

B-16 38 Definitive Survey

(Def Survey)

Report Date: December 12, 2013 - 01:13 PM
Client: HMDC
Field: Hibernia
Structure / Slot: Hibernia Platform / 45
Well: B-16 38 (OPNN1)
Borehole: B-16 38
UWI / API#: Borehole-821939 / Unknown
Survey Name: B-16 38 Definitive
Survey Date: December 10, 2013
Tort / AHD / DDI / ERD Ratio: 239.906 ° / 4427.147 m / 6.736 / 0.991
Coordinate Reference System: NAD83 Universal Transverse Mercator, Zone 22 North, Meters
Location Lat / Long: N 46° 45' 1.36990", W 48° 46' 53.57049"
Location Grid N/E Y/X: N 5179815.290 m, E 669440.500 m
CRS Grid Convergence Angle: 1.6162 °
Grid Scale Factor: 0.99995289

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 125.842 ° (Grid North)
Vertical Section Origin: 4,570 m, 23,981 m
TVD Reference Datum: Rotary Table
TVD Reference Elevation: 76,000 m above MSL
Seabed / Ground Elevation: 80,000 m below MSL
Magnetic Declination: -17.919 °
Total Gravity Field Strength: 1000.8096 mgn (9.8 based)
Total Magnetic Field Strength: 50108.607 nT
Magnetic Dip Angle: 65.767 °
Declination Date: October 15, 2013
Magnetic Declination Model: BGGM 2013
North Reference: Grid North
Grid Convergence Used: 1.6162 °
Total Corr Mag North->Grid North: -19.5350 °
Local Coord Referenced To: Structure Reference Point

Comments	MD (m)	Incl (°)	Azim Grid (°)	Azim True (°)	TVD (m)	VSEC (m)	NS (m)	EW (m)	DLS (°/30m)	Northing (m)	Easting (m)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Tie-In / Slot 45	0.00	0.00	0.00	1.62	0.00	0.00	4.57	23.98	N/A	5179815.29	669440.50	N 46 45 1.37	W 48 46 53.57
Seabed	156.91	0.00	0.00	1.62	156.91	0.00	4.57	23.98	0.00	5179815.29	669440.50	N 46 45 1.37	W 48 46 53.57
30° Csg Gyro	165.00	0.03	324.49	326.11	165.00	0.00	4.57	23.98	0.11	5179815.29	669440.50	N 46 45 1.37	W 48 46 53.57
	170.00	0.14	217.05	218.67	170.00	0.00	4.57	23.98	0.91	5179815.29	669440.49	N 46 45 1.37	W 48 46 53.57
	175.00	0.19	256.89	258.51	175.00	-0.01	4.56	23.96	0.73	5179815.28	669440.48	N 46 45 1.37	W 48 46 53.57
	180.00	0.15	238.41	240.03	180.00	-0.02	4.56	23.95	0.40	5179815.28	669440.47	N 46 45 1.37	W 48 46 53.57
	185.00	0.19	212.11	213.73	185.00	-0.02	4.55	23.94	0.52	5179815.27	669440.46	N 46 45 1.37	W 48 46 53.57
	190.00	0.26	218.05	219.67	190.00	-0.02	4.53	23.93	0.44	5179815.25	669440.45	N 46 45 1.37	W 48 46 53.57
	195.00	0.24	218.77	220.39	195.00	-0.02	4.51	23.92	0.12	5179815.23	669440.43	N 46 45 1.37	W 48 46 53.57
	200.00	0.26	214.13	215.75	200.00	-0.02	4.50	23.90	0.17	5179815.21	669440.42	N 46 45 1.37	W 48 46 53.57
	205.00	0.21	195.00	196.62	205.00	-0.02	4.48	23.89	0.55	5179815.20	669440.41	N 46 45 1.37	W 48 46 53.57
	210.00	0.24	233.44	235.06	210.00	-0.02	4.46	23.88	0.90	5179815.18	669440.40	N 46 45 1.37	W 48 46 53.58
	215.00	0.15	224.58	226.20	215.00	-0.02	4.45	23.87	0.57	5179815.17	669440.39	N 46 45 1.37	W 48 46 53.58
	220.00	0.17	213.08	214.70	220.00	-0.02	4.44	23.86	0.23	5179815.16	669440.38	N 46 45 1.37	W 48 46 53.58
	225.00	0.21	215.55	217.17	225.00	-0.02	4.43	23.85	0.24	5179815.15	669440.37	N 46 45 1.37	W 48 46 53.58
	230.00	0.15	183.16	184.78	230.00	-0.02	4.41	23.85	0.69	5179815.13	669440.36	N 46 45 1.36	W 48 46 53.58
	235.00	0.16	179.01	180.63	235.00	-0.01	4.40	23.85	0.09	5179815.12	669440.36	N 46 45 1.36	W 48 46 53.58
	240.00	0.16	214.82	216.44	240.00	-0.01	4.39	23.84	0.59	5179815.11	669440.36	N 46 45 1.36	W 48 46 53.58
	245.00	0.25	195.09	196.71	245.00	0.00	4.37	23.84	0.68	5179815.09	669440.35	N 46 45 1.36	W 48 46 53.58
	250.00	0.13	213.87	215.49	250.00	0.00	4.35	23.83	0.80	5179815.07	669440.35	N 46 45 1.36	W 48 46 53.58
	255.00	0.08	198.29	199.91	255.00	0.00	4.35	23.82	0.34	5179815.07	669440.34	N 46 45 1.36	W 48 46 53.58
	260.00	0.13	188.32	189.94	260.00	0.01	4.34	23.82	0.32	5179815.06	669440.34	N 46 45 1.36	W 48 46 53.58
	265.00	0.15	125.30	126.92	265.00	0.02	4.33	23.83	0.88	5179815.05	669440.35	N 46 45 1.36	W 48 46 53.58
	270.00	0.10	179.21	180.83	270.00	0.03	4.32	23.83	0.73	5179815.04	669440.35	N 46 45 1.36	W 48 46 53.58
	275.00	0.09	249.52	251.14	275.00	0.03	4.31	23.83	0.66	5179815.03	669440.35	N 46 45 1.36	W 48 46 53.58
	280.00	0.14	257.55	259.17	280.00	0.02	4.31	23.82	0.31	5179815.03	669440.34	N 46 45 1.36	W 48 46 53.58
	285.00	0.13	227.14	228.76	285.00	0.02	4.31	23.81	0.43	5179815.03	669440.33	N 46 45 1.36	W 48 46 53.58
	290.00	0.11	174.59	176.21	290.00	0.02	4.30	23.81	0.65	5179815.02	669440.32	N 46 45 1.36	W 48 46 53.58
gMWD 1	295.00	0.08	153.08	154.70	295.00	0.02	4.29	23.81	0.28	5179815.01	669440.33	N 46 45 1.36	W 48 46 53.58
	311.65	0.26	109.03	110.65	311.65	0.07	4.27	23.85	0.38	5179814.99	669440.37	N 46 45 1.36	W 48 46 53.58
	331.67	0.70	89.20	90.82	331.67	0.21	4.25	24.01	0.70	5179814.97	669440.53	N 46 45 1.36	W 48 46 53.57
	366.98	1.49	59.82	61.44	366.97	0.57	4.49	24.63	0.80	5179815.21	669441.15	N 46 45 1.37	W 48 46 53.54
	395.83	2.81	60.52	62.14	395.80	1.02	5.02	25.57	1.37	5179815.74	669442.09	N 46 45 1.38	W 48 46 53.50
	424.27	4.04	61.05	62.67	424.19	1.74	5.85	27.05	1.30	5179816.57	669443.57	N 46 45 1.41	W 48 46 53.42
	453.86	5.98	59.29	60.91	453.67	2.79	7.14	29.29	1.97	5179817.86	669445.81	N 46 45 1.45	W 48 46 53.32
	480.68	6.77	59.73	61.35	480.32	3.99	8.65	31.85	0.89	5179819.37	669448.37	N 46 45 1.49	W 48 46 53.19
gMWD 2	493.21	7.03	60.30	61.92	492.76	4.61	9.41	33.16	0.64	5179820.13	669449.68	N 46 45 1.52	W 48 46 53.13
	512.41	6.18	58.94	60.56	511.83	5.50	10.52	35.06	1.35	5179821.24	669451.58	N 46 45 1.55	W 48 46 53.04
	527.73	6.27	56.83	58.45	527.06	6.12	11.41	36.47	0.48	5179822.12	669452.99	N 46 45 1.58	W 48 46 52.97
	542.30	6.36	57.01	58.63	541.54	6.70	12.28	37.81	0.19	5179823.00	669454.33	N 46 45 1.61	W 48 46 52.91
	557.44	6.71	57.36	58.98	556.58	7.33	13.21	39.26	0.70	5179823.93	669455.78	N 46 45 1.64	W 48 46 52.84
	572.03	6.96	57.80	59.42	571.07	7.97	14.14	40.73	0.53	5179824.86	669457.25	N 46 45 1.66	W 48 46 52.77
	586.69	6.71	58.94	60.56	585.63	8.64	15.06	42.21	0.58	5179825.78	669458.73	N 46 45 1.69	W 48 46 52.70
	602.46	6.27	59.20	60.82	601.29	9.34	15.98	43.74	0.84	5179826.70	669460.26	N 46 45 1.72	W 48 46 52.62
	616.56	6.09	58.94	60.56	615.31	9.94	16.76	45.04	0.39	5179827.48	669461.56	N 46 45 1.75	W 48 46 52.56
	630.22	6.27	58.59	60.21	628.89	10.51	17.52	46.30	0.40	5179828.24	669462.82	N 46 45 1.77	W 48 46 52.50
	646.85	6.27	58.59	60.21	645.42	11.21	18.47	47.85	0.00	5179829.18	669464.37	N 46 45 1.80	W 48 46 52.43
	663.22	6.53	57.62	59.24	661.69	11.90	19.43	49.40	0.52	5179830.15	669465.92	N 46 45 1.83	W 48 46 52.35
	675.52	6.62	55.60	57.22	673.91	12.40	20.20	50.58	0.61	5179830.92	669467.09	N 46 45 1.85	W 48 46 52.30
	689.20	6.53	56.39	58.01	687.50	12.94	21.08	51.87	0.28	5179831.80	669468.39	N 46 45 1.88	W 48 46 52.23
	704.76	6.62	56.66	58.28	702.96	13.57	22.06	53.36	0.18	5179832.78	669469.88	N 46 45 1.91	W 48 46 52.16
	719.50	6.71	57.53	59.15	717.60	14.19	22.99	54.80	0.28	5179833.71	669471.31	N 46 45 1.94	W 48 46 52.09
	733.22	6.53	58.76	60.38	731.23	14.79	23.83	56.14	0.50	5179834.55	669472.66	N 46 45 1.96	W 48 46 52.03
	748.50	5.74	61.23	62.85	746.42	15.46	24.65	57.55	1.63	5179835.37	669474.07	N 46 45 1.99	W 48 46 51.96
	763.36	5.04	61.58	63.20	761.21	16.06	25.31	58.78	1.41	5179836.03	669475.30	N 46 45 2.01	W 48 46 51.90
	778.28	5.39	61.75	63.37	776.07	16.65	25.96	59.97	0.70	5179836.68	669476.49	N 46 45 2.03	W 48 46 51.85
	792.53	6.36	60.79	62.41	790.25	17.28	26.66	61.25	2.05	5179837.38	669477.77	N 46 45 2.05	W 48 46 51.79
	807.83	7.58	59.82	61.44	805.43	18.04	27.58	62.86	2.40	5179838.30	669479.38	N 46 45 2.08	W 48 46 51.71
	822.48	8.55	59.64	61.26	819.94	18.88	28.62	64.64	1.99	5179839.34	669481.15	N 46 45 2.11	W 48 46 51.62
	836.69	9.33	60.00	61.62	833.98	19.77	29.73	66.55	1.65	5179840.45	669483.06	N 46 45 2.15	W 48 46 51.53
	851.81	10.12	60.43	62.05	848.88	20.83	31.00	68.76	1.57	5179841.71	669485.28	N 46 45 2.18	W 48 46 51.43
	866.96	10.65	61.14	62.76	863.78	21.98	32.33	71.15	1.08	5179843.05	669487.66	N 46 45 2.23	W 48 46 51.31
	880.97	10.73	59.73	61.35	877.55	23.06	33.61	73.41	0.59	5179844.33	669489.92	N 46 45 2.26	W 48 46 51.20
	910.82	11.69	59.91	61.53	906.83	25.42	36.53	78.42	0.97	5179847.25	669494.94	N 46 45 2.35	W 48 46 50.96
	940.33	13.01	64.30	65.92	935.65	28.22	39.47	84.00	1.65	5179850.15	669500.52	N 46 45 2.44	W 48 46 50.70
	969.78	14.16	63.77	65.39	964.28	31.49	42.50	90.22	1.18	5179853.21	669506.74	N 46 45 2.54	W 48 46 50.40
	999.58	15.64	64.39	66.01	993.08	35.12	45.84	97.11	1.50	5179856.56	669513.63	N 46 45 2.64	W 48 46 50.07
	1028.85	16.88	64.74	66.36	1021.18	39.06	49.36	104.52	1.27	5179860.08	669521.03	N 46 4	

Comments	MD (m)	Incl (°)	Azim Grid (°)	Azim True (°)	TVD (m)	VSEC (m)	NS (m)	EW (m)	DLS (°30m)	Northing (m)	Easting (m)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	1356.11	28.32	81.79	83.41	1323.85	115.33	82.55	222.58	1.27	5179893.27	669639.09	N 46 45 3.71	W 48 46 44.11
	1385.55	29.16	83.78	85.40	1349.67	125.67	84.32	236.62	1.30	5179895.04	669653.13	N 46 45 3.76	W 48 46 43.45
	1414.90	29.80	85.84	87.46	1375.22	136.57	85.63	251.00	1.23	5179896.34	669667.51	N 46 45 3.79	W 48 46 42.77
	1444.48	30.35	88.01	89.63	1400.82	148.10	86.42	265.80	1.24	5179897.14	669682.31	N 46 45 3.80	W 48 46 42.07
	1474.03	30.99	90.29	91.91	1426.23	160.19	86.64	280.87	1.35	5179897.36	669697.38	N 46 45 3.79	W 48 46 41.36
	1503.56	31.86	92.44	94.06	1451.43	172.88	86.27	296.26	1.44	5179896.99	669712.77	N 46 45 3.77	W 48 46 40.64
	1532.86	33.49	94.84	96.46	1476.10	186.27	85.26	312.04	2.13	5179895.98	669728.55	N 46 45 3.72	W 48 46 39.90
	1562.27	34.87	97.35	98.97	1500.43	200.61	83.50	328.47	2.01	5179894.22	669744.97	N 46 45 3.65	W 48 46 39.13
	1591.80	36.53	99.73	101.35	1524.41	215.92	80.93	345.51	2.20	5179891.65	669762.01	N 46 45 3.55	W 48 46 38.33
	1650.45	37.45	101.27	102.89	1571.26	247.82	74.50	380.20	0.67	5179885.22	669796.70	N 46 45 3.31	W 48 46 36.70
	1680.47	38.15	101.69	103.31	1594.98	264.58	70.84	398.23	0.75	5179881.55	669814.73	N 46 45 3.17	W 48 46 35.86
	1709.87	39.86	103.22	104.84	1617.82	281.56	66.84	416.30	2.00	5179877.56	669832.80	N 46 45 3.03	W 48 46 35.01
	1739.11	41.57	104.62	106.24	1639.98	299.25	62.25	434.81	1.99	5179872.97	669851.31	N 46 45 2.86	W 48 46 34.15
	1768.38	43.13	106.91	108.53	1661.62	317.77	56.89	453.78	2.25	5179867.61	669870.28	N 46 45 2.67	W 48 46 33.26
	1798.43	44.72	109.29	110.91	1683.26	337.63	50.41	473.59	2.29	5179861.12	669890.08	N 46 45 2.44	W 48 46 32.33
	1827.06	46.23	111.33	112.95	1703.34	357.29	43.32	492.73	2.20	5179854.04	669909.22	N 46 45 2.20	W 48 46 31.44
	1856.46	47.84	113.40	115.02	1723.38	378.21	35.13	512.62	2.26	5179845.85	669929.11	N 46 45 1.91	W 48 46 30.52
	1886.23	49.48	115.59	117.21	1743.04	400.12	25.86	532.95	2.34	5179836.58	669949.45	N 46 45 1.59	W 48 46 29.57
	1915.79	51.16	117.86	119.48	1761.92	422.58	15.62	552.27	2.46	5179826.34	669969.76	N 46 45 1.24	W 48 46 28.63
	1945.09	52.59	120.08	121.70	1780.01	445.46	4.46	573.43	2.31	5179815.18	669989.92	N 46 45 0.86	W 48 46 27.69
	1974.59	54.91	121.75	123.37	1797.45	469.16	-7.77	593.83	2.73	5179802.95	670010.32	N 46 45 0.45	W 48 46 26.75
	2004.00	56.58	123.67	125.29	1814.00	493.43	-20.91	614.28	2.35	5179789.82	670030.77	N 46 45 0.01	W 48 46 25.80
	2033.13	58.67	126.07	127.69	1829.60	518.03	-34.97	634.46	3.00	5179775.75	670050.95	N 46 44 59.53	W 48 46 24.87
	2062.29	60.43	128.20	129.82	1844.38	543.16	-50.15	654.49	2.62	5179760.57	670070.98	N 46 44 59.02	W 48 46 23.95
	2092.33	61.80	129.94	131.56	1858.89	569.42	-66.73	674.91	2.05	5179743.99	670091.40	N 46 44 58.47	W 48 46 23.01
	2121.17	63.75	131.79	133.41	1872.09	594.96	-83.51	694.30	2.65	5179727.21	670110.79	N 46 44 57.91	W 48 46 22.12
	2150.32	66.08	133.08	134.70	1884.44	621.18	-101.32	713.78	2.68	5179709.40	670130.27	N 46 44 57.31	W 48 46 21.23
	2179.83	68.26	134.42	136.04	1895.89	648.12	-120.13	733.42	2.55	5179690.59	670149.91	N 46 44 56.68	W 48 46 20.33
	2209.10	70.74	135.22	136.84	1906.14	675.20	-139.46	752.87	2.66	5179671.27	670169.35	N 46 44 56.04	W 48 46 19.44
	2238.68	71.59	135.41	137.03	1915.69	702.81	-159.36	772.56	0.88	5179651.37	670189.04	N 46 44 55.38	W 48 46 18.53
	2268.67	71.70	135.58	137.20	1924.57	729.19	-178.44	791.31	0.21	5179632.29	670207.79	N 46 44 54.74	W 48 46 17.68
	2296.61	71.65	136.28	137.90	1933.92	756.98	-198.73	810.95	0.67	5179612.00	670227.43	N 46 44 54.07	W 48 46 16.78
	2326.09	71.73	136.95	138.57	1943.18	784.48	-219.07	830.17	0.65	5179591.66	670246.65	N 46 44 53.39	W 48 46 15.90
	2355.72	71.70	137.69	139.31	1952.48	812.05	-239.75	849.24	0.71	5179570.98	670265.72	N 46 44 52.71	W 48 46 15.03
	2385.17	71.60	138.12	139.74	1961.75	839.38	-260.49	867.98	0.43	5179550.24	670284.46	N 46 44 52.02	W 48 46 14.18
	2414.81	71.47	138.29	139.91	1971.14	866.85	-281.45	886.72	0.21	5179529.28	670303.20	N 46 44 51.32	W 48 46 13.32
	2443.23	71.44	137.72	139.34	1980.18	893.18	-301.48	904.75	0.57	5179509.26	670321.22	N 46 44 50.66	W 48 46 12.50
	2463.52	71.31	137.73	139.35	1986.66	912.00	-315.70	917.68	0.19	5179495.03	670334.16	N 46 44 50.18	W 48 46 11.91
	2492.09	71.10	137.04	138.66	1995.86	938.50	-335.61	935.99	0.72	5179475.13	670352.47	N 46 44 49.52	W 48 46 11.07
	2520.54	71.17	136.37	137.99	2005.06	964.94	-355.20	954.45	0.67	5179455.54	670370.93	N 46 44 48.87	W 48 46 10.23
	2549.28	70.96	135.24	136.86	2014.39	991.71	-374.69	973.40	1.14	5179436.05	670389.88	N 46 44 48.22	W 48 46 9.36
	2577.77	70.70	134.10	135.72	2023.74	1018.30	-393.61	992.54	1.17	5179417.13	670409.01	N 46 44 47.59	W 48 46 8.49
	2606.46	70.41	133.58	135.20	2033.29	1045.09	-412.35	1012.05	0.60	5179398.39	670428.53	N 46 44 46.97	W 48 46 7.59
	2634.50	70.30	134.17	135.79	2042.72	1071.24	-430.65	1031.09	0.61	5179380.09	670447.56	N 46 44 46.36	W 48 46 6.72
	2663.66	69.71	134.27	135.89	2052.69	1098.35	-449.76	1050.73	0.61	5179360.98	670467.20	N 46 44 45.72	W 48 46 5.82
	2692.10	69.52	134.44	136.06	2062.60	1124.72	-468.40	1069.79	0.26	5179342.34	670486.26	N 46 44 45.10	W 48 46 4.95
	2720.11	69.42	134.48	136.10	2072.42	1150.65	-486.77	1088.51	0.11	5179323.97	670504.98	N 46 44 44.49	W 48 46 4.09
	2749.26	69.78	134.06	135.68	2082.58	1177.68	-505.84	1108.08	0.55	5179304.90	670524.54	N 46 44 43.85	W 48 46 3.20
	2776.98	69.78	133.92	135.54	2092.16	1203.43	-523.91	1126.79	0.14	5179286.84	670543.26	N 46 44 43.25	W 48 46 2.34
	2805.28	69.75	133.46	135.08	2101.95	1229.73	-542.25	1145.99	0.46	5179268.49	670562.46	N 46 44 42.64	W 48 46 1.46
	2834.29	69.71	133.28	134.90	2112.00	1256.71	-560.94	1165.77	0.18	5179249.81	670582.24	N 46 44 42.02	W 48 46 0.55
	2862.77	69.84	133.71	135.33	2121.85	1283.20	-579.33	1185.16	0.45	5179231.41	670601.62	N 46 44 41.40	W 48 45 59.67
	2891.38	69.71	133.76	135.38	2131.74	1309.79	-597.89	1204.56	0.14	5179212.86	670621.02	N 46 44 40.79	W 48 45 58.78
	2920.04	69.75	134.30	135.92	2141.67	1336.40	-616.58	1223.89	0.53	5179194.17	670640.35	N 46 44 40.16	W 48 45 57.89
	2948.57	69.75	135.56	137.18	2151.54	1362.83	-635.48	1242.84	1.24	5179175.27	670659.30	N 46 44 39.53	W 48 45 57.02
	2977.13	69.75	135.67	137.29	2161.43	1389.24	-654.63	1261.58	0.11	5179156.12	670678.04	N 46 44 38.90	W 48 45 56.17
	3005.69	69.58	136.08	137.70	2171.35	1415.61	-673.85	1280.22	0.44	5179136.90	670696.68	N 46 44 38.26	W 48 45 55.32
	3034.19	69.62	135.87	137.49	2181.29	1441.90	-693.06	1298.79	0.21	5179117.69	670715.25	N 46 44 37.62	W 48 45 54.47
	3062.81	69.68	135.90	137.52	2191.24	1468.32	-712.33	1317.47	0.07	5179098.43	670733.92	N 46 44 36.98	W 48 45 53.61
	3091.46	69.78	136.06	137.68	2201.16	1494.78	-731.65	1336.14	0.19	5179079.10	670752.60	N 46 44 36.33	W 48 45 52.76
	3120.31	69.84	136.26	137.88	2211.12	1521.42	-751.18	1354.90	0.20	5179059.57	670771.35	N 46 44 35.69	W 48 45 51.90
	3148.62	69.84	135.89	137.51	2220.88	1547.57	-770.32	1373.33	0.37	5179040.43	670789.79	N 46 44 35.05	W 48 45 51.06
	3177.50	69.82	135.65	137.27	2230.84	1574.28	-789.75	1392.24	0.23	5179021.01	670808.70	N 46 44 34.40	W 48 45 50.20
	3205.78	70.11	135.77	137.39	2240.53	1600.45	-808.77	1410.80	0.33	5179001.99	670827.25	N 46 44 33.77	W 48 45 49.35
	3234.18	70.43	135.44	137.06	2250.11	1626.80	-827.87	1429.50	0.47	5178982.89	670846.95	N 46 44 33.13	W 48 45 48.49
	3263.05	69.95	134.84	136.46	2259.90	1653.60	-847.12	1448.66	0.77	5178963.64	670865.11	N 46 44 32.49	W 48 45 47.62
	3291.51	69.97	134.40	136.02	2269.65	1680.02	-865.90	1467.69	0.44	5178944.86	670884.14	N 46 44 31.87	W 48 45 46.74
	3320.33	69.73	133.63	135.25	2279.58	1706.81	-884.70	1487.14	0.79	5178926.06	670903.59	N 46 44 31.24	W 48 45 45.85
	3348.78	69.87	133.20	134.82	2289.40	1733.27	-903.05	1506.54	0.45	5178907.71	670922.99	N 46 44 30.63	W 48 45 44.97
	3376.75	69.90	132.67	134.29	2299.02	1759.34	-920.94	1525.77	0.53	5178889.82	670942.22	N 46 44 30.03	W 48 45 44.08
	3405.21	69.72	132.26	133.88	2308.84	1785.87	-938.97	1545.47	0.45	5178871.79	670961.92	N 46 44 29.43	W 48 45 43.18
	3433.19	69.49	132.82	134.44	2318.59	1811.92	-95						

Comments	MD (m)	Incl (°)	Azim Grid (°)	Azim True (°)	TVD (m)	VSEC (m)	NS (m)	EW (m)	DLS (°30m)	Northing (m)	Easting (m)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	4459.93	69.55	134.39	136.01	2675.06	2763.31	-1633.09	2249.87	0.35	5178177.71	671666.28	N 46 44 6.31	W 48 45 10.95
	4488.36	69.63	134.52	136.14	2684.97	2789.66	-1651.75	2268.88	0.15	5178159.05	671685.30	N 46 44 5.69	W 48 45 10.08
	4516.59	69.56	134.66	136.28	2694.81	2815.81	-1670.32	2287.73	0.16	5178140.48	671704.14	N 46 44 5.07	W 48 45 9.21
	4545.43	69.59	134.97	136.59	2704.88	2842.50	-1689.37	2306.90	0.30	5178121.43	671723.31	N 46 44 4.44	W 48 45 8.34
	4574.07	69.81	135.34	136.96	2714.82	2869.01	-1708.42	2325.84	0.43	5178102.39	671742.25	N 46 44 3.80	W 48 45 7.47
	4602.76	69.65	135.58	137.20	2724.76	2895.55	-1727.60	2344.72	0.29	5178083.20	671761.13	N 46 44 3.16	W 48 45 6.61
	4630.96	69.52	135.38	137.00	2734.59	2921.60	-1746.44	2363.25	0.24	5178064.36	671779.66	N 46 44 2.54	W 48 45 5.76
	4659.50	69.90	135.48	137.10	2744.49	2948.00	-1765.51	2382.04	0.41	5178045.29	671798.44	N 46 44 1.90	W 48 45 4.90
	4688.05	69.80	135.35	136.97	2754.32	2974.43	-1784.60	2400.85	0.17	5178026.20	671817.26	N 46 44 1.27	W 48 45 4.04
	4716.88	69.75	134.98	136.60	2764.29	3001.12	-1803.78	2419.92	0.37	5178007.02	671836.33	N 46 44 0.63	W 48 45 3.17
	4745.09	69.65	134.38	136.00	2774.08	3027.26	-1822.39	2436.74	0.61	5177988.42	671855.14	N 46 44 0.01	W 48 45 2.31
	4773.91	69.66	134.27	135.89	2784.10	3053.99	-1841.27	2456.07	0.11	5177969.54	671874.47	N 46 43 59.38	W 48 45 1.42
	4802.19	69.60	133.67	135.29	2793.94	3080.24	-1859.68	2477.15	0.60	5177951.13	671893.55	N 46 43 58.77	W 48 45 0.55
	4831.02	69.39	133.89	135.51	2804.04	3106.98	-1878.36	2496.64	0.31	5177932.45	671913.05	N 46 43 58.14	W 48 44 59.66
	4859.58	69.84	134.47	136.09	2813.99	3133.47	-1897.02	2515.84	0.74	5177913.79	671932.24	N 46 43 57.52	W 48 44 58.78
	4888.11	69.83	133.94	135.56	2823.82	3159.96	-1915.69	2535.04	0.52	5177895.12	671951.44	N 46 43 56.90	W 48 44 57.90
	4916.43	69.96	133.70	135.32	2833.56	3186.30	-1934.10	2554.23	0.28	5177876.71	671970.63	N 46 43 56.29	W 48 44 57.02
	4944.90	69.80	133.17	134.79	2843.35	3212.80	-1952.48	2573.64	0.55	5177858.33	671990.04	N 46 43 55.67	W 48 44 56.13
	4973.52	69.79	133.67	135.29	2853.24	3239.42	-1970.94	2593.15	0.49	5177839.87	672009.55	N 46 43 55.06	W 48 44 55.24
	5002.35	70.02	133.69	135.31	2863.14	3266.25	-1989.64	2612.73	0.24	5177821.17	672029.13	N 46 43 54.43	W 48 44 54.34
	5030.85	69.09	132.79	134.41	2873.10	3292.73	-2007.94	2632.18	1.32	5177802.88	672048.58	N 46 43 53.82	W 48 44 53.45
	5059.18	69.42	133.85	135.47	2883.13	3318.99	-2026.11	2651.46	1.11	5177784.70	672067.85	N 46 43 53.22	W 48 44 52.57
	5087.91	69.60	134.32	135.94	2893.19	3345.63	-2044.84	2670.79	0.50	5177765.98	672087.18	N 46 43 52.59	W 48 44 51.68
	5116.33	68.29	133.05	134.67	2903.40	3371.90	-2063.16	2689.97	1.86	5177747.66	672106.36	N 46 43 51.98	W 48 44 50.81
	5144.66	66.25	132.40	134.02	2914.35	3397.84	-2080.88	2709.16	2.25	5177729.93	672125.55	N 46 43 51.39	W 48 44 49.93
	5173.30	63.17	131.52	133.14	2926.58	3423.59	-2098.20	2728.41	3.33	5177712.62	672144.80	N 46 43 50.81	W 48 44 49.04
	5201.93	60.37	131.74	133.36	2940.12	3448.68	-2114.95	2747.26	2.94	5177695.87	672163.66	N 46 43 50.25	W 48 44 48.18
	5229.90	59.13	131.73	133.35	2954.21	3472.71	-2131.04	2765.29	1.33	5177679.78	672181.68	N 46 43 49.72	W 48 44 47.35
	5258.64	59.09	132.65	134.27	2968.97	3497.22	-2147.60	2783.57	0.83	5177663.22	672199.96	N 46 43 49.16	W 48 44 46.51
	5287.41	56.66	133.16	134.78	2984.26	3521.40	-2164.18	2801.41	2.57	5177646.64	672217.80	N 46 43 48.61	W 48 44 45.70
	5315.87	54.49	133.11	134.73	3000.35	3544.69	-2180.23	2818.54	2.29	5177630.59	672234.93	N 46 43 48.07	W 48 44 44.91
	5344.60	53.39	132.45	134.07	3017.26	3567.74	-2196.01	2835.59	1.28	5177614.82	672251.98	N 46 43 47.55	W 48 44 44.13
	5372.68	52.36	132.37	133.99	3034.21	3589.98	-2211.11	2852.12	1.10	5177599.72	672268.51	N 46 43 47.04	W 48 44 43.37
	5401.34	50.78	131.32	132.94	3052.02	3612.31	-2226.09	2868.84	1.86	5177584.74	672285.23	N 46 43 46.54	W 48 44 42.60
	5429.61	48.07	129.18	130.80	3070.41	3633.71	-2239.96	2885.22	3.35	5177570.86	672301.61	N 46 43 46.08	W 48 44 41.85
	5458.32	46.51	129.89	131.51	3089.88	3654.77	-2253.39	2901.49	1.72	5177557.44	672317.88	N 46 43 45.63	W 48 44 41.10
	5486.82	44.67	130.53	132.15	3109.83	3675.06	-2266.53	2917.04	2.00	5177544.29	672333.42	N 46 43 45.19	W 48 44 40.39
	5515.20	42.73	130.27	131.89	3130.34	3694.61	-2279.24	2931.97	2.06	5177531.59	672348.35	N 46 43 44.76	W 48 44 39.70
	5543.89	41.05	130.10	131.72	3151.70	3713.71	-2291.60	2946.61	1.76	5177519.23	672362.99	N 46 43 44.35	W 48 44 39.03
	5572.12	38.57	130.29	131.91	3173.39	3731.73	-2303.26	2960.41	2.64	5177507.56	672376.79	N 46 43 43.96	W 48 44 38.40
	5600.48	35.86	130.44	132.06	3195.97	3748.83	-2314.37	2973.48	2.87	5177496.46	672389.86	N 46 43 43.59	W 48 44 37.80
	5629.65	34.21	130.03	131.65	3218.85	3765.52	-2325.19	2986.26	1.71	5177485.64	672402.64	N 46 43 43.23	W 48 44 37.21
	5657.32	33.79	129.12	130.74	3242.79	3780.96	-2335.05	2998.19	0.72	5177475.78	672414.57	N 46 43 42.90	W 48 44 36.66
	5686.40	32.59	126.78	128.40	3267.13	3796.87	-2344.84	3010.73	1.81	5177465.99	672427.11	N 46 43 42.57	W 48 44 36.08
	5714.93	31.49	123.83	125.45	3291.31	3812.00	-2353.59	3023.08	2.01	5177457.24	672439.46	N 46 43 42.27	W 48 44 35.52
	5743.30	29.86	121.61	123.23	3315.71	3826.45	-2361.42	3035.25	2.10	5177449.42	672451.63	N 46 43 42.01	W 48 44 34.95
	5771.82	28.29	120.14	121.76	3340.64	3840.25	-2368.53	3047.14	1.81	5177442.30	672463.52	N 46 43 41.77	W 48 44 34.40
	5800.17	26.27	117.96	119.58	3365.84	3853.16	-2374.85	3058.50	2.38	5177435.99	672474.87	N 46 43 41.55	W 48 44 33.88
	5828.72	24.31	115.54	117.16	3391.65	3865.20	-2380.34	3069.38	2.33	5177430.49	672485.76	N 46 43 41.36	W 48 44 33.37
	5857.40	21.81	111.75	113.37	3418.04	3876.17	-2384.86	3079.66	3.04	5177425.97	672496.03	N 46 43 41.21	W 48 44 32.89
	5879.56	19.53	111.70	113.32	3438.77	3883.76	-2387.76	3086.92	3.09	5177423.07	672503.30	N 46 43 41.11	W 48 44 32.56
	5902.67	17.03	107.86	109.48	3460.71	3890.73	-2390.23	3093.73	3.60	5177420.61	672510.11	N 46 43 41.02	W 48 44 32.24
	5959.81	18.87	113.39	115.01	3515.07	3907.71	-2396.46	3110.18	1.32	5177414.37	672526.56	N 46 43 40.80	W 48 44 31.47
	5988.30	19.11	114.71	116.33	3542.01	3916.79	-2400.24	3118.65	0.52	5177410.59	672535.02	N 46 43 40.67	W 48 44 31.08
	6018.50	19.08	117.40	119.02	3570.55	3926.52	-2404.58	3127.52	0.87	5177406.26	672543.89	N 46 43 40.52	W 48 44 30.67
	6045.20	19.22	121.84	123.46	3595.77	3935.22	-2408.90	3135.13	1.64	5177401.93	672551.50	N 46 43 40.38	W 48 44 30.32
	6074.47	19.76	120.49	122.11	3623.37	3944.95	-2413.96	3143.49	0.72	5177396.88	672559.86	N 46 43 40.21	W 48 44 29.93
	6102.57	19.75	116.79	118.41	3649.81	3954.37	-2418.51	3151.82	1.33	5177392.33	672568.19	N 46 43 40.05	W 48 44 29.54
	6131.61	19.80	111.14	112.76	3677.14	3963.97	-2422.49	3160.79	1.97	5177388.34	672577.16	N 46 43 39.91	W 48 44 29.13
	6159.62	19.70	111.74	113.36	3703.51	3973.14	-2425.95	3169.60	0.24	5177384.88	672585.97	N 46 43 39.79	W 48 44 28.72
	6188.22	19.70	112.28	113.90	3730.43	3982.50	-2429.56	3178.53	0.19	5177381.27	672594.90	N 46 43 39.67	W 48 44 28.30
	6216.98	19.56	111.29	112.91	3757.52	3991.87	-2433.15	3187.50	0.38	5177377.68	672603.87	N 46 43 39.54	W 48 44 27.88
	6244.94	19.53	111.45	113.07	3783.87	4000.93	-2436.56	3196.22	0.07	5177374.28	672612.59	N 46 43 39.43	W 48 44 27.48
	6273.49	19.62	112.70	114.32	3810.77	4010.22	-2440.15	3205.08	0.45	5177370.68	672621.45	N 46 43 39.30	W 48 44 27.06
	6302.11	19.78	117.24	118.86	3837.72	4019.69	-2444.23	3213.82	1.61	5177366.61	672630.19	N 46 43 39.16	W 48 44 26.66
	6330.71	20.09	117.82	119.44	3864.60	4029.34	-2448.73	3222.47	0.39	5177362.10	672638.83	N 46 43 39.01	W 48 44 26.26
	6387.49	20.80	114.98	116.60	3917.81	4048.90	-2457.54	3240.23	0.64	5177353.29	672656.60	N 46 43 38.71	W 48 44 25.43
	6416.42	20.02	110.36	111.98	3944.92	4058.71	-2461.43	3249.53	1.86	5177349.40	672665.90	N 46 43 38.57	W 48 44 25.00
	6446.30	20.07	103.86	105.48	3973.00	4068.40	-2464.44	3259.30	2.24	5177346.39	672675.67	N 46 43 38.46	W 48 44 24.55
	6473.36	19.92	106.08	107.70	3998.43	4077.04	-2466.83	3268.24	0.86	5177344.01	672684.61	N 46 43 38.38	W 48 44 24.13
	6501.69	20.00	110.91	1									