

EXTRACTION OIL & GAS

Broomfield County

Sec 10-T1S-R68W

INTERCHANGE A S22-30-13C

ORIGINAL WELLBORE

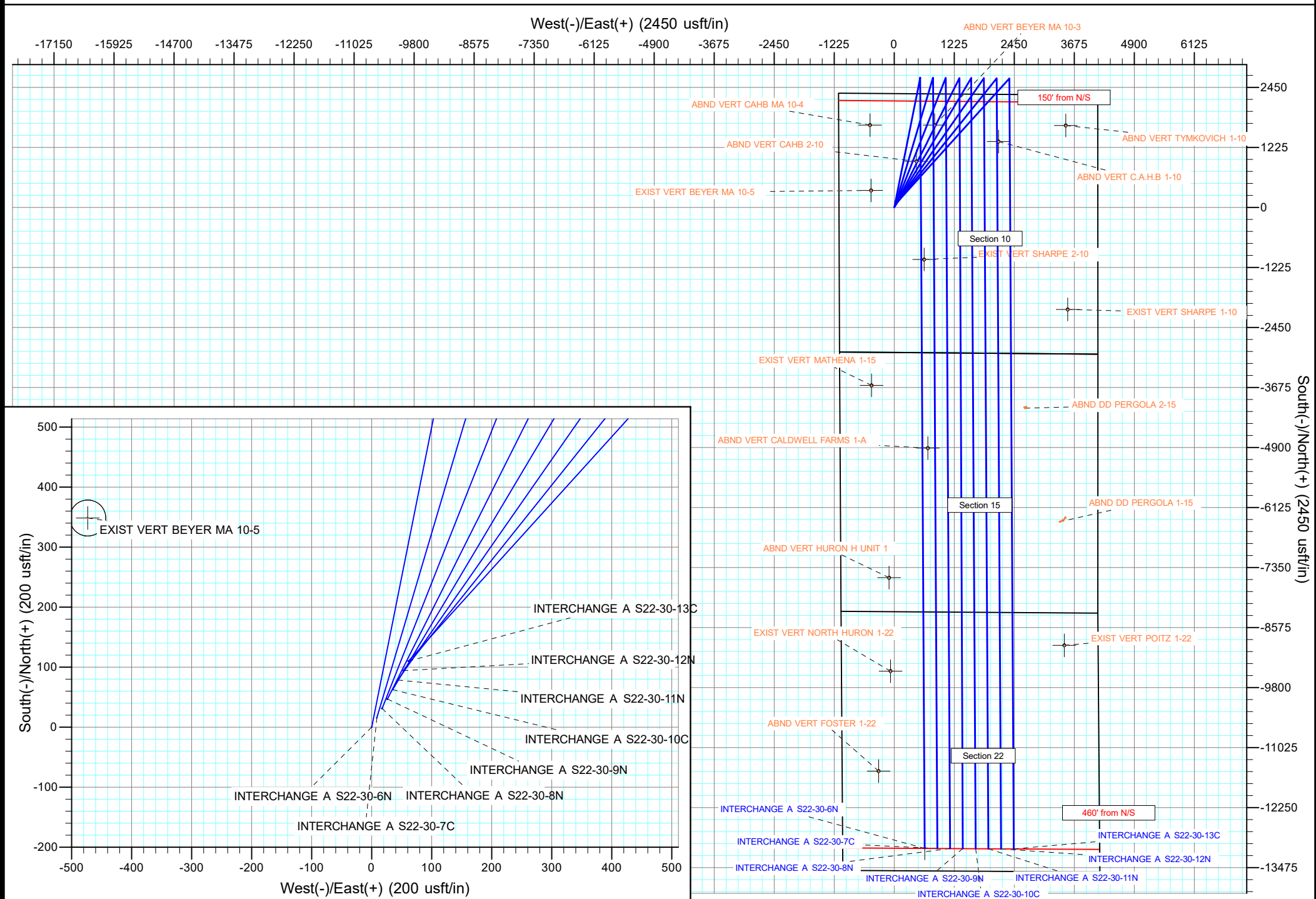
PROPOSAL 1

Anticollision Report

23 January, 2018



Project: Broomfield County
Site: Sec 10-T1S-R68W
Well: INTERCHANGE A S22-30-6N
ORIGINAL WELLBORE
PROPOSAL 1



Anticollision Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well INTERCHANGE A S22-30-13C
Project:	Broomfield County	TVD Reference:	KB 25' @ 5232.00usft
Reference Site:	Sec 10-T1S-R68W	MD Reference:	KB 25' @ 5232.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	INTERCHANGE A S22-30-13C	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDT_32Bit_ODBC
Reference Design:	PROPOSAL 1	Offset TVD Reference:	Offset Datum

Reference	PROPOSAL 1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999.98 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	1/23/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	24,460.71	PROPOSAL 1 (ORIGINAL WELLBORE)	MWD OWSG	OWSG MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Sec 10-T1S-R68W						
ABND VERT BEYER MA 10-3 - Wellbore #1 - Design #1	4,213.51	3,804.87	488.36	379.28	4.477	CC
ABND VERT BEYER MA 10-3 - Wellbore #1 - Design #1	4,300.00	3,870.28	490.24	379.14	4.413	ES
ABND VERT BEYER MA 10-3 - Wellbore #1 - Design #1	4,400.00	3,957.16	497.01	383.59	4.382	SF
ABND VERT C.A.H.B 1-10 - Wellbore #1 - Design #1	10,020.55	8,056.98	227.35	19.36	1.093	Level 2, CC, ES, SF
ABND VERT CAHB 2-10 - Wellbore #1 - Design #1	2,600.00	2,408.74	267.95	202.15	4.072	ES
ABND VERT CAHB 2-10 - Wellbore #1 - Design #1	2,601.28	2,407.64	267.95	202.16	4.073	CC
ABND VERT CAHB 2-10 - Wellbore #1 - Design #1	2,700.00	2,478.14	272.37	204.47	4.011	SF
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	2,419.62	2,254.54	1,468.42	1,407.41	24.068	CC
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	2,600.00	2,411.26	1,471.13	1,405.32	22.351	ES
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	9,800.00	8,113.99	2,853.97	2,642.94	13.524	SF
ABND VERT TYMKOVICH 1-10 - Wellbore #1 - Design #1	6,341.12	5,180.00	1,720.57	1,654.46	26.024	CC, ES
ABND VERT TYMKOVICH 1-10 - Wellbore #1 - Design #1	6,500.00	5,180.00	1,727.89	1,661.01	25.833	SF
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	100.00	115.00	584.99	583.33	351.723	CC
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	300.00	314.84	587.20	580.49	87.453	ES
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	11,300.00	8,118.95	2,850.40	2,638.70	13.464	SF
EXIST VERT SHARPE 1-10 - Wellbore #1 - Design #1	13,455.51	8,048.89	1,164.35	933.01	5.033	CC
EXIST VERT SHARPE 1-10 - Wellbore #1 - Design #1	13,500.00	8,048.89	1,165.20	932.90	5.016	ES
EXIST VERT SHARPE 1-10 - Wellbore #1 - Design #1	13,600.00	8,048.89	1,173.28	938.96	5.007	SF
EXIST VERT SHARPE 2-10 - Wellbore #1 - Design #1	100.00	77.00	1,292.83	1,291.79	1,235.026	CC
EXIST VERT SHARPE 2-10 - Wellbore #1 - Design #1	300.00	276.84	1,295.55	1,289.62	218.410	ES
EXIST VERT SHARPE 2-10 - Wellbore #1 - Design #1	12,500.00	8,080.92	1,763.13	1,543.09	8.013	SF
INTERCHANGE A S22-30-10C - ORIGINAL WELLBORE	100.00	125.00	54.05	53.69	150.788	CC, ES
INTERCHANGE A S22-30-10C - ORIGINAL WELLBORE	24,460.73	24,313.96	778.14	274.03	1.544	SF
INTERCHANGE A S22-30-11N - ORIGINAL WELLBORE	100.00	125.00	35.82	35.46	99.932	CC, ES
INTERCHANGE A S22-30-11N - ORIGINAL WELLBORE	24,448.54	24,117.28	593.60	141.28	1.312	Level 3, SF
INTERCHANGE A S22-30-12N - ORIGINAL WELLBORE	100.00	125.00	17.91	17.55	49.966	CC
INTERCHANGE A S22-30-12N - ORIGINAL WELLBORE	24,460.73	24,174.46	388.11	6.79	1.018	Level 2, ES, SF
INTERCHANGE A S22-30-6N - ORIGINAL WELLBORE	100.00	125.00	125.83	125.48	351.031	CC, ES
INTERCHANGE A S22-30-6N - ORIGINAL WELLBORE	24,353.91	34,382.28	1,841.45	1,164.45	2.720	SF
INTERCHANGE A S22-30-7C - ORIGINAL WELLBORE	100.00	125.00	107.92	107.56	301.065	CC, ES
INTERCHANGE A S22-30-7C - ORIGINAL WELLBORE	24,460.73	24,222.75	1,559.43	1,054.94	3.091	SF
INTERCHANGE A S22-30-8N - ORIGINAL WELLBORE	100.00	125.00	90.01	89.65	251.099	CC, ES
INTERCHANGE A S22-30-8N - ORIGINAL WELLBORE	24,448.81	24,006.13	1,331.99	838.89	2.701	SF
INTERCHANGE A S22-30-9N - ORIGINAL WELLBORE	100.00	125.00	71.96	71.61	200.754	CC, ES
INTERCHANGE A S22-30-9N - ORIGINAL WELLBORE	24,460.73	24,038.35	1,080.18	593.05	2.217	SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well INTERCHANGE A S22-30-13C
Project:	Broomfield County	TVD Reference:	KB 25' @ 5232.00usft
Reference Site:	Sec 10-T1S-R68W	MD Reference:	KB 25' @ 5232.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	INTERCHANGE A S22-30-13C	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDT_32Bit_ODBC
Reference Design:	PROPOSAL 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Sec 15-T1S-R68W						
ABND DD PERGOLA 1-15 - Wellbore #1 - Wellbore #1	17,788.81	7,500.00	1,110.03	954.65	7.144	CC
ABND DD PERGOLA 1-15 - Wellbore #1 - Wellbore #1	17,800.00	7,500.00	1,110.09	954.30	7.125	ES
ABND DD PERGOLA 1-15 - Wellbore #1 - Wellbore #1	18,000.00	7,500.00	1,129.95	968.77	7.011	SF
ABND DD PERGOLA 2-15 - Wellbore #1 - Wellbore #1	15,464.86	7,500.00	634.33	538.23	6.601	CC
ABND DD PERGOLA 2-15 - Wellbore #1 - Wellbore #1	15,500.00	7,500.00	635.31	537.60	6.502	ES
ABND DD PERGOLA 2-15 - Wellbore #1 - Wellbore #1	15,600.00	7,500.00	648.57	546.85	6.376	SF
ABND VERT CALDWELL FARMS 1-A - Wellbore #1 - De	16,269.72	8,077.82	1,707.60	1,433.08	6.220	CC, ES
ABND VERT CALDWELL FARMS 1-A - Wellbore #1 - De	16,300.00	8,077.82	1,707.87	1,433.20	6.218	SF
ABND VERT HURON H UNIT 1 - Wellbore #1 - Design #	18,910.13	8,105.75	2,514.59	2,195.58	7.882	CC, ES
ABND VERT HURON H UNIT 1 - Wellbore #1 - Design #	19,000.00	8,105.75	2,516.20	2,196.53	7.871	SF
EXIST VERT MATHENA 1-15 - Wellbore #1 - Design #1	14,982.37	8,100.85	2,848.83	2,594.24	11.190	CC
EXIST VERT MATHENA 1-15 - Wellbore #1 - Design #1	15,000.00	8,100.85	2,848.89	2,594.12	11.183	ES
EXIST VERT MATHENA 1-15 - Wellbore #1 - Design #1	15,200.00	8,100.85	2,857.13	2,600.61	11.138	SF
Sec 22-T1S-R68W						
ABND VERT FOSTER 1-22 - Wellbore #1 - Design #1	22,856.09	8,061.65	2,750.62	2,364.66	7.127	CC
ABND VERT FOSTER 1-22 - Wellbore #1 - Design #1	22,900.00	8,061.65	2,750.97	2,364.66	7.121	ES
ABND VERT FOSTER 1-22 - Wellbore #1 - Design #1	23,000.00	8,061.65	2,754.38	2,367.47	7.119	SF
EXIST VERT NORTH HURON 1-22 - Wellbore #1 - Desi	20,816.51	8,078.70	2,494.99	2,143.96	7.108	CC, ES
EXIST VERT NORTH HURON 1-22 - Wellbore #1 - Desi	20,900.00	8,078.70	2,496.38	2,144.79	7.100	SF
EXIST VERT POITZ 1-22 - Wellbore #1 - Design #1	20,310.63	8,043.72	1,055.90	714.25	3.091	CC, ES
EXIST VERT POITZ 1-22 - Wellbore #1 - Design #1	20,400.00	8,043.72	1,059.68	715.18	3.076	SF

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-INC												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	8.00	-8.00	0.00	0.09	25.95	1,571.12	764.71	1,747.34				
100.00	100.00	108.00	92.00	0.13	1.37	25.95	1,571.12	764.71	1,747.34	1,745.84	1.50	1,162.768	
200.00	199.98	208.02	191.98	0.49	3.64	-16.26	1,571.12	764.71	1,745.67	1,741.53	4.14	421.783	
300.00	299.84	308.16	291.84	0.86	5.72	-16.33	1,571.12	764.71	1,740.64	1,734.06	6.59	264.329	
400.00	399.45	408.55	391.45	1.23	7.77	-16.46	1,571.12	764.71	1,732.28	1,723.28	9.00	192.381	
500.00	498.70	509.30	490.70	1.63	9.82	-16.64	1,571.12	764.71	1,720.59	1,709.17	11.42	150.639	
600.00	597.47	589.47	589.47	2.05	11.44	-16.88	1,571.12	764.71	1,705.60	1,692.18	13.42	127.074	
700.00	695.62	687.62	687.62	2.50	13.42	-17.18	1,571.12	764.71	1,687.33	1,671.54	15.79	106.867	
800.00	793.06	785.06	785.06	2.98	15.39	-17.54	1,571.12	764.71	1,665.81	1,647.66	18.15	91.799	
900.00	889.64	881.64	881.64	3.50	17.33	-17.97	1,571.12	764.71	1,641.08	1,620.59	20.49	80.078	
1,000.00	985.27	977.27	977.27	4.07	19.26	-18.47	1,571.12	764.71	1,613.19	1,590.36	22.83	70.661	
1,100.00	1,079.82	1,071.82	1,071.82	4.68	21.16	-19.05	1,571.12	764.71	1,582.20	1,557.04	25.16	62.897	
1,200.00	1,173.17	1,165.17	1,165.17	5.34	23.04	-19.72	1,571.12	764.71	1,548.15	1,520.68	27.47	56.360	
1,300.00	1,265.21	1,257.21	1,257.21	6.06	24.90	-20.50	1,571.12	764.71	1,511.12	1,481.35	29.77	50.760	
1,400.00	1,355.84	1,347.84	1,347.84	6.82	26.72	-21.38	1,571.12	764.71	1,471.20	1,439.14	32.06	45.890	
1,500.00	1,444.94	1,436.94	1,436.94	7.64	28.51	-22.39	1,571.12	764.71	1,428.45	1,394.12	34.34	41.601	
1,583.80	1,518.34	1,510.34	1,510.34	8.36	29.99	-23.35	1,571.12	764.71	1,390.54	1,354.30	36.24	38.372	
1,600.00	1,532.42	1,524.42	1,524.42	8.51	30.27	-23.48	1,571.12	764.71	1,383.03	1,346.42	36.61	37.779	
1,700.00	1,619.30	1,611.30	1,611.30	9.41	32.02	-24.31	1,571.12	764.71	1,336.83	1,297.95	38.87	34.388	
1,800.00	1,706.18	1,701.82	1,698.18	10.32	33.84	-25.19	1,571.12	764.71	1,290.86	1,249.63	41.24	31.305	
1,900.00	1,793.07	1,785.07	1,785.07	11.23	35.52	-26.14	1,571.12	764.71	1,245.18	1,201.70	43.47	28.643	
2,000.00	1,879.95	1,871.95	1,871.95	12.15	37.27	-27.15	1,571.12	764.71	1,199.79	1,153.98	45.81	26.193	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation