



**Anglian Oil Company Ltd.
Northern Lights, AA Pad, AA16, Slot 09, Run #4**

**Job No. AB-CD-12345678
Survey Date: 23 September 2017**

**True North Directional Services Inc.
Anticollision Report**

01 March 2024

Minimum Distance Proximity Scan (Highside Reference)

Scan Range: 0.00m to 1,653.01m Measured Depth
Scan Radius is 200.00m. Clearance Factor cutoff is Unlimited.



True North
Directional Services Inc.

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Comparison Survey: AA Pad, AA06, As Drilled Surveys
Combined Surface Error between AA16 and AA06 is 1.75m

Measured Depth (m)	Uncertainty Data for Reference Survey				Uncertainty Data for Comparison Survey				Separation (Ref. > Comp.)				
	Vertical Depth (m)	Ellipse Centre		Ellipse Major Axis/2	Measured Depth (m)	Vertical Depth (m)	Ellipse Centre		Ellipse Major Axis/2	Between Centres (m)	Between Ellipsoids (m)	Relative HighSide Bearing	Clrnc. Factor
		Northings (m)	Eastings (m)				Northings (m)	Eastings (m)					
0.00	0.00	0.00 N	0.00 E	0.25	0.00	0.00	9.06 N	4.23 W	1.50	10.00	8.25	-25.00	5.70
30.00	30.00	0.06 S	0.04 E	0.32	30.00	30.00	9.09 N	4.19 W	1.57	10.07	8.19	-149.78	5.35
60.00	60.00	0.08 S	0.10 E	0.38	60.00	60.00	9.16 N	4.06 W	1.65	10.13	8.10	-99.02	4.99
90.00	90.00	0.09 S	0.09 E	0.43	89.96	89.96	9.26 N	3.87 W	1.76	10.16	7.98	96.59	4.65
120.00	120.00	0.12 S	0.03 E	0.51	119.97	119.96	9.55 N	3.66 W	1.85	10.35	7.98	124.79	4.38
150.00	150.00	0.14 S	0.03 E	0.55	150.03	150.02	9.70 N	3.44 W	1.95	10.43	7.94	141.15	4.19
180.00	180.00	0.17 S	0.04 E	0.59	180.09	180.08	9.66 N	2.89 W	2.05	10.26	7.63	-159.31	3.89
210.00	210.00	0.22 S	0.03 E	0.61	210.09	210.07	9.63 N	2.12 W	2.15	10.09	7.33	97.14	3.66
240.00	240.00	0.27 S	0.06 E	0.68	240.32	240.28	9.41 N	1.18 W	2.27	9.77	6.83	-102.95	3.32
270.00	269.94	0.78 S	1.69 E	1.03	271.15	270.92	7.40 N	1.47 E	2.71	8.24	4.94	-107.61	2.49
299.09	298.56	2.33 S	6.50 E	1.63	300.80	299.56	2.24 N	6.94 E	3.52	4.70	0.86	-109.75	1.22
300.00	299.44	2.42 S	6.71 E	1.68	301.71	300.42	2.03 N	7.16 E	3.56	4.58	0.72	-110.47	1.19
330.00	327.75	7.87 S	14.89 E	2.54	331.78	327.97	6.18 S	15.88 E	4.23	1.98	41%	-98.96	0.59
341.40	338.04	10.94 S	18.70 E	2.80	343.13	337.89	9.89 S	19.96 E	4.45	1.65	61%	-78.59	0.39
360.00	354.12	17.12 S	25.70 E	3.22	361.60	353.33	16.42 S	27.69 E	4.81	2.26	42%	-56.14	0.58
390.00	378.06	29.40 S	38.91 E	3.80	391.19	376.16	28.13 S	42.40 E	5.29	4.17	8%	-52.58	0.92
420.00	399.29	43.88 S	54.34 E	4.29	420.51	396.05	40.68 S	59.87 E	5.76	7.16	0.60	-59.11	1.09
450.00	417.28	60.06 S	72.04 E	4.74	449.80	412.98	54.66 S	79.22 E	6.12	9.96	1.76	-62.93	1.21
480.00	431.73	77.84 S	91.36 E	5.20	478.82	427.08	69.24 S	99.95 E	6.86	13.01	2.34	-69.98	1.22
510.00	442.33	96.88 S	111.94 E	6.53	507.97	437.28	84.97 S	122.24 E	8.19	16.53	3.33	-73.38	1.25
540.00	448.93	116.67 S	133.47 E	7.95	537.13	444.66	101.13 S	145.36 E	9.61	20.02	3.56	-78.54	1.22
570.00	452.87	136.79 S	155.37 E	9.41	566.73	451.95	117.34 S	169.04 E	11.06	23.79	3.44	-88.73	1.17
600.00	456.62	156.82 S	177.38 E	10.88	596.69	458.93	133.97 S	192.95 E	12.55	27.75	4.85	-95.63	1.21
630.00	460.35	176.49 S	199.72 E	12.37	626.12	464.41	150.78 S	216.47 E	14.04	30.95	5.83	-98.54	1.23
660.00	464.18	196.19 S	222.03 E	13.86	651.91	468.56	163.90 S	238.26 E	15.38	36.40	9.36	-98.82	1.35

Minimum Distance Proximity Scan (Highside Reference)
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Measured Depth (m)	Uncertainty Data for Reference Survey				Uncertainty Data for Comparison Survey				Separation (Ref. > Comp.)				
	Vertical Depth (m)	Ellipse Centre		Ellipse Major Axis/2	Measured Depth (m)	Vertical Depth (m)	Ellipse Centre		Ellipse Major Axis/2	Between Centres (m)	Between Ellipsoids (m)	Relative HighSide Bearing	Clrnc. Factor
		Northings (m)	Eastings (m)				Northings (m)	Eastings (m)					
690.00	467.89	215.03 S	245.06 E	15.38	676.77	471.88	174.07 S	260.69 E	16.70	44.02	15.31	-97.24	1.53
720.00	471.52	230.80 S	270.30 E	16.95	700.58	474.93	181.55 S	283.08 E	17.96	50.99	21.50	-95.56	1.73
750.00	474.60	242.85 S	297.57 E	18.52	724.51	477.87	186.39 S	306.32 E	19.19	57.22	27.17	-94.46	1.90
764.52	475.94	247.44 S	311.28 E	19.27	736.60	479.15	188.10 S	318.21 E	19.79	59.83	29.51	-93.88	1.97
780.00	477.45	251.39 S	326.17 E	19.71	748.57	480.36	189.25 S	330.06 E	20.38	62.34	32.31	-93.72	2.08
810.00	480.35	256.50 S	355.57 E	20.14	769.29	482.39	189.28 S	350.67 E	21.36	67.43	39.64	-92.68	2.43
840.00	482.69	257.44 S	385.43 E	20.64	792.73	485.04	186.38 S	373.76 E	22.37	72.04	45.06	-92.34	2.67
870.00	484.35	254.41 S	415.21 E	21.14	815.89	487.07	182.04 S	396.40 E	23.25	74.82	48.48	-92.32	2.84
900.00	485.53	246.92 S	444.21 E	21.64	835.89	487.66	175.86 S	415.41 E	24.00	76.71	52.94	-91.67	3.23
930.00	485.93	235.09 S	471.75 E	22.08	862.19	488.07	164.48 S	439.10 E	24.82	77.83	53.39	-91.57	3.18
960.00	486.06	222.61 S	499.03 E	22.48	892.16	488.09	151.94 S	466.32 E	25.75	77.90	51.05	-91.49	2.90
990.00	486.12	209.90 S	526.21 E	22.94	922.54	488.01	139.32 S	493.95 E	26.74	77.63	48.35	-91.40	2.65
1,020.00	486.06	197.30 S	553.43 E	23.45	950.96	487.96	127.29 S	519.70 E	27.70	77.73	46.81	-91.40	2.51
1,050.00	485.95	184.46 S	580.54 E	24.02	982.29	488.10	114.10 S	548.12 E	28.80	77.50	43.48	-91.59	2.28
1,080.00	485.99	171.82 S	607.75 E	24.66	1,012.48	487.98	101.15 S	575.39 E	29.89	77.75	41.11	-91.47	2.12
1,110.00	485.96	159.43 S	635.07 E	25.38	1,042.54	487.98	88.43 S	602.62 E	31.00	78.09	38.87	-91.48	1.99
1,140.00	486.18	146.66 S	662.21 E	26.16	1,072.35	487.96	76.05 S	629.73 E	32.14	77.74	36.36	-91.31	1.88
1,170.00	486.33	133.66 S	689.25 E	26.99	1,102.83	488.04	63.30 S	657.42 E	33.33	77.24	33.23	-91.26	1.75
1,196.86	486.33	122.25 S	713.56 E	27.79	1,128.64	488.02	52.38 S	680.80 E	34.35	77.20	31.70	-91.26	1.70
1,200.00	486.33	120.92 S	716.41 E	27.87	1,131.97	488.01	50.96 S	683.82 E	34.48	77.20	31.51	-91.25	1.69
1,230.00	486.35	107.97 S	743.47 E	28.37	1,162.17	487.86	38.10 S	711.15 E	35.68	77.00	29.64	-91.12	1.63
1,260.00	486.44	95.24 S	770.64 E	28.76	1,191.27	487.95	25.65 S	737.44 E	36.86	77.12	28.84	-91.13	1.60
1,290.00	486.46	82.69 S	797.88 E	29.21	1,221.95	488.13	12.83 S	765.31 E	38.12	77.10	26.94	-91.24	1.54
1,320.00	486.46	70.12 S	825.12 E	29.71	1,253.14	488.10	0.38 N	793.58 E	39.42	77.25	24.59	-91.22	1.47
1,350.00	486.47	57.18 S	852.19 E	30.26	1,281.93	488.23	12.45 N	819.70 E	40.63	76.86	23.50	-91.31	1.44

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Measured Depth (m)	Vertical Depth (m)	Uncertainty Data for Reference Survey			Measured Depth (m)	Vertical Depth (m)	Uncertainty Data for Comparison Survey			Separation (Ref. > Comp.)			
		Northings (m)	Eastings (m)	Ellipse Major Axis/2			Northings (m)	Eastings (m)	Ellipse Major Axis/2	Between Centres (m)	Between Ellipsoids (m)	Relative HighSide Bearing	Clrc. Factor
1,380.00	486.54	44.66 S	879.45 E	30.85	1,311.58	488.25	25.03 N	846.55 E	41.88	77.08	22.35	-91.27	1.41
1,410.00	486.73	32.02 S	906.66 E	31.49	1,341.07	488.19	37.43 N	873.31 E	43.14	77.06	21.04	-91.09	1.38
1,440.00	486.73	19.33 S	933.84 E	32.17	1,371.58	488.14	50.37 N	900.94 E	44.45	77.09	19.01	-91.05	1.33
1,470.00	486.71	6.91 S	961.15 E	32.91	1,402.13	488.28	63.26 N	928.64 E	45.77	77.36	17.28	-91.16	1.29
1,500.00	486.87	5.94 N	988.25 E	33.68	1,431.25	488.19	75.62 N	955.01 E	47.04	77.22	16.30	-90.98	1.27
1,530.00	486.91	18.97 N	1,015.27 E	34.48	1,461.46	488.18	88.44 N	982.35 E	48.35	76.88	14.31	-90.95	1.23
1,560.00	486.91	31.91 N	1,042.34 E	35.33	1,492.33	488.18	101.47 N	1,010.35 E	49.71	76.57	11.86	-90.95	1.18
1,590.00	486.97	45.02 N	1,069.32 E	36.20	1,521.26	488.04	113.73 N	1,036.54 E	50.98	76.14	11.05	-90.81	1.17
1,620.00	486.91	57.89 N	1,096.42 E	37.12	1,551.80	488.04	126.82 N	1,064.13 E	52.32	76.13	9.24	-90.86	1.14
1,637.30	486.91	65.46 N	1,111.98 E	37.66	1,568.33	488.04	133.83 N	1,079.11 E	53.06	75.87	8.79	-90.85	1.13

Bit Projection

1,650.00	487.00	71.10 N	1,123.35 E	38.06	1,581.34	488.10	139.46 N	1,090.83 E	53.63	75.70	7.92	-90.83	1.12
1,653.01	487.02	72.44 N	1,126.05 E	38.16	1,584.20	488.11	140.69 N	1,093.42 E	53.76	75.66	7.95	-90.82	1.12

Survey Tool Program for AA06, As Drilled Surveys

Measured Depth (m)	From		To		Survey Tool Description
	Measured Depth (m)	Vertical Depth (m)	Measured Depth (m)	Vertical Depth (m)	
0.00	0.00	300.00	298.80	North Seeking Gyro MS (GYRO-NS)	
300.00	298.80	1,698.26	488.30	MWD	

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Ellipse error terms are uncorrelated across survey tool tie-on points.
Ellipse separations were reported only if both profiles contained survey tool information.
Calculated ellipses incorporate surface errors as described at the top of each page.
Distance between Ellipsoids is the actual separation distance between ellipsoids.
Distance Between Centres is the straight line distance between ellipsoid centres.
Probability is set at 2 sigma.
Clearance Factor = Distance Between Profiles / (Distance Between Profiles - Ellipse Separation)

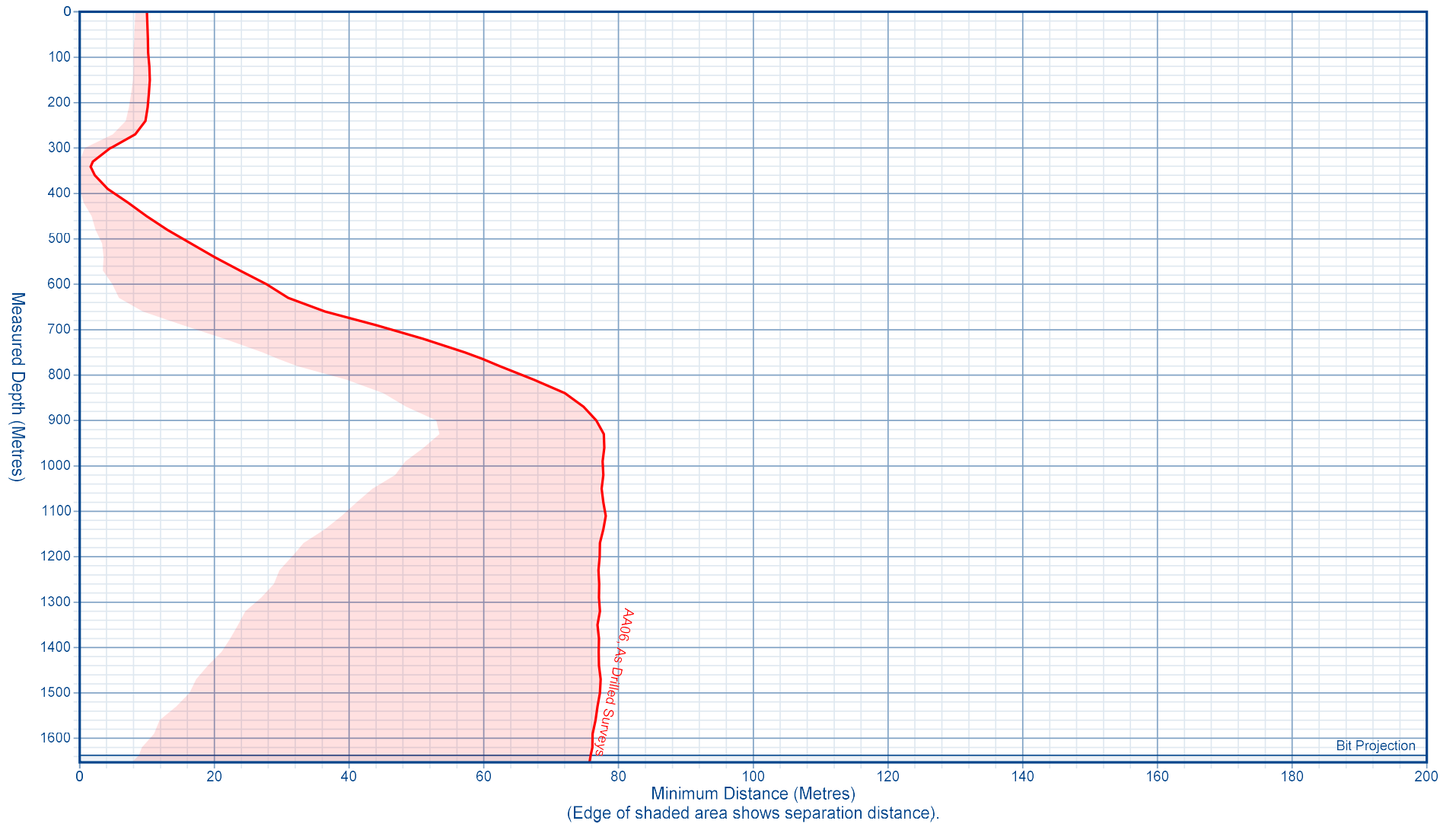
All station coordinates were calculated using the Minimum Curvature method.
All data is in metres unless otherwise stated. Directions and coordinates are relative to Grid North.
Vertical depths are relative to RKB. Northings and Eastings are relative to Well AA16.

Coordinate system is Universal Transverse Mercator, Zone 12 North.
Central meridian is -111.00°. Grid convergence at surface is 1.18°.

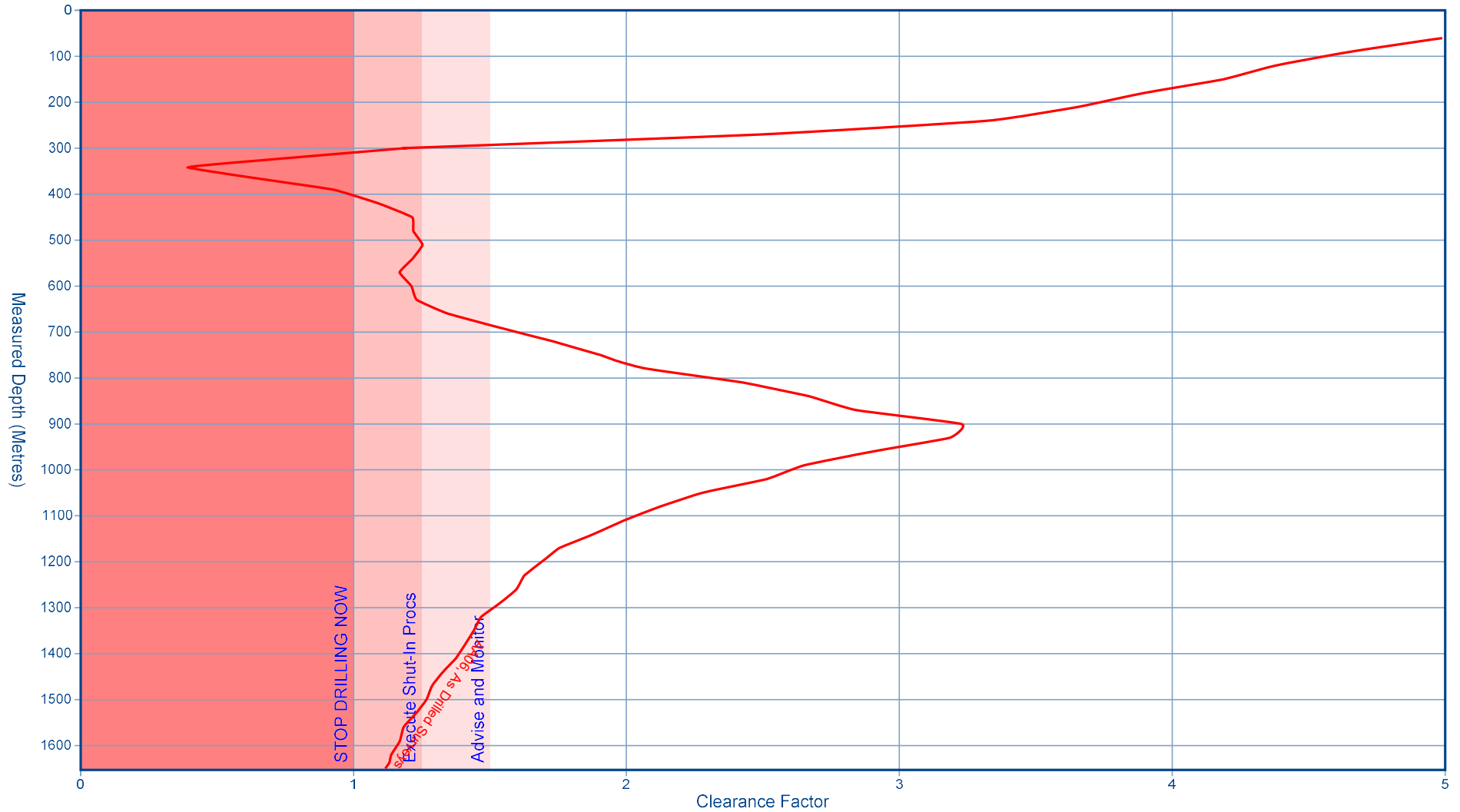
Profile Sections

Survey: Run #1 from 0.00m to 299.09m
Survey: Run #2 from 299.09m to 764.52m
Survey: Run #3 from 764.52m to 1,196.86m
Survey: Run #4 from 1,196.86m to 1,637.30m

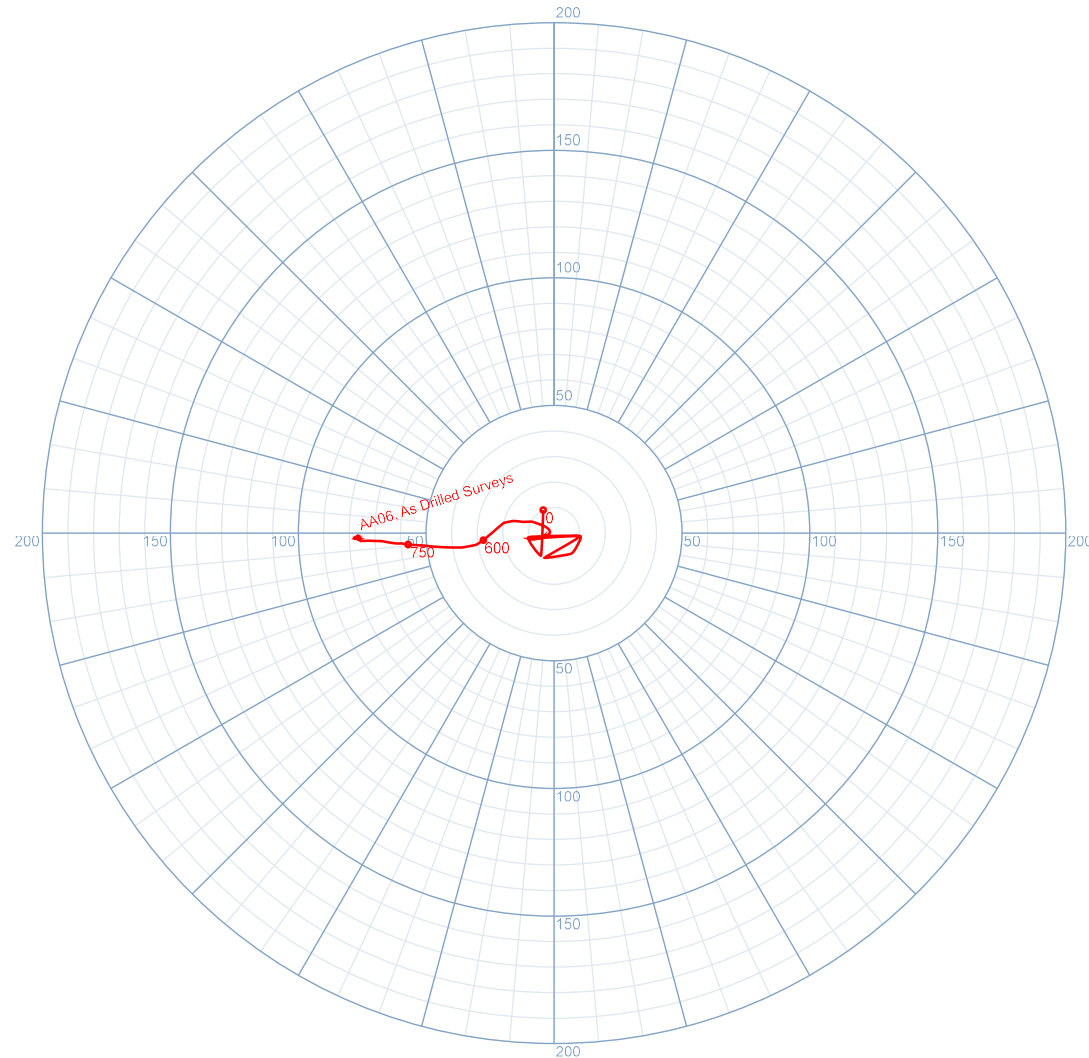
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Survey Tool Program for AA16, Run #4

Measured Depth (m)	From Vertical Depth (m)	To Measured Depth (m)	Vertical Depth (m)	Survey Tool Description
0.00	0.00	299.09	298.56	OWSG Gyrocompass Gyro (GYRO-NS)
299.09	298.56	764.52	475.94	MWD
764.52	475.94	1,196.86	486.33	MWD
1,196.86	486.33	1,637.30	486.91	MWD

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