

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
									200	5154	661	4629
SHL	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	200	5154	661	4629
BHL	9770	94.90	177.30	5351.39	-4826.25	72.00	4826.49	0.00	5025	330	715	4604
Miss Entry	5547	65.12	179.14	5312.71	-613.62	4.94	613.63	11.69	813	4541	663	4630
Top Perf	5549	65.35	179.23	5313.49	-615.46	4.95	615.47	11.72	814	4540	663	4630
Bottom Perf	9665	93.93	177.96	5359.31	-4721.65	67.79	4721.87	2.59	4921	435	711	4607

Survey Points	NW Corner XY Coord	X	Y	Surface XY	X	Y	m	
							North Line slope	0.0007563
	SW Corner XY Coord	1764728	160963		1765370	166103	East Line slope	-0.0097016
	NE Corner XY Coord	1769997	166306				South Line slope	-0.0225479
	SE Corner XY Coord	1770050	160843				West Line slope	-0.003746

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								200	5154	661	4629
0	0.0	0	0	0	0	0	0	200	5154	661	4629
900	0.30	96.30	900.00	0	2	0.27	0.03	200	5154	663	4627
961	0.30	110.20	961.00	0	3	0.34	0.12	200	5154	663	4627
1148	0.20	96.10	1147.99	-1	3	0.55	0.06	200	5154	664	4626
1528	0.30	306.30	1527.99	0	3	0.03	0.13	200	5155	664	4626
2003	1.30	330.00	2002.94	5	0	-5.39	0.22	194	5160	660	4630
2478	0.80	346.40	2477.86	13	-4	-13.29	0.12	186	5168	657	4633
2953	0.40	2.60	2952.83	18	-5	-18.17	0.09	181	5173	656	4634
3427	0.50	24.20	3426.82	22	-4	-21.71	0.04	178	5176	657	4633
3808	0.80	30.10	3807.79	26	-2	-25.52	0.08	174	5180	659	4631
3869	1.00	113.20	3868.79	26	-1	-25.67	1.97	174	5180	660	4630
3901	2.50	147.60	3900.77	25	0	-24.97	5.52	175	5179	661	4630
3932	4.20	163.40	3931.72	23	0	-23.31	6.19	176	5178	661	4629
3964	6.50	167.40	3963.58	20	1	-20.42	7.28	179	5175	662	4628
3995	7.90	168.70	3994.33	17	2	-16.61	4.55	183	5171	663	4627
4027	7.80	167.90	4026.03	12	3	-12.33	0.46	187	5167	664	4627
4059	7.50	166.90	4057.75	8	4	-8.17	1.03	191	5163	665	4626
4090	6.90	165.40	4088.50	4	5	-4.39	2.03	195	5159	665	4625
4122	6.50	165.80	4120.29	1	6	-0.77	1.26	199	5155	666	4624
4185	5.80	163.30	4182.92	-6	7	5.74	1.19	205	5149	668	4622
4280	4.10	163.00	4277.56	-14	10	13.59	1.79	213	5141	670	4620
4375	3.60	158.90	4372.35	-20	12	19.63	0.60	219	5135	672	4618
4407	3.30	158.00	4404.29	-21	13	21.43	0.95	221	5133	673	4617
4439	3.00	154.00	4436.24	-23	13	23.04	1.16	222	5132	674	4616
4470	2.70	154.10	4467.21	-24	14	24.42	0.97	224	5130	675	4616
4502	3.60	168.20	4499.16	-26	14	26.09	3.69	226	5129	675	4615
4534	5.70	174.10	4531.05	-29	15	28.65	6.72	228	5126	675	4615
4565	8.40	178.80	4561.81	-32	15	32.45	8.90	232	5122	676	4615
4597	10.40	179.90	4593.38	-38	15	37.68	6.27	237	5117	676	4615
4629	13.40	184.30	4624.69	-44	15	44.26	9.79	244	5111	675	4615
4660	16.20	186.90	4654.66	-52	14	52.14	9.28	252	5103	675	4616
4692	17.90	186.00	4685.25	-61	13	61.45	5.38	261	5093	673	4617
4724	20.30	184.40	4715.49	-72	12	71.88	7.68	271	5083	672	4618
4755	22.60	182.40	4744.34	-83	11	83.19	7.78	283	5072	672	4619
4787	24.40	181.40	4773.69	-96	11	95.94	5.76	295	5059	671	4619
4818	25.90	183.70	4801.75	-109	10	109.10	5.77	309	5046	671	4620
4850	27.90	184.70	4830.28	-123	9	123.53	6.41	323	5031	670	4621
4882	30.30	184.80	4858.24	-139	8	139.03	7.50	339	5016	668	4623
4913	32.20	184.80	4884.74	-155	7	155.05	6.13	355	5000	667	4624
4945	33.00	182.70	4911.70	-172	6	172.25	4.33	372	4982	666	4626
4977	34.50	180.60	4938.31	-190	5	190.02	5.94	390	4965	665	4626
5008	35.50	179.80	4963.70	-208	5	207.80	3.55	407	4947	665	4627
5040	36.90	178.60	4989.52	-227	5	226.69	4.90	426	4928	665	4626
5072	39.80	178.80	5014.62	-247	6	246.54	9.07	446	4908	665	4626
5103	42.90	179.90	5037.89	-267	6	267.02	10.27	467	4888	666	4626
5135	45.50	180.40	5060.83	-289	6	289.33	8.20	489	4865	665	4626
5167	48.00	180.00	5082.75	-313	6	312.63	7.87	512	4842	665	4627
5198	50.20	180.40	5103.05	-336	6	336.06	7.16	536	4819	665	4627
5230	50.80	180.90	5123.40	-361	5	360.75	2.23	560	4794	665	4628
5261	50.60	181.00	5143.03	-385	5	384.73	0.69	584	4770	664	4628
5293	49.90	180.60	5163.50	-409	5	409.33	2.39	609	4745	664	4629
5325	49.90	181.80	5184.11	-434	4	433.80	2.87	633	4721	663	4630
5356	49.60	180.70	5204.14	-457	4	457.45	2.88	657	4697	663	4630
5388	49.50	180.70	5224.90	-482	3	481.80	0.31	681	4673	662	4631
5420	50.50	180.00	5245.47	-506	3	506.31	3.55	706	4648	662	4631
5451	54.10	179.10	5264.42	-531	3	530.84	11.84	730	4624	662	4631
5483	58.20	178.90	5282.24	-557	4	557.40	12.82	757	4597	662	4631
5515	61.40	178.70	5298.34	-585	4	585.05	10.01	785	4570	663	4631
5546	65.00	179.10	5312.31	-613	5	612.72	11.67	812	4542	663	4630
5578	68.70	180.50	5324.89	-642	5	642.13	12.24	842	4512	663	4631
5610	72.20	180.10	5335.60	-672	5	672.28	11.00	872	4482	663	4631
5642	74.50	181.40	5344.77	-703	4	702.93	8.17	902	4452	663	4632
5673	77.90	180.80	5352.16	-733	4	733.03	11.13	933	4422	662	4633
5705	80.10	182.10	5358.27	-764	3	764.42	7.95	964	4390	661	4634
5737	82.30	181.40	5363.16	-796	2	796.02	7.21	996	4358	660	4635

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5760	83.80	180.80	5365.95	-819	2	818.85	7.02	1018	4336	659	4636
5843	88.10	181.40	5371.81	-902	0	901.60	5.23	1101	4253	657	4638
5874	89.60	181.20	5372.43	-933	-1	932.58	4.88	1132	4222	657	4639
5905	90.00	180.90	5372.54	-964	-1	963.57	1.61	1163	4191	656	4640
5997	90.70	180.50	5371.97	-1056	-2	1055.56	0.88	1255	4099	655	4642
6088	91.50	180.10	5370.23	-1147	-3	1146.54	0.98	1346	4008	654	4643
6181	90.40	180.10	5368.69	-1240	-3	1239.52	1.18	1439	3915	653	4644
6272	89.10	180.00	5369.08	-1331	-3	1330.52	1.43	1530	3824	653	4645
6367	90.70	179.80	5369.25	-1426	-3	1425.52	1.70	1625	3729	653	4646
6462	91.70	179.40	5367.26	-1521	-2	1520.49	1.13	1720	3634	653	4646
6557	91.20	179.10	5364.86	-1615	-1	1615.46	0.61	1815	3539	654	4646
6652	90.30	179.20	5363.61	-1710	0	1710.44	0.95	1910	3444	655	4646
6747	89.80	178.80	5363.53	-1805	2	1805.43	0.67	2005	3349	656	4645
6842	90.50	178.80	5363.28	-1900	4	1900.42	0.74	2100	3254	658	4644
6937	89.70	179.00	5363.11	-1995	6	1995.41	0.87	2195	3159	659	4643
7032	88.80	178.60	5364.36	-2090	8	2090.38	1.04	2290	3064	661	4642
7127	88.40	178.30	5366.68	-2185	11	2185.33	0.53	2385	2969	663	4640
7222	87.70	178.50	5369.91	-2280	13	2280.24	0.77	2480	2875	665	4638
7317	87.80	177.50	5373.64	-2375	16	2375.12	1.06	2575	2780	668	4636
7412	89.40	179.40	5375.96	-2470	19	2470.06	2.61	2670	2685	671	4634
7507	90.60	179.00	5375.96	-2565	20	2565.06	1.33	2765	2590	672	4634
7602	90.70	179.60	5374.88	-2660	22	2660.05	0.64	2860	2495	672	4634
7697	90.70	179.90	5373.72	-2755	22	2755.04	0.32	2954	2400	672	4634
7792	89.10	180.80	5373.89	-2850	21	2850.03	1.93	3049	2305	671	4636
7887	89.10	180.40	5375.38	-2945	20	2945.01	0.42	3144	2210	670	4638
7982	90.00	179.90	5376.13	-3040	20	3040.00	1.08	3239	2115	669	4639
8077	90.20	179.90	5375.96	-3135	20	3135.00	0.21	3334	2020	669	4640
8172	90.10	179.30	5375.71	-3230	21	3230.00	0.64	3429	1925	670	4640
8266	90.00	178.60	5375.63	-3324	23	3323.99	0.75	3523	1831	671	4639
8361	90.70	179.10	5375.05	-3419	25	3418.97	0.91	3618	1736	673	4638
8455	89.80	179.30	5374.64	-3513	26	3512.97	0.98	3712	1642	673	4638
8550	89.60	177.80	5375.14	-3608	28	3607.94	1.59	3807	1547	676	4636
8645	89.80	176.80	5375.64	-3703	33	3702.85	1.07	3902	1452	680	4633
8740	91.70	176.20	5374.39	-3798	39	3797.68	2.10	3997	1358	685	4628
8835	92.00	177.00	5371.33	-3892	44	3892.48	0.90	4092	1263	690	4623
8930	91.50	176.80	5368.42	-3987	49	3987.32	0.57	4187	1168	695	4619
9025	89.50	177.80	5367.60	-4082	54	4082.22	2.35	4282	1074	699	4615
9120	89.40	179.00	5368.51	-4177	56	4177.19	1.27	4377	979	702	4614
9215	90.30	178.10	5368.76	-4272	59	4272.16	1.34	4472	884	704	4612
9310	90.70	178.40	5367.93	-4367	62	4367.12	0.53	4566	789	706	4610
9405	90.90	179.60	5366.60	-4462	63	4462.10	1.28	4661	694	707	4609
9500	89.80	179.60	5366.02	-4557	64	4557.10	1.16	4756	599	708	4610
9595	92.70	178.80	5363.95	-4652	65	4652.06	3.17	4851	504	709	4609
9720	94.90	177.30	5355.66	-4776	70	4776.72	2.13	4976	380	713	4606
9770	94.90	177.30	5351.39	-4826	72	4826.49	0.00	5026	330	715	4604