

EXTRACTION OIL & GAS

Broomfield County

Sec 10-T1S-R68W

INTERCHANGE A S22-30-7C

ORIGINAL WELLBORE

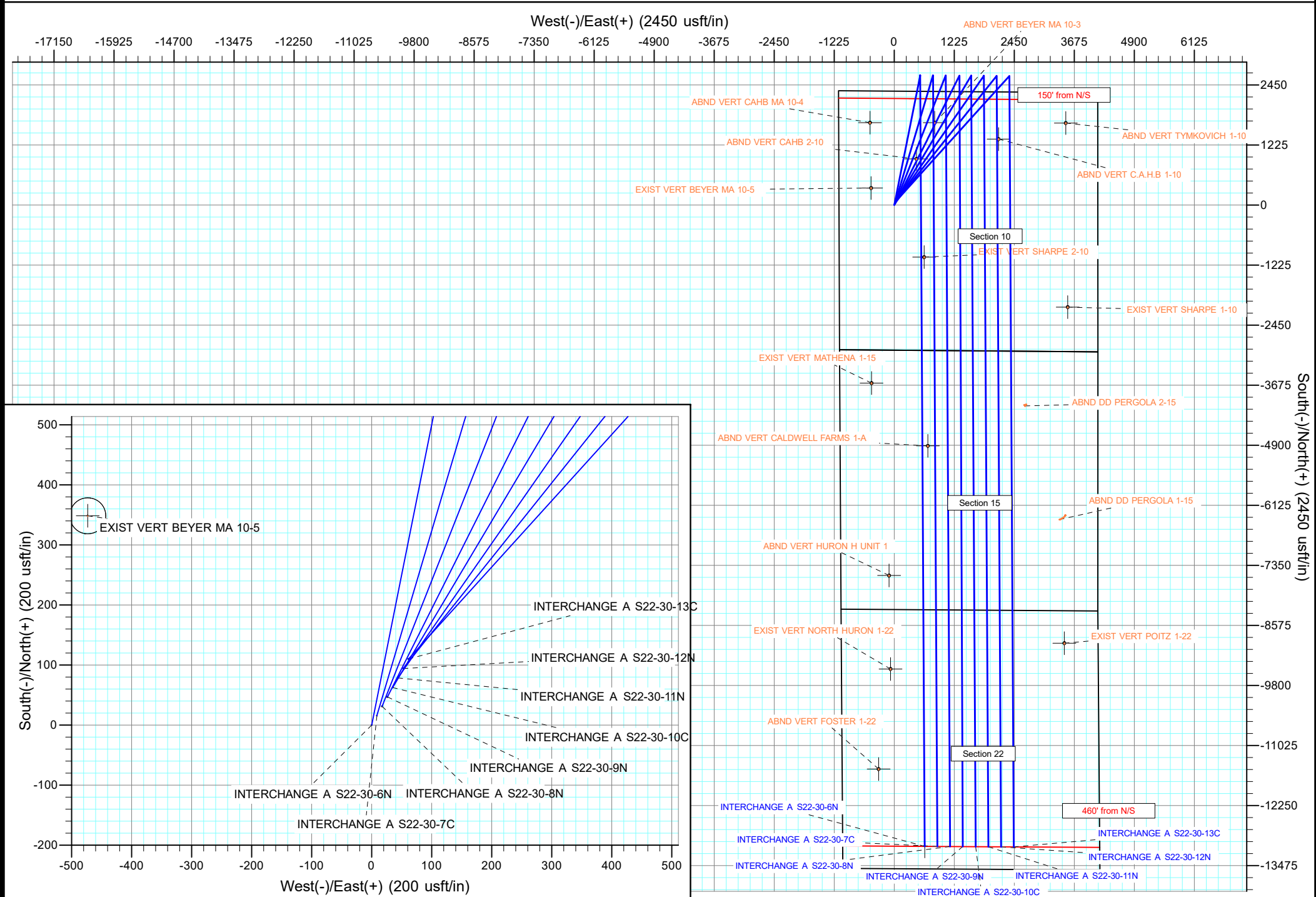
PROPOSAL 1

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 S22-30-7C
Project:	Broomfield County	TVD Reference:	KB 25' @ 5257.00usft
Reference Site:	Sec 10-T1S-R68W	MD Reference:	KB 25' @ 5257.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	INTERCHANGE A S22-30-7C	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	24,222.75	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	9,458.36	8,071.00	31.12	-176.45	0.150	Level 1, CC, ES, SF
ABND VERT C.A.H.B 1-10 - Wellbore #1 - Design #1	9,700.00	8,032.00	1,336.03	1,129.71	6.476	SF
ABND VERT C.A.H.B 1-10 - Wellbore #1 - Design #1	9,800.00	8,031.99	1,332.21	1,126.69	6.482	ES
ABND VERT C.A.H.B 1-10 - Wellbore #1 - Design #1	9,800.88	8,031.99	1,332.21	1,126.70	6.482	CC
ABND VERT CAHB 2-10 - Wellbore #1 - Design #1	3,636.10	3,387.93	162.76	74.12	1.836	CC, ES
ABND VERT CAHB 2-10 - Wellbore #1 - Design #1	10,200.00	8,068.99	345.81	139.96	1.680	SF
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	4,627.38	4,303.20	958.26	843.27	8.333	CC
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	4,800.00	4,451.58	961.30	842.00	8.058	ES
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	9,450.78	8,089.00	1,291.47	1,083.50	6.210	SF
ABND VERT TYMKOVICH 1-10 - Wellbore #1 - Design #	5,974.96	5,180.00	2,935.47	2,877.96	51.047	CC
ABND VERT TYMKOVICH 1-10 - Wellbore #1 - Design #	6,000.00	5,180.00	2,935.57	2,877.88	50.885	ES
ABND VERT TYMKOVICH 1-10 - Wellbore #1 - Design #	6,600.00	5,180.00	3,001.28	2,940.26	49.192	SF
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	1,727.27	1,704.60	556.51	516.01	13.739	CC
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	1,800.00	1,763.17	557.14	515.04	13.233	ES
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	10,800.00	8,106.01	1,275.43	1,067.44	6.132	SF
EXIST VERT SHARPE 1-10 - Wellbore #1 - Design #1	13,235.83	8,023.97	2,723.93	2,493.01	11.796	CC
EXIST VERT SHARPE 1-10 - Wellbore #1 - Design #1	13,300.00	8,023.97	2,724.69	2,492.81	11.751	ES
EXIST VERT SHARPE 1-10 - Wellbore #1 - Design #1	13,600.00	8,023.97	2,748.17	2,512.14	11.643	SF
EXIST VERT SHARPE 2-10 - Wellbore #1 - Design #1	12,199.32	8,055.98	201.70	-16.74	0.923	Level 1, CC
EXIST VERT SHARPE 2-10 - Wellbore #1 - Design #1	12,200.00	8,055.98	201.70	-16.74	0.923	Level 1, ES, SF
INTERCHANGE A S22-30-10C - ORIGINAL WELLBORE	400.00	400.00	53.87	51.45	22.264	CC, ES
INTERCHANGE A S22-30-10C - ORIGINAL WELLBORE	24,222.75	24,294.58	781.38	276.04	1.546	SF
INTERCHANGE A S22-30-11N - ORIGINAL WELLBORE	300.00	300.00	72.10	70.40	42.344	CC, ES
INTERCHANGE A S22-30-11N - ORIGINAL WELLBORE	24,222.75	24,106.18	1,073.71	577.25	2.163	SF
INTERCHANGE A S22-30-12N - ORIGINAL WELLBORE	200.00	200.00	90.01	89.03	91.309	CC, ES
INTERCHANGE A S22-30-12N - ORIGINAL WELLBORE	24,222.75	24,156.00	1,326.60	826.69	2.654	SF
INTERCHANGE A S22-30-13C - ORIGINAL WELLBORE	100.00	75.00	107.92	107.69	458.766	CC, ES
INTERCHANGE A S22-30-13C - ORIGINAL WELLBORE	24,222.75	24,449.49	1,559.39	1,054.84	3.091	SF
INTERCHANGE A S22-30-6N - ORIGINAL WELLBORE	700.00	700.00	17.91	13.34	3.919	CC
INTERCHANGE A S22-30-6N - ORIGINAL WELLBORE	24,222.75	23,982.35	370.07	-28.37	0.929	Level 1, ES, SF
INTERCHANGE A S22-30-8N - ORIGINAL WELLBORE	600.00	600.00	17.91	14.06	4.648	CC
INTERCHANGE A S22-30-8N - ORIGINAL WELLBORE	24,115.00	27,481.46	369.64	-81.98	0.818	Level 1, ES, SF
INTERCHANGE A S22-30-9N - ORIGINAL WELLBORE	500.00	500.00	35.96	32.82	11.464	CC, ES
INTERCHANGE A S22-30-9N - ORIGINAL WELLBORE	24,222.75	24,040.33	581.78	112.21	1.239	Level 2, 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 S22-30-7C
Project:	Broomfield County	TVD Reference:	KB 25' @ 5257.00usft
Reference Site:	Sec 10-T1S-R68W	MD Reference:	KB 25' @ 5257.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	INTERCHANGE A S22-30-7C	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	17,569.11	7,500.00	2,581.57	2,418.40	15.822	CC
ABND DD PERGOLA 1-15 - Wellbore #1 - Wellbore #1	17,600.00	7,500.00	2,581.76	2,417.98	15.764	ES
ABND DD PERGOLA 1-15 - Wellbore #1 - Wellbore #1	18,000.00	7,500.00	2,617.28	2,447.36	15.403	SF
ABND DD PERGOLA 2-15 - Wellbore #1 - Wellbore #1	15,245.17	7,500.00	1,919.39	1,795.25	15.461	CC
ABND DD PERGOLA 2-15 - Wellbore #1 - Wellbore #1	15,300.00	7,500.00	1,920.18	1,794.97	15.335	ES
ABND DD PERGOLA 2-15 - Wellbore #1 - Wellbore #1	15,600.00	7,500.00	1,951.92	1,822.14	15.040	SF
ABND VERT CALDWELL FARMS 1-A - Wellbore #1 - De	16,050.06	8,052.95	148.00	-126.75	0.539	Level 1, CC, ES, SF
ABND VERT HURON H UNIT 1 - Wellbore #1 - Design #	18,690.47	8,080.93	954.98	635.47	2.989	CC
ABND VERT HURON H UNIT 1 - Wellbore #1 - Design #	18,700.00	8,080.93	955.03	635.44	2.988	ES, SF
EXIST VERT MATHENA 1-15 - Wellbore #1 - Design #1	14,762.71	8,075.96	1,289.24	1,034.64	5.064	CC, ES
EXIST VERT MATHENA 1-15 - Wellbore #1 - Design #1	14,800.00	8,075.96	1,289.78	1,034.77	5.058	SF
Sec 22-T1S-R68W						
ABND VERT FOSTER 1-22 - Wellbore #1 - Design #1	22,636.43	8,036.91	1,190.98	804.34	3.080	CC, ES, SF
EXIST VERT NORTH HURON 1-22 - Wellbore #1 - Desi	20,596.85	8,053.92	935.36	583.73	2.660	CC
EXIST VERT NORTH HURON 1-22 - Wellbore #1 - Desi	20,600.00	8,053.92	935.37	583.71	2.660	ES, SF
EXIST VERT POITZ 1-22 - Wellbore #1 - Design #1	20,090.95	8,018.92	2,615.52	2,273.30	7.643	CC
EXIST VERT POITZ 1-22 - Wellbore #1 - Design #1	20,100.00	8,018.92	2,615.54	2,273.13	7.639	ES
EXIST VERT POITZ 1-22 - Wellbore #1 - Design #1	20,400.00	8,018.92	2,633.72	2,286.56	7.587	SF

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-INC													Offset Well Error:	0.00 usft
Sec 10-T1S-R68W - ABND VERT BEYER MA 10-3 - Wellbore #1 - Design #1														
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	26.13	1,665.47	817.11	1,855.41					
100.00	100.00	67.00	67.00	0.13	0.79	26.13	1,665.47	817.11	1,855.12	1,854.19	0.93	1,998.369		
200.00	200.00	167.00	167.00	0.49	2.72	26.13	1,665.47	817.11	1,855.12	1,851.90	3.21	577.226		
300.00	300.00	267.00	267.00	0.85	4.87	26.13	1,665.47	817.11	1,855.12	1,849.40	5.72	324.235		
400.00	400.00	367.00	367.00	1.21	6.92	26.13	1,665.47	817.11	1,855.12	1,846.98	8.13	228.063		
500.00	500.00	467.00	467.00	1.57	8.96	26.13	1,665.47	817.11	1,855.12	1,844.59	10.53	176.240		
600.00	600.00	567.00	567.00	1.93	10.98	26.13	1,665.47	817.11	1,855.12	1,842.21	12.91	143.702		
700.00	700.00	667.00	667.00	2.29	13.00	26.13	1,665.47	817.11	1,855.12	1,839.83	15.29	121.342		
800.00	799.98	766.98	766.98	2.64	15.02	9.63	1,665.47	817.11	1,853.40	1,835.73	17.66	104.923		
900.00	899.84	866.84	866.84	3.00	17.03	9.67	1,665.47	817.11	1,848.24	1,828.20	20.04	92.237		
1,000.00	999.45	966.45	966.45	3.37	19.04	9.75	1,665.47	817.11	1,839.65	1,817.24	22.41	82.104		
1,100.00	1,098.70	1,065.70	1,065.70	3.73	21.04	9.85	1,665.47	817.11	1,827.63	1,802.87	24.77	73.791		
1,200.00	1,197.47	1,164.47	1,164.47	4.12	23.03	9.99	1,665.47	817.11	1,812.22	1,785.10	27.12	66.822		
1,300.00	1,295.62	1,262.62	1,262.62	4.52	25.01	10.16	1,665.47	817.11	1,793.42	1,763.96	29.46	60.873		
1,400.00	1,393.06	1,360.06	1,360.06	4.96	26.97	10.37	1,665.47	817.11	1,771.27	1,739.48	31.79	55.717		
1,500.00	1,489.64	1,456.64	1,456.64	5.42	28.91	10.62	1,665.47	817.11	1,745.80	1,711.69	34.11	51.188		
1,600.00	1,585.27	1,552.27	1,552.27	5.91	30.83	10.92	1,665.47	817.11	1,717.03	1,680.63	36.40	47.166		
1,700.00	1,679.82	1,646.82	1,646.82	6.45	32.74	11.26	1,665.47	817.11	1,685.02	1,646.34	38.69	43.557		
1,800.00	1,773.17	1,740.17	1,740.17	7.03	34.62	11.65	1,665.47	817.11	1,649.81	1,608.86	40.95	40.292		
1,900.00	1,865.21	1,832.21	1,832.21	7.65	36.47	12.10	1,665.47	817.11	1,611.45	1,568.26	43.19	37.313		
2,000.00	1,955.84	1,922.84	1,922.84	8.32	38.29	12.62	1,665.47	817.11	1,570.00	1,524.60	45.40	34.578		
2,013.69	1,968.13	1,935.13	1,935.13	8.41	38.54	12.70	1,665.47	817.11	1,564.09	1,518.38	45.71	34.217		
2,100.00	2,045.52	2,012.52	2,012.52	9.02	40.10	13.01	1,665.47	817.11	1,526.66	1,479.05	47.61	32.068		
2,200.00	2,135.19	2,102.19	2,102.19	9.74	41.90	13.39	1,665.47	817.11	1,483.34	1,433.53	49.81	29.779		
2,300.00	2,224.86	2,208.14	2,191.86	10.48	44.03	13.80	1,665.47	817.11	1,440.08	1,387.73	52.35	27.508		

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