6.15	-2.09	0.32	461462.62	713520.21	N 32 16 2.67	W 103 46 34.55
	1229.00	0.21	288.57	1228.96	-5.97	-6.42	-2.80	0.17	461462.35	713519.50	N 32 16 2.66	W 103 46 34.56
	1320.00	0.30	187.95	1319.95	-6.13	-6.61	-3.00	0.44	461462.16	713519.31	N 32 16 2.66	W 103 46 34.56
	1507.00	0.24	145.23	1506.95	-6.95	-7.41	-2.84	0.11	461461.36	713519.46	N 32 16 2.65	W 103 46 34.56
	1696.00	0.19	323.24	1695.95	-7.02	-7.49	-2.80	0.23	461461.28	713519.50	N 32 16 2.65	W 103 46 34.56
	1790.00	0.19	308.69	1789.95	-6.77	-7.26	-3.02	0.05	461461.51	713519.28	N 32 16 2.65	W 103 46 34.56
	1885.00	0.24	183.39	1884.95	-6.86	-7.36	-3.15	0.40	461461.41	713519.15	N 32 16 2.65	W 103 46 34.57
	1979.00	0.23	337.80	1978.95	-6.87	-7.39	-3.23	0.49	461461.38	713519.07	N 32 16 2.65	W 103 46 34.57
	2074.00	0.46	265.98	2073.95	-6.65	-7.24	-3.69	0.47	461461.53	713518.61	N 32 16 2.65	W 103 46 34.57
	2169.00	0.47	297.19	2168.95	-6.40	-7.08	-4.41	0.26	461461.69	713517.89	N 32 16 2.66	W 103 46 34.58
	2264.00	0.05	5.54	2263.95	-6.14	-6.87	-4.76	0.48	461461.90	713517.54	N 32 16 2.66	W 103 46 34.58
	2358.00	0.43	289.35	2357.94	-5.94	-6.71	-5.08	0.45	461462.06	713517.22	N 32 16 2.66	W 103 46 34.59
	2453.00	0.46	318.56	2452.94	-5.45	-6.30	-5.67	0.24	461462.47	713516.63	N 32 16 2.66	W 103 46 34.60
	2547.00	0.33	323.79	2546.94	-4.90	-5.80	-6.08	0.14	461462.97	713516.22	N 32 16 2.67	W 103 46 34.60
	2641.00	0.19	333.50	2640.94	-4.52	-5.44	-6.31	0.16	461463.33	713515.99	N 32 16 2.67	W 103 46 34.60
	2736.00	0.38	36.09	2735.94	-4.14	-5.05	-6.20	0.36	461463.72	713516.10	N 32 16 2.68	W 103 46 34.60
	2830.00	0.35	81.63	2829.94	-3.91	-4.76	-5.73	0.30	461464.01	713516.57	N 32 16 2.68	W 103 46 34.60
	2925.00	1.69	284.56	2924.92	-3.37	-4.36	-6.80	2.12	461464.41	713515.50	N 32 16 2.68	W 103 46 34.61
	3019.00	5.22	284.89	3018.74	-1.18	-2.91	-12.27	3.76	461465.86	713510.03	N 32 16 2.70	W 103 46 34.67
	3113.00	7.86	285.78	3112.12	3.07	-0.07	-22.59	2.81	461468.70	713499.71	N 32 16 2.73	W 103 46 34.79
	3207.00	10.33	287.11	3204.93	9.24	4.16	-36.84	2.64	461472.93	713485.47	N 32 16 2.77	W 103 46 34.96
	3302.00	11.32	288.79	3298.24	17.05	9.67	-53.80	1.09	461478.44	713468.50	N 32 16 2.82	W 103 46 35.15
	3397.00	11.38	286.07	3391.38	25.07	15.27	-71.64	0.57	461484.04	713450.67	N 32 16 2.88	W 103 46 35.36
	3491.00	11.01	285.80	3483.59	32.47	20.28	-89.19	0.40	461489.05	713433.12	N 32 16 2.93	W 103 46 35.57
	3586.00	11.00	277.65	3576.85	38.57	23.96	-106.90	1.64	461492.73	713415.41	N 32 16 2.97	W 103 46 35.77
	3680.00	10.97	275.23	3669.13	43.04	25.97	-124.69	0.49	461494.73	713397.61	N 32 16 2.99	W 103 46 35.98
	3775.00	10.85	270.04	3762.41	46.35	26.80	-142.64	1.04	461495.56	713379.67	N 32 16 3.00	W 103 46 36.19
	3869.00	11.00	263.20	3854.71	47.77	25.74	-160.39	1.39	461494.51	713361.92	N 32 16 2.99	W 103 46 36.39
	3964.00	11.05	258.29	3947.96	47.37	22.82	-178.30	0.99	461491.59	713344.01	N 32 16 2.96	W 103 46 36.60
	4059.00	10.93	252.05	4041.22	45.22	18.20	-195.79	1.26	461486.96	713326.52	N 32 16 2.92	W 103 46 36.81
	4153.00	10.69	252.22	4133.56	42.19	12.79	-212.57	0.26	461481.56	713309.75	N 32 16 2.86	W 103 46 37.00
	4248.00	10.95	250.65	4226.87	38.91	7.11	-229.47	0.41	461475.88	713292.84	N 32 16 2.81	W 103 46 37.20
	4268.00	11.09	251.77	4246.50	38.20	5.88	-233.09	1.28	461474.65	713289.22	N 32 16 2.80	W 103 46 37.24
	4465.00	11.81	253.62	4439.58	31.89	-5.74	-270.43	0.41	461463.03	713251.89	N 32 16 2.68	W 103 46 37.68
	4500.00	12.16	253.46	4473.81	30.81	-7.80	-277.40	1.00	461460.97	713244.92	N 32 16 2.66	W 103 46 37.76
	4594.00	12.27	253.57	4565.69	27.87	-13.44	-296.47	0.12	461455.33	713225.85	N 32 16 2.61	W 103 46 37.98
	4784.00	12.14	255.76	4751.39	22.73	-24.06	-335.20	0.25	461444.71	713187.12	N 32 16 2.51	W 103 46 38.43
	4878.00	12.14	259.30	4843.29	21.19	-28.33	-354.49	0.79	461440.44	713167.83	N 32 16 2.46	W 103 46 38.66
	4973.00	12.39	262.24	4936.12	20.75	-31.56	-374.41	0.71	461437.21	713147.92	N 32 16 2.43	W 103 46 38.89
	5068.00	12.47	264.60	5028.90	21.26	-33.90	-394.72	0.54	461434.87	713127.61	N 32 16 2.41	W 103 46 39.13
	5162.00	12.27	267.40	5120.72	22.65	-35.31	-414.80	0.67	461433.46	713107.53	N 32 16 2.40	W 103 46 39.36
	5257.00	12.24	272.70	5213.56	25.47	-35.30	-434.94	1.18	461433.48	713087.38	N 32 16 2.40	W 103 46 39.60
	5352.00	12.04	275.83	5306.43	29.70	-33.81	-454.86	0.72	461434.96	713067.47	N 32 16 2.41	W 103 46 39.83
	5447.00	12.54	279.33	5399.26	35.14	-31.14	-474.89	0.94	461437.64	713047.44	N 32 16 2.44	W 103 46 40.06
	5541.00	13.45	278.59	5490.85	41.29	-27.85	-495.77	0.98	461440.92	713026.56	N 32 16 2.48	W 103 46 40.30
	5636.00	13.70	277.58	5583.19	47.46	-24.71	-517.85	0.36	461444.06	713004.48	N 32 16 2.51	W 103 46 40.56
	5730.00	13.44	278.30	5674.57	53.51	-21.67	-539.69	0.33	461447.10	712982.64	N 32 16 2.54	W 103 46 40.82
	5825.00	13.20	278.67	5767.01	59.72	-18.44	-561.34	0.27	461450.33	712960.99	N 32 16 2.57	W 103 46 41.07
	6013.00	13.87	278.12	5949.79	72.12	-12.02	-604.87	0.36	461456.75	712917.47	N 32 16 2.64	W 103 46 41.57
	6108.00	13.76	275.65	6042.04	77.94	-9.30	-627.38	0.63	461459.47	712894.95	N 32 16 2.67	W 103 46 41.84
	6203.00	13.94	274.74	6134.28	83.13	-7.24	-650.03	0.30	461461.53	712872.31	N 32 16 2.69	W 103 46 42.10
	6297.00	13.90	272.27	6225.52	87.63	-5.86	-672.60	0.63	461462.91	712849.74	N 32 16 2.70	W 103 46 42.36
	6487.00	13.99	267.98	6409.93	94.08	-5.77	-718.35	0.55	461463.00	712803.99	N 32 16 2.71	W 103 46 42.89
	6581.00	13.76	267.06	6501.18	96.24	-6.74	-740.87	0.34	461462.03	712781.47	N 32 16 2.70	W 103 46 43.16
	6676.00	13.77	265.04	6593.46	97.83	-8.30	-763.42	0.51	461460.47	712758.93	N 32 16 2.68	W 103 46 43.42
	6770.00	13.70	264.99	6684.77	99.00	-10.24	-785.65	0.08	461458.53	712736.69	N 32 16 2.67	W 103 46 43.68
	6865.00	13.78	265.31	6777.05	100.24	-12.14	-808.14	0.12	461456.63	712714.21	N 32 16 2.65	W 103 46 43.94
	6959.00	13.51	268.23	6868.40	102.07	-13.40	-830.27	0.79	461455.37	712692.08	N 32 16 2.64	W 103 46 44.20
	7149.00	13.12	270.63	7053.29	107.70	-13.85	-874.02	0.36	461454.92	712648.34	N 32 16 2.63	W 103 46 44.71
	7338.00	13.55	276.60	7237.20	116.49	-11.07	-917.46	0.76	461457.70	712604.89	N 32 16 2.66	W 103 46 45.21
	7432.00	13.80	276.12	7328.54	121.99	-8.60	-939.55	0.29	461460.17	712582.81	N 32 16 2.69	W 103 46 45.47
	7622.00	11.11	276.18	7514.05	132.00	-4.22	-980.29	1.42	461464.55	712542.07	N 32 16 2.73	W 103 46 45.95
	7717.00	10.35	273.68	7607.39	135.96	-2.68	-997.90	0.94	461466.09	712524.46	N 32 16 2.75	W 103 46 46.15
	7906.00	10.12	265.69	7793.39	140.46	-2.84	-1031.41	0.76	461465.93	712490.96	N 32 16 2.75	W 103 46 46.54

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 ° ' ")
Bone Spring Intersection	*8068.00*	*11.21*	*264.41*	*7952.59*	*142.03*	*-5.45*	*-1061.27*	*0.69*	*461463.32*	*712461.09*	*N 32 16 2.73*	*W 103 46 46.89*
	8095.00	11.39	264.22	7979.07	142.24	-5.97	-1066.53	0.69	461462.80	712455.83	N 32 16 2.72	W 103 46 46.95
	8284.00	11.08	274.61	8164.47	146.92	-6.39	-1103.21	1.08	461462.38	712419.16	N 32 16 2.72	W 103 46 47.38
	8473.00	10.50	287.70	8350.15	158.35	0.31	-1137.72	1.33	461469.08	712384.65	N 32 16 2.79	W 103 46 47.78
	8568.00	10.64	287.92	8443.54	165.93	5.64	-1154.31	0.15	461474.41	712368.06	N 32 16 2.84	W 103 46 47.97
	8757.00	9.70	281.40	8629.57	178.84	14.15	-1186.52	0.79	461482.92	712335.85	N 32 16 2.93	W 103 46 48.35
	8852.00	8.89	274.94	8723.33	183.14	16.37	-1201.68	1.39	461485.14	712320.69	N 32 16 2.95	W 103 46 48.52
	8946.00	10.15	264.71	8816.04	185.15	16.23	-1217.17	2.24	461485.00	712305.20	N 32 16 2.95	W 103 46 48.70
	9041.00	11.97	256.99	8909.28	184.68	13.24	-1235.10	2.47	461482.01	712287.27	N 32 16 2.92	W 103 46 48.91
	9136.00	11.98	268.10	9002.22	184.87	10.69	-1254.56	2.42	461479.46	712267.82	N 32 16 2.90	W 103 46 49.14
	9230.00	12.35	286.06	9094.14	190.00	13.15	-1273.98	4.03	461481.92	712248.40	N 32 16 2.92	W 103 46 49.36
	9325.00	13.47	299.19	9186.76	200.83	21.36	-1293.40	3.30	461490.13	712228.97	N 32 16 3.00	W 103 46 49.59
	9420.00	15.06	309.61	9278.84	216.63	34.63	-1312.58	3.17	461503.40	712209.80	N 32 16 3.14	W 103 46 49.81
KOP Actual	9456.00	15.53	312.09	9313.57	223.78	40.84	-1319.75	2.24	461509.61	712202.62	N 32 16 3.20	W 103 46 49.90
	9653.00	21.39	339.87	9500.70	279.28	92.39	-1351.78	5.29	461561.16	712170.60	N 32 16 3.71	W 103 46 50.27
	9759.00	22.46	352.02	9599.09	318.44	130.61	-1361.25	4.39	461599.38	712161.13	N 32 16 4.09	W 103 46 50.37
	9853.00	30.44	340.90	9683.23	359.86	170.99	-1371.55	9.96	461639.75	712150.83	N 32 16 4.49	W 103 46 50.49
	9948.00	41.58	340.88	9759.96	414.57	223.68	-1389.81	11.73	461692.43	712132.57	N 32 16 5.01	W 103 46 50.70
	10042.00	54.72	344.24	9822.54	483.51	290.38	-1410.54	14.23	461759.13	712111.84	N 32 16 5.67	W 103 46 50.94
	10136.00	64.50	342.45	9870.04	563.55	367.94	-1433.81	10.53	461836.69	712088.57	N 32 16 6.44	W 103 46 51.20
100' FSL Crossing	*10136.75*	*64.57*	*342.48*	*9870.36*	*564.22*	*368.59*	*-1434.02*	*10.59*	*461837.34*	*712088.37*	*N 32 16 6.45*	*W 103 46 51.21*
	10231.00	73.97	346.08	9903.69	651.46	453.35	-1457.79	10.59	461922.10	712064.60	N 32 16 7.29	W 103 46 51.48
	10326.00	73.79	354.65	9930.12	742.59	543.23	-1473.05	8.67	462011.97	712049.34	N 32 16 8.18	W 103 46 51.65
	10420.00	83.00	357.48	9949.01	834.33	634.99	-1479.32	10.23	462103.72	712043.07	N 32 16 9.09	W 103 46 51.72
	10515.00	88.56	1.41	9956.00	928.22	729.67	-1480.23	7.16	462198.40	712042.16	N 32 16 10.02	W 103 46 51.72
	10677.00	90.18	358.11	9957.78	1088.70	891.63	-1480.91	2.27	462360.35	712041.48	N 32 16 11.62	W 103 46 51.72
	10770.00	90.28	357.15	9957.41	1181.26	984.55	-1484.75	1.04	462453.26	712037.64	N 32 16 12.54	W 103 46 51.76
	10863.00	90.35	356.94	9956.90	1273.90	1077.42	-1489.55	0.24	462546.13	712032.84	N 32 16 13.46	W 103 46 51.81
	10957.00	90.28	356.65	9956.38	1367.57	1171.28	-1494.80	0.32	462639.98	712027.59	N 32 16 14.39	W 103 46 51.87
	11050.00	90.11	358.10	9956.06	1460.16	1264.17	-1499.06	1.57	462732.87	712023.33	N 32 16 15.31	W 103 46 51.91
	11145.00	90.14	359.25	9955.86	1554.52	1359.15	-1501.26	1.21	462827.84	712021.13	N 32 16 16.25	W 103 46 51.93
	11239.00	90.42	359.49	9955.40	1647.74	1453.14	-1502.29	0.39	462921.83	712020.10	N 32 16 17.18	W 103 46 51.94
	11334.00	90.45	0.43	9954.68	1741.83	1548.14	-1502.36	0.99	463016.82	712020.03	N 32 16 18.12	W 103 46 51.93
	11428.00	90.73	1.05	9953.71	1834.73	1642.12	-1501.14	0.72	463110.80	712021.24	N 32 16 19.05	W 103 46 51.91
	11522.00	90.59	0.90	9952.62	1927.58	1736.10	-1499.54	0.22	463204.77	712022.84	N 32 16 19.98	W 103 46 51.89
	11617.00	90.62	0.98	9951.62	2021.42	1831.09	-1497.99	0.09	463299.75	712024.40	N 32 16 20.92	W 103 46 51.86
	11712.00	90.73	0.88	9950.50	2115.27	1926.07	-1496.44	0.16	463394.72	712025.94	N 32 16 21.86	W 103 46 51.84
	11807.00	90.62	0.06	9949.38	2209.23	2021.06	-1495.66	0.87	463489.71	712026.72	N 32 16 22.80	W 103 46 51.83
	11901.00	90.42	358.87	9948.53	2302.43	2115.05	-1496.54	1.28	463583.69	712025.85	N 32 16 23.73	W 103 46 51.83
	11996.00	90.32	359.30	9947.92	2396.71	2210.03	-1498.06	0.46	463678.67	712024.33	N 32 16 24.67	W 103 46 51.84
	12091.00	90.32	359.12	9947.39	2490.96	2305.02	-1499.37	0.19	463773.66	712023.02	N 32 16 25.61	W 103 46 51.85
	12185.00	90.52	359.29	9946.70	2584.21	2399.01	-1500.67	0.28	463867.64	712021.72	N 32 16 26.54	W 103 46 51.86
	12280.00	90.04	359.19	9946.23	2678.46	2494.00	-1501.93	0.52	463962.62	712020.46	N 32 16 27.48	W 103 46 51.87
	12374.00	90.21	359.36	9946.03	2771.70	2587.99	-1503.12	0.26	464056.61	712019.27	N 32 16 28.41	W 103 46 51.88
	12563.00	90.32	1.56	9945.15	2958.64	2776.97	-1501.61	1.17	464245.58	712020.78	N 32 16 30.28	W 103 46 51.85
	12658.00	89.97	1.53	9944.91	3052.33	2871.94	-1499.04	0.37	464340.54	712023.34	N 32 16 31.22	W 103 46 51.81
	12752.00	90.18	1.95	9944.79	3144.98	2965.89	-1496.19	0.50	464434.49	712026.20	N 32 16 32.15	W 103 46 51.78
	12847.00	90.04	1.99	9944.61	3238.55	3060.84	-1492.92	0.15	464529.43	712029.46	N 32 16 33.09	W 103 46 51.73
	12941.00	90.35	1.79	9944.29	3331.16	3154.79	-1489.82	0.39	464623.37	712032.56	N 32 16 34.02	W 103 46 51.69
	13036.00	90.69	1.21	9943.43	3424.85	3249.75	-1487.34	0.71	464718.33	712035.05	N 32 16 34.96	W 103 46 51.66
	13225.00	89.73	0.92	9942.73	3611.50	3438.71	-1483.82	0.53	464907.28	712038.56	N 32 16 36.83	W 103 46 51.60
	13413.00	89.59	0.72	9943.85	3797.28	3626.69	-1481.13	0.13	465095.25	712041.25	N 32 16 38.69	W 103 46 51.56
	13508.00	89.80	1.23	9944.35	3891.12	3721.67	-1479.52	0.58	465190.22	712042.87	N 32 16 39.63	W 103 46 51.54
	13602.00	89.90	0.90	9944.60	3983.95	3815.66	-1477.77	0.37	465284.20	712044.62	N 32 16 40.56	W 103 46 51.51
	13697.00	89.66	359.23	9944.97	4078.00	3910.65	-1477.66	1.78	465379.19	712044.72	N 32 16 41.50	W 103 46 51.50
	13792.00	89.35	358.84	9945.79	4172.29	4005.64	-1479.26	0.52	465474.17	712043.12	N 32 16 42.44	W 103 46 51.52
	13886.00	88.97	359.11	9947.16	4265.59	4099.61	-1480.94	0.50	465568.14	712041.44	N 32 16 43.37	W 103 46 51.53
	14075.00	89.39	358.63	9949.87	4453.21	4288.55	-1484.67	0.34	465757.07	712037.72	N 32 16 45.24	W 103 46 51.56
	14170.00	89.32	358.81	9950.94	4547.56	4383.52	-1486.79	0.20	465852.03	712035.59	N 32 16 46.18	W 103 46 51.58
	14359.00	89.11	358.51	9953.53	4735.27	4572.45	-1491.21	0.19	466040.95	712031.18	N 32 16 48.05	W 103 46 51.62
	14453.00	89.08	359.06	9955.01	4828.60	4666.42	-1493.21	0.59	466134.92	712029.18	N 32 16 48.98	W 103 46 51.64
	14548.00	89.28	359.43	9956.37	4922.84	4761.40	-1494.46	0.44	466229.89	712027.93	N 32 16 49.92	W 103 46 51.65
	14737.00	89.15	359.54	9958.96	5110.22	4950.38	-1496.16	0.09	466418.85	712026.23	N 32 16 51.79	W 103 46 51.66
	14926.00	89.42	359.44	9961.32	5297.60	5139.35	-1497.84	0.15	466607.82	712024.55	N 32 16 53.66	W 103 46 51.66
	15116.00	89.83	359.02	9962.56	5486.09	5329.33	-1500.39	0.31	466797.79	712022.00	N 32 16 55.54	W 103 46 51.68
	15304.00	89.42	358.65	9963.79	5672.75	5517.29	-1504.21	0.29	466985.73	712018.18	N 32 16 57.40	W 103 46 51.72
	15493.00	89.39	358.66	9965.76	5860.47	5706.23	-1508.65	0.02	467174.66	712013.74	N 32 16 59.27	W 103 46 51.76
	15682.00	90.25	359.30	9966.35	6048.08	5895.19	-1512.01	0.57	467363.62	712010.38	N 32 17 1.14	W 103 46 51.78
	15871.00	89.70	358.70	9966.43	6235.67	6084.16	-1515.31	0.43	467552.57	712007.08	N 32 17 3.01	W 103 46 51.81
	15966.00	89.83	358.49	9966.82	6330.04	6179.13	-1517.64	0.26	467647.54	712004.75	N 32 17 3.95	W 103 46 51.83
	16155.00	90.11	1.73	9966.92	6517.14	6368.11	-1517.28	1.72	467836.50	712005.11	N 32 17 5.82	W 103 46 51.82
	16249.00	90.14	2.14	9966.72	6609.73	6462.05	-1514.10	0.44	467930.44	712008.28	N 32 17 6.75	W 103 46 51.77
	16438.00	90.38	2.16	9965.86	6795.78	6650.92	-1507.01	0.13	468119.30	712015.37	N 32 17 8.61	W 103 46 51.68
	16627.00	90.04	1.46	9965.17	6982.02	6839.82	-1501.04	0.41	468308.19	712021.34	N 32 17 10.48	W 103 46 51.60
	16816.00	90.38	2.78	9964.47	7168.08	7028.69	-1494.05	0.72	468497.04	712028.33	N 32 17 12.35	W 103 46 51.51
	16910.00	90.18	1.76	9964.01	7260.58	7122.61	-1490.33	1.11	468590.96	712032.06	N 32 17 13.28	W 103 46 51.46
	17099.00	90.35	1.43	9963.14	7446.94	7311.53	-1485.07	0.20	468779.87	712037.32	N 32 17 15.15	W 103 46 51.39
	17194.00	89.63	1.39	9963.16	7540.67	7406.50	-1482.73	0.76	468874.84	712039.66	N 32 17 16.09	W 103 46 51.35
	17289.00	89.94	0.82	9963.51	7634.47	7501.49	-1480.90	0.68	468969.81	712041.49	N 32 17 17.03	W 103 46 51.33
	17383.00	90.56	0.92	9963.10	7727.35	7595.47	-1479.47	0.67	469063.80	712042.91	N 32 17 17.96	W 103 46 51.30
	17478.00	90.38	1.68	9962.32	7821.10	7690.45	-1477.32	0.82	469158.76	712045.07	N 32 17 18.90	W 103 46 51.27
	17572.00	89.76	1.15	9962.21	7913.84	7784.42	-1475.00	0.87	469252.73	712047.39	N 32 17 19.83	W 103 46 51.24
	17667.00	90.52	0.30	9961.98	8007.74	7879.41	-1473.79	1.20	469347.71	712048.59	N 32 17 20.77	W 103 46 51.22
	17856.00	90.25	0.82	9960.71	8194.64	8068.39	-1471.95	0.31	469536.69	712050.44	N 32 17 22.64	W 103 46 51.19
	17950.00	90.76	0.24	9959.88	8287.60	8162.38	-1471.08	0.82	469630.67	712051.31	N 32 17 23.57	W 103 46 51.17
	18044.00	90.18	359.78	9959.11	8380.68	8256.38	-1471.06	0.79	469724.66	712051.33	N 32 17 24.50	W 103 46 51.17
	18139.00	90.62	359.78	9958.44	8474.81	8351.38	-1471.43	0.46	469819.65	712050.96	N 32 17 25.44	W 103 46 51.16
	18328.00	90.35	359.15	9956.84	8662.20	8540.36	-1473.19	0.36	470008.63	712049.20	N 32 17 27.31	W 103 46 51.17
	18423.00	90.52	359.56	9956.12	8756.42	8635.35	-1474.26	0.47	470103.61	712048.13	N 32 17 28.25	W 103 46 51.18
	18587.00	90.03	359.42	9955.34	8919.03	8799.34	-1475.72	0.31	470267.59	712046.67	N 32 17 29.87	W 103 46 51.19
	18682.00	90.10	357.89	9955.23	9013.39	8894.31	-1477.95	1.61	470362.56	712044.44	N 32 17 30.81	W 103 46 51.21
	18871.00	90.17	358.55	9954.78	9201.28	9083.22	-1483.82	0.35	470551.46	712038.57	N 32 17 32.68	W 103 46 51.26
	18965.00	90.13	358.92	9954.54	9294.63	9177.20	-1485.90	0.40	470645.43	712036.49	N 32 17 33.61	W 103 46 51.28
	19059.00	90.20	358.13	9954.27	9388.02	9271.17	-1488.32	0.84	470739.39	712034.07	N 32 17 34.54	W 103 46 51.31
	19154.00	90.37	358.92	9953.79	9482.41	9366.13	-1490.76	0.85	470834.35	712031.63	N 32 17 35.48	W 103 46 51.33
	19248.00	90.27	358.76	9953.27	9575.74	9460.11	-1492.66	0.20	470928.32	712029.72	N 32 17 36.41	W 103 46 51.34
	19343.00	90.27	358.51	9952.82	9670.11	9555.08	-1494.93	0.26	471023.29	712027.46	N 32 17 37.35	W 103 46 51.37
	19438.00	90.41	359.38	9952.26	9764.41	9650.06	-1496.68	0.93	471118.27	712025.71	N 32 17 38.29	W 103 46 51.38
	19532.00	90.44	359.07	9951.56	9857.66	9744.05	-1497.95	0.33	471212.25	712024.44	N 32 17 39.22	W 103 46 51.39
	19627.00	90.41	358.48	9950.85	9952.00	9839.03	-1499.98	0.62	471307.22	712022.41	N 32 17 40.16	W 103 46 51.41
	19816.00	90.24	358.77	9949.78	10139.74	10027.97	-1504.51	0.18	471496.15	712017.88	N 32 17 42.03	W 103 46 51.45
	19911.00	90.44	358.65	9949.22	10234.09	10122.94	-1506.65	0.25	471591.12	712015.74	N 32 17 42.97	W 103 46 51.47
	20005.00	90.20	358.51	9948.69	10327.47	10216.91	-1508.98	0.30	471685.08	712013.41	N 32 17 43.90	W 103 46 51.49
	20099.00	90.27	358.93	9948.31	10420.83	10310.89	-1511.08	0.45	471779.05	712011.31	N 32 17 44.83	W 103 46 51.51
	20289.00	90.20	359.14	9947.53	10609.40	10500.86	-1514.28	0.12	471969.01	712008.11	N 32 17 46.71	W 103 46 51.53
	20383.00	90.37	358.74	9947.06	10702.72	10594.84	-1516.02	0.46	472062.99	712006.37	N 32 17 47.64	W 103 46 51.55
	20477.00	90.17	358.89	9946.62	10796.05	10688.82	-1517.96	0.27	472156.96	712004.43	N 32 17 48.57	W 103 46 51.57

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 ° ' ")
100' FNL Crossing	*20520.63*	*90.23*	*358.95*	*9946.47*	*10839.37*	*10732.44*	*-1518.78*	*0.20*	*472200.58*	*712003.60*	*N 32 17 49.00*	*W 103 46 51.57*
Final Survey	20553.00	90.27	359.00	9946.33	10871.50	10764.81	-1519.36	0.20	472232.94	712003.03	N 32 17 49.32	W 103 46 51.58
Proj. to Bit	20599.00	90.27	359.00	9946.11	10917.16	10810.80	-1520.17	0.00	472278.93	712002.22	N 32 17 49.78	W 103 46 51.58

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 (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	26.500	1/98.425	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Iridium MDP1 28-21 Fed Com 5H Gyros+MWD 0'- 20599' MD
	1	26.500	26.500	Act Stns	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Iridium MDP1 28-21 Fed Com 5H Gyros+MWD 0'- 20599' MD
	1	26.500	565.500	Act Stns	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Iridium MDP1 28-21 Fed Com 5H
	1	565.500	20599.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Iridium MDP1 28-21 Fed Com 5H