



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

**Job No. AB-CD-12345678
Survey Date: 11 January 2013**

True North Directional Services Inc. Anticollision Report

18 August 2015

Minimum Distance Proximity Scan (Highside Reference)

Scan Range: 0.00m to 1,638.78m Measured Depth
Scan Radius is 200.00m. Clearance Factor cutoff is Unlimited.



True North
Directional Services Inc.



Company:	Anglian Oil Company Ltd.	Local Co-ordinate Reference:	Well AA16
Project:	Northern Lights	TVD Reference:	RKB @ 629.61m (Mean Sea Level)
Reference Structure:	AA Pad	MD Reference:	Local RKB
Structure Error:	0.00m	North Reference:	Grid North
Reference Well:	AA16	Survey Calculation Method:	Minimum Curvature
Well Error:	1.50m	Output errors are at:	2.00 Sigma
Reference wellbore:		Database:	Example Projects Database
Reference Survey:	MWD Run #4	Offset TVD Reference:	629.61m (Mean Sea Level)

Reference:	AA Pad, AA16, MWD Run #4	Interpolation Method:	30.00m
Filter Type:	None	Error Model:	ISCWSA
Depth Range:	0.00m to 1,638.78m Measured Depth	Scan Method:	Minimum Distance
Scan Radius:	200.00m	Error Surface:	Elliptical Conic
Clearance Factor:	Unlimited	Casing Model:	Not applied
Warning Levels:	2.00 Sigma		

Survey Program for:	AA Pad, AA16, MWD Run #4		
From (m)	To (m)	Tool Name	Description
0.00	240.00	GYRO-NS	North Seeking Gyro MS
240.00	1,638.78	MWD	MWD

Offset Survey											AA Pad, AA06, As Drilled Surveys		Offset Surface Error:		1.50m
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance				Warning		
Measured Depth (m)	Vertical Depth (m)	Measured Depth (m)	Vertical Depth (m)	Reference (m)	Offset (m)	Azimuth from HighSide (°)	+N/-S (m)	+E/-W (m)	Between Centres (m)	Between Ellipses (m)	Minimum Separation (m)	Separation Factor			
0.00	0.00	0.00	0.00	1.50	1.50	-25.000	9.06 N	4.23 W	10.00	7.00	3.00	3.33			
30.00	30.00	30.00	30.00	1.57	1.55	-149.853	9.09 N	4.19 W	10.07	7.07	3.00	3.35			
60.00	60.00	60.00	60.00	1.64	1.63	-99.091	9.16 N	4.06 W	10.13	7.12	3.01	3.36			
90.00	90.00	89.96	89.96	1.68	1.73	96.521	9.26 N	3.87 W	10.16	7.14	3.03	3.36			
120.00	120.00	119.97	119.96	1.77	1.83	124.726	9.55 N	3.66 W	10.35	7.29	3.06	3.38			
150.00	150.00	150.03	150.02	1.80	1.92	141.080	9.70 N	3.44 W	10.43	7.35	3.09	3.38			
180.00	180.00	180.09	180.08	1.84	2.02	-176.274	9.66 N	2.89 W	10.26	7.14	3.12	3.29			
210.00	210.00	210.09	210.07	1.87	2.13	101.015	9.63 N	2.12 W	10.11	6.94	3.17	3.19			
240.00	240.00	240.32	240.28	1.93	2.25	-117.332	9.41 N	1.18 W	9.78	6.55	3.23	3.03			
270.00	269.96	271.10	270.86	2.14	2.68	-104.269	7.40 N	1.46 E	8.12	4.77	3.35	2.42			
300.00	299.56	301.49	300.21	2.73	3.51	-89.427	2.08 N	7.10 E	4.29	0.69	3.60	1.19	Execute Shut-In Procs		
304.09	303.53	305.54	304.02	2.84	3.70	-84.896	1.12 N	8.10 E	3.64	0.07	3.57	1.02	Execute Shut-In Procs		
323.52	322.11	324.76	321.68	3.32	4.08	-49.676	4.05 S	13.60 E	2.21	14%	2.34	0.38	STOP DRILLING NOW		
330.00	328.13	331.21	327.47	3.48	4.19	-44.381	6.01 S	15.69 E	2.28	11%	2.39	0.47	STOP DRILLING NOW		
360.00	354.91	360.65	352.57	4.22	4.76	-19.885	16.07 S	27.27 E	4.23	0.46	3.77	1.12	Execute Shut-In Procs		
390.00	379.32	389.86	375.19	4.84	5.25	-25.770	27.58 S	41.68 E	6.53	2.47	4.06	1.61			
420.00	401.08	418.68	394.90	5.37	5.72	-36.614	39.85 S	58.72 E	9.39	4.66	4.74	1.98			
450.00	419.69	447.50	411.74	5.85	6.08	-42.610	53.54 S	77.65 E	12.18	6.46	5.72	2.13			
480.00	434.81	475.97	425.87	6.42	6.75	-51.060	67.77 S	97.83 E	14.76	7.26	7.50	1.97			
510.00	446.14	504.41	436.24	7.73	8.03	-56.790	83.01 S	119.46 E	17.94	8.41	9.54	1.88			
540.00	453.47	533.30	443.73	9.14	9.44	-62.772	99.03 S	142.30 E	20.98	8.69	12.28	1.71			
570.00	457.61	562.89	450.98	10.59	10.89	-74.264	115.23 S	165.97 E	23.68	6.98	16.70	1.42	Advise and Monitor		
600.00	461.39	592.50	458.03	12.06	12.37	-83.507	131.61 S	189.61 E	26.92	5.89	21.03	1.28	Advise and Monitor		
630.00	465.09	622.21	463.76	13.55	13.86	-88.125	148.58 S	213.30 E	29.78	5.39	24.39	1.22	Execute Shut-In Procs		
660.00	468.92	648.24	468.02	15.04	15.22	-90.033	162.18 S	235.07 E	34.63	8.23	26.40	1.31	Advise and Monitor		
690.00	472.65	673.05	471.39	16.55	16.53	-90.081	172.69 S	257.27 E	42.16	14.44	27.72	1.52			
720.00	476.30	697.15	474.50	18.12	17.81	-89.485	180.64 S	279.80 E	49.35	20.79	28.56	1.73			
750.00	479.48	720.74	477.43	19.70	19.03	-88.986	185.77 S	302.62 E	55.87	27.02	28.85	1.94			
770.02	481.35	737.34	479.22	20.73	19.86	-88.689	188.19 S	318.95 E	59.57	30.03	29.54	2.02			
780.00	482.30	745.14	480.01	21.24	20.24	-88.844	188.99 S	326.66 E	61.18	31.80	29.38	2.08			
810.00	485.28	766.26	482.11	22.71	21.26	-88.187	189.46 S	347.65 E	66.21	38.09	28.12	2.35			
840.00	487.76	788.51	484.52	24.10	22.24	-87.891	187.05 S	369.63 E	71.04	44.10	26.95	2.64			
870.00	489.50	812.67	486.88	25.36	23.17	-88.215	182.82 S	393.28 E	73.98	47.08	26.90	2.75			
900.00	490.79	832.84	487.61	26.46	23.91	-87.736	176.97 S	412.56 E	76.03	52.25	23.78	3.20			
930.00	491.30	855.61	488.06	27.38	24.67	-87.599	167.30 S	433.15 E	77.47	55.25	22.22	3.49			
960.00	491.49	886.98	488.10	28.21	25.61	-87.493	154.14 S	461.63 E	77.49	52.57	24.93	3.11			
990.00	491.56	917.56	488.02	29.08	26.61	-87.374	141.39 S	489.42 E	77.30	49.90	27.40	2.82			
1,020.00	491.52	946.94	487.96	29.99	27.60	-87.366	129.02 S	516.07 E	77.38	48.06	29.32	2.64			
1,050.00	491.41	977.97	488.09	30.94	28.67	-87.542	115.89 S	544.19 E	77.21	45.31	31.90	2.42			
1,080.00	491.45	1,006.32	487.99	31.92	29.69	-87.438	103.77 S	569.81 E	77.39	44.47	32.92	2.35			

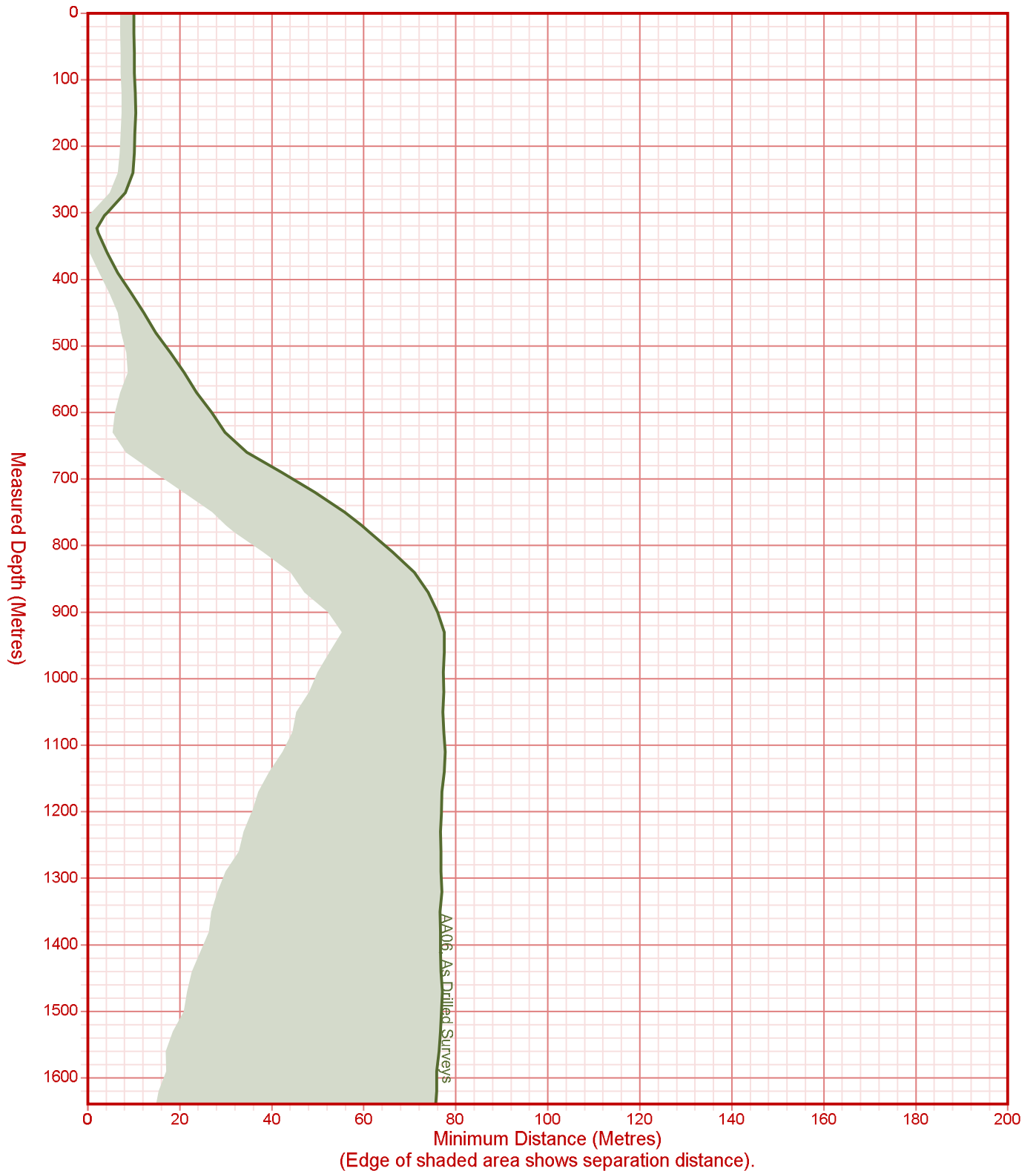


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Reference Well:	AA16	Survey Calculation Method:	Minimum Curvature
Well Error:	1.50m	Output errors are at:	2.00 Sigma
Reference wellbore:		Database:	Example Projects Database
Reference Survey:	MWD Run #4	Offset TVD Reference:	629.61m (Mean Sea Level)

Offset Survey		AA Pad, AA06, As Drilled Surveys						Offset Surface Error:				1.50m	
Reference		Offset		Semi Major Axis		Azimuth from HighSide (°)	Offset Wellbore Centre		Distance		Minimum Separation (m)	Separation Factor	Warning
Measured Depth (m)	Vertical Depth (m)	Measured Depth (m)	Vertical Depth (m)	Reference (m)	Offset (m)		+N/-S (m)	+E/-W (m)	Between Centres (m)	Between Ellipses (m)			
1,110.00	491.38	1,036.78	488.00	32.95	30.81	-87.509	90.85 S	597.40 E	77.72	42.32	35.39	2.20	
1,140.00	491.61	1,067.75	487.96	34.00	31.98	-87.291	77.95 S	625.55 E	77.49	39.44	38.05	2.04	
1,170.00	491.75	1,097.63	488.04	35.06	33.14	-87.231	65.45 S	652.69 E	77.00	37.10	39.90	1.93	
1,200.00	491.77	1,126.76	488.03	36.16	34.29	-87.208	53.17 S	679.11 E	76.84	35.76	41.08	1.87	
1,201.65	491.77	1,128.51	488.02	36.22	34.36	-87.206	52.43 S	680.69 E	76.85	35.52	41.33	1.86	
1,230.00	491.80	1,156.75	487.87	37.27	35.48	-87.060	40.39 S	706.23 E	76.71	33.82	42.89	1.79	
1,260.00	491.88	1,185.93	487.92	38.41	36.65	-87.052	27.97 S	732.64 E	76.77	32.78	43.98	1.75	
1,290.00	491.89	1,217.36	488.11	39.58	37.94	-87.177	14.76 S	761.15 E	76.80	29.93	46.87	1.64	
1,320.00	491.91	1,247.66	488.12	40.77	39.19	-87.180	1.87 S	788.58 E	77.00	28.14	48.85	1.58	
1,350.00	491.90	1,276.93	488.19	41.96	40.42	-87.219	10.34 N	815.18 E	76.53	26.89	49.64	1.54	
1,380.00	491.99	1,305.93	488.26	43.17	41.65	-87.214	22.59 N	841.46 E	76.70	26.37	50.33	1.52	
1,410.00	492.17	1,336.44	488.22	44.40	42.95	-87.043	35.44 N	869.13 E	76.69	24.50	52.20	1.47	Advise and Monitor
1,440.00	492.16	1,367.04	488.15	45.64	44.25	-87.006	48.44 N	896.83 E	76.76	22.62	54.14	1.42	Advise and Monitor
1,470.00	492.14	1,396.96	488.26	46.90	45.54	-87.119	61.07 N	923.95 E	77.05	21.59	55.46	1.39	Advise and Monitor
1,500.00	492.28	1,426.21	488.19	48.15	46.81	-86.949	73.44 N	950.45 E	76.91	20.88	56.03	1.37	Advise and Monitor
1,530.00	492.32	1,457.39	488.19	49.40	48.16	-86.909	86.72 N	978.66 E	76.62	18.49	58.14	1.32	Advise and Monitor
1,560.00	492.34	1,487.81	488.19	50.66	49.50	-86.890	99.59 N	1,006.22 E	76.36	16.92	59.45	1.28	Advise and Monitor
1,590.00	492.39	1,516.16	488.04	51.93	50.74	-86.712	111.53 N	1,031.94 E	75.86	17.00	58.86	1.29	Advise and Monitor
1,620.00	492.32	1,546.95	488.03	53.21	52.10	-86.759	124.77 N	1,059.74 E	75.88	15.34	60.54	1.25	Advise and Monitor
1,638.78	492.32	1,565.42	488.03	54.01	52.91	-86.742	132.58 N	1,076.48 E	75.59	14.89	60.70	1.25	Execute Shut-In Procs

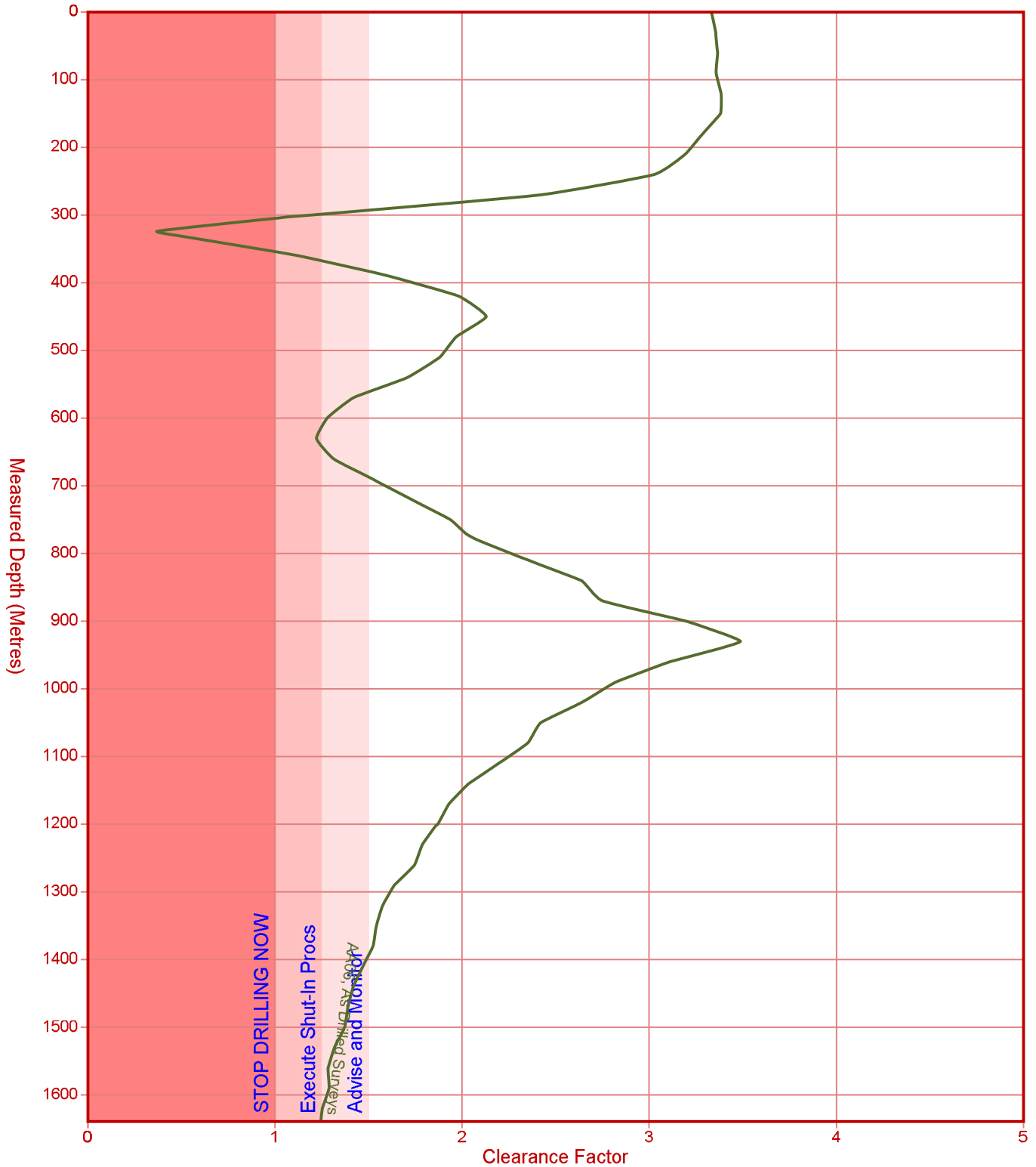


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Reference wellbore:		Database:	Example Projects Database
Reference Survey:	MWD Run #4	Offset TVD Reference:	629.61m (Mean Sea Level)



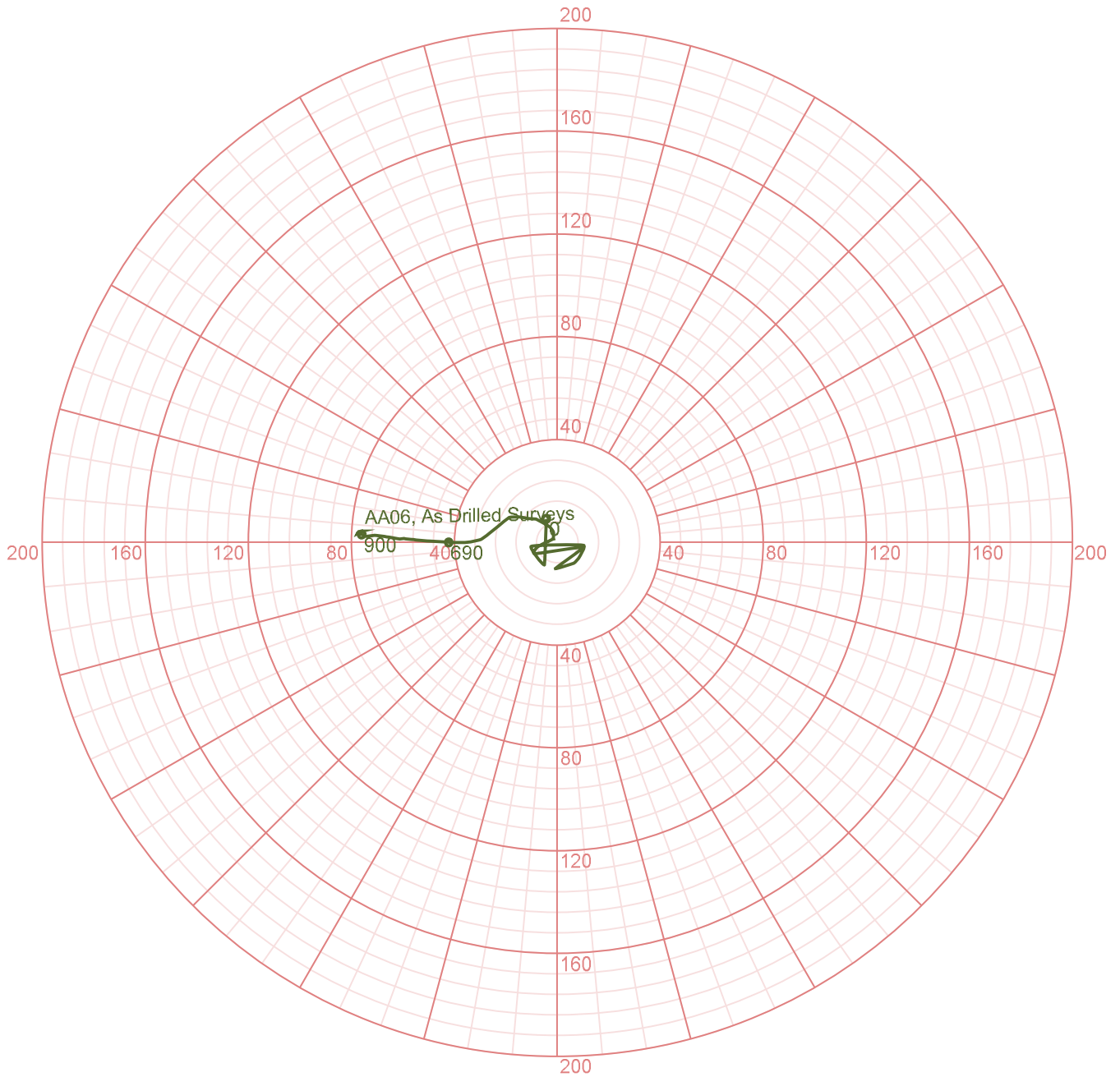


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