

DIRECTIONAL SURVEY FOR WELL LD16-21
RAW DATA

WELL No. Z2A-21-781-D-LD16(LD16-21) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 39

THE CONDUCTOR IS VERTICAL

No.	MEASURED DEPTH	DEVIATION ANGLE	ORIENTATION
1	892	1.00	N - 28.00 - E
2	1278	1.00	N - 37.00 - W
3	1749	1.00	N - 32.00 - W
4	2047	1.00	N - 90.00 - W
5	2109	2.00	S - 5.00 - W
6	2169	3.75	S - 5.00 - W
7	2232	5.00	S - 5.00 - W
8	2263	6.00	S - 8.00 - W
9	2294	6.75	S - 10.00 - W
10	2376	8.00	S - 13.00 - W
11	2532	9.75	S - 14.00 - W
12	2665	10.25	S - 16.00 - W
13	2791	12.00	S - 17.50 - W
14	2916	13.50	S - 17.00 - W
15	3102	16.75	S - 19.50 - W
16	3226	18.50	S - 22.00 - W
17	3467	19.50	S - 23.00 - W
18	3592	19.00	S - 25.50 - W
19	3778	19.00	S - 26.00 - W
20	3987	19.25	S - 28.00 - W
21	4158	19.25	S - 27.00 - W
22	4311	20.00	S - 29.00 - W
23	4467	21.00	S - 30.00 - W
24	4592	21.25	S - 34.00 - W
25	4765	21.50	S - 36.50 - W
26	4982	20.75	S - 38.00 - W
27	5167	21.00	S - 42.00 - W
28	5361	20.50	S - 48.00 - W
29	5440	20.00	S - 41.00 - W
30	5541	19.00	S - 34.50 - W
31	5726	18.00	S - 38.00 - W
32	5910	18.00	S - 39.00 - W
33	6126	18.25	S - 42.00 - W
34	6402	17.75	S - 47.50 - W
35	6708	17.00	S - 56.00 - W
36	6933	17.00	S - 62.00 - W
37	7300	18.00	S - 65.00 - W
38	7557	18.00	S - 67.00 - W
39	7800	18.50	S - 69.00 - W

DIRECTIONAL SURVEY FOR WELL L016-21

COMPUTATIONS AT 10 FEET INCREMENTS

WELL NO. Z2A-21-781-D-L016(L016-21) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 39

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 370' MD.

	MEASURED DEPTH	VERTICAL DEPTH	TRUE SUB-SEA	TOTAL CD - ORDINATES			HORIZONTAL DISTANCE	
*	370	370.00	320.00	N	0.00	E	0.00	0.00 *
	380	379.99	329.99	N	0.00	E	0.00	0.00
	390	389.99	339.99	N	0.00	E	0.00	0.01
	400	399.99	349.99	N	0.01	E	0.00	0.02
	410	409.99	359.99	N	0.02	E	0.01	0.03
	420	419.99	369.99	N	0.04	E	0.02	0.05
	430	429.99	379.99	N	0.06	E	0.03	0.07
	440	439.99	389.99	N	0.08	E	0.04	0.09
	450	449.99	399.99	N	0.10	E	0.05	0.12
	460	459.99	409.99	N	0.13	E	0.07	0.15
	470	469.99	419.99	N	0.16	E	0.08	0.18
	480	479.99	429.99	N	0.19	E	0.10	0.22
	490	489.99	439.99	N	0.23	E	0.12	0.26
	500	499.99	449.99	N	0.26	E	0.14	0.30
	510	509.99	459.99	N	0.30	E	0.16	0.35
	520	519.99	469.99	N	0.35	E	0.18	0.40
	530	529.99	479.99	N	0.40	E	0.21	0.45
	540	539.99	489.99	N	0.45	E	0.24	0.51
	550	549.99	499.99	N	0.50	E	0.26	0.57
	560	559.99	509.99	N	0.56	E	0.29	0.63
	570	569.99	519.99	N	0.61	E	0.32	0.70
	580	579.99	529.99	N	0.68	E	0.36	0.77
	590	589.99	539.99	N	0.74	E	0.39	0.84
	600	599.99	549.99	N	0.81	E	0.43	0.92
	610	609.99	559.99	N	0.88	E	0.47	1.00
	620	619.99	569.99	N	0.95	E	0.51	1.08
	630	629.99	579.99	N	1.03	E	0.55	1.17
	640	639.99	589.99	N	1.11	E	0.59	1.26
	650	649.99	599.99	N	1.19	E	0.63	1.35
	660	659.99	609.99	N	1.28	E	0.68	1.45
	670	669.99	619.99	N	1.37	E	0.72	1.55
	680	679.99	629.99	N	1.46	E	0.77	1.65
	690	689.99	639.99	N	1.55	E	0.82	1.76
	700	699.99	649.99	N	1.65	E	0.88	1.87
	710	709.99	659.99	N	1.75	E	0.93	1.98
	720	719.99	669.99	N	1.85	E	0.98	2.10
	730	729.99	679.99	N	1.96	E	1.04	2.22
	740	739.99	689.99	N	2.07	E	1.10	2.35
	750	749.98	699.98	N	2.18	E	1.16	2.47
	760	759.98	709.98	N	2.30	E	1.22	2.60
	770	769.98	719.98	N	2.42	E	1.28	2.74
	780	779.98	729.98	N	2.54	E	1.35	2.87
	790	789.98	739.98	N	2.66	E	1.41	3.01
	800	799.98	749.98	N	2.79	E	1.48	3.16
	810	809.98	759.98	N	2.92	E	1.55	3.31

DIRECTIONAL SURVEY FOR WELL L016-21

COMPUTATIONS AT 10 FEET INCREMENTS

WELL NO. Z2A-21-781-D-L016(L016-21) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 39

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 370' MD.

MEASURED DEPTH	VERTICAL DEPTH	TRUE SUB-SEA	TOTAL CD - ORDINATES				HORIZONTAL DISTANCE
820	819.98	769.98	N	3.05	E	1.62	3.46
830	829.98	779.98	N	3.19	E	1.69	3.61
840	839.98	789.98	N	3.32	E	1.77	3.77
850	849.97	799.97	N	3.47	E	1.84	3.93
860	859.97	809.97	N	3.61	E	1.92	4.09
870	869.97	819.97	N	3.76	E	2.00	4.26
880	879.97	829.97	N	3.91	E	2.08	4.43
890	889.97	839.97	N	4.06	E	2.16	4.60
* 892	891.97	841.97	N	4.09	E	2.17	4.64 *
900	899.97	849.97	N	4.21	E	2.09	4.70
910	909.96	859.96	N	4.34	E	1.99	4.78
920	919.96	869.96	N	4.48	E	1.88	4.86
930	929.96	879.96	N	4.62	E	1.78	4.95
940	939.96	889.96	N	4.76	E	1.67	5.05
950	949.96	899.96	N	4.90	E	1.57	5.15
960	959.96	909.96	N	5.04	E	1.46	5.25
970	969.96	919.96	N	5.18	E	1.36	5.36
980	979.95	929.95	N	5.32	E	1.25	5.47
990	989.95	939.95	N	5.46	E	1.15	5.58
1000	999.95	949.95	N	5.60	E	1.04	5.70
1010	1,009.95	959.95	N	5.74	E	0.94	5.81
1020	1,019.95	969.95	N	5.88	E	0.83	5.94
1030	1,029.95	979.95	N	6.02	E	0.72	6.06
1040	1,039.95	989.95	N	6.16	E	0.62	6.19
1050	1,049.94	999.94	N	6.30	E	0.51	6.32
1060	1,059.94	1,009.94	N	6.44	E	0.41	6.45
1070	1,069.94	1,019.94	N	6.57	E	0.30	6.58
1080	1,079.94	1,029.94	N	6.71	E	0.20	6.72
1090	1,089.94	1,039.94	N	6.85	E	0.09	6.85
1100	1,099.94	1,049.94	N	6.99	W	0.00	6.99
1110	1,109.93	1,059.93	N	7.13	W	0.11	7.13
1120	1,119.93	1,069.93	N	7.27	W	0.21	7.27
1130	1,129.93	1,079.93	N	7.41	W	0.32	7.42
1140	1,139.93	1,089.93	N	7.55	W	0.42	7.56
1150	1,149.93	1,099.93	N	7.69	W	0.53	7.71
1160	1,159.93	1,109.93	N	7.83	W	0.63	7.85
1170	1,169.93	1,119.93	N	7.97	W	0.74	8.00
1180	1,179.92	1,129.92	N	8.11	W	0.84	8.15
1190	1,189.92	1,139.92	N	8.25	W	0.95	8.30
1200	1,199.92	1,149.92	N	8.39	W	1.05	8.45
1210	1,209.92	1,159.92	N	8.53	W	1.16	8.60
1220	1,219.92	1,169.92	N	8.67	W	1.26	8.76
1230	1,229.92	1,179.92	N	8.80	W	1.37	8.91
1240	1,239.91	1,189.91	N	8.94	W	1.47	9.07
1250	1,249.91	1,199.91	N	9.08	W	1.58	9.22

DIRECTIONAL SURVEY FOR WELL L016-21

COMPUTATIONS AT 10 FEET INCREMENTS

WELL NO. Z2A-21-781-D-L016(L016-21) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 39

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 370' MD.

MEASURED DEPTH	VERTICAL DEPTH	TRUE SUB-SEA	TOTAL CO - ORDINATES			HORIZONTAL DISTANCE
1260	1,259.91	1,209.91	N	9.22	W 1.68	9.38
1270	1,269.91	1,219.91	N	9.36	W 1.79	9.53
* 1278	1,277.91	1,227.91	N	9.47	W 1.87	9.66 *
1280	1,279.91	1,229.91	N	9.50	W 1.89	9.69
1290	1,289.91	1,239.91	N	9.65	W 1.98	9.85
1300	1,299.91	1,249.91	N	9.80	W 2.07	10.02
1310	1,309.90	1,259.90	N	9.95	W 2.17	10.18
1320	1,319.90	1,269.90	N	10.10	W 2.26	10.35
1330	1,329.90	1,279.90	N	10.24	W 2.35	10.51
1340	1,339.90	1,289.90	N	10.39	W 2.44	10.68
1350	1,349.90	1,299.90	N	10.54	W 2.54	10.84
1360	1,359.90	1,309.90	N	10.69	W 2.63	11.01
1370	1,369.89	1,319.89	N	10.84	W 2.72	11.17
1380	1,379.89	1,329.89	N	10.98	W 2.81	11.34
1390	1,389.89	1,339.89	N	11.13	W 2.91	11.51
1400	1,399.89	1,349.89	N	11.28	W 3.00	11.67
1410	1,409.89	1,359.89	N	11.43	W 3.09	11.84
1420	1,419.89	1,369.89	N	11.58	W 3.18	12.01
1430	1,429.89	1,379.89	N	11.72	W 3.28	12.17
1440	1,439.88	1,389.88	N	11.87	W 3.37	12.34
1450	1,449.88	1,399.88	N	12.02	W 3.46	12.51
1460	1,459.88	1,409.88	N	12.17	W 3.55	12.68
1470	1,469.88	1,419.88	N	12.32	W 3.65	12.85
1480	1,479.88	1,429.88	N	12.46	W 3.74	13.01
1490	1,489.88	1,439.88	N	12.61	W 3.83	13.18
1500	1,499.88	1,449.88	N	12.76	W 3.92	13.35
1510	1,509.87	1,459.87	N	12.91	W 4.02	13.52
1520	1,519.87	1,469.87	N	13.06	W 4.11	13.69
1530	1,529.87	1,479.87	N	13.20	W 4.20	13.86
1540	1,539.87	1,489.87	N	13.35	W 4.29	14.03
1550	1,549.87	1,499.87	N	13.50	W 4.39	14.20
1560	1,559.87	1,509.87	N	13.65	W 4.48	14.36
1570	1,569.86	1,519.86	N	13.80	W 4.57	14.53
1580	1,579.86	1,529.86	N	13.94	W 4.66	14.70
1590	1,589.86	1,539.86	N	14.09	W 4.76	14.87
1600	1,599.86	1,549.86	N	14.24	W 4.85	15.04
1610	1,609.86	1,559.86	N	14.39	W 4.94	15.21
1620	1,619.86	1,569.86	N	14.54	W 5.03	15.38
1630	1,629.86	1,579.86	N	14.68	W 5.13	15.55
1640	1,639.85	1,589.85	N	14.83	W 5.22	15.72
1650	1,649.85	1,599.85	N	14.98	W 5.31	15.89
1660	1,659.85	1,609.85	N	15.13	W 5.40	16.06
1670	1,669.85	1,619.85	N	15.28	W 5.50	16.24
1680	1,679.85	1,629.85	N	15.42	W 5.59	16.41
1690	1,689.85	1,639.85	N	15.57	W 5.68	16.58

DIRECTIONAL SURVEY FOR WELL L016-21

COMPUTATIONS AT 10 FEET INCREMENTS

WELL NO. Z2A-21-781-D-L016(L016-21) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 39

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 370' MD.

MEASURED DEPTH	VERTICAL DEPTH	TRUE SUB-SEA	TOTAL CD - ORDINATES				HORIZONTAL DISTANCE
1700	1,699.84	1,649.84	N	15.72	W	5.77	16.75
1710	1,709.84	1,659.84	N	15.87	W	5.87	16.92
1720	1,719.84	1,669.84	N	16.02	W	5.96	17.09
1730	1,729.84	1,679.84	N	16.16	W	6.05	17.26
1740	1,739.84	1,689.84	N	16.31	W	6.14	17.43
* 1749	1,748.84	1,698.84	N	16.44	W	6.23	17.59 *
1750	1,749.84	1,699.84	N	16.44	W	6.24	17.59
1760	1,759.84	1,709.84	N	16.44	W	6.42	17.65
1770	1,769.83	1,719.83	N	16.44	W	6.59	17.72
1780	1,779.83	1,729.83	N	16.44	W	6.77	17.78
1790	1,789.83	1,739.83	N	16.44	W	6.94	17.85
1800	1,799.83	1,749.83	N	16.44	W	7.12	17.92
1810	1,809.83	1,759.83	N	16.44	W	7.29	17.99
1820	1,819.83	1,769.83	N	16.44	W	7.46	18.06
1830	1,829.82	1,779.82	N	16.44	W	7.64	18.13
1840	1,839.82	1,789.82	N	16.44	W	7.81	18.21
1850	1,849.82	1,799.82	N	16.44	W	7.99	18.28
1860	1,859.82	1,809.82	N	16.44	W	8.16	18.36
1870	1,869.82	1,819.82	N	16.44	W	8.34	18.44
1880	1,879.82	1,829.82	N	16.44	W	8.51	18.52
1890	1,889.82	1,839.82	N	16.44	W	8.69	18.60
1900	1,899.81	1,849.81	N	16.44	W	8.86	18.68
1910	1,909.81	1,859.81	N	16.44	W	9.04	18.77
1920	1,919.81	1,869.81	N	16.44	W	9.21	18.85
1930	1,929.81	1,879.81	N	16.44	W	9.38	18.94
1940	1,939.81	1,889.81	N	16.44	W	9.56	19.02
1950	1,949.81	1,899.81	N	16.44	W	9.73	19.11
1960	1,959.81	1,909.81	N	16.44	W	9.91	19.20
1970	1,969.80	1,919.80	N	16.44	W	10.08	19.29
1980	1,979.80	1,929.80	N	16.44	W	10.26	19.38
1990	1,989.80	1,939.80	N	16.44	W	10.43	19.48
2000	1,999.80	1,949.80	N	16.44	W	10.61	19.57
2010	2,009.80	1,959.80	N	16.44	W	10.78	19.67
2020	2,019.80	1,969.80	N	16.44	W	10.96	19.76
2030	2,029.79	1,979.79	N	16.44	W	11.13	19.86
2040	2,039.79	1,989.79	N	16.44	W	11.30	19.96
* 2047	2,046.79	1,996.79	N	16.44	W	11.43	20.03 *
2050	2,049.79	1,999.79	N	16.39	W	11.43	19.98
2060	2,059.79	2,009.79	N	16.18	W	11.45	19.82
2070	2,069.79	2,019.79	N	15.94	W	11.47	19.64
2080	2,079.78	2,029.78	N	15.68	W	11.49	19.44
2090	2,089.78	2,039.78	N	15.38	W	11.52	19.22
2100	2,099.77	2,049.77	N	15.06	W	11.55	18.98
* 2109	2,108.77	2,058.77	N	14.75	W	11.58	18.75 *
2110	2,109.77	2,059.77	N	14.71	W	11.58	18.72

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COMPUTATIONS AT 10 FEET INCREMENTS

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CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 370' MD.

MEASURED DEPTH	VERTICAL DEPTH	TRUE SUB-SEA	TOTAL CO - ORDINATES				HORIZONTAL DISTANCE
2120	2,119.76	2,069.76	N	14.31	W	11.61	18.43
2130	2,129.75	2,079.75	N	13.85	W	11.65	18.10
2140	2,139.74	2,089.74	N	13.35	W	11.70	17.75
2150	2,149.72	2,099.72	N	12.79	W	11.75	17.37
2160	2,159.70	2,109.70	N	12.19	W	11.80	16.96
* 2169	2,168.68	2,118.68	N	11.60	W	11.85	16.59
2170	2,169.68	2,119.68	N	11.53	W	11.86	16.54
2180	2,179.66	2,129.66	N	10.85	W	11.92	16.11
2190	2,189.63	2,139.63	N	10.12	W	11.98	15.69
2200	2,199.60	2,149.60	N	9.36	W	12.05	15.26
2210	2,209.57	2,159.57	N	8.57	W	12.12	14.84
2220	2,219.53	2,169.53	N	7.74	W	12.19	14.44
2230	2,229.50	2,179.50	N	6.88	W	12.26	14.06
* 2232	2,231.49	2,181.49	N	6.71	W	12.28	13.99
2240	2,239.46	2,189.46	N	5.98	W	12.33	13.75
2250	2,249.41	2,199.41	N	5.02	W	12.52	13.49
2260	2,259.36	2,209.36	N	4.00	W	12.66	13.28
* 2263	2,262.34	2,212.34	N	3.69	W	12.70	13.23
2270	2,269.30	2,219.30	N	2.95	W	12.83	13.17
2280	2,279.24	2,229.24	N	1.85	W	13.03	13.16
2290	2,289.17	2,239.17	N	0.71	W	13.23	13.25
* 2294	2,293.14	2,243.14	N	0.25	W	13.31	13.31
2300	2,299.10	2,249.10	S	0.44	W	13.47	13.48
2310	2,309.02	2,259.02	S	1.63	W	13.74	13.84
2320	2,318.95	2,268.95	S	2.84	W	14.02	14.31
2330	2,328.86	2,278.86	S	4.08	W	14.31	14.88
2340	2,338.78	2,288.78	S	5.34	W	14.60	15.55
2350	2,348.69	2,298.69	S	6.63	W	14.90	16.31
2360	2,358.60	2,308.60	S	7.94	W	15.20	17.16
2370	2,368.51	2,318.51	S	9.29	W	15.51	18.08
* 2374	2,374.45	2,324.45	S	10.10	W	15.70	18.67
2380	2,378.41	2,328.41	S	10.64	W	15.84	19.08
2390	2,388.31	2,338.31	S	12.02	W	16.18	20.16
2400	2,398.20	2,348.20	S	13.41	W	16.53	21.29
2410	2,408.10	2,358.10	S	14.83	W	16.88	22.47
2420	2,417.99	2,367.99	S	16.26	W	17.24	23.70
2430	2,427.87	2,377.87	S	17.71	W	17.60	24.97
2440	2,437.76	2,387.76	S	19.18	W	17.97	26.29
2450	2,447.64	2,397.64	S	20.67	W	18.34	27.64
2460	2,457.52	2,407.52	S	22.18	W	18.71	29.02
2470	2,467.39	2,417.39	S	23.71	W	19.09	30.44
2480	2,477.27	2,427.27	S	25.25	W	19.48	31.90
2490	2,487.14	2,437.14	S	26.82	W	19.87	33.38
2500	2,497.00	2,447.00	S	28.40	W	20.26	34.89
2510	2,506.86	2,456.86	S	30.00	W	20.66	36.43

DIRECTIONAL SURVEY FOR WELL L016-21

COMPUTATIONS AT 10 FEET INCREMENTS

WELL NO. Z2A-21-781-D-L016(L016-21) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 39

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 370' MD.

MEASURED DEPTH	VERTICAL DEPTH	TRUE SUB-SEA	TOTAL CO - ORDINATES				HORIZONTAL DISTANCE
2520	2,516.72	2,466.72	S	31.63	W	21.07	38.00
2530	2,526.58	2,476.58	S	33.26	W	21.48	39.60
* 2532	2,528.55	2,478.55	S	33.59	W	21.56	39.92 *
2540	2,536.43	2,486.43	S	34.90	W	21.93	41.22
2550	2,546.29	2,496.29	S	36.54	W	22.40	42.86
2560	2,556.14	2,506.14	S	38.18	W	22.87	44.51
2570	2,565.99	2,515.99	S	39.84	W	23.35	46.18
2580	2,575.84	2,525.84	S	41.49	W	23.82	47.85
2590	2,585.69	2,535.69	S	43.16	W	24.30	49.53
2600	2,595.54	2,545.54	S	44.83	W	24.78	51.22
2610	2,605.39	2,555.39	S	46.50	W	25.26	52.92
2620	2,615.23	2,565.23	S	48.19	W	25.74	54.63
2630	2,625.08	2,575.08	S	49.87	W	26.23	56.35
2640	2,634.92	2,584.92	S	51.57	W	26.71	58.08
2650	2,644.76	2,594.76	S	53.27	W	27.20	59.82
2660	2,654.60	2,604.60	S	54.98	W	27.69	61.56
* 2665	2,659.52	2,609.52	S	55.83	W	27.94	62.43 *
2670	2,664.44	2,614.44	S	56.69	W	28.21	63.32
2680	2,674.28	2,624.28	S	58.42	W	28.75	65.11
2690	2,684.10	2,634.10	S	60.17	W	29.30	66.93
2700	2,693.93	2,643.93	S	61.95	W	29.86	68.77
2710	2,703.75	2,653.75	S	63.75	W	30.43	70.64
2720	2,713.57	2,663.57	S	65.57	W	31.01	72.53
2730	2,723.38	2,673.38	S	67.42	W	31.59	74.45
2740	2,733.18	2,683.18	S	69.28	W	32.18	76.39
2750	2,742.99	2,692.99	S	71.17	W	32.77	78.36
2760	2,752.78	2,702.78	S	73.09	W	33.38	80.35
2770	2,762.57	2,712.57	S	75.02	W	33.99	82.36
2780	2,772.36	2,722.36	S	76.98	W	34.60	84.40
2790	2,782.14	2,732.14	S	78.96	W	35.23	86.46
* 2791	2,783.12	2,733.12	S	79.16	W	35.29	86.67 *
2800	2,791.92	2,741.92	S	80.96	W	35.84	88.54
2810	2,801.69	2,751.69	S	82.99	W	36.46	90.65
2820	2,811.46	2,761.46	S	85.03	W	37.09	92.77
2830	2,821.23	2,771.23	S	87.10	W	37.72	94.92
2840	2,830.99	2,780.99	S	89.18	W	38.35	97.08
2850	2,840.74	2,790.74	S	91.29	W	39.00	99.27
2860	2,850.49	2,800.49	S	93.41	W	39.65	101.48
2870	2,860.24	2,810.24	S	95.55	W	40.30	103.71
2880	2,869.98	2,819.98	S	97.71	W	40.96	105.96
2890	2,879.71	2,829.71	S	99.90	W	41.63	108.23
2900	2,889.45	2,839.45	S	102.10	W	42.30	110.52
2910	2,899.17	2,849.17	S	104.32	W	42.98	112.83
* 2916	2,905.01	2,855.01	S	105.66	W	43.39	114.22 *
2920	2,908.90	2,858.90	S	106.54	W	43.71	115.16

DIRECTIONAL SURVEY FOR WELL L016-21

COMPUTATIONS AT 10 FEET INCREMENTS

WELL NO. Z2A-21-781-D-L016(L016-21) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 39

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 370' MD.

MEASURED DEPTH	VERTICAL DEPTH	TRUE SUB-SEA	TOTAL CO - ORDINATES				HORIZONTAL DISTANCE
2930	2,918.61	2,868.61	S	108.78	W	44.50	117.53
2940	2,928.32	2,878.32	S	111.05	W	45.30	119.94
2950	2,938.01	2,888.01	S	113.35	W	46.11	122.37
2960	2,947.71	2,897.71	S	115.67	W	46.94	124.83
2970	2,957.39	2,907.39	S	118.02	W	47.77	127.32
2980	2,967.07	2,917.07	S	120.40	W	48.61	129.84
2990	2,976.73	2,926.73	S	122.81	W	49.46	132.39
3000	2,986.40	2,936.40	S	125.24	W	50.33	134.98
3010	2,996.05	2,946.05	S	127.70	W	51.20	137.59
3020	3,005.69	2,955.69	S	130.19	W	52.08	140.22
3030	3,015.33	2,965.33	S	132.71	W	52.97	142.89
3040	3,024.96	2,974.96	S	135.26	W	53.87	145.59
3050	3,034.58	2,984.58	S	137.83	W	54.78	148.32
3060	3,044.19	2,994.19	S	140.43	W	55.71	151.08
3070	3,053.79	3,003.79	S	143.06	W	56.64	153.86
3080	3,063.39	3,013.39	S	145.71	W	57.58	156.68
3090	3,072.97	3,022.97	S	148.40	W	58.53	159.52
3100	3,082.55	3,032.55	S	151.11	W	59.49	162.40
* 3102	3,084.47	3,034.47	S	151.65	W	59.68	162.97
3110	3,092.12	3,042.12	S	153.80	W	60.55	165.30
3120	3,101.69	3,051.69	S	156.52	W	61.64	168.22
3130	3,111.24	3,061.24	S	159.25	W	62.75	171.17
3140	3,120.79	3,070.79	S	162.00	W	63.86	174.14
3150	3,130.33	3,080.33	S	164.78	W	64.98	177.13
3160	3,139.86	3,089.86	S	167.58	W	66.11	180.15
3170	3,149.39	3,099.39	S	170.40	W	67.25	183.19
3180	3,158.91	3,108.91	S	173.24	W	68.40	186.26
3190	3,168.42	3,118.42	S	176.11	W	69.56	189.35
3200	3,177.92	3,127.92	S	178.99	W	70.73	192.46
3210	3,187.42	3,137.42	S	181.90	W	71.90	195.60
3220	3,196.91	3,146.91	S	184.83	W	73.08	198.75
* 3226	3,202.60	3,152.60	S	186.59	W	73.80	200.66
3230	3,206.39	3,156.39	S	187.76	W	74.29	201.93
3240	3,215.87	3,165.87	S	190.69	W	75.54	205.11
3250	3,225.35	3,175.35	S	193.63	W	76.78	208.30
3260	3,234.82	3,184.82	S	196.57	W	78.03	211.49
3270	3,244.30	3,194.30	S	199.52	W	79.28	214.70
3280	3,253.77	3,203.77	S	202.47	W	80.54	217.91
3290	3,263.24	3,213.24	S	205.44	W	81.79	221.12
3300	3,272.70	3,222.70	S	208.40	W	83.05	224.34
3310	3,282.17	3,232.17	S	211.38	W	84.32	227.57
3320	3,291.63	3,241.63	S	214.36	W	85.58	230.81
3330	3,301.09	3,251.09	S	217.34	W	86.85	234.06
3340	3,310.54	3,260.54	S	220.34	W	88.12	237.31
3350	3,320.00	3,270.00	S	223.34	W	89.39	240.56

DIRECTIONAL SURVEY FOR WELL L016-21

COMPUTATIONS AT 10 FEET INCREMENTS

WELL NO. Z2A-21-781-D-L016(L016-21) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 39

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 370' MD.

MEASURED DEPTH	VERTICAL DEPTH	TRUE SUB-SEA	TOTAL CO - ORDINATES			HORIZONTAL DISTANCE
3360	3,329.45	3,279.45	S	226.34	W 90.67	243.83
3370	3,338.90	3,288.90	S	229.35	W 91.95	247.10
3380	3,348.35	3,298.35	S	232.37	W 93.23	250.38
3390	3,357.79	3,307.79	S	235.39	W 94.51	253.66
3400	3,367.23	3,317.23	S	238.43	W 95.80	256.95
3410	3,376.67	3,326.67	S	241.46	W 97.09	260.25
3420	3,386.11	3,336.11	S	244.51	W 98.38	263.56
3430	3,395.55	3,345.55	S	247.56	W 99.67	266.87
3440	3,404.98	3,354.98	S	250.61	W 100.97	270.19
3450	3,414.41	3,364.41	S	253.67	W 102.27	273.51
3460	3,423.84	3,373.84	S	256.74	W 103.57	276.85
* 3467	3,430.44	3,380.44	S	258.89	W 104.49	279.18 *
3470	3,433.26	3,383.26	S	259.80	W 104.92	280.18
3480	3,442.69	3,392.69	S	262.80	W 106.35	283.51
3490	3,452.13	3,402.13	S	265.80	W 107.78	286.82
3500	3,461.56	3,411.56	S	268.79	W 109.21	290.13
3510	3,471.00	3,421.00	S	271.78	W 110.63	293.44
3520	3,480.43	3,430.43	S	274.76	W 112.05	296.73
3530	3,489.88	3,439.88	S	277.74	W 113.47	300.03
3540	3,499.32	3,449.32	S	280.71	W 114.89	303.31
3550	3,508.76	3,458.76	S	283.67	W 116.30	306.59
3560	3,518.21	3,468.21	S	286.63	W 117.71	309.86
3570	3,527.66	3,477.66	S	289.58	W 119.12	313.13
3580	3,537.12	3,487.12	S	292.53	W 120.53	316.38
3590	3,546.57	3,496.57	S	295.46	W 121.93	319.64
* 3592	3,548.46	3,498.46	S	296.05	W 122.21	320.29 *
3600	3,556.03	3,506.03	S	298.39	W 123.35	322.89
3610	3,565.48	3,515.48	S	301.32	W 124.78	326.14
3620	3,574.94	3,524.94	S	304.25	W 126.21	329.39
3630	3,584.39	3,534.39	S	307.17	W 127.63	332.63
3640	3,593.85	3,543.85	S	310.10	W 129.06	335.88
3650	3,603.30	3,553.30	S	313.02	W 130.49	339.13
3660	3,612.76	3,562.76	S	315.95	W 131.91	342.38
3670	3,622.21	3,572.21	S	318.88	W 133.34	345.63
3680	3,631.67	3,581.67	S	321.80	W 134.77	348.89
3690	3,641.12	3,591.12	S	324.73	W 136.20	352.14
3700	3,650.58	3,600.58	S	327.66	W 137.62	355.39
3710	3,660.03	3,610.03	S	330.58	W 139.05	358.64
3720	3,669.49	3,619.49	S	333.51	W 140.48	361.89
3730	3,678.94	3,628.94	S	336.43	W 141.91	365.14
3740	3,688.40	3,638.40	S	339.36	W 143.33	368.39
3750	3,697.85	3,647.85	S	342.29	W 144.76	371.64
3760	3,707.31	3,657.31	S	345.21	W 146.19	374.89
3770	3,716.76	3,666.76	S	348.14	W 147.61	378.14
* 3778	3,724.33	3,674.33	S	350.48	W 148.76	380.74 *

DIRECTIONAL SURVEY FOR WELL L016-21

COMPUTATIONS AT 10 FEET INCREMENTS

WELL NO. Z2A-21-781-D-L016(L016-21) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 39

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 370' MD.

MEASURED DEPTH	VERTICAL DEPTH	TRUE SUB-SEA	TOTAL	CD -	ORDINATES	HORIZONTAL DISTANCE
3780	3,726.22	3,676.22	S	351.05	W 149.06	381.39
3790	3,735.67	3,685.67	S	353.93	W 150.59	384.64
3800	3,745.13	3,695.13	S	356.81	W 152.12	387.89
3810	3,754.58	3,704.58	S	359.69	W 153.65	391.14
3820	3,764.03	3,714.03	S	362.57	W 155.19	394.39
3830	3,773.48	3,723.48	S	365.46	W 156.72	397.64
3840	3,782.93	3,732.93	S	368.34	W 158.25	400.90
3850	3,792.38	3,742.38	S	371.23	W 159.79	404.16
3860	3,801.83	3,751.83	S	374.12	W 161.32	407.42
3870	3,811.28	3,761.28	S	377.01	W 162.86	410.68
3880	3,820.73	3,770.73	S	379.90	W 164.40	413.95
3890	3,830.18	3,780.18	S	382.79	W 165.94	417.21
3900	3,839.63	3,789.63	S	385.69	W 167.48	420.48
3910	3,849.07	3,799.07	S	388.59	W 169.02	423.76
3920	3,858.52	3,808.52	S	391.49	W 170.56	427.03
3930	3,867.96	3,817.96	S	394.39	W 172.10	430.30
3940	3,877.41	3,827.41	S	397.29	W 173.65	433.58
3950	3,886.85	3,836.85	S	400.20	W 175.19	436.86
3960	3,896.29	3,846.29	S	403.10	W 176.74	440.14
3970	3,905.73	3,855.73	S	406.01	W 178.28	443.43
3980	3,915.18	3,865.18	S	408.92	W 179.83	446.72
* 3987	3,921.78	3,871.78	S	410.96	W 180.91	449.02 *
3990	3,924.62	3,874.62	S	411.84	W 181.36	450.00
4000	3,934.06	3,884.06	S	414.78	W 182.86	453.30
4010	3,943.50	3,893.50	S	417.71	W 184.35	456.59
4020	3,952.94	3,902.94	S	420.65	W 185.85	459.88
4030	3,962.38	3,912.38	S	423.59	W 187.35	463.17
4040	3,971.82	3,921.82	S	426.53	W 188.84	466.46
4050	3,981.26	3,931.26	S	429.46	W 190.34	469.76
4060	3,990.70	3,940.70	S	432.40	W 191.84	473.05
4070	4,000.14	3,950.14	S	435.34	W 193.34	476.34
4080	4,009.59	3,959.59	S	438.28	W 194.83	479.63
4090	4,019.03	3,969.03	S	441.21	W 196.33	482.92
4100	4,028.47	3,978.47	S	444.15	W 197.83	486.22
4110	4,037.91	3,987.91	S	447.09	W 199.32	489.51
4120	4,047.35	3,997.35	S	450.03	W 200.82	492.80
4130	4,056.79	4,006.79	S	452.96	W 202.32	496.09
4140	4,066.23	4,016.23	S	455.90	W 203.81	499.39
4150	4,075.67	4,025.67	S	458.84	W 205.31	502.68
* 4158	4,083.22	4,033.22	S	461.19	W 206.51	505.31 *
4160	4,085.11	4,035.11	S	461.77	W 206.83	505.97
4170	4,094.55	4,044.55	S	464.66	W 208.43	509.27
4180	4,103.98	4,053.98	S	467.56	W 210.04	512.57
4190	4,113.42	4,063.42	S	470.46	W 211.65	515.88
4200	4,122.85	4,072.85	S	473.38	W 213.26	519.20

DIRECTIONAL SURVEY FOR WELL LD16-21

COMPUTATIONS AT 10 FEET INCREMENTS

WELL NO. Z2A-21-781-D-LD16(LD16-21) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 39

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 370' MD.

MEASURED DEPTH	VERTICAL DEPTH	TRUE SUB-SEA	TOTAL CO - ORDINATES			HORIZONTAL DISTANCE
4210	4,132.27	4,082.27	S	476.30	W 214.88	522.53
4220	4,141.69	4,091.69	S	479.22	W 216.50	525.86
4230	4,151.11	4,101.11	S	482.16	W 218.13	529.21
4240	4,160.53	4,110.53	S	485.10	W 219.76	532.56
4250	4,169.95	4,119.95	S	488.05	W 221.40	535.92
4260	4,179.36	4,129.36	S	491.00	W 223.03	539.29
4270	4,188.77	4,138.77	S	493.97	W 224.68	542.66
4280	4,198.17	4,148.17	S	496.94	W 226.32	546.05
4290	4,207.58	4,157.58	S	499.91	W 227.97	549.44
4300	4,216.98	4,166.98	S	502.90	W 229.63	552.84
4310	4,226.37	4,176.37	S	505.89	W 231.28	556.25
* 4311	4,227.31	4,177.31	S	506.19	W 231.45	556.59 *
4320	4,235.77	4,185.77	S	508.86	W 232.99	559.67
4330	4,245.16	4,195.16	S	511.84	W 234.71	563.09
4340	4,254.54	4,204.54	S	514.83	W 236.44	566.53
4350	4,263.93	4,213.93	S	517.82	W 238.17	569.97
4360	4,273.30	4,223.30	S	520.83	W 239.90	573.43
4370	4,282.68	4,232.68	S	523.85	W 241.65	576.90
4380	4,292.05	4,242.05	S	526.87	W 243.39	580.37
4390	4,301.41	4,251.41	S	529.91	W 245.14	583.86
4400	4,310.78	4,260.78	S	532.95	W 246.90	587.36
4410	4,320.13	4,270.13	S	536.00	W 248.66	590.87
4420	4,329.49	4,279.49	S	539.06	W 250.43	594.39
4430	4,338.84	4,288.84	S	542.13	W 252.20	597.92
4440	4,348.19	4,298.19	S	545.21	W 253.98	601.47
4450	4,357.53	4,307.53	S	548.30	W 255.76	605.02
4460	4,366.87	4,316.87	S	551.40	W 257.55	608.58
* 4467	4,373.40	4,323.40	S	553.57	W 258.80	611.08 *
4470	4,376.20	4,326.20	S	554.46	W 259.41	612.14
4480	4,385.54	4,335.54	S	557.43	W 261.41	615.69
4490	4,394.87	4,344.87	S	560.41	W 263.42	619.24
4500	4,404.20	4,354.20	S	563.39	W 265.43	622.79
4510	4,413.53	4,363.53	S	566.37	W 267.44	626.34
4520	4,422.86	4,372.86	S	569.36	W 269.46	629.90
4530	4,432.19	4,382.19	S	572.35	W 271.47	633.47
4540	4,441.52	4,391.52	S	575.34	W 273.49	637.03
4550	4,450.84	4,400.84	S	578.33	W 275.51	640.60
4560	4,460.17	4,410.17	S	581.33	W 277.53	644.18
4570	4,469.49	4,419.49	S	584.33	W 279.55	647.76
4580	4,478.81	4,428.81	S	587.33	W 281.58	651.34
4590	4,488.13	4,438.13	S	590.33	W 283.60	654.92
* 4592	4,489.99	4,439.99	S	590.93	W 284.01	655.64 *
4600	4,497.45	4,447.45	S	593.26	W 285.73	658.49
4610	4,506.77	4,456.77	S	596.18	W 287.89	662.05
4620	4,516.09	4,466.09	S	599.10	W 290.05	665.62

DIRECTIONAL SURVEY FOR WELL LD16-21

COMPUTATIONS AT 10 FEET INCREMENTS

WELL NO. Z2A-21-781-D-LD16(LD16-21) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 39

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 370' MD.

MEASURED DEPTH	VERTICAL DEPTH	TRUE SUB-SEA	TOTAL CD - ORDINATES			HORIZONTAL DISTANCE
4630	4,525.40	4,475.40	S	602.02	W 292.21	669.19
4640	4,534.72	4,484.72	S	604.94	W 294.38	672.77
4650	4,544.03	4,494.03	S	607.87	W 296.54	676.34
4660	4,553.35	4,503.35	S	610.79	W 298.70	679.92
4670	4,562.66	4,512.66	S	613.72	W 300.87	683.51
4680	4,571.97	4,521.97	S	616.65	W 303.04	687.09
4690	4,581.28	4,531.28	S	619.58	W 305.21	690.68
4700	4,590.59	4,540.59	S	622.52	W 307.38	694.27
4710	4,599.90	4,549.90	S	625.45	W 309.55	697.87
4720	4,609.21	4,559.21	S	628.39	W 311.73	701.46
4730	4,618.52	4,568.52	S	631.33	W 313.90	705.06
4740	4,627.82	4,577.82	S	634.27	W 316.08	708.67
4750	4,637.13	4,587.13	S	637.22	W 318.26	712.27
4760	4,646.43	4,596.43	S	640.16	W 320.44	715.88
* 4765	4,651.09	4,601.09	S	641.63	W 321.53	717.69 *
4770	4,655.74	4,605.74	S	643.08	W 322.65	719.48
4780	4,665.05	4,615.05	S	645.96	W 324.90	723.07
4790	4,674.36	4,624.36	S	648.84	W 327.15	726.65
4800	4,683.67	4,633.67	S	651.71	W 329.40	730.22
4810	4,692.98	4,642.98	S	654.58	W 331.64	733.80
4820	4,702.30	4,652.30	S	657.44	W 333.87	737.36
4830	4,711.62	4,661.62	S	660.30	W 336.11	740.92
4840	4,720.94	4,670.94	S	663.15	W 338.34	744.48
4850	4,730.26	4,680.26	S	666.01	W 340.57	748.03
4860	4,739.59	4,689.59	S	668.85	W 342.79	751.58
4870	4,748.91	4,698.91	S	671.69	W 345.01	755.12
4880	4,758.24	4,708.24	S	674.53	W 347.23	758.66
4890	4,767.57	4,717.57	S	677.36	W 349.44	762.19
4900	4,776.91	4,726.91	S	680.19	W 351.65	765.71
4910	4,786.24	4,736.24	S	683.01	W 353.85	769.24
4920	4,795.58	4,745.58	S	685.83	W 356.06	772.76
4930	4,804.92	4,754.92	S	688.65	W 358.26	776.27
4940	4,814.26	4,764.26	S	691.46	W 360.45	779.77
4950	4,823.61	4,773.61	S	694.27	W 362.64	783.27
4960	4,832.96	4,782.96	S	697.07	W 364.83	786.77
4970	4,842.30	4,792.30	S	699.86	W 367.02	790.26
4980	4,851.66	4,801.66	S	702.66	W 369.20	793.75
* 4982	4,853.53	4,803.53	S	703.22	W 369.64	794.45 *
4990	4,861.01	4,811.01	S	705.32	W 371.53	797.20
5000	4,870.36	4,820.36	S	707.96	W 373.91	800.63
5010	4,879.70	4,829.70	S	710.60	W 376.28	804.08
5020	4,889.05	4,839.05	S	713.24	W 378.66	807.52
5030	4,898.40	4,848.40	S	715.88	W 381.04	810.97
5040	4,907.75	4,857.75	S	718.52	W 383.42	814.42
5050	4,917.09	4,867.09	S	721.16	W 385.80	817.87

DIRECTIONAL SURVEY FOR WELL L016-21

COMPUTATIONS AT 10 FEET INCREMENTS

WELL NO. Z2A-21-781-D-L016(L016-21) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 39

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 370' MD.

MEASURED DEPTH	VERTICAL DEPTH	TRUE SUB-SEA	TOTAL CO - ORDINATES			HORIZONTAL DISTANCE
5060	4,926.44	4,876.44	S	723.81	W 388.18	821.33
5070	4,935.78	4,885.78	S	726.46	W 390.56	824.79
5080	4,945.12	4,895.12	S	729.10	W 392.95	828.25
5090	4,954.47	4,904.47	S	731.76	W 395.33	831.72
5100	4,963.81	4,913.81	S	734.41	W 397.72	835.19
5110	4,973.15	4,923.15	S	737.06	W 400.11	838.66
5120	4,982.49	4,932.49	S	739.72	W 402.50	842.14
5130	4,991.83	4,941.83	S	742.37	W 404.90	845.61
5140	5,001.17	4,951.17	S	745.03	W 407.29	849.09
5150	5,010.50	4,960.50	S	747.69	W 409.68	852.58
5160	5,019.84	4,969.84	S	750.35	W 412.08	856.06
* 5167	5,026.37	4,976.37	S	752.22	W 413.76	858.51 *
5170	5,029.18	4,979.18	S	752.94	W 414.56	859.52
5180	5,038.51	4,988.51	S	755.33	W 417.22	862.90
5190	5,047.85	4,997.85	S	757.72	W 419.87	866.28
5200	5,057.19	5,007.19	S	760.11	W 422.53	869.66
5210	5,066.54	5,016.54	S	762.50	W 425.18	873.03
5220	5,075.88	5,025.88	S	764.88	W 427.82	876.40
5230	5,085.23	5,035.23	S	767.26	W 430.47	879.77
5240	5,094.57	5,044.57	S	769.64	W 433.11	883.14
5250	5,103.92	5,053.92	S	772.01	W 435.74	886.50
5260	5,113.27	5,063.27	S	774.39	W 438.38	889.86
5270	5,122.63	5,072.63	S	776.75	W 441.01	893.22
5280	5,131.98	5,081.98	S	779.12	W 443.64	896.58
5290	5,141.34	5,091.34	S	781.48	W 446.26	899.93
5300	5,150.69	5,100.69	S	783.84	W 448.88	903.28
5310	5,160.05	5,110.05	S	786.20	W 451.50	906.63
5320	5,169.41	5,119.41	S	788.56	W 454.12	909.97
5330	5,178.77	5,128.77	S	790.91	W 456.73	913.31
5340	5,188.14	5,138.14	S	793.26	W 459.34	916.65
5350	5,197.50	5,147.50	S	795.61	W 461.95	919.99
5360	5,206.87	5,156.87	S	797.95	W 464.55	923.33
* 5361	5,207.81	5,157.81	S	798.18	W 464.81	923.66 *
5370	5,216.24	5,166.24	S	800.56	W 466.87	926.75
5380	5,225.61	5,175.61	S	803.18	W 469.16	930.17
5390	5,234.99	5,184.99	S	805.80	W 471.43	933.58
5400	5,244.37	5,194.37	S	808.42	W 473.70	936.98
5410	5,253.76	5,203.76	S	811.02	W 475.97	940.38
5420	5,263.15	5,213.15	S	813.62	W 478.23	943.76
5430	5,272.54	5,222.54	S	816.21	W 480.48	947.13
* 5440	5,281.94	5,231.94	S	818.79	W 482.72	950.49 *
5450	5,291.34	5,241.34	S	821.59	W 484.65	953.89
5460	5,300.75	5,250.75	S	824.39	W 486.57	957.27
5470	5,310.16	5,260.16	S	827.16	W 488.48	960.63
5480	5,319.58	5,269.58	S	829.93	W 490.38	963.98

DIRECTIONAL SURVEY FOR WELL L016-21

COMPUTATIONS AT 10 FEET INCREMENTS

WELL NO. Z2A-21-781-D-L016(L016-21) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 39

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 370' MD.

MEASURED DEPTH	VERTICAL DEPTH	TRUE SUB-SEA	TOTAL CO - ORDINATES			HORIZONTAL DISTANCE
5490	5,329.01	5,279.01	S	832.68	W 492.27	967.31
5500	5,338.44	5,288.44	S	835.42	W 494.15	970.63
5510	5,347.88	5,297.88	S	838.14	W 496.02	973.92
5520	5,357.32	5,307.32	S	840.86	W 497.89	977.21
5530	5,366.77	5,316.77	S	843.55	W 499.74	980.47
5540	5,376.23	5,326.23	S	846.24	W 501.59	983.72
* 5541	5,377.17	5,327.17	S	846.51	W 501.77	984.05 *
5550	5,385.68	5,335.68	S	848.81	W 503.57	986.95
5560	5,395.14	5,345.14	S	851.36	W 505.56	990.16
5570	5,404.61	5,354.61	S	853.91	W 507.55	993.36
5580	5,414.08	5,364.08	S	856.44	W 509.54	996.56
5590	5,423.55	5,373.55	S	858.98	W 511.51	999.74
5600	5,433.02	5,383.02	S	861.50	W 513.48	1,002.92
5610	5,442.50	5,392.50	S	864.02	W 515.45	1,006.09
5620	5,451.97	5,401.97	S	866.53	W 517.41	1,009.25
5630	5,461.46	5,411.46	S	869.03	W 519.37	1,012.40
5640	5,470.94	5,420.94	S	871.53	W 521.32	1,015.55
5650	5,480.43	5,430.43	S	874.01	W 523.26	1,018.68
5660	5,489.92	5,439.92	S	876.50	W 525.20	1,021.80
5670	5,499.42	5,449.42	S	878.97	W 527.13	1,024.92
5680	5,508.91	5,458.91	S	881.44	W 529.06	1,028.03
5690	5,518.41	5,468.41	S	883.90	W 530.98	1,031.13
5700	5,527.92	5,477.92	S	886.35	W 532.90	1,034.22
5710	5,537.42	5,487.42	S	888.80	W 534.81	1,037.30
5720	5,546.93	5,496.93	S	891.24	W 536.72	1,040.37
* 5726	5,552.64	5,502.64	S	892.70	W 537.86	1,042.21 *
5730	5,556.44	5,506.44	S	893.66	W 538.64	1,043.44
5740	5,565.95	5,515.95	S	896.06	W 540.58	1,046.50
5750	5,575.46	5,525.46	S	898.46	W 542.53	1,049.56
5760	5,584.97	5,534.97	S	900.86	W 544.47	1,052.62
5770	5,594.48	5,544.48	S	903.27	W 546.42	1,055.68
5780	5,603.99	5,553.99	S	905.67	W 548.36	1,058.74
5790	5,613.50	5,563.50	S	908.07	W 550.31	1,061.80
5800	5,623.01	5,573.01	S	910.47	W 552.25	1,064.87
5810	5,632.52	5,582.52	S	912.87	W 554.20	1,067.93
5820	5,642.04	5,592.04	S	915.27	W 556.14	1,070.99
5830	5,651.55	5,601.55	S	917.67	W 558.09	1,074.05
5840	5,661.06	5,611.06	S	920.08	W 560.03	1,077.12
5850	5,670.57	5,620.57	S	922.48	W 561.97	1,080.18
5860	5,680.08	5,630.08	S	924.88	W 563.92	1,083.24
5870	5,689.59	5,639.59	S	927.28	W 565.86	1,086.30
5880	5,699.10	5,649.10	S	929.68	W 567.81	1,089.37
5890	5,708.61	5,658.61	S	932.08	W 569.75	1,092.43
5900	5,718.12	5,668.12	S	934.49	W 571.70	1,095.49
* 5910	5,727.63	5,677.63	S	936.89	W 573.64	1,098.56 *

DIRECTIONAL SURVEY FOR WELL L016-21

COMPUTATIONS AT 10 FEET INCREMENTS

WELL NO. Z2A-21-781-D-L016(L016-21) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 39

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 370' MD.

MEASURED DEPTH	VERTICAL DEPTH	TRUE SUB-SEA	TOTAL CO - ORDINATES			HORIZONTAL DISTANCE
5920	5,737.14	5,687.14	S	939.18	W 575.71	1,101.60
5930	5,746.65	5,696.65	S	941.48	W 577.78	1,104.64
5940	5,756.16	5,706.16	S	943.78	W 579.85	1,107.68
5950	5,765.67	5,715.67	S	946.09	W 581.93	1,110.73
5960	5,775.17	5,725.17	S	948.39	W 584.00	1,113.78
5970	5,784.68	5,734.68	S	950.70	W 586.08	1,116.83
5980	5,794.19	5,744.19	S	953.00	W 588.15	1,119.88
5990	5,803.69	5,753.69	S	955.31	W 590.23	1,122.94
6000	5,813.20	5,763.20	S	957.62	W 592.31	1,126.00
6010	5,822.70	5,772.70	S	959.93	W 594.39	1,129.06
6020	5,832.21	5,782.21	S	962.24	W 596.47	1,132.12
6030	5,841.71	5,791.71	S	964.56	W 598.56	1,135.18
6040	5,851.21	5,801.21	S	966.87	W 600.64	1,138.25
6050	5,860.71	5,810.71	S	969.19	W 602.73	1,141.32
6060	5,870.21	5,820.21	S	971.50	W 604.81	1,144.39
6070	5,879.71	5,829.71	S	973.82	W 606.90	1,147.46
6080	5,889.21	5,839.21	S	976.14	W 608.99	1,150.54
6090	5,898.71	5,848.71	S	978.47	W 611.08	1,153.61
6100	5,908.21	5,858.21	S	980.79	W 613.17	1,156.69
6110	5,917.71	5,867.71	S	983.12	W 615.27	1,159.77
6120	5,927.21	5,877.21	S	985.44	W 617.36	1,162.86
* 6126	5,932.91	5,882.91	S	986.84	W 618.62	1,164.71 *
6130	5,936.70	5,886.70	S	987.68	W 619.54	1,165.91
6140	5,946.20	5,896.20	S	989.80	W 621.85	1,168.93
6150	5,955.70	5,905.70	S	991.91	W 624.15	1,171.94
6160	5,965.20	5,915.20	S	994.02	W 626.45	1,174.95
6170	5,974.70	5,924.70	S	996.12	W 628.75	1,177.96
6180	5,984.21	5,934.21	S	998.23	W 631.05	1,180.97
6190	5,993.71	5,943.71	S	1,000.33	W 633.34	1,183.97
6200	6,003.21	5,953.21	S	1,002.43	W 635.64	1,186.97
6210	6,012.72	5,962.72	S	1,004.53	W 637.93	1,189.97
6220	6,022.23	5,972.23	S	1,006.63	W 640.21	1,192.97
6230	6,031.73	5,981.73	S	1,008.72	W 642.50	1,195.96
6240	6,041.24	5,991.24	S	1,010.81	W 644.78	1,198.96
6250	6,050.75	6,000.75	S	1,012.90	W 647.07	1,201.95
6260	6,060.26	6,010.26	S	1,014.99	W 649.34	1,204.93
6270	6,069.77	6,019.77	S	1,017.08	W 651.62	1,207.92
6280	6,079.28	6,029.28	S	1,019.14	W 653.90	1,210.90
6290	6,088.80	6,038.80	S	1,021.25	W 656.17	1,213.88
6300	6,098.31	6,048.31	S	1,023.33	W 658.44	1,216.86
6310	6,107.83	6,057.83	S	1,025.40	W 660.71	1,219.83
6320	6,117.34	6,067.34	S	1,027.48	W 662.97	1,222.81
6330	6,126.86	6,076.86	S	1,029.56	W 665.24	1,225.78
6340	6,136.38	6,086.38	S	1,031.63	W 667.50	1,228.75
6350	6,145.90	6,095.90	S	1,033.70	W 669.76	1,231.71

DIRECTIONAL SURVEY FOR WELL L016-21

COMPUTATIONS AT 10 FEET INCREMENTS

WELL NO. Z2A-21-781-D-L016(L016-21) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 39

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 370' MD.

MEASURED DEPTH	VERTICAL DEPTH	TRUE SUB-SEA	TOTAL CO - ORDINATES		HORIZONTAL DISTANCE
6360	6,155.42	6,105.42	S 1,035.77	W 672.01	1,234.67
6370	6,164.94	6,114.94	S 1,037.83	W 674.27	1,237.63
6380	6,174.46	6,124.46	S 1,039.90	W 676.52	1,240.59
6390	6,183.98	6,133.98	S 1,041.96	W 678.77	1,243.55
6400	6,193.51	6,143.51	S 1,044.02	W 681.02	1,246.50
* 6402	6,195.41	6,145.41	S 1,044.43	W 681.47	1,247.09 *
6410	6,203.03	6,153.03	S 1,045.79	W 683.49	1,249.34
6420	6,212.56	6,162.56	S 1,047.49	W 686.01	1,252.14
6430	6,222.08	6,172.08	S 1,049.19	W 688.53	1,254.94
6440	6,231.61	6,181.61	S 1,050.89	W 691.04	1,257.74
6450	6,241.14	6,191.14	S 1,052.58	W 693.56	1,260.54
6460	6,250.67	6,200.67	S 1,054.27	W 696.06	1,263.33
6470	6,260.21	6,210.21	S 1,055.96	W 698.57	1,266.12
6480	6,269.74	6,219.74	S 1,057.65	W 701.07	1,268.91
6490	6,279.28	6,229.28	S 1,059.33	W 703.57	1,271.69
6500	6,288.81	6,238.81	S 1,061.02	W 706.06	1,274.47
6510	6,298.35	6,248.35	S 1,062.70	W 708.55	1,277.25
6520	6,307.89	6,257.89	S 1,064.37	W 711.04	1,280.03
6530	6,317.43	6,267.43	S 1,066.05	W 713.52	1,282.80
6540	6,326.97	6,276.97	S 1,067.72	W 716.00	1,285.57
6550	6,336.52	6,286.52	S 1,069.39	W 718.48	1,288.34
6560	6,346.06	6,296.06	S 1,071.06	W 720.96	1,291.11
6570	6,355.61	6,305.61	S 1,072.73	W 723.43	1,293.87
6580	6,365.15	6,315.15	S 1,074.39	W 725.89	1,296.63
6590	6,374.70	6,324.70	S 1,076.06	W 728.36	1,299.39
6600	6,384.25	6,334.25	S 1,077.72	W 730.82	1,302.14
6610	6,393.80	6,343.80	S 1,079.37	W 733.27	1,304.89
6620	6,403.35	6,353.35	S 1,081.03	W 735.73	1,307.64
6630	6,412.91	6,362.91	S 1,082.68	W 738.18	1,310.39
6640	6,422.46	6,372.46	S 1,084.33	W 740.63	1,313.13
6650	6,432.02	6,382.02	S 1,085.98	W 743.07	1,315.87
6660	6,441.57	6,391.57	S 1,087.63	W 745.51	1,318.60
6670	6,451.13	6,401.13	S 1,089.27	W 747.95	1,321.34
6680	6,460.69	6,410.69	S 1,090.91	W 750.39	1,324.07
6690	6,470.25	6,420.25	S 1,092.55	W 752.81	1,326.80
6700	6,479.81	6,429.81	S 1,094.19	W 755.24	1,329.52
* 6708	6,487.46	6,437.46	S 1,095.49	W 757.18	1,331.70 *
6710	6,489.38	6,439.38	S 1,095.77	W 757.69	1,332.22
6720	6,498.94	6,448.94	S 1,097.14	W 760.27	1,334.82
6730	6,508.50	6,458.50	S 1,098.51	W 762.85	1,337.42
6740	6,518.07	6,468.07	S 1,099.89	W 765.44	1,340.02
6750	6,527.63	6,477.63	S 1,101.26	W 768.02	1,342.62
6760	6,537.19	6,487.19	S 1,102.63	W 770.60	1,345.22
6770	6,546.76	6,496.76	S 1,104.00	W 773.18	1,347.83
6780	6,556.32	6,506.32	S 1,105.38	W 775.76	1,350.43

DIRECTIONAL SURVEY FOR WELL L016-21

COMPUTATIONS AT 10 FEET INCREMENTS

WELL NO. Z2A-21-781-D-L016(L016-21) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 39

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 370' MD.

MEASURED DEPTH	VERTICAL DEPTH	TRUE SUB-SEA	TOTAL CO - ORDINATES		HORIZONTAL DISTANCE
6790	6,565.88	6,515.88	S 1,106.75	W 778.34	1,353.04
6800	6,575.44	6,525.44	S 1,108.12	W 780.92	1,355.65
6810	6,585.01	6,535.01	S 1,109.49	W 783.51	1,358.26
6820	6,594.57	6,544.57	S 1,110.87	W 786.09	1,360.87
6830	6,604.13	6,554.13	S 1,112.24	W 788.67	1,363.48
6840	6,613.70	6,563.70	S 1,113.61	W 791.25	1,366.10
6850	6,623.26	6,573.26	S 1,114.99	W 793.83	1,368.71
6860	6,632.82	6,582.82	S 1,116.36	W 796.41	1,371.33
6870	6,642.39	6,592.39	S 1,117.73	W 799.00	1,373.94
6880	6,651.95	6,601.95	S 1,119.10	W 801.58	1,376.56
6890	6,661.51	6,611.51	S 1,120.48	W 804.16	1,379.18
6900	6,671.08	6,621.08	S 1,121.85	W 806.74	1,381.80
6910	6,680.64	6,630.64	S 1,123.22	W 809.32	1,384.42
6920	6,690.20	6,640.20	S 1,124.59	W 811.90	1,387.05
6930	6,699.76	6,649.76	S 1,125.97	W 814.48	1,389.67
* 6933	6,702.63	6,652.63	S 1,126.38	W 815.26	1,390.46 *
6940	6,709.33	6,659.33	S 1,127.24	W 817.12	1,392.25
6950	6,718.89	6,668.89	S 1,128.48	W 819.77	1,394.81
6960	6,728.45	6,678.45	S 1,129.72	W 822.43	1,397.38
6970	6,738.00	6,688.00	S 1,130.97	W 825.10	1,399.96
6980	6,747.56	6,697.56	S 1,132.21	W 827.77	1,402.54
6990	6,757.12	6,707.12	S 1,133.46	W 830.44	1,405.12
7000	6,766.67	6,716.67	S 1,134.71	W 833.12	1,407.71
7010	6,776.22	6,726.22	S 1,135.96	W 835.80	1,410.31
7020	6,785.77	6,735.77	S 1,137.21	W 838.49	1,412.91
7030	6,795.32	6,745.32	S 1,138.46	W 841.17	1,415.51
7040	6,804.87	6,754.87	S 1,139.72	W 843.87	1,418.13
7050	6,814.42	6,764.42	S 1,140.98	W 846.57	1,420.74
7060	6,823.96	6,773.96	S 1,142.24	W 849.27	1,423.37
7070	6,833.51	6,783.51	S 1,143.50	W 851.97	1,425.99
7080	6,843.05	6,793.05	S 1,144.76	W 854.69	1,428.63
7090	6,852.59	6,802.59	S 1,146.03	W 857.40	1,431.27
7100	6,862.13	6,812.13	S 1,147.30	W 860.12	1,433.91
7110	6,871.67	6,821.67	S 1,148.57	W 862.84	1,436.56
7120	6,881.20	6,831.20	S 1,149.84	W 865.57	1,439.21
7130	6,890.74	6,840.74	S 1,151.11	W 868.30	1,441.88
7140	6,900.27	6,850.27	S 1,152.39	W 871.03	1,444.54
7150	6,909.81	6,859.81	S 1,153.66	W 873.77	1,447.21
7160	6,919.34	6,869.34	S 1,154.94	W 876.52	1,449.89
7170	6,928.87	6,878.87	S 1,156.22	W 879.26	1,452.57
7180	6,938.39	6,888.39	S 1,157.51	W 882.01	1,455.26
7190	6,947.92	6,897.92	S 1,158.79	W 884.77	1,457.95
7200	6,957.45	6,907.45	S 1,160.08	W 887.53	1,460.65
7210	6,966.97	6,916.97	S 1,161.37	W 890.29	1,463.35
7220	6,976.49	6,926.49	S 1,162.66	W 893.06	1,466.06

DIRECTIONAL SURVEY FOR WELL L016-21

COMPUTATIONS AT 10 FEET INCREMENTS

WELL NO. Z2A-21-781-D-L016(L016-21) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 39

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 370' MD.

MEASURED DEPTH	VERTICAL DEPTH	TRUE SUB-SEA	TOTAL CD - ORDINATES		HORIZONTAL DISTANCE
7230	6,986.01	6,936.01	S 1,163.95	W 895.83	1,468.78
7240	6,995.53	6,945.53	S 1,165.24	W 898.61	1,471.50
7250	7,005.05	6,955.05	S 1,166.54	W 901.39	1,474.22
7260	7,014.57	6,964.57	S 1,167.84	W 904.17	1,476.95
7270	7,024.08	6,974.08	S 1,169.14	W 906.96	1,479.69
7280	7,033.59	6,983.59	S 1,170.44	W 909.75	1,482.43
7290	7,043.11	6,993.11	S 1,171.75	W 912.55	1,485.17
* 7300	7,052.62	7,002.62	S 1,173.05	W 915.35	1,487.93 *
7310	7,062.13	7,012.13	S 1,174.26	W 918.20	1,490.63
7320	7,071.64	7,021.64	S 1,175.47	W 921.04	1,493.33
7330	7,081.15	7,031.15	S 1,176.67	W 923.89	1,496.04
7340	7,090.66	7,040.66	S 1,177.88	W 926.73	1,498.75
7350	7,100.17	7,050.17	S 1,179.09	W 929.57	1,501.45
7360	7,109.68	7,059.68	S 1,180.30	W 932.42	1,504.16
7370	7,119.19	7,069.19	S 1,181.50	W 935.26	1,506.88
7380	7,128.70	7,078.70	S 1,182.71	W 938.11	1,509.59
7390	7,138.21	7,088.21	S 1,183.92	W 940.95	1,512.30
7400	7,147.72	7,097.72	S 1,185.13	W 943.80	1,515.02
7410	7,157.23	7,107.23	S 1,186.33	W 946.64	1,517.74
7420	7,166.74	7,116.74	S 1,187.54	W 949.49	1,520.45
7430	7,176.25	7,126.25	S 1,188.75	W 952.33	1,523.17
7440	7,185.76	7,135.76	S 1,189.96	W 955.17	1,525.90
7450	7,195.28	7,145.28	S 1,191.16	W 958.02	1,528.62
7460	7,204.79	7,154.79	S 1,192.37	W 960.86	1,531.34
7470	7,214.30	7,164.30	S 1,193.58	W 963.71	1,534.07
7480	7,223.81	7,173.81	S 1,194.79	W 966.55	1,536.80
7490	7,233.32	7,183.32	S 1,195.99	W 969.40	1,539.52
7500	7,242.83	7,192.83	S 1,197.20	W 972.24	1,542.25
7510	7,252.34	7,202.34	S 1,198.41	W 975.09	1,544.99
7520	7,261.85	7,211.85	S 1,199.62	W 977.93	1,547.72
7530	7,271.36	7,221.36	S 1,200.82	W 980.78	1,550.45
7540	7,280.87	7,230.87	S 1,202.03	W 983.62	1,553.19
7550	7,290.38	7,240.38	S 1,203.24	W 986.46	1,555.92
* 7560	7,299.89	7,249.89	S 1,204.41	W 989.32	1,558.65 *
7570	7,309.40	7,259.40	S 1,205.52	W 992.21	1,561.34
7580	7,318.91	7,268.91	S 1,206.63	W 995.10	1,564.03
7590	7,328.42	7,278.42	S 1,207.75	W 998.00	1,566.73
7600	7,337.92	7,287.92	S 1,208.86	W 1,000.90	1,569.44
7610	7,347.43	7,297.43	S 1,209.97	W 1,003.80	1,572.15
7620	7,356.93	7,306.93	S 1,211.09	W 1,006.70	1,574.86
7630	7,366.43	7,316.43	S 1,212.20	W 1,009.61	1,577.58
7640	7,375.93	7,325.93	S 1,213.32	W 1,012.52	1,580.30
7650	7,385.43	7,335.43	S 1,214.44	W 1,015.44	1,583.03
7660	7,394.93	7,344.93	S 1,215.56	W 1,018.36	1,585.76

DIRECTIONAL SURVEY FOR WELL L016-21

COMPUTATIONS AT 10 FEET INCREMENTS

WELL NO. Z2A-21-781-D-L016(L016-21) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 39

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 370' MD.

MEASURED DEPTH	VERTICAL DEPTH	TRUE SUB-SEA	TOTAL CD - ORDINATES		HORIZONTAL DISTANCE
7670	7,404.43	7,354.43	S 1,216.68	W 1,021.28	1,588.50
7680	7,413.93	7,363.93	S 1,217.80	W 1,024.20	1,591.24
7690	7,423.42	7,373.42	S 1,218.93	W 1,027.13	1,593.98
7700	7,432.92	7,382.92	S 1,220.05	W 1,030.06	1,596.73
7710	7,442.41	7,392.41	S 1,221.18	W 1,032.99	1,599.49
7720	7,451.90	7,401.90	S 1,222.31	W 1,035.93	1,602.24
7730	7,461.39	7,411.39	S 1,223.43	W 1,038.87	1,605.01
7740	7,470.88	7,420.88	S 1,224.56	W 1,041.81	1,607.77
7750	7,480.37	7,430.37	S 1,225.70	W 1,044.76	1,610.55
7760	7,489.86	7,439.86	S 1,226.83	W 1,047.71	1,613.32
7770	7,499.35	7,449.35	S 1,227.96	W 1,050.66	1,616.10
7780	7,508.83	7,458.83	S 1,229.10	W 1,053.62	1,618.89
7790	7,518.32	7,468.32	S 1,230.23	W 1,056.58	1,621.67
* 7800	7,527.80	7,477.80	S 1,231.37	W 1,059.54	1,624.47 *