

EXTRACTION OIL & GAS

Weld County

Sec 17-T2N-R68W

RINN VALLEY EAST N17-20-7C

ORIGINAL WELLBORE

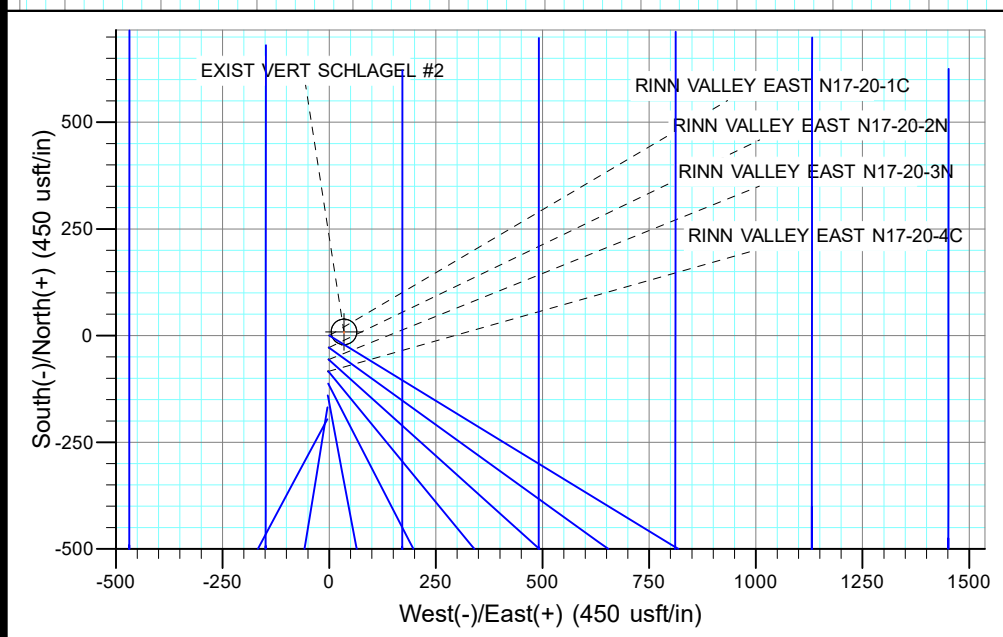
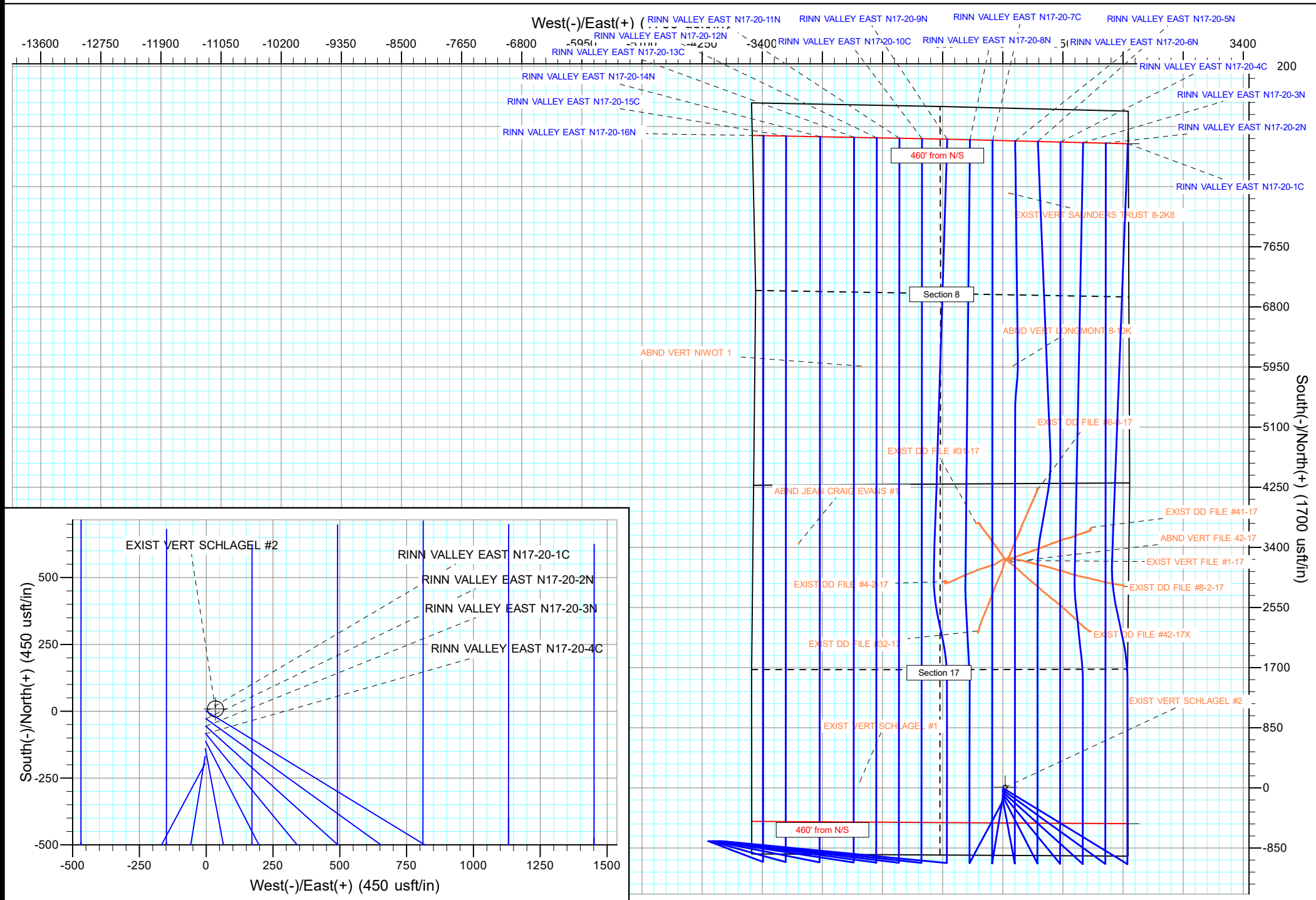
PROPOSAL 1

Anticollision Report

14 March, 2018



Project: Weld County
 Site: Sec 17-T2N-R68W
 Well: RINN VALLEY EAST N17-20-1C
 ORIGINAL WELLBORE
 PROPOSAL 1



Anticollision Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well RINN VALLEY EAST N17-20-7C
Project:	Weld County	TVD Reference:	KB 25' @ 4949.00usft
Reference Site:	Sec 17-T2N-R68W	MD Reference:	KB 25' @ 4949.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	RINN VALLEY EAST N17-20-7C	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	2/15/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	17,574.71	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
Sec 17-T2N-R68W						
ABND JEAN CRAIG EVANS #1 - Wellbore #1 - Design #	11,878.16	4,838.00	3,800.09	3,668.60	28.902	CC
ABND JEAN CRAIG EVANS #1 - Wellbore #1 - Design #	11,900.00	4,838.00	3,800.15	3,668.36	28.836	ES
ABND JEAN CRAIG EVANS #1 - Wellbore #1 - Design #	13,200.00	4,838.00	4,023.42	3,873.70	26.873	SF
ABND VERT FILE 42-17 - Wellbore #1 - Design #1	700.00	646.00	3,361.57	3,346.73	226.456	CC
ABND VERT FILE 42-17 - Wellbore #1 - Design #1	800.00	745.98	3,363.30	3,346.10	195.497	ES
ABND VERT FILE 42-17 - Wellbore #1 - Design #1	15,900.00	1,020.00	7,754.21	7,679.77	104.164	SF
EXIST DD FILE #31-17 - Wellbore #1 - Wellbore #1	12,159.67	7,522.73	217.85	108.53	1.993	CC, ES, SF
EXIST DD FILE #32-17 - Wellbore #1 - Wellbore #1	10,639.40	7,618.26	195.74	106.65	2.197	CC, ES, SF
EXIST DD FILE #41-17 - Wellbore #1 - Wellbore #1	12,076.82	7,638.85	1,398.10	1,289.50	12.873	CC
EXIST DD FILE #41-17 - Wellbore #1 - Wellbore #1	12,100.00	7,639.77	1,398.30	1,289.25	12.823	ES
EXIST DD FILE #41-17 - Wellbore #1 - Wellbore #1	12,300.00	7,648.05	1,415.78	1,303.71	12.633	SF
EXIST DD FILE #4-2-17 - Wellbore #1 - Wellbore #1	11,342.75	7,601.50	658.47	562.76	6.880	CC, ES
EXIST DD FILE #4-2-17 - Wellbore #1 - Wellbore #1	11,400.00	7,600.84	660.95	564.72	6.869	SF
EXIST DD FILE #42-17X - Wellbore #1 - Wellbore #1	10,633.93	7,692.66	1,381.95	1,291.72	15.317	CC, ES
EXIST DD FILE #42-17X - Wellbore #1 - Wellbore #1	10,700.00	7,691.44	1,383.52	1,292.86	15.261	SF
EXIST DD FILE #6-0-17 - Wellbore #1 - Wellbore #1	12,636.03	7,613.35	634.08	513.37	5.253	CC, ES
EXIST DD FILE #6-0-17 - Wellbore #1 - Wellbore #1	12,700.00	7,610.99	637.29	515.73	5.243	SF
EXIST DD FILE #8-2-17 - Wellbore #1 - Wellbore #1	11,273.47	7,674.20	1,860.78	1,764.44	19.315	CC
EXIST DD FILE #8-2-17 - Wellbore #1 - Wellbore #1	11,300.00	7,674.05	1,860.97	1,764.31	19.254	ES
EXIST DD FILE #8-2-17 - Wellbore #1 - Wellbore #1	11,600.00	7,672.32	1,889.21	1,789.46	18.939	SF
EXIST VERT FILE #1-17 - Wellbore #1 - Design #1	11,634.15	7,475.96	212.57	112.99	2.135	CC, ES, SF
EXIST VERT SCHLAGEL #1 - Wellbore #1 - Design #1	8,514.80	7,509.01	1,866.96	1,684.79	10.248	CC, ES
EXIST VERT SCHLAGEL #1 - Wellbore #1 - Design #1	8,700.00	7,509.01	1,876.12	1,692.68	10.227	SF
EXIST VERT SCHLAGEL #2 - Wellbore #1 - Design #1	700.00	672.00	180.84	165.44	11.743	CC
EXIST VERT SCHLAGEL #2 - Wellbore #1 - Design #1	8,428.11	7,502.00	183.41	1.90	1.010	Level 2, ES, SF
RINN VALLEY EAST N17-20-1C - ORIGINAL WELLBOR	751.63	750.72	146.18	140.95	27.972	CC, ES
RINN VALLEY EAST N17-20-1C - ORIGINAL WELLBOR	17,574.73	17,802.55	1,911.71	1,565.54	5.522	SF
RINN VALLEY EAST N17-20-2N - ORIGINAL WELLBOR	796.56	796.64	118.29	112.87	21.843	CC
RINN VALLEY EAST N17-20-2N - ORIGINAL WELLBOR	800.00	800.03	118.29	112.85	21.733	ES
RINN VALLEY EAST N17-20-2N - ORIGINAL WELLBOR	17,574.73	17,489.99	1,618.84	1,274.18	4.697	SF
RINN VALLEY EAST N17-20-3N - ORIGINAL WELLBOR	845.53	846.17	91.15	85.48	16.087	CC, ES
RINN VALLEY EAST N17-20-3N - ORIGINAL WELLBOR	17,574.73	17,430.94	1,303.37	960.18	3.798	SF
RINN VALLEY EAST N17-20-4C - ORIGINAL WELLBOR	901.05	901.74	64.91	58.94	10.860	CC, ES
RINN VALLEY EAST N17-20-4C - ORIGINAL WELLBOR	17,574.73	17,618.90	960.41	612.75	2.763	SF
RINN VALLEY EAST N17-20-5N - ORIGINAL WELLBOR	964.79	965.90	40.11	33.74	6.294	CC, ES
RINN VALLEY EAST N17-20-5N - ORIGINAL WELLBOR	17,574.73	17,358.43	685.90	355.12	2.074	SF
RINN VALLEY EAST N17-20-6N - ORIGINAL WELLBOR	1,044.52	1,044.37	17.68	10.80	2.568	CC, ES

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

Anticollision Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well RINN VALLEY EAST N17-20-7C
Project:	Weld County	TVD Reference:	KB 25' @ 4949.00usft
Reference Site:	Sec 17-T2N-R68W	MD Reference:	KB 25' @ 4949.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	RINN VALLEY EAST N17-20-7C	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 17-T2N-R68W						
RINN VALLEY EAST N17-20-6N - ORIGINAL WELLBOR	17,568.74	17,327.22	404.02	110.45	1.376	Level 3, SF
RINN VALLEY EAST N17-20-8N - ORIGINAL WELLBOR	1,207.72	1,202.88	11.66	3.68	1.462	Level 3, CC, ES
RINN VALLEY EAST N17-20-8N - ORIGINAL WELLBOR	17,574.73	17,345.55	404.92	110.43	1.375	Level 3, SF
Sec 18-T2N-R68W						
RINN VALLEY EAST N17-20-10C - ORIGINAL WELLBO	17,574.73	18,169.11	996.53	641.73	2.809	CC, ES, SF
RINN VALLEY EAST N17-20-11N - ORIGINAL WELLBO	6,909.13	7,421.24	1,319.76	1,261.18	22.530	CC
RINN VALLEY EAST N17-20-11N - ORIGINAL WELLBO	17,574.73	17,817.25	1,342.47	995.15	3.865	ES, SF
RINN VALLEY EAST N17-20-12N - ORIGINAL WELLBO	6,914.28	7,310.16	1,639.61	1,581.84	28.384	CC
RINN VALLEY EAST N17-20-12N - ORIGINAL WELLBO	17,574.73	17,703.54	1,657.69	1,308.12	4.742	ES, SF
RINN VALLEY EAST N17-20-13C - ORIGINAL WELLBO	17,574.73	17,830.54	1,956.92	1,602.64	5.524	CC, ES, SF
RINN VALLEY EAST N17-20-14N - ORIGINAL WELLBO	6,923.75	7,074.91	2,439.51	2,383.72	43.729	CC
RINN VALLEY EAST N17-20-14N - ORIGINAL WELLBO	17,574.73	17,455.51	2,451.41	2,099.67	6.969	ES, SF
RINN VALLEY EAST N17-20-15C - ORIGINAL WELLBO	17,574.73	17,594.29	2,917.53	2,563.64	8.244	CC, ES, SF
RINN VALLEY EAST N17-20-16N - ORIGINAL WELLBO	6,929.82	6,928.90	3,239.41	3,185.15	59.709	CC
RINN VALLEY EAST N17-20-16N - ORIGINAL WELLBO	17,574.73	17,304.08	3,248.78	2,896.10	9.212	ES, SF
RINN VALLEY EAST N17-20-9N - ORIGINAL WELLBOR	6,890.53	7,689.42	640.51	580.28	10.636	CC
RINN VALLEY EAST N17-20-9N - ORIGINAL WELLBOR	17,574.73	18,144.53	691.79	360.20	2.086	ES, SF
Sec 8-T2N-R68W						
ABND VERT LONGMONT 8-10K - Wellbore #1 - Design	14,387.07	7,456.94	293.71	24.80	1.092	Level 2, CC, ES, SF
ABND VERT NIWOT 1 - Wellbore #1 - Design #1	14,382.62	7,466.94	1,859.55	1,590.52	6.912	CC
ABND VERT NIWOT 1 - Wellbore #1 - Design #1	14,400.00	7,466.94	1,859.64	1,590.29	6.904	ES
ABND VERT NIWOT 1 - Wellbore #1 - Design #1	14,500.00	7,466.94	1,863.25	1,592.35	6.878	SF
EXIST VERT SAUNDERS TRUST 8-2K8 - Wellbore #1 -	16,829.17	7,552.91	233.85	-79.31	0.747	Level 1, CC, ES, SF

Offset Design												Offset Site Error:	0.00 usft	
Survey Program: 0-INC												Offset Well Error:		0.00 usft
Reference												Reference		Warning
Offset				Semi Major Axis				Distance				Minimum Separation		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)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-38.42	3,628.40	-2,878.11	4,631.60					
100.00	100.00	46.00	46.00	0.13	0.55	-38.42	3,628.40	-2,878.11	4,631.28	4,630.60	0.69	6,754.989		
200.00	200.00	146.00	146.00	0.49	2.25	-38.42	3,628.40	-2,878.11	4,631.28	4,628.54	2.74	1,687.564		
300.00	300.00	246.00	246.00	0.85	4.44	-38.42	3,628.40	-2,878.11	4,631.28	4,625.99	5.30	874.607		
400.00	400.00	346.00	346.00	1.21	6.51	-38.42	3,628.40	-2,878.11	4,631.28	4,623.57	7.72	600.261		
500.00	500.00	446.00	446.00	1.57	8.54	-38.42	3,628.40	-2,878.11	4,631.28	4,621.17	10.11	458.087		
600.00	600.00	546.00	546.00	1.93	10.57	-38.42	3,628.40	-2,878.11	4,631.28	4,618.79	12.49	370.660		
700.00	700.00	646.00	646.00	2.29	12.59	-38.42	3,628.40	-2,878.11	4,631.28	4,616.41	14.87	311.360		
800.00	799.98	745.98	745.98	2.63	14.61	132.38	3,628.40	-2,878.11	4,632.46	4,615.23	17.23	268.807		
900.00	899.84	845.84	845.84	2.96	16.62	132.37	3,628.40	-2,878.11	4,635.99	4,616.41	19.58	236.787		
1,000.00	999.45	945.45	945.45	3.30	18.63	132.36	3,628.40	-2,878.11	4,641.87	4,619.95	21.93	211.692		
1,100.00	1,098.70	1,044.70	1,044.70	3.66	20.63	132.35	3,628.40	-2,878.11	4,650.12	4,625.84	24.28	191.528		
1,147.27	1,145.46	1,108.54	1,091.46	3.83	21.91	132.34	3,628.40	-2,878.11	4,654.84	4,629.10	25.74	180.866		
1,200.00	1,197.54	1,143.54	1,143.54	4.03	22.62	132.42	3,628.40	-2,878.11	4,660.40	4,633.77	26.63	174.981		
1,300.00	1,296.33	1,242.33	1,242.33	4.42	24.61	132.56	3,628.40	-2,878.11	4,670.98	4,641.98	28.99	161.106		
1,400.00	1,395.11	1,341.11	1,341.11	4.83	26.60	132.70	3,628.40	-2,878.11	4,681.58	4,650.22	31.36	149.288		
1,500.00	1,493.89	1,439.89	1,439.89	5.24	28.58	132.84	3,628.40	-2,878.11	4,692.20	4,658.47	33.73	139.108		
1,600.00	1,592.68	1,538.68	1,538.68	5.65	30.57	132.97	3,628.40	-2,878.11	4,702.86	4,666.75	36.11	130.252		
1,700.00	1,691.46	1,637.46	1,637.46	6.07	32.56	133.11	3,628.40	-2,878.11	4,713.54	4,675.06	38.48	122.480		
1,800.00	1,790.25	1,736.25	1,736.25	6.49	34.55	133.25	3,628.40	-2,878.11	4,724.25	4,683.39	40.86	115.607		

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