

Directional Survey Calculations	Measured Depth (ft)	Sub-Sea Incl. (deg)	Vertical Azim. (ft)	True Vert Depth (ft)	Northings (+) Southings (-) (ft)	Eastings (+) Westings (-) (ft)	Vert Section (ft)	DLS deg/100' (deg)	FNL	FSL	FWL	FEL
SHL	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5103	200	3358	1881
BHL	8722	90.20	358.90	4453.07	4617.09	-38.88	4617.25	0.00	485	4818	3381	1878
Miss Entry	4810	78.07	22.75	4463.19	707.07	-6.41	707.10	9.87	4395	907	3361	1881
Top Perf	4986	90.87	357.93	4477.02	882.00	-10.25	882.05	5.96	4221	1082	3359	1883
Bottom Perf	8425	88.55	358.37	4451.21	4320.17	-32.96	4320.29	0.91	782	4521	3383	1875

Survey Points	NW Corner XY Coord	X	Y	Surface XY	X	Y	m		
							North Line slope	East Line slope	West Line slope
	SW Corner XY Coord	2139591	203571		2143017	198512	0.0127352	-0.0088797	
	NE Corner XY Coord	2144852	203638				0.0175707		
	SE Corner XY Coord	2144899	198345				-0.0135389		

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	0	0.0	0	0	0	0	0	0	5103	200	3358	1881
	250	0.40	213.30	250.00	-1	0	-0.73	0.16	5103	199	3357	1881
	500	1.30	213.30	499.97	-4	-3	-3.81	0.36	5106	196	3355	1883
	700	1.40	213.30	699.91	-8	-5	-7.72	0.05	5110	192	3352	1886
	932	1.10	213.30	931.86	-12	-8	-11.93	0.13	5115	188	3349	1889
	1392	1.20	188.70	1391.77	-20	-11	-20.35	0.11	5123	180	3346	1892
	1867	0.40	167.80	1866.72	-27	-11	-26.89	0.18	5129	173	3346	1892
	2342	0.40	86.60	2341.71	-29	-9	-28.43	0.11	5131	172	3348	1890
	2816	0.30	26.10	2815.70	-27	-7	-27.23	0.08	5130	173	3350	1888
	3291	0.10	279.10	3290.70	-26	-7	-26.05	0.07	5129	174	3350	1888
	3538	0.50	227.40	3537.70	-27	-8	-26.74	0.18	5129	173	3349	1889
	3575	0.50	299.10	3574.69	-27	-8	-26.77	1.58	5129	173	3349	1889
	3607	2.20	342.30	3606.69	-26	-9	-26.11	5.83	5129	174	3348	1889
	3638	4.50	358.70	3637.63	-24	-9	-24.33	7.96	5127	176	3348	1890
	3670	5.80	11.40	3669.50	-22	-9	-21.49	5.38	5124	179	3349	1889
	3702	7.00	9.70	3701.30	-18	-8	-17.99	3.80	5121	182	3349	1889
	3733	9.60	6.70	3731.97	-14	-7	-13.56	8.50	5116	187	3350	1888
	3765	12.30	5.00	3763.39	-8	-7	-7.52	8.50	5110	193	3351	1887
	3797	13.80	8.30	3794.56	0	-6	-0.36	5.23	5103	200	3352	1886
	3828	15.30	7.90	3824.57	7	-5	7.34	4.85	5095	207	3353	1885
	3860	17.60	5.90	3855.26	16	-4	16.33	7.40	5086	216	3354	1884
	3892	20.60	4.00	3885.49	27	-3	26.75	9.57	5076	227	3355	1883
	3923	24.00	2.20	3914.17	38	-2	38.49	11.19	5064	239	3356	1882
	3955	27.80	1.00	3942.95	52	-2	52.46	11.99	5050	253	3356	1882
	3986	31.00	0.30	3969.95	68	-2	67.67	10.38	5035	268	3357	1882
	4018	33.80	0.30	3996.97	85	-2	84.81	8.75	5018	285	3357	1881
	4050	36.50	359.40	4023.13	103	-2	103.23	8.59	4999	303	3357	1881
	4081	39.00	358.30	4047.64	122	-2	122.21	8.35	4980	322	3357	1881
	4113	41.40	358.10	4072.08	143	-3	142.85	7.51	4960	343	3357	1882
	4145	43.70	358.20	4095.65	164	-3	164.49	7.19	4938	365	3356	1882
	4176	45.90	358.60	4117.65	186	-4	186.32	7.15	4916	386	3356	1883
	4208	48.30	359.30	4139.43	210	-4	209.76	7.67	4893	410	3356	1883
	4240	49.80	359.90	4160.40	234	-5	233.93	4.90	4869	434	3356	1883
Top of Tangent @ 4270'	4271	50.90	359.80	4180.18	258	-5	257.80	3.56	4845	458	3356	1883
	4335	50.20	359.30	4220.85	307	-5	307.22	1.25	4795	507	3357	1883
	4366	49.60	358.90	4240.82	331	-5	330.93	2.17	4772	531	3357	1883
	4430	48.80	358.20	4282.64	379	-7	379.37	1.50	4723	580	3356	1884
	4461	48.40	358.00	4303.14	403	-7	402.62	1.38	4700	603	3356	1884
Btm of Tangent @ 4502'	4493	48.30	358.10	4324.40	426	-8	426.52	0.39	4676	627	3355	1885
	4524	50.80	358.40	4344.51	450	-9	450.10	8.10	4652	650	3355	1885
	4556	53.80	359.60	4364.08	475	-9	475.42	9.83	4627	676	3355	1886
	4588	57.30	359.30	4382.18	502	-10	501.80	10.96	4601	702	3355	1886
	4619	60.70	359.10	4398.14	528	-10	528.37	10.98	4574	729	3355	1886
	4651	64.10	359.60	4412.97	557	-10	556.72	10.71	4546	757	3355	1886
	4682	67.90	0.70	4425.57	585	-10	585.03	12.68	4518	785	3355	1886
	4714	70.30	2.10	4436.99	615	-9	614.91	8.54	4488	815	3356	1885
	4746	72.80	2.60	4447.12	645	-8	645.22	7.95	4457	845	3358	1883
	4777	75.30	2.00	4455.63	675	-7	674.99	8.28	4428	875	3360	1882
	4808	77.90	0.30	4462.82	705	-6	705.13	9.94	4397	905	3361	1881
	4840	80.60	359.50	4468.79	737	-6	736.57	8.79	4366	937	3361	1880
	4872	83.30	359.20	4473.27	768	-7	768.25	8.49	4334	968	3361	1881
	4903	86.20	358.40	4476.10	799	-7	799.11	9.70	4303	999	3361	1881
	4956	90.80	357.90	4477.49	852	-9	852.07	8.73	4250	1052	3360	1882
	5048	91.00	358.00	4476.05	944	-12	944.02	0.24	4159	1144	3358	1885
	5140	90.90	358.20	4474.52	1036	-16	1035.98	0.24	4067	1236	3356	1887
	5232	90.70	359.50	4473.24	1128	-17	1127.96	1.43	3975	1328	3355	1888
	5324	90.30	358.50	4472.43	1220	-19	1219.96	1.17	3883	1420	3355	1889
	5416	90.50	359.70	4471.79	1312	-20	1311.95	1.32	3791	1512	3355	1889
	5508	90.10	359.40	4471.31	1404	-21	1403.95	0.54	3699	1604	3355	1889
	5599	89.60	359.60	4471.55	1495	-22	1494.95	0.59	3608	1695	3356	1889
	5694	90.60	359.80	4471.38	1590	-22	1589.94	1.07	3513	1790	3357	1889
	5789	89.50	359.90	4471.30	1685	-23	1684.94	1.16	3418	1885	3358	1888
	5884	88.80	0.00	4472.71	1780	-23	1779.93	0.74	3323	1980	3359	1887
	5979	90.50	0.50	4473.29	1875	-22	1874.91	1.87	3228	2075	3361	1886
	6074	92.10	359.90	4471.13	1970	-22	1969.88	1.80	3133	2170	3362	1885

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								FNL	FSL	FWL	FEL
6169	91.60	359.40	4468.07	2065	-23	2064.83	0.74	3038	2265	3363	1885
6264	91.10	358.80	4465.83	2160	-24	2159.80	0.82	2943	2360	3363	1885
6359	91.00	359.00	4464.09	2255	-26	2254.78	0.24	2848	2455	3362	1886
6454	90.70	358.90	4462.68	2350	-28	2349.76	0.33	2753	2550	3362	1887
6549	90.10	359.20	4462.01	2445	-29	2444.76	0.71	2658	2645	3361	1888
6644	89.20	358.20	4462.59	2540	-31	2539.74	1.42	2563	2740	3361	1889
6739	89.90	0.20	4463.34	2635	-33	2634.73	2.23	2468	2835	3360	1890
6834	89.50	359.80	4463.84	2730	-33	2729.73	0.60	2373	2930	3362	1889
6929	90.30	359.70	4464.00	2825	-33	2824.73	0.85	2278	3025	3363	1889
7024	90.40	359.40	4463.42	2920	-34	2919.72	0.33	2183	3120	3363	1888
7119	91.70	0.30	4461.68	3015	-34	3014.70	1.66	2088	3215	3364	1888
7214	91.40	359.50	4459.11	3109	-34	3109.67	0.90	1993	3310	3365	1887
7308	91.30	359.50	4456.90	3203	-35	3203.64	0.11	1899	3404	3366	1887
7404	92.10	359.60	4454.05	3299	-36	3299.60	0.84	1803	3500	3366	1887
7499	91.70	1.30	4450.90	3394	-35	3394.53	1.84	1708	3595	3368	1885
7594	90.70	0.30	4448.91	3489	-34	3489.48	1.49	1613	3690	3371	1883
7688	89.70	0.60	4448.58	3583	-33	3583.47	1.11	1519	3784	3373	1882
7783	90.90	1.50	4448.09	3678	-31	3678.43	1.58	1424	3879	3376	1879
7878	89.90	1.00	4447.42	3773	-29	3773.38	1.18	1329	3974	3379	1876
7973	90.10	0.50	4447.42	3868	-28	3868.36	0.57	1234	4069	3382	1874
8068	90.20	359.80	4447.17	3963	-28	3963.35	0.74	1139	4164	3383	1873
8163	89.80	359.20	4447.17	4058	-29	4058.35	0.76	1044	4259	3384	1873
8258	89.60	359.40	4447.67	4153	-30	4153.35	0.30	949	4354	3384	1873
8353	88.40	358.90	4449.33	4248	-31	4248.33	1.37	854	4449	3384	1874
8448	88.60	358.20	4451.82	4343	-34	4343.28	0.77	759	4544	3383	1875
8543	89.80	359.00	4453.14	4438	-36	4438.26	1.52	664	4639	3382	1877
8638	90.00	359.20	4453.31	4533	-37	4533.26	0.30	569	4734	3382	1878
8672	90.20	358.90	4453.25	4567	-38	4567.26	1.06	535	4768	3381	1878
8722	90.20	358.90	4453.07	4617	-39	4617.25	0.00	485	4818	3381	1878