

EXTRACTION OIL & GAS

Weld County

Sec 17-T2N-R68W

RINN VALLEY EAST N17-20-2N

ORIGINAL WELLBORE

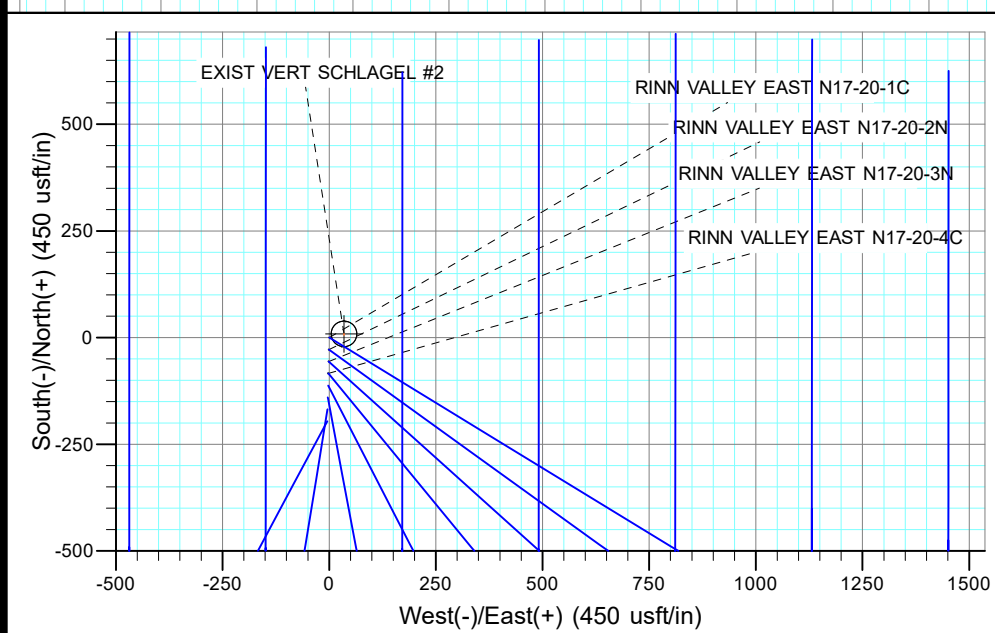
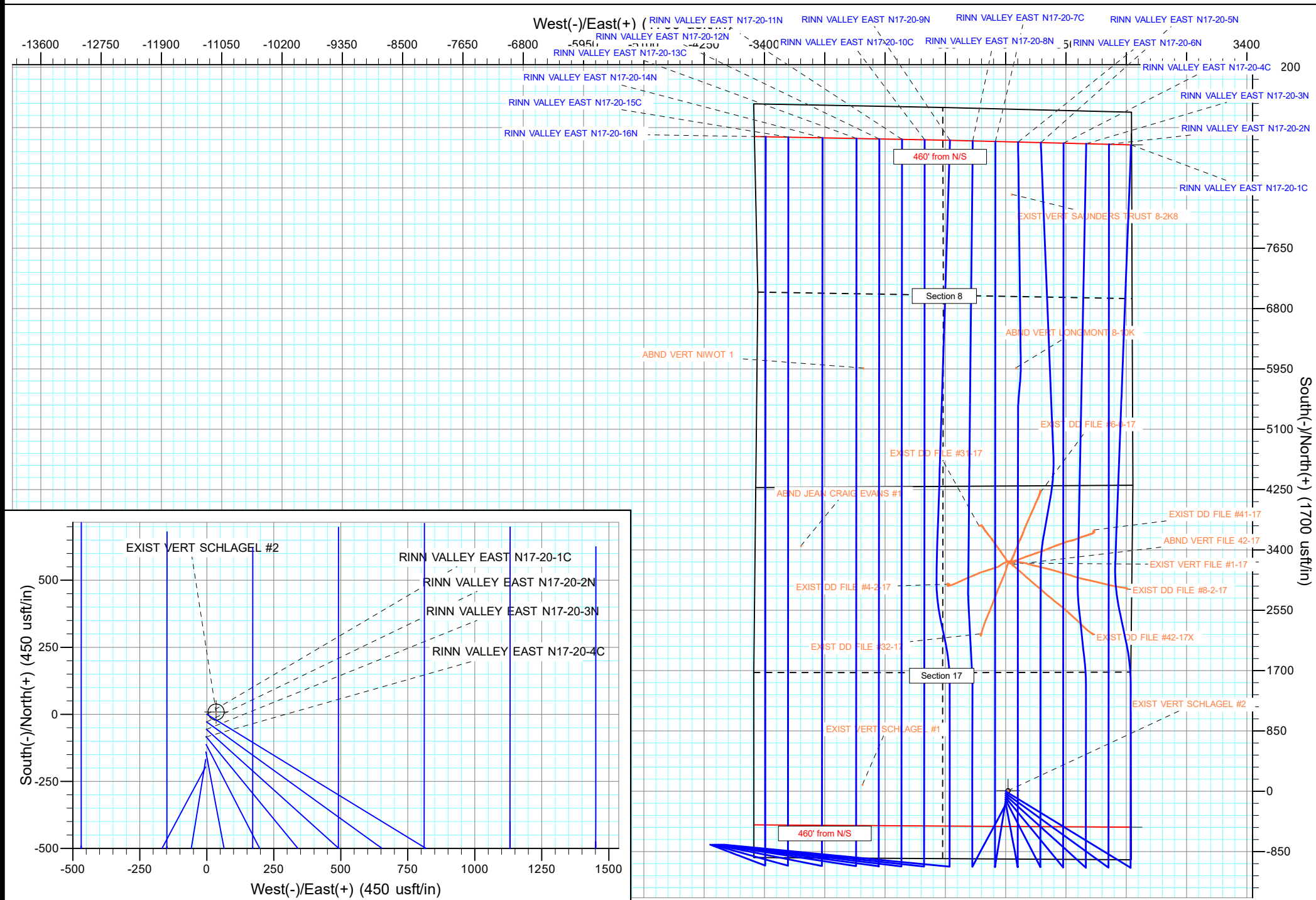
PROPOSAL 1

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 N17-20-2N
Project:	Weld County	TVD Reference:	KB 25' @ 4941.00usft
Reference Site:	Sec 17-T2N-R68W	MD Reference:	KB 25' @ 4941.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	RINN VALLEY EAST N17-20-2N	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	17,489.86	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 17-T2N-R68W						
ABND JEAN CRAIG EVANS #1 - Wellbore #1 - Design #	200.00	154.00	4,524.66	4,521.73	1,545.555	CC
ABND JEAN CRAIG EVANS #1 - Wellbore #1 - Design #	300.00	253.98	4,526.35	4,520.90	830.329	ES
ABND JEAN CRAIG EVANS #1 - Wellbore #1 - Design #	13,400.00	4,838.00	5,195.43	5,026.45	30.745	SF
ABND VERT FILE 42-17 - Wellbore #1 - Design #1	200.00	154.00	3,221.65	3,218.76	1,113.829	CC
ABND VERT FILE 42-17 - Wellbore #1 - Design #1	300.00	253.98	3,222.63	3,217.21	594.570	ES
ABND VERT FILE 42-17 - Wellbore #1 - Design #1	15,700.00	1,020.00	7,585.91	7,508.81	98.395	SF
EXIST DD FILE #31-17 - Wellbore #1 - Wellbore #1	12,114.96	7,229.06	1,811.87	1,705.17	16.980	CC, ES
EXIST DD FILE #31-17 - Wellbore #1 - Wellbore #1	12,300.00	7,228.95	1,821.29	1,712.86	16.797	SF
EXIST DD FILE #32-17 - Wellbore #1 - Wellbore #1	10,592.84	7,401.28	1,795.38	1,707.70	20.476	CC
EXIST DD FILE #32-17 - Wellbore #1 - Wellbore #1	10,600.00	7,401.39	1,795.39	1,707.65	20.462	ES
EXIST DD FILE #32-17 - Wellbore #1 - Wellbore #1	10,800.00	7,404.41	1,807.29	1,718.20	20.286	SF
EXIST DD FILE #41-17 - Wellbore #1 - Wellbore #1	12,000.00	7,403.57	207.39	99.48	1.922	SF
EXIST DD FILE #41-17 - Wellbore #1 - Wellbore #1	12,029.71	7,403.16	205.25	98.55	1.924	CC, ES
EXIST DD FILE #4-2-17 - Wellbore #1 - Wellbore #1	11,299.48	7,435.47	2,267.96	2,173.53	24.018	CC
EXIST DD FILE #4-2-17 - Wellbore #1 - Wellbore #1	11,300.00	7,435.47	2,267.96	2,173.52	24.017	ES
EXIST DD FILE #4-2-17 - Wellbore #1 - Wellbore #1	11,700.00	7,429.75	2,303.04	2,205.42	23.592	SF
EXIST DD FILE #42-17X - Wellbore #1 - Wellbore #1	10,591.78	7,471.17	222.15	133.22	2.498	CC
EXIST DD FILE #42-17X - Wellbore #1 - Wellbore #1	10,600.00	7,471.07	222.30	133.20	2.495	ES, SF
EXIST DD FILE #6-0-17 - Wellbore #1 - Wellbore #1	12,603.20	7,343.28	960.88	842.42	8.111	CC, ES, SF
EXIST DD FILE #8-2-17 - Wellbore #1 - Wellbore #1	11,230.73	7,495.94	252.62	157.72	2.662	CC, ES, SF
EXIST VERT FILE #1-17 - Wellbore #1 - Design #1	11,588.89	7,233.98	1,387.59	1,290.13	14.238	CC
EXIST VERT FILE #1-17 - Wellbore #1 - Design #1	11,600.00	7,233.98	1,387.63	1,290.08	14.225	ES
EXIST VERT FILE #1-17 - Wellbore #1 - Design #1	11,700.00	7,233.98	1,392.03	1,293.80	14.171	SF
EXIST VERT SCHLAGEL #1 - Wellbore #1 - Design #1	200.00	169.00	2,018.94	2,015.67	617.228	CC
EXIST VERT SCHLAGEL #1 - Wellbore #1 - Design #1	300.00	268.98	2,020.42	2,014.66	350.613	ES
EXIST VERT SCHLAGEL #1 - Wellbore #1 - Design #1	9,000.00	7,248.99	3,507.50	3,325.44	19.266	SF
EXIST VERT SCHLAGEL #2 - Wellbore #1 - Design #1	400.90	380.73	50.45	42.04	5.998	CC
EXIST VERT SCHLAGEL #2 - Wellbore #1 - Design #1	500.00	479.45	51.19	40.40	4.747	ES
EXIST VERT SCHLAGEL #2 - Wellbore #1 - Design #1	700.00	677.47	62.26	46.69	4.000	SF
RINN VALLEY EAST N17-20-1C - ORIGINAL WELLBOR	431.08	431.06	25.31	22.66	9.542	CC
RINN VALLEY EAST N17-20-1C - ORIGINAL WELLBOR	500.00	500.02	25.49	22.31	8.003	ES
RINN VALLEY EAST N17-20-1C - ORIGINAL WELLBOR	17,489.99	17,823.79	399.79	119.50	1.426	Level 3, SF
RINN VALLEY EAST N17-20-3N - ORIGINAL WELLBOR	535.64	535.44	24.84	21.47	7.372	CC
RINN VALLEY EAST N17-20-3N - ORIGINAL WELLBOR	17,475.63	17,899.29	319.86	-32.03	0.909	Level 1, ES, SF
RINN VALLEY EAST N17-20-4C - ORIGINAL WELLBOR	591.39	590.78	49.23	45.45	13.024	CC
RINN VALLEY EAST N17-20-4C - ORIGINAL WELLBOR	600.00	599.30	49.23	45.39	12.813	ES
RINN VALLEY EAST N17-20-4C - ORIGINAL WELLBOR	17,489.99	17,603.26	686.28	356.01	2.078	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 RINN VALLEY EAST N17-20-2N
Project:	Weld County	TVD Reference:	KB 25' @ 4941.00usft
Reference Site:	Sec 17-T2N-R68W	MD Reference:	KB 25' @ 4941.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	RINN VALLEY EAST N17-20-2N	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 N17-20-5N - ORIGINAL WELLBOR	653.73	653.44	72.94	68.68	17.109	CC
RINN VALLEY EAST N17-20-5N - ORIGINAL WELLBOR	700.00	698.71	73.29	68.68	15.895	ES
RINN VALLEY EAST N17-20-5N - ORIGINAL WELLBOR	17,489.99	17,295.75	958.34	615.12	2.792	SF
RINN VALLEY EAST N17-20-6N - ORIGINAL WELLBOR	721.79	720.66	96.10	91.30	20.019	CC, ES
RINN VALLEY EAST N17-20-6N - ORIGINAL WELLBOR	17,489.99	17,279.95	1,279.65	934.63	3.709	SF
RINN VALLEY EAST N17-20-7C - ORIGINAL WELLBOR	796.64	796.56	118.29	112.87	21.843	CC
RINN VALLEY EAST N17-20-7C - ORIGINAL WELLBOR	800.00	799.73	118.29	112.85	21.738	ES
RINN VALLEY EAST N17-20-7C - ORIGINAL WELLBOR	17,489.99	17,529.71	1,618.21	1,274.61	4.710	SF
RINN VALLEY EAST N17-20-8N - ORIGINAL WELLBOR	878.82	874.83	140.31	134.21	22.996	CC
RINN VALLEY EAST N17-20-8N - ORIGINAL WELLBOR	900.00	894.45	140.46	134.19	22.389	ES
RINN VALLEY EAST N17-20-8N - ORIGINAL WELLBOR	17,489.99	17,321.38	1,920.56	1,574.65	5.552	SF
Sec 18-T2N-R68W						
RINN VALLEY EAST N17-20-10C - ORIGINAL WELLBO	5,801.86	6,879.27	2,595.43	2,535.70	43.452	CC
RINN VALLEY EAST N17-20-10C - ORIGINAL WELLBO	17,489.99	18,131.03	2,606.72	2,254.65	7.404	ES, SF
RINN VALLEY EAST N17-20-11N - ORIGINAL WELLBO	5,489.54	6,539.54	2,844.57	2,788.22	50.486	CC
RINN VALLEY EAST N17-20-11N - ORIGINAL WELLBO	17,489.99	17,782.51	2,916.64	2,565.55	8.307	ES, SF
RINN VALLEY EAST N17-20-12N - ORIGINAL WELLBO	5,410.19	6,422.45	3,153.88	3,099.41	57.897	CC
RINN VALLEY EAST N17-20-12N - ORIGINAL WELLBO	17,489.99	17,664.46	3,236.78	2,885.87	9.224	ES, SF
RINN VALLEY EAST N17-20-13C - ORIGINAL WELLBO	5,556.53	6,541.32	3,524.24	3,469.94	64.909	CC
RINN VALLEY EAST N17-20-13C - ORIGINAL WELLBO	17,489.99	17,791.40	3,564.34	3,213.06	10.147	ES, SF
RINN VALLEY EAST N17-20-14N - ORIGINAL WELLBO	5,195.12	6,166.24	3,927.25	3,877.31	78.645	CC
RINN VALLEY EAST N17-20-14N - ORIGINAL WELLBO	17,489.99	17,416.34	4,037.27	3,686.77	11.519	ES, SF
RINN VALLEY EAST N17-20-15C - ORIGINAL WELLBO	200.00	223.00	4,199.30	4,198.23	3,931.020	CC
RINN VALLEY EAST N17-20-15C - ORIGINAL WELLBO	17,489.99	17,555.13	4,523.36	4,172.66	12.898	ES, SF
RINN VALLEY EAST N17-20-16N - ORIGINAL WELLBO	200.00	224.00	4,226.84	4,225.77	3,943.573	CC, ES
RINN VALLEY EAST N17-20-16N - ORIGINAL WELLBO	17,489.99	17,260.50	4,838.11	4,487.81	13.811	SF
RINN VALLEY EAST N17-20-9N - ORIGINAL WELLBOR	5,664.33	6,829.94	2,187.22	2,126.73	36.159	CC
RINN VALLEY EAST N17-20-9N - ORIGINAL WELLBOR	17,489.99	18,144.53	2,240.99	1,887.58	6.341	ES, SF
Sec 8-T2N-R68W						
ABND VERT LONGMONT 8-10K - Wellbore #1 - Design	14,341.81	7,214.97	1,306.42	1,044.17	4.982	CC, ES
ABND VERT LONGMONT 8-10K - Wellbore #1 - Design	14,400.00	7,214.96	1,307.72	1,045.15	4.980	SF
ABND VERT NIWOT 1 - Wellbore #1 - Design #1	14,337.39	7,224.97	3,459.68	3,197.29	13.185	CC
ABND VERT NIWOT 1 - Wellbore #1 - Design #1	14,400.00	7,224.96	3,460.25	3,197.04	13.147	ES
ABND VERT NIWOT 1 - Wellbore #1 - Design #1	14,800.00	7,224.96	3,490.47	3,222.90	13.045	SF
EXIST VERT SAUNDERS TRUST 8-2K8 - Wellbore #1 -	16,783.91	7,310.95	1,366.24	1,059.93	4.460	CC
EXIST VERT SAUNDERS TRUST 8-2K8 - Wellbore #1 -	16,800.00	7,310.95	1,366.34	1,059.92	4.459	ES, SF

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-INC												Offset Well Error:	0.00 usft
Reference													
Reference				Semi Major Axis				Distance					
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	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-39.56	3,488.52	-2,881.46	4,524.90				
100.00	100.00	54.00	54.00	0.13	0.65	-39.56	3,488.52	-2,881.46	4,524.66	4,523.88	0.78	5,789.960	
200.00	200.00	154.00	154.00	0.49	2.43	-39.56	3,488.52	-2,881.46	4,524.66	4,521.73	2.93	1,545.555	CC
300.00	299.98	253.98	253.98	0.84	4.61	-165.37	3,488.52	-2,881.46	4,526.35	4,520.90	5.45	830.329	ES
400.00	399.84	353.84	353.84	1.19	6.67	-165.36	3,488.52	-2,881.46	4,531.41	4,523.55	7.86	576.505	
500.00	499.45	453.45	453.45	1.56	8.69	-165.34	3,488.52	-2,881.46	4,539.85	4,529.60	10.25	442.983	
600.00	598.70	552.70	552.70	1.95	10.70	-165.32	3,488.52	-2,881.46	4,551.64	4,539.02	12.63	360.526	

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