

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	7725	202	4635
BHL	9276	92.40	2.60	4793.07	4749.07	-24.44	4749.13	0.00	2976	4951	4639	652
Miss Entry	5044	75.47	358.43	4797.56	523.87	9.00	523.80	9.29	7201	726	4648	647
Top Perf	5532	88.98	357.06	4825.02	1008.64	-19.71	1008.75	1.09	6716	1211	4622	673
Bottom Perf	9176	91.82	2.36	4796.76	4649.24	-28.76	4649.33	2.12	3076	4851	4634	657

Survey Points				X		Y		m			
NW Corner XY Coord	2103319	134777					North Line slope	0.0066175			
SW Corner XY Coord	2103366	126840			Surface XY	2108000	127083	East Line slope	-0.0066877		
NE Corner XY Coord	2108608	134812					South Line slope	0.0088763			
SE Corner XY Coord	2108661	126887					West Line slope	-0.0059216			

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0	0.0	0	0	0	0	0	0	7725	202	4635	660
242	0.40	107.00	242.00	-0.247	0.808	-0.25	0.17	7725	202	4636	659
489	0.40	107.00	488.99	-0.751	2.457	-0.77	0.00	7726	201	4638	657
765	0.00	107.00	764.99	-1.033	3.378	-1.05	0.14	7726	201	4639	656
863	0.20	107.00	862.99	-1.083	3.542	-1.11	0.20	7726	201	4639	656
1138	0.30	98.90	1137.99	-1.335	4.712	-1.36	0.04	7726	200	4640	655
1412	0.20	92.50	1411.98	-1.466	5.898	-1.50	0.04	7726	200	4641	654
1886	0.40	121.30	1885.98	-2.362	8.139	-2.41	0.05	7727	199	4644	652
2360	0.40	127.90	2359.97	-4.238	10.858	-4.31	0.01	7729	198	4646	649
2834	0.20	55.60	2833.96	-4.787	12.846	-4.87	0.08	7730	197	4648	647
3309	0.60	328.10	3308.95	-2.207	12.216	-2.28	0.13	7727	200	4648	647
3783	0.60	97.60	3782.94	-0.428	13.365	-0.51	0.23	7725	201	4649	646
4034	0.60	37.90	4033.93	0.435	15.475	0.34	0.24	7725	202	4651	644
4066	0.50	54.00	4065.93	0.649	15.690	0.55	0.57	7724	202	4651	644
4097	1.30	357.70	4096.92	1.080	15.786	0.98	3.56	7724	203	4651	644
4129	3.10	356.00	4128.90	2.306	15.711	2.21	5.63	7723	204	4651	644
4160	4.70	2.50	4159.83	4.411	15.708	4.31	5.35	7721	206	4651	644
4192	6.20	0.10	4191.68	7.449	15.768	7.35	4.74	7718	209	4651	644
4222	8.20	358.30	4221.44	11.208	15.707	11.11	6.71	7714	213	4651	644
4254	10.40	358.90	4253.02	16.377	15.584	16.28	6.88	7709	218	4651	644
4286	11.40	1.50	4284.44	22.427	15.612	22.33	3.48	7703	224	4651	644
4318	13.60	358.00	4315.68	29.349	15.563	29.25	7.27	7696	231	4651	644
4349	16.20	355.70	4345.64	37.305	15.111	37.21	8.60	7688	239	4651	644
4381	19.30	353.20	4376.11	47.010	14.150	46.92	9.97	7678	249	4650	645
4412	22.50	354.00	4405.07	57.999	12.923	57.92	10.36	7667	260	4649	646
4444	25.00	356.80	4434.36	70.842	11.906	70.77	8.57	7654	273	4648	647
4475	27.60	359.60	4462.15	84.566	11.490	84.49	9.29	7640	286	4647	648
4506	30.20	0.90	4489.28	99.546	11.562	99.47	8.63	7626	301	4648	647
4537	33.30	1.10	4515.64	115.854	11.848	115.78	10.01	7609	318	4648	647
4569	36.20	0.70	4541.93	134.090	12.132	134.01	9.09	7591	336	4648	647
4600	38.70	359.80	4566.54	152.938	12.210	152.86	8.26	7572	355	4649	646
4632	41.70	359.50	4590.98	173.590	12.082	173.51	9.39	7551	375	4649	646
4664	45.40	359.70	4614.17	195.633	11.930	195.55	11.57	7529	397	4649	646
4695	48.60	359.30	4635.31	218.301	11.730	218.22	10.37	7507	420	4648	646
4727	51.30	358.80	4655.89	242.790	11.322	242.71	8.52	7482	445	4648	647
4758	53.80	358.20	4674.74	267.390	10.675	267.32	8.21	7458	469	4648	647
4789	56.50	357.70	4692.46	292.812	9.764	292.74	8.81	7432	495	4647	648
4821	58.90	358.60	4709.55	319.844	8.893	319.78	7.87	7405	522	4646	649
4852	60.80	359.00	4725.12	346.643	8.333	346.58	6.23	7378	548	4646	649
4884	63.10	0.40	4740.17	374.880	8.189	374.82	8.16	7350	577	4646	649
4915	65.30	0.90	4753.66	402.787	8.507	402.72	7.24	7322	605	4646	648
4947	67.30	1.90	4766.52	432.077	9.224	432.01	6.87	7293	634	4647	648
4978	69.80	0.60	4777.86	460.920	9.851	460.85	8.96	7264	663	4648	647
5010	72.40	359.00	4788.23	491.191	9.742	491.12	9.40	7234	693	4648	647
5041	75.30	358.60	4796.85	520.958	9.118	520.89	9.44	7204	723	4648	647
5073	77.10	356.80	4804.48	552.006	7.869	551.95	7.84	7173	754	4647	648
5105	79.80	356.30	4810.89	583.298	5.982	583.25	8.58	7142	785	4645	650
5136	81.80	356.30	4815.84	613.834	4.007	613.80	6.45	7111	816	4643	652
5168	84.00	356.40	4819.80	645.522	1.986	645.50	6.88	7079	847	4641	653
5200	86.30	356.70	4822.50	677.348	0.067	677.33	7.25	7048	879	4640	655
5231	87.30	356.80	4824.23	708.249	-1.688	708.25	3.24	7017	910	4638	657
5263	88.20	356.70	4825.49	740.173	-3.500	740.18	2.83	6985	942	4636	658
5294	89.70	356.80	4826.06	771.117	-5.258	771.13	4.85	6954	973	4635	660
5325	91.00	356.30	4825.87	802.060	-7.123	802.09	4.49	6923	1004	4633	661
5357	91.10	356.00	4825.28	833.982	-9.271	834.02	0.99	6891	1036	4631	663
5389	91.70	356.00	4824.50	865.894	-11.503	865.95	1.87	6859	1068	4629	665
5420	90.50	356.40	4823.91	896.820	-13.557	896.89	4.08	6828	1099	4627	667
5452	89.50	356.80	4823.91	928.763	-15.455	928.84	3.37	6796	1131	4625	669
5545	88.90	357.10	4825.20	1021.622	-20.402	1021.73	0.72	6703	1224	4621	673
5576	89.20	356.90	4825.72	1052.575	-22.025	1052.69	1.16	6672	1255	4620	675
5608	87.90	356.70	4826.53	1084.514	-23.810	1084.64	4.11	6640	1287	4618	676
5640	87.30	356.70	4827.87	1116.433	-25.651	1116.57	1.87	6608	1319	4616	678
5671	87.30	356.80	4829.33	1147.349	-27.406	1147.50	0.32	6577	1349	4615	679
5703	87.00	356.40	4830.92	1179.253	-29.302	1179.41	1.56	6546	1381	4613	681
5735	86.60	356.10	4832.71	1211.134	-31.391	1211.31	1.56	6514	1413	4611	683

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								FNL	FSL	FWL	FEL
5766	86.50	356.80	4834.57	1242.019	-33.307	1242.20	2.28	6483	1444	4609	685
5798	86.80	357.20	4836.44	1273.920	-34.979	1274.12	1.56	6451	1476	4608	686
5829	87.70	357.70	4837.93	1304.853	-36.357	1305.06	3.32	6420	1507	4607	687
5861	89.00	358.70	4838.85	1336.823	-37.361	1337.03	5.12	6388	1539	4606	688
5892	88.90	358.90	4839.42	1367.811	-38.010	1368.02	0.72	6357	1570	4606	689
5924	89.20	359.30	4839.95	1399.803	-38.513	1400.02	1.56	6325	1602	4605	689
5956	89.80	0.90	4840.23	1431.800	-38.457	1432.01	5.34	6293	1634	4605	689
5986	90.40	2.20	4840.18	1461.788	-37.646	1462.00	4.77	6263	1664	4606	688
6018	90.90	2.30	4839.81	1493.761	-36.389	1493.96	1.59	6231	1696	4608	686
6049	90.90	2.50	4839.33	1524.730	-35.091	1524.92	0.65	6200	1727	4609	685
6144	92.50	2.30	4836.51	1619.602	-31.115	1619.77	1.70	6105	1822	4614	680
6238	92.30	2.30	4832.57	1713.444	-27.346	1713.58	0.21	6011	1916	4618	676
6333	92.20	1.80	4828.84	1808.310	-23.950	1808.42	0.54	5917	2010	4622	672
6428	91.90	1.50	4825.44	1903.209	-21.217	1903.31	0.45	5822	2105	4625	668
6523	90.10	1.10	4823.78	1998.166	-19.062	1998.25	1.94	5727	2200	4628	665
6620	89.50	1.00	4824.12	2095.149	-17.284	2095.22	0.63	5630	2297	4631	663
6715	90.50	0.50	4824.12	2190.139	-16.041	2190.20	1.18	5535	2392	4632	661
6809	90.90	0.40	4822.98	2284.129	-15.303	2284.18	0.44	5441	2486	4634	660
6904	92.00	1.10	4820.57	2379.089	-14.060	2379.13	1.37	5346	2581	4635	658
7000	88.80	0.00	4819.90	2475.068	-13.139	2475.10	3.52	5250	2677	4637	656
7095	89.30	0.50	4821.48	2570.053	-12.724	2570.08	0.74	5155	2772	4638	655
7188	93.00	0.70	4819.61	2663.013	-11.751	2663.03	3.98	5062	2865	4639	654
7283	92.00	0.80	4815.47	2757.914	-10.508	2757.92	1.06	4967	2960	4641	652
7378	90.10	0.10	4813.73	2852.890	-9.763	2852.89	2.13	4872	3055	4643	650
7472	90.30	0.30	4813.40	2946.888	-9.434	2946.89	0.30	4778	3149	4643	649
7567	89.60	358.90	4813.48	3041.883	-10.098	3041.89	1.65	4683	3244	4643	649
7662	89.90	358.70	4813.89	3136.861	-12.087	3136.88	0.38	4588	3339	4642	651
7757	90.20	357.60	4813.81	3231.810	-15.154	3231.84	1.20	4493	3434	4639	653
7851	91.40	357.60	4812.50	3325.717	-19.090	3325.77	1.28	4399	3528	4636	657
7945	90.50	356.50	4810.94	3419.577	-23.927	3419.66	1.51	4305	3622	4632	661
8040	89.60	356.80	4810.86	3514.414	-29.478	3514.53	1.00	4210	3717	4627	666
8160	94.10	358.20	4806.98	3634.203	-34.710	3634.35	3.93	4091	3836	4622	670
8255	95.00	358.40	4799.45	3728.861	-37.520	3729.02	0.97	3996	3931	4620	672
8349	93.10	358.90	4792.81	3822.596	-39.728	3822.77	2.09	3902	4025	4618	674
8,444	90.9	359.9	4,789	3917.525	-40.722	3,918	2.543507	3807	4120	4618	674
8,538	90.6	0.5	4,788	4011.516	-40.394	4,012	0.713589	3713	4214	4619	673
8,633	88.4	0.6	4,789	4106.502	-39.482	4,107	2.31818	3618	4309	4620	672
8,728	88.599998	0.5	4,792	4201.465	-38.570	4,202	0.235358	3523	4404	4622	670
8823	89.30	1.10	4793.32	4296.439	-37.244	4296.59	0.97	3428	4499	4624	668
8918	88.50	0.60	4795.14	4391.410	-35.835	4391.55	0.99	3333	4594	4626	666
9014	88.50	1.50	4797.66	4487.360	-34.076	4487.49	0.94	3237	4690	4628	664
9108	90.50	1.80	4798.48	4581.313	-31.370	4581.42	2.15	3143	4783	4631	660
9206	92.40	2.60	4796.00	4679.204	-27.610	4679.28	2.10	3046	4881	4636	656
9276	92.40	2.60	4793.07	4749.070	-24.437	4749.13	0.00	2976	4951	4639	652