EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)
SW NW SEC. 15 T5N R65W 6th P.M.
VT-LDS 3-16-18

ORIGINAL WELLBORE
PROPOSAL #2

Anticollision Report

10 March, 2016

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS 3-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS 3-16-18	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	**Offset TVD Reference:**	Offset Datum

Reference PROPOSAL #2

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 98.4usft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0 us	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 10/03/2016

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	20,403.6	PROPOSAL #2 (ORIGINAL WELLBORE)	MWD	MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
SW NW SEC. 15 T5N R65W 6th P.M.						
ABDN VERT LORENZ FARM INC #1 - Wellbore #1 - Des	600.0	557.0	2,623.4	2,611.5	220.479	CC
ABDN VERT LORENZ FARM INC #1 - Wellbore #1 - Des	700.0	657.0	2,624.3	2,610.2	185.711	ES
ABDN VERT LORENZ FARM INC #1 - Wellbore #1 - Des	7,700.0	4,600.0	5,616.9	5,449.6	33.563	SF
CARLSON A-15-16HN - Wellbore #1 - Design #1	8,053.0	14,862.7	1,236.8	926.7	3.988	CC
CARLSON A-15-16HN - Wellbore #1 - Design #1	8,070.8	14,862.7	1,237.1	926.5	3.983	ES
CARLSON A-15-16HN - Wellbore #1 - Design #1	8,100.0	14,862.7	1,238.7	927.6	3.981	SF
CARLSON B-15-16HC - Wellbore #1 - Design #1	8,051.3	14,905.1	1,078.1	770.1	3.500	CC
CARLSON B-15-16HC - Wellbore #1 - Design #1	8,070.8	14,905.1	1,078.5	770.0	3.496	ES
CARLSON B-15-16HC - Wellbore #1 - Design #1	8,100.0	14,905.1	1,080.4	771.3	3.495	SF
CARLSON C-15-16HN - Wellbore #1 - Design #1	8,040.9	14,796.3	908.4	599.4	2.940	CC
CARLSON C-15-16HN - Wellbore #1 - Design #1	8,050.0	14,796.3	908.4	599.2	2.937	ES
CARLSON C-15-16HN - Wellbore #1 - Design #1	8,070.8	14,796.3	909.3	599.4	2.935	SF
CARLSON D-15-16HN - Wellbore #1 - Design #1	8,024.5	14,777.6	580.2	273.0	1.889	CC
CARLSON D-15-16HN - Wellbore #1 - Design #1	8,050.0	14,777.6	581.0	272.9	1.885	ES, SF
CARLSON E-15-16HC - Wellbore #1 - Design #1	8,021.7	14,848.6	432.0	136.7	1.463	Level 3, CC, ES
CARLSON E-15-16HC - Wellbore #1 - Design #1	8,050.0	14,848.6	433.5	136.8	1.461	Level 3, SF
CARLSON F-15-16HN - Wellbore #1 - Design #1	8,005.0	14,769.7	303.3	0.2	1.001	Level 2, CC, ES, SF
CARLSON G-15-16HN - Wellbore #1 - Design #1	7,882.3	14,709.1	126.4	-131.0	0.491	Level 1, CC
CARLSON G-15-16HN - Wellbore #1 - Design #1	7,972.4	14,787.6	128.7	-152.9	0.457	Level 1, ES, SF
CARLSON H-15-16HC - Wellbore #1 - Design #1	7,830.2	14,754.5	308.6	49.4	1.191	Level 2, CC
CARLSON H-15-16HC - Wellbore #1 - Design #1	7,972.4	14,883.6	311.8	33.1	1.119	Level 2, ES, SF
CARLSON I-15-16HN - Wellbore #1 - Design #1	7,691.2	14,578.0	477.8	195.4	1.692	CC
CARLSON I-15-16HN - Wellbore #1 - Design #1	7,775.6	14,655.0	480.9	191.8	1.663	ES
CARLSON I-15-16HN - Wellbore #1 - Design #1	7,900.0	14,774.5	492.8	194.9	1.654	SF
CARLSON J-15-16HN - Wellbore #1 - Design #1	7,620.7	14,582.8	798.9	515.7	2.822	CC
CARLSON J-15-16HN - Wellbore #1 - Design #1	7,700.0	14,650.7	801.3	513.8	2.787	ES
CARLSON J-15-16HN - Wellbore #1 - Design #1	8,000.0	14,901.4	834.0	529.7	2.740	SF
CARLSON K-15-16HC - Wellbore #1 - Design #1	7,653.7	14,722.4	977.3	694.6	3.456	CC
CARLSON K-15-16HC - Wellbore #1 - Design #1	7,750.0	14,808.0	980.5	692.6	3.406	ES
CARLSON K-15-16HC - Wellbore #1 - Design #1	8,070.8	15,013.6	1,015.1	709.3	3.319	SF
CARLSON L-15-16HN - Wellbore #1 - Design #1	7,571.2	14,618.9	1,123.2	840.6	3.974	CC
CARLSON L-15-16HN - Wellbore #1 - Design #1	7,650.0	14,682.7	1,125.4	839.3	3.934	ES
CARLSON L-15-16HN - Wellbore #1 - Design #1	8,100.0	14,977.0	1,177.5	868.5	3.811	SF
EXIST DD BMC #B8 - Wellbore #1 - Wellbore #1	12,183.2	7,053.6	3,397.7	3,179.2	15.546	CC
EXIST DD BMC #B8 - Wellbore #1 - Wellbore #1	12,300.0	7,053.4	3,399.7	3,178.0	15.329	ES
EXIST DD BMC #B8 - Wellbore #1 - Wellbore #1	13,681.1	7,051.2	3,713.2	3,453.2	14.281	SF
EXIST DD BUS BARN #A5 - Wellbore #1 - Wellbore #1	9,588.4	7,214.2	3,279.4	3,125.2	21.264	CC

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

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Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS 3-16-18	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
SW NW SEC. 15 T5N R65W 6th P.M.						
EXIST DD BUS BARN #A5 - Wellbore #1 - Wellbore #1	9,700.0	7,212.8	3,281.3	3,124.1	20.872	ES
EXIST DD BUS BARN #A5 - Wellbore #1 - Wellbore #1	11,515.7	7,191.0	3,803.8	3,597.3	18.419	SF
EXIST DD CDOT 2 #D7 - Wellbore #1 - Wellbore #1	12,907.2	7,141.8	3,908.9	3,664.3	15.981	CC
EXIST DD CDOT 2 #D7 - Wellbore #1 - Wellbore #1	13,000.0	7,141.9	3,910.0	3,662.8	15.819	ES
EXIST DD CDOT 2 #D7 - Wellbore #1 - Wellbore #1	14,665.3	7,143.2	4,286.1	3,992.7	14.609	SF
EXIST DD CDOT 3 # D2 - Wellbore #1 - Wellbore #1	11,505.0	6,877.8	3,910.6	3,720.9	20.605	CC
EXIST DD CDOT 3 # D2 - Wellbore #1 - Wellbore #1	11,614.1	6,877.3	3,912.2	3,719.4	20.293	ES
EXIST DD CDOT 3 # D2 - Wellbore #1 - Wellbore #1	13,779.5	6,868.0	4,524.0	4,271.4	17.910	SF
EXIST DD CLARK #A1 - Wellbore #1 - Wellbore #1	10,188.1	7,950.0	2,395.3	2,233.3	14.791	CC
EXIST DD CLARK #A1 - Wellbore #1 - Wellbore #1	10,236.2	7,950.0	2,395.8	2,232.5	14.677	ES
EXIST DD CLARK #A1 - Wellbore #1 - Wellbore #1	11,122.0	7,950.0	2,570.9	2,383.8	13.739	SF
EXIST DD CLASSIC LANES #C9 - Wellbore #1 - Wellbo	13,511.4	7,671.3	1,979.5	1,701.9	7.130	CC
EXIST DD CLASSIC LANES #C9 - Wellbore #1 - Wellbo	13,582.6	7,673.3	1,980.8	1,701.2	7.085	ES
EXIST DD CLASSIC LANES #C9 - Wellbore #1 - Wellbo	13,900.0	7,682.3	2,017.3	1,728.9	6.995	SF
EXIST DD COUNTRYSIDE CENTER C3 - Wellbore #1 -	10,363.4	7,698.8	1,292.2	1,118.7	7.449	CC
EXIST DD COUNTRYSIDE CENTER C3 - Wellbore #1 -	10,400.0	7,700.5	1,292.7	1,118.2	7.410	ES
EXIST DD COUNTRYSIDE CENTER C3 - Wellbore #1 -	10,629.9	7,711.2	1,319.3	1,138.6	7.301	SF
EXIST DD DELTA PARK #A2 - Wellbore #1 - Wellbore #	9,557.2	7,739.6	1,983.4	1,828.2	12.780	CC
EXIST DD DELTA PARK #A2 - Wellbore #1 - Wellbore #	9,600.0	7,736.0	1,983.8	1,827.5	12.689	ES
EXIST DD DELTA PARK #A2 - Wellbore #1 - Wellbore #	10,236.2	7,687.0	2,095.3	1,921.8	12.073	SF
EXIST DD DISTRICT SIX #C6 - Wellbore #1 - Wellbore #	12,304.6	7,971.6	710.2	481.8	3.109	CC, ES
EXIST DD DISTRICT SIX #C6 - Wellbore #1 - Wellbore #	12,400.0	7,974.8	716.6	485.5	3.101	SF
EXIST DD DRIFTWOOD #D1 - Wellbore #1 - Wellbore #	12,771.4	7,171.7	2,690.8	2,448.9	11.127	CC
EXIST DD DRIFTWOOD #D1 - Wellbore #1 - Wellbore #	12,800.0	7,169.2	2,690.9	2,448.3	11.092	ES
EXIST DD DRIFTWOOD #D1 - Wellbore #1 - Wellbore #	13,600.0	7,122.2	2,814.9	2,550.5	10.644	SF
EXIST DD EHRLICH MOTORS #D8 - Wellbore #1 - Well	14,105.1	7,583.3	3,936.4	3,634.9	13.053	CC
EXIST DD EHRLICH MOTORS #D8 - Wellbore #1 - Well	14,200.0	7,603.3	3,937.5	3,633.3	12.942	ES
EXIST DD EHRLICH MOTORS #D8 - Wellbore #1 - Well	15,551.1	7,768.4	4,186.3	3,844.6	12.250	SF
EXIST DD GARDEN CITY #D5 - Wellbore #1 - Wellbore	13,587.2	7,699.0	3,250.9	2,975.0	11.784	CC
EXIST DD GARDEN CITY #D5 - Wellbore #1 - Wellbore	13,681.1	7,699.0	3,252.2	2,973.7	11.679	ES
EXIST DD GARDEN CITY #D5 - Wellbore #1 - Wellbore	14,665.3	7,699.0	3,425.0	3,119.3	11.205	SF
EXIST DD GREELEY IND SOUTH #B9 - Wellbore #1 - W	12,270.1	7,561.0	2,106.4	1,881.5	9.367	CC
EXIST DD GREELEY IND SOUTH #B9 - Wellbore #1 - W	12,303.1	7,561.0	2,106.7	1,880.9	9.331	ES
EXIST DD GREELEY IND SOUTH #B9 - Wellbore #1 - W	12,800.0	7,609.3	2,171.3	1,932.2	9.083	SF
EXIST DD HWY 34-1 #A-7 - Wellbore #1 - Wellbore #1	10,163.6	6,921.1	3,998.9	3,838.9	25.003	CC
EXIST DD HWY 34-1 #A-7 - Wellbore #1 - Wellbore #1	10,300.0	6,921.1	4,001.2	3,837.6	24.453	ES
EXIST DD HWY 34-1 #A-7 - Wellbore #1 - Wellbore #1	12,900.0	6,922.8	4,845.5	4,610.5	20.621	SF
EXIST DD HWY 34-2 #A-8 - Wellbore #1 - Wellbore #1	8,943.0	7,280.8	3,982.4	3,832.6	26.582	CC
EXIST DD HWY 34-2 #A-8 - Wellbore #1 - Wellbore #1	9,055.1	7,279.4	3,983.9	3,831.2	26.080	ES
EXIST DD HWY 34-2 #A-8 - Wellbore #1 - Wellbore #1	11,900.0	7,245.6	4,960.0	4,730.2	21.586	SF
EXIST DD HWY 85-1 #B-12 - Wellbore #1 - Wellbore #1	10,799.1	6,953.7	3,323.6	3,151.7	19.328	CC
EXIST DD HWY 85-1 #B-12 - Wellbore #1 - Wellbore #1	10,900.0	6,953.6	3,325.2	3,150.4	19.032	ES
EXIST DD HWY 85-1 #B-12 - Wellbore #1 - Wellbore #1	12,598.4	6,951.8	3,779.4	3,558.0	17.071	SF
EXIST DD HWY 85-2 #B11 - Wellbore #1 - Wellbore #1	11,032.8	7,701.8	1,970.9	1,790.0	10.895	CC
EXIST DD HWY 85-2 #B11 - Wellbore #1 - Wellbore #1	11,100.0	7,701.9	1,972.1	1,789.4	10.795	ES
EXIST DD HWY 85-2 #B11 - Wellbore #1 - Wellbore #1	11,614.1	7,702.2	2,054.9	1,858.5	10.462	SF
EXIST DD HWY 85-3 #C4 - Wellbore #1 - Wellbore #1	10,878.0	7,859.7	761.9	576.3	4.104	CC
EXIST DD HWY 85-3 #C4 - Wellbore #1 - Wellbore #1	10,900.0	7,859.9	762.3	576.0	4.092	ES
EXIST DD HWY 85-3 #C4 - Wellbore #1 - Wellbore #1	11,000.0	7,860.8	771.6	582.6	4.083	SF
EXIST DD KUETTEL #11-15 - Wellbore #1 - Wellbore #1	3,643.2	4,135.8	1,999.2	1,967.1	62.262	CC, ES
EXIST DD KUETTEL #11-15 - Wellbore #1 - Wellbore #1	8,115.3	7,030.2	3,720.9	3,617.8	36.099	SF
EXIST DD KUETTEL #21-15 - Wellbore #1 - Wellbore #1	2,025.7	2,366.6	2,319.0	2,304.2	156.443	CC, ES
EXIST DD KUETTEL #21-15 - Wellbore #1 - Wellbore #1	12,900.0	7,123.8	9,932.5	9,694.1	41.661	SF

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Reference Design:	PROPOSAL #2	**Offset TVD Reference:**	Offset Datum

Summary

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SW NW SEC. 15 T5N R65W 6th P.M.						
EXIST DD KUETTEL #CNW-15 - Wellbore #1 - Wellbore	2,516.2	3,048.9	2,016.9	1,994.3	89.527	CC
EXIST DD KUETTEL #CNW-15 - Wellbore #1 - Wellbore	2,559.0	3,070.1	2,017.1	1,994.1	87.580	ES
EXIST DD KUETTEL #CNW-15 - Wellbore #1 - Wellbore	13,600.0	7,081.9	9,929.0	9,678.8	39.689	SF
EXIST DD PARKVIEW AOUTH #A3 - Wellbore #1 - Well	8,414.2	8,077.5	1,839.0	1,693.3	12.623	CC
EXIST DD PARKVIEW AOUTH #A3 - Wellbore #1 - Well	8,464.5	8,070.4	1,839.7	1,692.7	12.515	ES
EXIST DD PARKVIEW AOUTH #A3 - Wellbore #1 - Well	9,055.1	7,980.0	1,944.6	1,782.1	11.963	SF
EXIST DD SAM PAK #A6 - Wellbore #1 - Wellbore #1	7,834.1	7,787.0	3,210.1	3,075.8	23.904	CC
EXIST DD SAM PAK #A6 - Wellbore #1 - Wellbore #1	8,267.7	7,748.7	3,214.7	3,067.8	21.893	ES
EXIST DD SAM PAK #A6 - Wellbore #1 - Wellbore #1	9,940.9	7,358.4	3,641.1	3,452.4	19.297	SF
EXIST DD SMITH 5 SPOT #A4 - Wellbore #1 - Wellbore	9,016.1	7,629.0	2,751.1	2,602.0	18.440	CC
EXIST DD SMITH 5 SPOT #A4 - Wellbore #1 - Wellbore	9,100.0	7,629.0	2,752.4	2,601.0	18.180	ES
EXIST DD SMITH 5 SPOT #A4 - Wellbore #1 - Wellbore	10,400.0	7,464.7	3,074.2	2,888.2	16.526	SF
EXIST DD STATE #16-6B - Wellbore #1 - Wellbore #1	8,237.0	7,183.3	704.7	587.2	5.999	CC
EXIST DD STATE #16-6B - Wellbore #1 - Wellbore #1	8,267.7	7,183.6	705.3	587.1	5.965	ES
EXIST DD STATE #16-6B - Wellbore #1 - Wellbore #1	8,366.1	7,184.4	716.4	595.7	5.933	SF
EXIST DD UNION PACIFIC #C5 - Wellbore #1 - Wellbore	11,604.7	7,604.2	1,330.9	1,128.8	6.586	CC
EXIST DD UNION PACIFIC #C5 - Wellbore #1 - Wellbore	11,614.1	7,604.4	1,330.9	1,128.6	6.578	ES
EXIST DD UNION PACIFIC #C5 - Wellbore #1 - Wellbore	11,811.0	7,610.2	1,346.7	1,139.0	6.482	SF
EXIST DD UNIVERSITY 5 SPOT #D4 - Wellbore #1 - W	14,162.0	7,827.3	2,685.0	2,376.4	8.702	CC
EXIST DD UNIVERSITY 5 SPOT #D4 - Wellbore #1 - W	14,271.6	7,849.0	2,687.3	2,375.8	8.626	ES
EXIST DD UNIVERSITY 5 SPOT #D4 - Wellbore #1 - W	14,800.0	7,849.0	2,759.7	2,433.5	8.460	SF
EXIST DD UNIVERSITY SQUARE #D6 - Wellbore #1 - V	14,964.3	8,199.0	3,320.4	2,974.9	9.610	CC
EXIST DD UNIVERSITY SQUARE #D6 - Wellbore #1 - V	15,059.0	8,199.0	3,321.8	2,973.6	9.541	ES
EXIST DD UNIVERSITY SQUARE #D6 - Wellbore #1 - V	15,846.4	8,199.0	3,435.6	3,065.6	9.285	SF
EXIST DD VOLK #C7 - Wellbore #1 - Wellbore #1	12,865.3	7,735.1	1,369.9	1,120.4	5.491	CC
EXIST DD VOLK #C7 - Wellbore #1 - Wellbore #1	12,900.0	7,735.1	1,370.3	1,119.9	5.472	ES
EXIST DD VOLK #C7 - Wellbore #1 - Wellbore #1	13,090.5	7,735.1	1,388.3	1,132.5	5.429	SF
EXIST DD WHEELER #D3 - Wellbore #1 - Wellbore #1	14,782.5	8,113.1	2,100.2	1,759.3	6.162	CC
EXIST DD WHEELER #D3 - Wellbore #1 - Wellbore #1	14,862.2	8,117.0	2,101.7	1,758.6	6.127	ES
EXIST DD WHEELER #D3 - Wellbore #1 - Wellbore #1	15,157.4	8,130.6	2,133.3	1,782.0	6.073	SF
EXIST VERT EISENMAN #22-15 - Wellbore #1 - Wellbor	616.1	606.2	1,606.0	1,604.3	943.581	CC, ES
EXIST VERT EISENMAN #22-15 - Wellbore #1 - Wellbor	12,800.0	6,600.0	9,993.7	9,791.2	49.341	SF
EXIST VERT FAY #1 - Wellbore #1 - Design #1	6,285.5	5,624.5	451.9	282.6	2.669	CC
EXIST VERT FAY #1 - Wellbore #1 - Design #1	6,300.0	5,636.9	452.0	282.3	2.663	ES
EXIST VERT FAY #1 - Wellbore #1 - Design #1	6,397.6	5,720.6	455.6	283.5	2.647	SF
EXIST VERT HARRINGTON #1 - Wellbore #1 - Design #	600.0	561.0	1,252.3	1,240.3	104.882	CC
EXIST VERT HARRINGTON #1 - Wellbore #1 - Design #	1,082.7	1,041.4	1,257.8	1,235.0	55.199	ES
EXIST VERT HARRINGTON #1 - Wellbore #1 - Design #	8,100.0	6,825.8	4,057.6	3,836.0	18.312	SF
EXIST VERT SANDUSKY #1 - Wellbore #1 - Wellbore #1	98.4	80.2	58.5	58.3	422.461	CC, ES
EXIST VERT SANDUSKY #1 - Wellbore #1 - Wellbore #1	900.0	881.5	71.2	68.7	28.750	SF
VETTING 12 - ORIGINAL WELLBORE - PROPOSAL #2	100.0	100.0	154.8	154.6	819.763	CC, ES
VETTING 12 - ORIGINAL WELLBORE - PROPOSAL #2	13,385.8	15,072.1	1,318.4	853.3	2.835	SF
VETTING 13 - ORIGINAL WELLBORE - PROPOSAL #2	200.0	200.0	135.9	135.3	212.887	CC, ES
VETTING 13 - ORIGINAL WELLBORE - PROPOSAL #2	13,385.8	15,280.6	1,512.6	1,051.2	3.278	SF
VETTING 14 - ORIGINAL WELLBORE - PROPOSAL #2	300.0	300.0	120.8	119.7	110.999	CC, ES
VETTING 14 - ORIGINAL WELLBORE - PROPOSAL #2	13,400.0	15,100.4	1,664.7	1,198.9	3.574	SF
VETTING 15 - ORIGINAL WELLBORE - PROPOSAL #2	400.0	400.0	107.3	105.8	69.821	CC, ES
VETTING 15 - ORIGINAL WELLBORE - PROPOSAL #2	13,484.2	15,171.7	2,004.0	1,534.7	4.270	SF
VETTING 16 - ORIGINAL WELLBORE - PROPOSAL #2	500.0	500.0	102.6	100.6	51.640	CC, ES
VETTING 16 - ORIGINAL WELLBORE - PROPOSAL #2	13,500.0	15,409.8	2,177.6	1,709.4	4.651	SF
VETTING 17 - ORIGINAL WELLBORE - PROPOSAL #2	600.0	600.0	99.3	96.9	40.771	CC, ES
VETTING 17 - ORIGINAL WELLBORE - PROPOSAL #2	13,582.6	15,284.8	2,342.6	1,869.9	4.956	SF
VETTING 18 - ORIGINAL WELLBORE - PROPOSAL #2	600.0	600.0	101.4	99.0	41.617	CC, ES

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

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS 3-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS 3-16-18	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
SW NW SEC. 15 T5N R65W 6th P.M.						
VETTING 18 - ORIGINAL WELLBORE - PROPOSAL #2	13,681.1	15,420.3	2,686.4	2,211.0	5.651	SF
VETTING 19 - ORIGINAL WELLBORE - PROPOSAL #2	600.0	600.0	109.8	107.3	45.071	CC, ES
VETTING 19 - ORIGINAL WELLBORE - PROPOSAL #2	13,700.0	15,682.9	2,858.1	2,383.0	6.016	SF
VETTING 20 - ORIGINAL WELLBORE - PROPOSAL #2	600.0	600.0	120.9	118.5	49.635	CC, ES
VETTING 20 - ORIGINAL WELLBORE - PROPOSAL #2	13,779.5	15,616.6	3,026.9	2,548.0	6.320	SF
VETTING 21 - ORIGINAL WELLBORE - PROPOSAL #2	600.0	600.0	137.2	134.7	56.303	CC, ES
VETTING 21 - ORIGINAL WELLBORE - PROPOSAL #2	13,877.9	15,843.4	3,372.1	2,890.3	6.999	SF
VETTING 22 - ORIGINAL WELLBORE - PROPOSAL #2	600.0	600.0	153.5	151.0	62.995	CC, ES
VETTING 22 - ORIGINAL WELLBORE - PROPOSAL #2	13,976.3	16,129.6	3,558.3	3,074.5	7.355	SF
VETTING 23 - ORIGINAL WELLBORE - PROPOSAL #2	600.0	600.0	173.7	171.3	71.302	CC, ES
VETTING 23 - ORIGINAL WELLBORE - PROPOSAL #2	14,000.0	16,069.4	3,719.0	3,233.2	7.655	SF
VETTING 24 - ORIGINAL WELLBORE - PROPOSAL #2	600.0	600.0	194.0	191.5	79.612	CC, ES
VETTING 24 - ORIGINAL WELLBORE - PROPOSAL #2	14,173.2	16,281.8	4,081.5	3,590.7	8.316	SF
VT-ALLES 1-16-18 - ORIGINAL WELLBORE - PROPOS	100.0	99.0	120.6	120.5	642.204	CC, ES
VT-ALLES 1-16-18 - ORIGINAL WELLBORE - PROPOS	20,403.6	20,226.0	1,012.8	171.9	1.204	Level 2, SF
VT-GLENMERE 3-16-18 - ORIGINAL WELLBORE - PRC	600.0	599.0	95.8	93.4	39.360	CC, ES
VT-GLENMERE 3-16-18 - ORIGINAL WELLBORE - PRC	20,403.6	20,692.5	990.9	138.9	1.163	Level 2, SF
VT-GLENMERE C1-16-18 - ORIGINAL WELLBORE - PF	600.0	599.0	121.1	118.7	49.765	CC, ES
VT-GLENMERE C1-16-18 - ORIGINAL WELLBORE - PF	20,403.6	20,865.6	1,171.3	331.1	1.394	Level 3, SF
VT-LDS 1-16-18 - ORIGINAL WELLBORE - PROPOSAL	600.0	600.0	70.5	68.0	28.928	CC
VT-LDS 1-16-18 - ORIGINAL WELLBORE - PROPOSAL	20,403.6	20,542.1	659.4	-191.3	0.775	Level 1, ES, SF
VT-LDS 2-16-18 - ORIGINAL WELLBORE - PROPOSAL	600.0	600.0	22.6	20.1	9.267	CC
VT-LDS 2-16-18 - ORIGINAL WELLBORE - PROPOSAL	20,403.6	20,465.9	331.5	-517.0	0.391	Level 1, ES, SF
VT-LDS 4-16-18 - ORIGINAL WELLBORE - PROPOSAL	400.0	399.0	47.5	46.0	30.933	CC
VT-LDS 4-16-18 - ORIGINAL WELLBORE - PROPOSAL	20,403.6	20,287.9	349.7	-494.9	0.414	Level 1, ES, SF
VT-LDS 5-16-18 - ORIGINAL WELLBORE - PROPOSAL	300.0	300.0	72.8	71.7	66.901	CC
VT-LDS 5-16-18 - ORIGINAL WELLBORE - PROPOSAL	20,403.6	20,298.7	681.3	-162.1	0.808	Level 1, ES, SF
VT-LDS C2-16-18 - ORIGINAL WELLBORE - PROPOSA	600.0	599.0	47.9	45.5	19.680	CC
VT-LDS C2-16-18 - ORIGINAL WELLBORE - PROPOSA	20,403.6	20,652.0	532.4	-259.9	0.672	Level 1, ES, SF
VT-LDS C3-16-18 - ORIGINAL WELLBORE - PROPOSA	500.0	500.0	25.1	23.1	12.616	CC
VT-LDS C3-16-18 - ORIGINAL WELLBORE - PROPOSA	20,403.6	20,510.3	272.6	-336.0	0.448	Level 1, ES, SF
VT-LDS C4-16-18 - ORIGINAL WELLBORE - PROPOSA	200.0	199.0	95.3	94.7	149.594	CC
VT-LDS C4-16-18 - ORIGINAL WELLBORE - PROPOSA	20,403.6	20,473.7	867.6	45.9	1.056	Level 2, ES, SF

Offset Design SW NW SEC. 15 T5N R65W 6th P.M. - ABDN VERT LORENZ FARM INC #1 - Wellbore #1 - Design #1

Survey Program: 0-INC

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset 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
0.0	0.0	0.0	0.0	0.0	0.0	156.52	-2,406.2	1,045.1	2,623.8				
98.4	98.4	55.4	55.4	0.1	0.6	156.52	-2,406.2	1,045.1	2,623.4	2,622.7	0.68	3,883.202	
100.0	100.0	57.0	57.0	0.1	0.6	156.52	-2,406.2	1,045.1	2,623.4	2,622.7	0.69	3,780.595	
196.8	196.8	153.8	153.8	0.3	2.3	156.52	-2,406.2	1,045.1	2,623.4	2,620.8	2.61	1,003.235	
200.0	200.0	157.0	157.0	0.3	2.4	156.52	-2,406.2	1,045.1	2,623.4	2,620.7	2.70	973.359	
295.3	295.3	252.3	252.3	0.5	4.5	156.52	-2,406.2	1,045.1	2,623.4	2,618.4	5.00	525.105	
300.0	300.0	257.0	257.0	0.5	4.6	156.52	-2,406.2	1,045.1	2,623.4	2,618.3	5.10	513.900	
393.7	393.7	350.7	350.7	0.8	6.5	156.52	-2,406.2	1,045.1	2,623.4	2,616.2	7.25	362.061	
400.0	400.0	357.0	357.0	0.8	6.6	156.52	-2,406.2	1,045.1	2,623.4	2,616.0	7.39	355.061	
492.1	492.1	449.1	449.1	1.0	8.5	156.52	-2,406.2	1,045.1	2,623.4	2,613.9	9.47	276.998	
500.0	500.0	457.0	457.0	1.0	8.7	156.52	-2,406.2	1,045.1	2,623.4	2,613.8	9.65	271.902	

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

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS 3-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS 3-16-18	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	**Offset TVD Reference:**	Offset Datum

Offset Design SW NW SEC. 15 T5N R65W 6th P.M. - CARLSON G-15-16HN - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset 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
0.0	0.0	0.0	0.0	0.0	0.0	78.64	876.9	4,363.9	4,451.2				
98.4	98.4	77.9	77.9	0.1	0.0	78.64	876.9	4,363.9	4,451.1	4,451.0	0.14	N/A	
100.0	100.0	79.5	79.5	0.1	0.1	78.64	876.9	4,363.9	4,451.1	4,451.0	0.14	N/A	
196.8	196.8	176.3	176.3	0.3	0.2	78.64	876.9	4,363.9	4,451.1	4,450.6	0.55	8,134.511	
200.0	200.0	179.5	179.5	0.3	0.2	78.64	876.9	4,363.9	4,451.1	4,450.6	0.56	7,929.316	
295.3	295.3	274.8	274.8	0.5	0.5	78.64	876.9	4,363.9	4,451.1	4,450.2	0.99	4,497.722	
300.0	300.0	279.5	279.5	0.5	0.5	78.64	876.9	4,363.9	4,451.1	4,450.1	1.01	4,403.218	
393.7	393.7	373.2	373.2	0.8	0.7	78.64	876.9	4,363.9	4,451.1	4,449.7	1.43	3,108.134	
400.0	400.0	379.5	379.5	0.8	0.7	78.64	876.9	4,363.9	4,451.1	4,449.7	1.46	3,047.860	
492.1	492.1	471.6	471.6	1.0	0.9	78.64	876.9	4,363.9	4,451.1	4,449.3	1.87	2,374.517	
500.0	500.0	479.5	479.5	1.0	0.9	78.64	876.9	4,363.9	4,451.1	4,449.2	1.91	2,330.506	
590.5	590.5	570.0	570.0	1.2	1.1	78.64	876.9	4,363.9	4,451.1	4,448.8	2.32	1,921.082	
600.0	600.0	579.5	579.5	1.2	1.1	78.64	876.9	4,363.9	4,451.1	4,448.8	2.36	1,886.494	
689.0	689.0	668.5	668.5	1.4	1.3	160.86	876.9	4,363.9	4,452.5	4,449.7	2.75	1,618.710	
700.0	700.0	679.5	679.5	1.4	1.4	160.85	876.9	4,363.9	4,452.8	4,450.0	2.80	1,590.904	
787.4	787.3	766.8	766.8	1.6	1.6	160.85	876.9	4,363.9	4,456.9	4,453.8	3.18	1,402.539	
800.0	799.8	779.3	779.3	1.6	1.6	160.84	876.9	4,363.9	4,457.7	4,454.5	3.23	1,379.311	
885.8	885.4	864.9	864.9	1.8	1.8	160.83	876.9	4,363.9	4,464.6	4,461.0	3.61	1,237.737	
900.0	899.5	879.0	879.0	1.9	1.8	160.83	876.9	4,363.9	4,466.0	4,462.3	3.67	1,217.393	
984.2	983.1	962.6	962.6	2.1	2.0	160.81	876.9	4,363.9	4,475.5	4,471.4	4.04	1,107.958	
1,000.0	998.7	978.2	978.2	2.1	2.0	160.80	876.9	4,363.9	4,477.5	4,473.4	4.11	1,089.886	
1,082.7	1,080.4	1,059.9	1,059.9	2.4	2.2	160.78	876.9	4,363.9	4,489.5	4,485.0	4.48	1,003.141	
1,100.0	1,097.5	1,077.0	1,077.0	2.4	2.3	160.77	876.9	4,363.9	4,492.3	4,487.7	4.55	986.951	
1,181.1	1,177.1	1,156.6	1,156.6	2.7	2.4	160.74	876.9	4,363.9	4,506.7	4,501.8	4.92	916.739	
1,200.0	1,195.6	1,175.1	1,175.1	2.8	2.5	160.73	876.9	4,363.9	4,510.3	4,505.3	5.00	902.057	
1,279.5	1,273.2	1,252.7	1,252.7	3.1	2.7	160.69	876.9	4,363.9	4,527.0	4,521.6	5.36	844.189	
1,300.0	1,293.1	1,272.6	1,272.6	3.2	2.7	160.68	876.9	4,363.9	4,531.6	4,526.2	5.45	830.746	
1,377.9	1,368.4	1,347.9	1,347.9	3.5	2.9	160.63	876.9	4,363.9	4,550.5	4,544.6	5.82	782.302	
1,400.0	1,389.6	1,369.1	1,369.1	3.7	2.9	160.62	876.9	4,363.9	4,556.1	4,550.2	5.92	769.888	
1,476.4	1,462.8	1,430.0	1,430.0	4.1	3.0	160.55	876.8	4,364.0	4,577.1	4,570.8	6.25	732.616	
1,500.0	1,485.3	1,446.0	1,446.0	4.2	3.1	160.53	876.7	4,364.1	4,584.0	4,577.6	6.34	722.970	
1,574.8	1,556.1	1,500.0	1,500.0	4.6	3.2	160.45	875.8	4,364.6	4,607.2	4,600.6	6.66	691.871	
1,600.0	1,579.8	1,500.0	1,500.0	4.8	3.2	160.39	875.8	4,364.6	4,615.5	4,608.8	6.73	685.747	
1,621.5	1,600.0	1,526.9	1,526.8	4.9	3.2	160.39	875.1	4,365.0	4,622.8	4,615.9	6.84	675.905	
1,673.2	1,648.5	1,560.7	1,560.7	5.3	3.3	160.46	874.0	4,365.6	4,640.5	4,633.5	7.07	656.713	
1,686.5	1,660.9	1,569.4	1,569.4	5.4	3.3	160.48	873.7	4,365.8	4,645.1	4,638.0	7.13	651.515	
1,700.0	1,673.5	1,578.2	1,578.1	5.5	3.3	160.46	873.3	4,366.0	4,649.8	4,642.6	7.19	647.052	
1,771.6	1,740.2	1,624.4	1,624.3	6.0	3.4	160.38	871.2	4,367.3	4,675.9	4,668.4	7.49	623.996	
1,800.0	1,766.5	1,642.5	1,642.3	6.2	3.4	160.34	870.3	4,367.8	4,686.7	4,679.1	7.62	615.291	
1,870.1	1,830.8	1,700.0	1,699.7	6.8	3.5	160.29	866.8	4,369.9	4,714.8	4,706.8	7.95	592.725	
1,900.0	1,858.0	1,700.0	1,699.7	7.0	3.5	160.20	866.8	4,369.9	4,727.3	4,719.2	8.06	586.519	
1,968.5	1,919.9	1,746.8	1,746.3	7.6	3.6	160.11	863.4	4,371.9	4,757.1	4,748.7	8.39	566.707	
2,000.0	1,948.1	1,765.7	1,765.1	7.9	3.7	160.06	861.9	4,372.8	4,771.3	4,762.8	8.54	558.433	
2,066.9	2,007.5	1,800.0	1,799.3	8.5	3.7	159.94	858.9	4,374.6	4,802.8	4,793.9	8.87	541.510	
2,100.0	2,036.7	1,824.3	1,823.5	8.8	3.8	159.90	856.7	4,375.9	4,818.9	4,809.9	9.04	532.791	
2,165.3	2,093.6	11,647.2	6,878.5	9.5	137.1	172.12	385.5	-404.9	4,816.7	4,788.0	28.71	167.792	
2,200.0	2,123.5	11,664.6	6,878.5	9.9	137.6	172.29	385.4	-422.2	4,786.7	4,757.6	29.13	164.338	
2,215.0	2,136.4	11,672.2	6,878.5	10.0	137.8	172.36	385.4	-429.8	4,773.8	4,744.5	29.31	162.859	
2,263.8	2,178.2	11,697.1	6,878.5	10.6	138.5	172.38	385.2	-454.7	4,731.9	4,702.3	29.59	159.941	
2,300.0	2,209.2	11,715.5	6,878.5	11.0	139.0	172.39	385.1	-473.1	4,700.7	4,670.9	29.79	157.803	
2,362.2	2,262.6	11,747.2	6,878.5	11.7	139.9	172.41	384.9	-504.9	4,647.2	4,617.1	30.14	154.185	
2,400.0	2,295.0	11,766.5	6,878.5	12.1	140.5	172.42	384.8	-524.1	4,614.7	4,584.3	30.36	152.023	

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS 3-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS 3-16-18	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	**Offset TVD Reference:**	Offset Datum

Offset Design SW NW SEC. 15 T5N R65W 6th P.M. - CARLSON G-15-16HN - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset 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
2,460.6	2,346.9	11,797.4	6,878.5	12.8	141.3	172.45	384.6	-555.0	4,562.5	4,531.8	30.70	148.607	
2,500.0	2,380.7	11,817.5	6,878.5	13.2	141.9	172.46	384.5	-575.1	4,528.7	4,497.8	30.93	146.426	
2,559.0	2,431.3	11,847.6	6,878.5	13.9	142.7	172.48	384.4	-605.2	4,477.9	4,446.6	31.27	143.204	
2,600.0	2,466.4	11,868.5	6,878.5	14.4	143.3	172.50	384.2	-626.1	4,442.7	4,411.2	31.51	141.008	
2,657.5	2,515.7	11,897.8	6,878.5	15.0	144.1	172.52	384.1	-655.4	4,393.2	4,361.4	31.84	137.973	
2,700.0	2,552.1	11,919.5	6,878.5	15.5	144.7	172.53	383.9	-677.1	4,356.7	4,324.6	32.09	135.766	
2,755.9	2,600.0	11,948.0	6,878.5	16.1	145.5	172.56	383.8	-705.6	4,308.6	4,276.2	32.42	132.910	
2,800.0	2,637.8	11,970.5	6,878.5	16.6	146.1	172.57	383.6	-728.1	4,270.6	4,238.0	32.68	130.695	
2,854.3	2,684.4	11,998.2	6,878.5	17.3	146.9	172.60	383.5	-755.8	4,223.9	4,190.9	33.00	128.010	
2,900.0	2,723.5	12,021.5	6,878.5	17.8	147.6	172.62	383.3	-779.1	4,184.6	4,151.4	33.27	125.790	
2,952.7	2,768.8	12,048.4	6,878.5	18.4	148.3	172.64	383.2	-806.0	4,139.3	4,105.7	33.58	123.266	
3,000.0	2,809.3	12,072.4	6,878.5	18.9	149.0	172.66	383.0	-830.1	4,098.6	4,064.8	33.86	121.044	
3,051.2	2,853.1	12,098.5	6,878.5	19.5	149.7	172.68	382.9	-856.1	4,054.6	4,020.4	34.17	118.674	
3,100.0	2,895.0	12,123.4	6,878.5	20.1	150.4	172.70	382.7	-881.0	4,012.6	3,978.2	34.46	116.451	
3,149.6	2,937.5	12,148.7	6,878.5	20.6	151.1	172.73	382.6	-906.3	3,970.0	3,935.2	34.75	114.228	
3,200.0	2,980.7	12,174.4	6,878.5	21.2	151.8	172.75	382.4	-932.0	3,926.6	3,891.6	35.06	112.006	
3,248.0	3,021.9	12,198.9	6,878.5	21.8	152.5	172.77	382.3	-956.5	3,885.3	3,850.0	35.35	109.922	
3,300.0	3,066.4	12,225.4	6,878.5	22.4	153.3	172.80	382.1	-983.0	3,840.6	3,804.9	35.66	107.702	
3,346.4	3,106.2	12,249.1	6,878.5	22.9	153.9	172.82	382.0	-1,006.7	3,800.7	3,764.7	35.94	105.749	
3,400.0	3,152.1	12,276.4	6,878.5	23.5	154.7	172.85	381.8	-1,034.0	3,754.6	3,718.3	36.26	103.534	
3,444.9	3,190.6	12,299.3	6,878.5	24.1	155.3	172.88	381.7	-1,056.9	3,716.0	3,679.5	36.54	101.706	
3,500.0	3,237.8	12,327.4	6,878.5	24.7	156.1	172.91	381.5	-1,085.0	3,668.6	3,631.7	36.87	99.496	
3,543.3	3,275.0	12,349.5	6,878.5	25.2	156.7	172.93	381.4	-1,107.1	3,631.3	3,594.2	37.14	97.786	
3,600.0	3,323.6	12,378.4	6,878.5	25.9	157.5	172.96	381.3	-1,136.0	3,582.6	3,545.1	37.48	95.582	
3,641.7	3,359.3	12,399.7	6,878.5	26.3	158.1	172.99	381.1	-1,157.3	3,546.7	3,509.0	37.74	93.984	
3,700.0	3,409.3	12,429.4	6,878.5	27.0	159.0	173.02	381.0	-1,187.0	3,496.6	3,458.5	38.09	91.787	
3,740.1	3,443.7	12,449.8	6,878.5	27.5	159.5	173.05	380.8	-1,207.4	3,462.1	3,423.7	38.34	90.295	
3,800.0	3,495.0	12,480.4	6,878.5	28.2	160.4	173.08	380.7	-1,238.0	3,410.6	3,371.9	38.71	88.106	
3,838.6	3,528.1	12,500.0	6,878.5	28.6	160.9	173.11	380.5	-1,257.6	3,377.4	3,338.5	38.95	86.715	
3,900.0	3,580.7	12,531.3	6,878.5	29.3	161.8	173.15	380.4	-1,288.9	3,324.6	3,285.2	39.33	84.533	
3,937.0	3,612.4	12,550.2	6,878.5	29.8	162.3	173.17	380.2	-1,307.8	3,292.8	3,253.2	39.56	83.238	
4,000.0	3,666.4	12,582.3	6,878.5	30.5	163.2	173.22	380.1	-1,339.9	3,238.6	3,198.6	39.95	81.065	
4,035.4	3,696.8	12,600.4	6,878.5	30.9	163.7	173.24	380.0	-1,358.0	3,208.1	3,167.9	40.17	79.861	
4,100.0	3,752.1	12,633.3	6,878.5	31.7	164.7	173.29	379.8	-1,390.9	3,152.6	3,112.0	40.58	77.697	
4,133.8	3,781.2	12,650.6	6,878.5	32.0	165.1	173.32	379.7	-1,408.2	3,123.5	3,082.7	40.79	76.579	
4,200.0	3,837.9	12,684.3	6,878.5	32.8	166.1	173.37	379.5	-1,441.9	3,066.6	3,025.4	41.20	74.424	
4,232.3	3,865.5	12,700.8	6,878.5	33.2	166.5	173.39	379.4	-1,458.4	3,038.8	2,997.4	41.41	73.388	
4,300.0	3,923.6	12,735.3	6,878.5	34.0	167.5	173.45	379.2	-1,492.9	2,980.6	2,938.7	41.84	71.243	
4,330.7	3,949.9	12,750.9	6,878.5	34.3	168.0	173.47	379.1	-1,508.5	2,954.2	2,912.1	42.03	70.284	
4,400.0	4,009.3	12,786.3	6,878.5	35.1	168.9	173.53	378.9	-1,543.9	2,894.6	2,852.1	42.47	68.149	
4,429.1	4,034.3	12,801.1	6,878.5	35.5	169.4	173.56	378.8	-1,558.7	2,869.5	2,826.9	42.66	67.264	
4,500.0	4,095.0	12,837.3	6,878.5	36.3	170.4	173.62	378.6	-1,594.9	2,808.6	2,765.5	43.12	65.139	
4,527.5	4,118.6	12,851.3	6,878.5	36.6	170.8	173.65	378.5	-1,608.9	2,784.9	2,741.6	43.30	64.324	
4,600.0	4,180.7	12,888.3	6,878.5	37.5	171.8	173.72	378.3	-1,645.9	2,722.6	2,678.8	43.77	62.209	
4,626.0	4,203.0	12,901.5	6,878.5	37.8	172.2	173.75	378.2	-1,659.1	2,700.3	2,656.3	43.94	61.460	
4,700.0	4,266.4	12,939.2	6,878.5	38.6	173.2	173.82	378.0	-1,696.8	2,636.6	2,592.2	44.42	59.355	
4,724.4	4,287.4	12,951.7	6,878.5	38.9	173.6	173.85	377.9	-1,709.3	2,615.6	2,571.0	44.58	58.670	
4,800.0	4,352.2	12,990.2	6,878.5	39.8	174.6	173.93	377.7	-1,747.8	2,550.6	2,505.5	45.08	56.575	
4,822.8	4,371.7	13,001.9	6,878.5	40.1	175.0	173.96	377.6	-1,759.5	2,531.0	2,485.8	45.24	55.950	
4,900.0	4,437.9	13,041.2	6,878.5	41.0	176.1	174.05	377.4	-1,798.8	2,464.6	2,418.9	45.76	53.864	
4,921.2	4,456.1	13,052.1	6,878.5	41.2	176.4	174.08	377.3	-1,809.7	2,446.4	2,400.5	45.90	53.297	
5,000.0	4,523.6	13,092.2	6,878.5	42.1	177.5	174.18	377.1	-1,849.8	2,378.7	2,332.2	46.44	51.221	

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS 3-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS 3-16-18	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	**Offset TVD Reference:**	Offset Datum

Offset Design SW NW SEC. 15 T5N R65W 6th P.M. - CARLSON G-15-16HN - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset 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
5,019.7	4,540.5	13,102.2	6,878.5	42.3	177.8	174.20	377.0	-1,859.8	2,361.7	2,315.2	46.57	50.709	
5,100.0	4,609.3	13,143.2	6,878.5	43.3	178.9	174.31	376.8	-1,900.8	2,292.7	2,245.5	47.13	48.642	
5,118.1	4,624.8	13,152.4	6,878.5	43.5	179.2	174.34	376.7	-1,910.0	2,277.1	2,229.9	47.26	48.181	
5,200.0	4,695.0	13,194.2	6,878.5	44.4	180.3	174.46	376.5	-1,951.8	2,206.7	2,158.9	47.84	46.123	
5,216.5	4,709.2	13,202.6	6,878.5	44.6	180.6	174.49	376.4	-1,960.2	2,192.5	2,144.5	47.96	45.713	
5,300.0	4,780.7	13,245.2	6,878.5	45.6	181.8	174.62	376.2	-2,002.8	2,120.7	2,072.2	48.57	43.663	
5,314.9	4,793.6	13,252.8	6,878.5	45.8	182.0	174.64	376.1	-2,010.4	2,107.9	2,059.2	48.68	43.300	
5,400.0	4,866.5	13,296.2	6,878.5	46.8	183.2	174.79	375.9	-2,053.8	2,034.8	1,985.5	49.32	41.259	
5,413.4	4,877.9	13,303.0	6,878.5	46.9	183.4	174.81	375.8	-2,060.6	2,023.3	1,973.9	49.42	40.941	
5,500.0	4,952.2	13,347.2	6,878.5	47.9	184.6	174.98	375.6	-2,104.7	1,948.8	1,898.7	50.09	38.907	
5,511.8	4,962.3	13,353.2	6,878.5	48.1	184.8	175.00	375.5	-2,110.8	1,938.7	1,888.5	50.18	38.633	
5,600.0	5,037.9	13,398.1	6,878.5	49.1	186.1	175.18	375.3	-2,155.7	1,862.9	1,812.0	50.89	36.606	
5,610.2	5,046.7	13,403.4	6,878.5	49.2	186.2	175.20	375.3	-2,160.9	1,854.1	1,803.1	50.97	36.373	
5,700.0	5,123.6	13,449.1	6,878.5	50.3	187.5	175.40	375.0	-2,206.7	1,776.9	1,725.2	51.73	34.352	
5,708.6	5,131.0	13,453.5	6,878.5	50.4	187.6	175.42	375.0	-2,211.1	1,769.5	1,717.7	51.80	34.159	
5,800.0	5,209.3	13,500.1	6,878.5	51.4	188.9	175.65	374.7	-2,257.7	1,691.0	1,638.4	52.61	32.143	
5,807.1	5,215.4	13,503.7	6,878.5	51.5	189.0	175.67	374.7	-2,261.3	1,684.9	1,632.2	52.67	31.989	
5,900.0	5,295.0	13,551.1	6,878.5	52.6	190.3	175.92	374.4	-2,308.7	1,605.0	1,551.5	53.54	29.977	
5,905.5	5,299.8	13,553.9	6,878.5	52.7	190.4	175.94	374.4	-2,311.5	1,600.3	1,546.7	53.59	29.859	
6,000.0	5,380.8	13,602.1	6,878.5	53.8	191.8	176.22	374.1	-2,359.7	1,519.1	1,464.6	54.54	27.852	
6,003.9	5,384.1	13,604.1	6,878.5	53.8	191.8	176.24	374.1	-2,361.7	1,515.7	1,461.2	54.58	27.769	
6,100.0	5,466.5	13,653.1	6,878.5	54.9	193.2	176.56	373.8	-2,410.7	1,433.2	1,377.6	55.63	25.765	
6,102.3	5,468.5	13,654.3	6,878.5	55.0	193.2	176.57	373.8	-2,411.9	1,431.2	1,375.5	55.65	25.716	
6,200.0	5,552.2	13,704.1	6,878.5	56.1	194.6	176.94	373.5	-2,461.7	1,347.3	1,290.5	56.82	23.714	
6,200.8	5,552.9	13,704.5	6,878.5	56.1	194.6	176.95	373.5	-2,462.0	1,346.6	1,289.8	56.83	23.698	
6,299.2	5,637.2	13,754.6	6,878.5	57.3	196.0	177.37	373.2	-2,512.2	1,262.1	1,204.0	58.13	21.713	
6,300.0	5,637.9	13,755.1	6,878.5	57.3	196.0	177.37	373.2	-2,512.6	1,261.4	1,203.3	58.14	21.697	
6,397.6	5,721.6	13,804.8	6,878.5	58.4	197.4	177.86	372.9	-2,562.4	1,177.6	1,118.0	59.60	19.760	
6,400.0	5,723.6	13,806.0	6,878.5	58.4	197.5	177.87	372.9	-2,563.6	1,175.6	1,116.0	59.63	19.714	
6,496.0	5,806.0	13,855.0	6,878.5	59.6	198.8	178.42	372.6	-2,612.6	1,093.1	1,031.9	61.28	17.839	
6,500.0	5,809.3	13,857.0	6,878.5	59.6	198.9	178.44	372.6	-2,614.6	1,089.8	1,028.4	61.35	17.762	
6,594.5	5,890.3	13,905.2	6,878.5	60.7	200.2	179.07	372.3	-2,662.8	1,008.7	945.5	63.25	15.949	
6,600.0	5,895.1	13,908.0	6,878.5	60.8	200.3	179.11	372.3	-2,665.6	1,004.0	940.6	63.37	15.844	
6,692.9	5,974.7	13,955.4	6,878.5	61.9	201.7	179.84	372.0	-2,713.0	924.3	858.7	65.59	14.091	
6,700.0	5,980.8	13,959.0	6,878.5	61.9	201.8	179.90	372.0	-2,716.6	918.2	852.4	65.78	13.959	
6,791.3	6,059.1	14,005.6	6,878.5	63.0	203.1	-179.24	371.7	-2,763.2	840.0	771.5	68.45	12.270	
6,800.0	6,066.5	14,010.0	6,878.5	63.1	203.2	-179.15	371.7	-2,767.6	832.5	763.8	68.74	12.112	
6,889.7	6,143.4	14,055.8	6,878.5	64.1	204.5	-178.12	371.4	-2,813.3	755.7	683.7	72.03	10.491	
6,900.0	6,152.2	14,061.0	6,878.5	64.3	204.6	-177.99	371.4	-2,818.6	746.9	674.5	72.46	10.309	
6,988.2	6,227.8	14,105.9	6,878.5	65.3	205.9	-176.72	371.1	-2,863.5	671.5	594.9	76.62	8.764	
7,000.0	6,237.9	14,112.0	6,878.5	65.4	206.0	-176.53	371.1	-2,869.5	661.4	584.1	77.26	8.561	
7,086.6	6,312.2	14,156.1	6,878.5	66.4	207.3	-174.95	370.8	-2,913.7	587.5	504.8	82.70	7.104	
7,100.0	6,323.6	14,163.0	6,878.5	66.6	207.5	-174.67	370.8	-2,920.5	576.0	492.4	83.68	6.884	
7,185.0	6,396.5	14,206.3	6,878.5	67.6	208.7	-172.61	370.5	-2,963.9	503.6	412.6	91.02	5.533	
7,200.0	6,409.4	14,213.9	6,878.5	67.8	208.9	-172.19	370.5	-2,971.5	490.9	398.4	92.55	5.304	
7,283.4	6,480.9	14,256.5	6,878.5	68.7	210.1	-169.42	370.2	-3,014.1	420.2	317.3	102.88	4.084	
7,300.0	6,495.1	14,264.9	6,878.5	68.9	210.3	-168.76	370.2	-3,022.5	406.2	300.8	105.37	3.855	
7,371.5	6,556.4	14,301.4	6,878.5	69.8	211.3	-165.39	370.0	-3,059.0	346.0	227.6	118.33	2.924	
7,381.9	6,565.2	14,306.8	6,878.5	69.9	211.5	-165.21	369.9	-3,064.3	337.3	218.3	119.02	2.834	
7,400.0	6,580.4	14,316.5	6,878.5	70.1	211.8	-164.85	369.9	-3,074.1	322.5	202.1	120.42	2.678	
7,450.0	6,620.7	14,345.8	6,878.5	70.8	212.6	-163.41	369.7	-3,103.4	283.6	157.9	125.71	2.256	
7,480.3	6,643.8	14,365.3	6,878.5	71.3	213.1	-162.23	369.6	-3,122.8	261.5	131.6	129.96	2.013	

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS 3-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS 3-16-18	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	**Offset TVD Reference:**	Offset Datum

Offset Design SW NW SEC. 15 T5N R65W 6th P.M. - CARLSON G-15-16HN - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset 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
7,500.0	6,658.2	14,378.5	6,878.5	71.6	213.5	-161.33	369.5	-3,136.1	247.9	114.8	133.17	1.862	
7,550.0	6,692.7	14,414.3	6,878.5	72.5	214.5	-158.52	369.3	-3,171.9	216.0	72.9	143.10	1.510	
7,578.7	6,711.1	14,436.2	6,878.5	73.0	215.1	-156.55	369.2	-3,193.8	199.6	49.5	150.07	1.330	Level 3
7,600.0	6,723.9	14,453.0	6,878.5	73.4	215.6	-154.91	369.1	-3,210.6	188.4	32.6	155.86	1.209	Level 2
7,650.0	6,751.6	14,494.2	6,878.5	74.5	216.7	-150.42	368.8	-3,251.8	165.6	-6.0	171.63	0.965	Level 1
7,677.1	6,765.1	14,517.5	6,878.5	75.1	217.4	-147.62	368.7	-3,275.1	155.4	-26.0	181.36	0.857	Level 1
7,700.0	6,775.6	14,537.6	6,878.5	75.6	218.0	-145.09	368.6	-3,295.2	148.0	-42.0	190.05	0.779	Level 1
7,750.0	6,795.6	14,582.9	6,878.5	76.8	219.2	-139.14	368.3	-3,340.5	135.8	-74.0	209.89	0.647	Level 1
7,775.6	6,804.3	14,606.7	6,878.5	77.4	219.9	-136.00	368.2	-3,364.3	131.7	-88.3	219.97	0.599	Level 1
7,800.0	6,811.6	14,629.8	6,878.5	78.0	220.5	-133.03	368.0	-3,387.4	129.0	-100.2	229.17	0.563	Level 1
7,838.2	6,821.0	14,666.5	6,878.5	78.9	221.6	-128.64	367.8	-3,424.0	126.9	-115.3	242.19	0.524	Level 1
7,874.0	6,828.7	14,701.1	6,878.5	79.8	222.5	-124.67	367.6	-3,458.7	126.4	-128.2	254.63	0.496	Level 1
7,882.3	6,830.4	14,709.1	6,878.5	80.0	222.8	-123.74	367.6	-3,466.7	126.4	-131.0	257.39	0.491	Level 1, CC
7,900.0	6,834.2	14,726.2	6,878.5	80.5	223.2	-121.77	367.5	-3,483.8	126.4	-136.7	263.10	0.481	Level 1
7,972.4	6,849.7	14,787.6	6,878.5	82.3	225.0	-114.77	367.1	-3,545.2	128.7	-152.9	281.58	0.457	Level 1, ES, SF
8,000.0	6,855.0	14,787.6	6,878.5	83.0	225.0	-113.89	367.1	-3,545.2	134.5	-149.0	283.54	0.474	Level 1
8,050.0	6,861.8	14,787.6	6,878.5	84.2	225.0	-111.03	367.1	-3,545.2	156.9	-132.7	289.64	0.542	Level 1
8,070.8	6,863.5	14,787.6	6,878.5	84.8	225.0	-109.36	367.1	-3,545.2	169.6	-123.3	292.92	0.579	Level 1
8,100.0	6,864.8	14,787.6	6,878.5	85.5	225.0	-106.59	367.1	-3,545.2	189.7	-108.2	297.87	0.637	Level 1
8,115.3	6,865.0	14,787.6	6,878.5	85.9	225.0	-104.95	367.1	-3,545.2	201.0	-99.5	300.47	0.669	Level 1
8,169.3	6,865.0	14,787.6	6,878.5	87.2	225.0	-104.95	367.1	-3,545.2	244.3	-57.4	301.79	0.810	Level 1
8,200.0	6,865.0	14,787.6	6,878.5	88.0	225.0	-104.95	367.1	-3,545.2	270.7	-31.8	302.53	0.895	Level 1
8,267.7	6,865.0	14,787.6	6,878.5	89.7	225.0	-104.95	367.1	-3,545.2	331.5	27.3	304.20	1.090	Level 2
8,300.0	6,865.0	14,787.6	6,878.5	90.5	225.0	-104.95	367.1	-3,545.2	361.4	56.4	304.99	1.185	Level 2
8,366.1	6,865.0	14,787.6	6,878.5	92.2	225.0	-104.95	367.1	-3,545.2	423.6	117.0	306.63	1.382	Level 3
8,400.0	6,865.0	14,787.6	6,878.5	93.1	225.0	-104.95	367.1	-3,545.2	455.9	148.5	307.47	1.483	Level 3
8,464.5	6,865.0	14,787.6	6,878.5	94.7	225.0	-104.95	367.1	-3,545.2	518.1	209.0	309.07	1.676	
8,500.0	6,865.0	14,787.6	6,878.5	95.6	225.0	-104.95	367.1	-3,545.2	552.4	242.5	309.95	1.782	
8,563.0	6,865.0	14,787.6	6,878.5	97.2	225.0	-104.95	367.1	-3,545.2	613.8	302.2	311.53	1.970	
8,600.0	6,865.0	14,787.6	6,878.5	98.2	225.0	-104.95	367.1	-3,545.2	650.0	337.5	312.46	2.080	
8,661.4	6,865.0	14,787.6	6,878.5	99.8	225.0	-104.95	367.1	-3,545.2	710.2	396.2	314.00	2.262	
8,700.0	6,865.0	14,787.6	6,878.5	100.8	225.0	-104.95	367.1	-3,545.2	748.2	433.2	314.97	2.375	
8,759.8	6,865.0	14,787.6	6,878.5	102.3	225.0	-104.95	367.1	-3,545.2	807.1	490.7	316.48	2.550	
8,800.0	6,865.0	14,787.6	6,878.5	103.4	225.0	-104.95	367.1	-3,545.2	846.8	529.3	317.49	2.667	
8,858.2	6,865.0	14,787.6	6,878.5	104.9	225.0	-104.95	367.1	-3,545.2	904.4	585.4	318.97	2.835	
8,900.0	6,865.0	14,787.6	6,878.5	106.0	225.0	-104.95	367.1	-3,545.2	945.7	625.7	320.03	2.955	
8,956.7	6,865.0	14,787.6	6,878.5	107.5	225.0	-104.95	367.1	-3,545.2	1,001.9	680.4	321.47	3.116	
9,000.0	6,865.0	14,787.6	6,878.5	108.6	225.0	-104.95	367.1	-3,545.2	1,044.8	722.3	322.57	3.239	
9,055.1	6,865.0	14,787.6	6,878.5	110.0	225.0	-104.95	367.1	-3,545.2	1,099.5	775.5	323.98	3.394	
9,100.0	6,865.0	14,787.6	6,878.5	111.2	225.0	-104.95	367.1	-3,545.2	1,144.1	819.0	325.13	3.519	
9,153.5	6,865.0	14,787.6	6,878.5	112.6	225.0	-104.95	367.1	-3,545.2	1,197.3	870.8	326.50	3.667	
9,200.0	6,865.0	14,787.6	6,878.5	113.8	225.0	-104.95	367.1	-3,545.2	1,243.5	915.8	327.69	3.795	
9,251.9	6,865.0	14,787.6	6,878.5	115.2	225.0	-104.95	367.1	-3,545.2	1,295.2	966.1	329.02	3.936	
9,300.0	6,865.0	14,787.6	6,878.5	116.5	225.0	-104.95	367.1	-3,545.2	1,343.0	1,012.7	330.26	4.066	
9,350.4	6,865.0	14,787.6	6,878.5	117.8	225.0	-104.95	367.1	-3,545.2	1,393.1	1,061.5	331.55	4.202	
9,400.0	6,865.0	14,787.6	6,878.5	119.1	225.0	-104.95	367.1	-3,545.2	1,442.5	1,109.7	332.83	4.334	
9,448.8	6,865.0	14,787.6	6,878.5	120.4	225.0	-104.95	367.1	-3,545.2	1,491.1	1,157.0	334.09	4.463	
9,500.0	6,865.0	14,787.6	6,878.5	121.8	225.0	-104.95	367.1	-3,545.2	1,542.1	1,206.7	335.42	4.598	
9,547.2	6,865.0	14,787.6	6,878.5	123.1	225.0	-104.95	367.1	-3,545.2	1,589.2	1,252.5	336.64	4.721	
9,600.0	6,865.0	14,787.6	6,878.5	124.5	225.0	-104.95	367.1	-3,545.2	1,641.8	1,303.8	338.01	4.857	
9,645.6	6,865.0	14,787.6	6,878.5	125.7	225.0	-104.95	367.1	-3,545.2	1,687.3	1,348.1	339.19	4.974	
9,700.0	6,865.0	14,787.6	6,878.5	127.1	225.0	-104.95	367.1	-3,545.2	1,741.5	1,400.9	340.60	5.113	

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

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS 3-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS 3-16-18	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	**Offset TVD Reference:**	Offset Datum

Offset Design SW NW SEC. 15 T5N R65W 6th P.M. - CARLSON G-15-16HN - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset 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
9,744.1	6,865.0	14,787.6	6,878.5	128.3	225.0	-104.95	367.1	-3,545.2	1,785.4	1,443.7	341.75	5.224	
9,800.0	6,865.0	14,787.6	6,878.5	129.8	225.0	-104.95	367.1	-3,545.2	1,841.2	1,498.0	343.20	5.365	
9,842.5	6,865.0	14,787.6	6,878.5	131.0	225.0	-104.95	367.1	-3,545.2	1,883.6	1,539.3	344.31	5.471	
9,900.0	6,865.0	14,787.6	6,878.5	132.5	225.0	-104.95	367.1	-3,545.2	1,941.0	1,595.2	345.81	5.613	
9,940.9	6,865.0	14,787.6	6,878.5	133.6	225.0	-104.95	367.1	-3,545.2	1,981.8	1,634.9	346.87	5.713	
10,000.0	6,865.0	14,787.6	6,878.5	135.2	225.0	-104.95	367.1	-3,545.2	2,040.7	1,692.3	348.42	5.857	
10,039.3	6,865.0	14,787.6	6,878.5	136.2	225.0	-104.95	367.1	-3,545.2	2,080.0	1,730.6	349.45	5.952	
10,100.0	6,865.0	14,787.6	6,878.5	137.9	225.0	-104.95	367.1	-3,545.2	2,140.5	1,789.5	351.03	6.098	
10,137.8	6,865.0	14,787.6	6,878.5	138.9	225.0	-104.95	367.1	-3,545.2	2,178.2	1,826.2	352.02	6.188	
10,200.0	6,865.0	14,787.6	6,878.5	140.6	225.0	-104.95	367.1	-3,545.2	2,240.4	1,886.7	353.65	6.335	
10,236.2	6,865.0	14,787.6	6,878.5	141.5	225.0	-104.95	367.1	-3,545.2	2,276.5	1,921.9	354.60	6.420	
10,300.0	6,865.0	14,787.6	6,878.5	143.3	225.0	-104.95	367.1	-3,545.2	2,340.2	1,983.9	356.27	6.569	
10,334.6	6,865.0	14,787.6	6,878.5	144.2	225.0	-104.95	367.1	-3,545.2	2,374.8	2,017.6	357.18	6.649	
10,400.0	6,865.0	14,787.6	6,878.5	146.0	225.0	-104.95	367.1	-3,545.2	2,440.0	2,081.1	358.90	6.799	
10,433.0	6,865.0	14,787.6	6,878.5	146.9	225.0	-104.95	367.1	-3,545.2	2,473.0	2,113.3	359.77	6.874	
10,500.0	6,865.0	14,787.6	6,878.5	148.7	225.0	-104.95	367.1	-3,545.2	2,539.9	2,178.4	361.53	7.025	
10,531.5	6,865.0	14,787.6	6,878.5	149.5	225.0	-104.95	367.1	-3,545.2	2,571.3	2,209.0	362.36	7.096	
10,600.0	6,865.0	14,787.6	6,878.5	151.4	225.0	-104.95	367.1	-3,545.2	2,639.8	2,275.6	364.17	7.249	
10,629.9	6,865.0	14,787.6	6,878.5	152.2	225.0	-104.95	367.1	-3,545.2	2,669.6	2,304.7	364.96	7.315	
10,700.0	6,865.0	14,787.6	6,878.5	154.1	225.0	-104.95	367.1	-3,545.2	2,739.7	2,372.8	366.81	7.469	
10,728.3	6,865.0	14,787.6	6,878.5	154.9	225.0	-104.95	367.1	-3,545.2	2,767.9	2,400.4	367.55	7.531	
10,800.0	6,865.0	14,787.6	6,878.5	156.8	225.0	-104.95	367.1	-3,545.2	2,839.5	2,470.1	369.45	7.686	
10,826.7	6,865.0	14,787.6	6,878.5	157.6	225.0	-104.95	367.1	-3,545.2	2,866.3	2,496.1	370.15	7.743	
10,900.0	6,865.0	14,787.6	6,878.5	159.6	225.0	-104.95	367.1	-3,545.2	2,939.4	2,567.3	372.09	7.900	
10,925.2	6,865.0	14,787.6	6,878.5	160.3	225.0	-104.95	367.1	-3,545.2	2,964.6	2,591.8	372.76	7.953	
11,000.0	6,865.0	14,787.6	6,878.5	162.3	225.0	-104.95	367.1	-3,545.2	3,039.3	2,664.6	374.74	8.111	
11,023.6	6,865.0	14,787.6	6,878.5	162.9	225.0	-104.95	367.1	-3,545.2	3,062.9	2,687.6	375.36	8.160	
11,100.0	6,865.0	14,787.6	6,878.5	165.0	225.0	-104.95	367.1	-3,545.2	3,139.2	2,761.9	377.38	8.318	
11,122.0	6,865.0	14,787.6	6,878.5	165.6	225.0	-104.95	367.1	-3,545.2	3,161.3	2,783.3	377.97	8.364	
11,200.0	6,865.0	14,787.6	6,878.5	167.8	225.0	-104.95	367.1	-3,545.2	3,239.2	2,859.1	380.04	8.523	
11,220.4	6,865.0	14,787.6	6,878.5	168.3	225.0	-104.95	367.1	-3,545.2	3,259.6	2,879.0	380.58	8.565	
11,300.0	6,865.0	14,787.6	6,878.5	170.5	225.0	-104.95	367.1	-3,545.2	3,339.1	2,956.4	382.69	8.725	
11,318.9	6,865.0	14,787.6	6,878.5	171.0	225.0	-104.95	367.1	-3,545.2	3,357.9	2,974.8	383.19	8.763	
11,400.0	6,865.0	14,787.6	6,878.5	173.2	225.0	-104.95	367.1	-3,545.2	3,439.0	3,053.7	385.35	8.924	
11,417.3	6,865.0	14,787.6	6,878.5	173.7	225.0	-104.95	367.1	-3,545.2	3,456.3	3,070.5	385.81	8.959	
11,500.0	6,865.0	14,787.6	6,878.5	176.0	225.0	-104.95	367.1	-3,545.2	3,538.9	3,150.9	388.00	9.121	
11,515.7	6,865.0	14,787.6	6,878.5	176.4	225.0	-104.95	367.1	-3,545.2	3,554.6	3,166.2	388.42	9.151	
11,600.0	6,865.0	14,787.6	6,878.5	178.7	225.0	-104.95	367.1	-3,545.2	3,638.9	3,248.2	390.67	9.315	
11,614.1	6,865.0	14,787.6	6,878.5	179.1	225.0	-104.95	367.1	-3,545.2	3,653.0	3,262.0	391.04	9.342	
11,700.0	6,865.0	14,787.6	6,878.5	181.4	225.0	-104.95	367.1	-3,545.2	3,738.8	3,345.5	393.33	9.506	
11,712.6	6,865.0	14,787.6	6,878.5	181.8	225.0	-104.95	367.1	-3,545.2	3,751.4	3,357.7	393.66	9.529	
11,800.0	6,865.0	14,787.6	6,878.5	184.2	225.0	-104.95	367.1	-3,545.2	3,838.7	3,442.8	395.99	9.694	
11,811.0	6,865.0	14,787.6	6,878.5	184.5	225.0	-104.95	367.1	-3,545.2	3,849.7	3,453.5	396.29	9.715	
11,900.0	6,865.0	14,787.6	6,878.5	186.9	225.0	-104.95	367.1	-3,545.2	3,938.7	3,540.0	398.66	9.880	
11,909.4	6,865.0	14,787.6	6,878.5	187.2	225.0	-104.95	367.1	-3,545.2	3,948.1	3,549.2	398.91	9.897	
12,000.0	6,865.0	14,787.6	6,878.5	189.7	225.0	-104.95	367.1	-3,545.2	4,038.6	3,637.3	401.33	10.063	
12,007.8	6,865.0	14,787.6	6,878.5	189.9	225.0	-104.95	367.1	-3,545.2	4,046.5	3,644.9	401.54	10.078	
12,100.0	6,865.0	14,787.6	6,878.5	192.4	225.0	-104.95	367.1	-3,545.2	4,138.6	3,734.6	404.00	10.244	
12,106.3	6,865.0	14,787.6	6,878.5	192.6	225.0	-104.95	367.1	-3,545.2	4,144.9	3,740.7	404.16	10.255	
12,200.0	6,865.0	14,787.6	6,878.5	195.2	225.0	-104.95	367.1	-3,545.2	4,238.5	3,831.9	406.67	10.423	
12,204.7	6,865.0	14,787.6	6,878.5	195.3	225.0	-104.95	367.1	-3,545.2	4,243.2	3,836.4	406.79	10.431	
12,300.0	6,865.0	14,787.6	6,878.5	198.0	225.0	-104.95	367.1	-3,545.2	4,338.5	3,929.1	409.34	10.599	

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

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS 3-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS 3-16-18	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	**Offset TVD Reference:**	Offset Datum

Offset Design SW NW SEC. 15 T5N R65W 6th P.M. - CARLSON G-15-16HN - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset 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
12,303.1	6,865.0	14,787.6	6,878.5	198.0	225.0	-104.95	367.1	-3,545.2	4,341.6	3,932.2	409.42	10.604	
12,400.0	6,865.0	14,787.6	6,878.5	200.7	225.0	-104.95	367.1	-3,545.2	4,438.4	4,026.4	412.01	10.773	
12,401.5	6,865.0	14,787.6	6,878.5	200.8	225.0	-104.95	367.1	-3,545.2	4,440.0	4,027.9	412.05	10.775	
12,500.0	6,865.0	14,787.6	6,878.5	203.5	225.0	-104.95	367.1	-3,545.2	4,538.4	4,123.7	414.69	10.944	
12,598.4	6,865.0	14,787.6	6,878.5	206.2	225.0	-104.95	367.1	-3,545.2	4,636.8	4,219.4	417.32	11.111	
12,600.0	6,865.0	14,787.6	6,878.5	206.2	225.0	-104.95	367.1	-3,545.2	4,638.4	4,221.0	417.37	11.113	
12,696.8	6,865.0	14,787.6	6,878.5	208.9	225.0	-104.95	367.1	-3,545.2	4,735.1	4,315.2	419.96	11.275	
12,700.0	6,865.0	14,787.6	6,878.5	209.0	225.0	-104.95	367.1	-3,545.2	4,738.3	4,318.3	420.04	11.281	
12,795.2	6,865.0	14,787.6	6,878.5	211.6	225.0	-104.95	367.1	-3,545.2	4,833.5	4,410.9	422.60	11.438	
12,800.0	6,865.0	14,787.6	6,878.5	211.8	225.0	-104.95	367.1	-3,545.2	4,838.3	4,415.6	422.72	11.446	
12,893.7	6,865.0	14,787.6	6,878.5	214.3	225.0	-104.95	367.1	-3,545.2	4,931.9	4,506.7	425.23	11.598	
12,900.0	6,865.0	14,787.6	6,878.5	214.5	225.0	-104.95	367.1	-3,545.2	4,938.2	4,512.8	425.40	11.608	
12,992.1	6,865.0	14,787.6	6,878.5	217.1	225.0	-104.95	367.1	-3,545.2	5,030.3	4,602.4	427.87	11.757	
13,000.0	6,865.0	14,787.6	6,878.5	217.3	225.0	-104.95	367.1	-3,545.2	5,038.2	4,610.1	428.08	11.769	
13,090.5	6,865.0	14,787.6	6,878.5	219.8	225.0	-104.95	367.1	-3,545.2	5,128.7	4,698.2	430.51	11.913	
13,100.0	6,865.0	14,787.6	6,878.5	220.0	225.0	-104.95	367.1	-3,545.2	5,138.2	4,707.4	430.77	11.928	
13,188.9	6,865.0	14,787.6	6,878.5	222.5	225.0	-104.95	367.1	-3,545.2	5,227.1	4,793.9	433.15	12.068	
13,200.0	6,865.0	14,787.6	6,878.5	222.8	225.0	-104.95	367.1	-3,545.2	5,238.1	4,804.7	433.45	12.085	
13,287.4	6,865.0	14,787.6	6,878.5	225.2	225.0	-104.95	367.1	-3,545.2	5,325.5	4,889.7	435.80	12.220	
13,300.0	6,865.0	14,787.6	6,878.5	225.6	225.0	-104.95	367.1	-3,545.2	5,338.1	4,902.0	436.14	12.240	
13,385.8	6,865.0	14,787.6	6,878.5	228.0	225.0	-104.95	367.1	-3,545.2	5,423.9	4,985.4	438.44	12.371	
13,400.0	6,865.0	14,787.6	6,878.5	228.4	225.0	-104.95	367.1	-3,545.2	5,438.1	4,999.3	438.82	12.392	
13,484.2	6,865.0	14,787.6	6,878.5	230.7	225.0	-104.95	367.1	-3,545.2	5,522.3	5,081.2	441.08	12.520	
13,500.0	6,865.0	14,787.6	6,878.5	231.1	225.0	-104.95	367.1	-3,545.2	5,538.0	5,096.5	441.51	12.543	
13,582.6	6,865.0	14,787.6	6,878.5	233.4	225.0	-104.95	367.1	-3,545.2	5,620.7	5,176.9	443.73	12.667	
13,600.0	6,865.0	14,787.6	6,878.5	233.9	225.0	-104.95	367.1	-3,545.2	5,638.0	5,193.8	444.20	12.693	
13,681.1	6,865.0	14,787.6	6,878.5	236.1	225.0	-104.95	367.1	-3,545.2	5,719.1	5,272.7	446.38	12.812	
13,700.0	6,865.0	14,787.6	6,878.5	236.7	225.0	-104.95	367.1	-3,545.2	5,738.0	5,291.1	446.88	12.840	
13,779.5	6,865.0	14,787.6	6,878.5	238.9	225.0	-104.95	367.1	-3,545.2	5,817.5	5,368.5	449.02	12.956	
13,800.0	6,865.0	14,787.6	6,878.5	239.4	225.0	-104.95	367.1	-3,545.2	5,838.0	5,388.4	449.57	12.986	
13,877.9	6,865.0	14,787.6	6,878.5	241.6	225.0	-104.95	367.1	-3,545.2	5,915.9	5,464.2	451.67	13.098	
13,900.0	6,865.0	14,787.6	6,878.5	242.2	225.0	-104.95	367.1	-3,545.2	5,937.9	5,485.7	452.26	13.129	
13,976.3	6,865.0	14,787.6	6,878.5	244.3	225.0	-104.95	367.1	-3,545.2	6,014.3	5,560.0	454.32	13.238	
14,000.0	6,865.0	14,787.6	6,878.5	245.0	225.0	-104.95	367.1	-3,545.2	6,037.9	5,583.0	454.95	13.271	
14,074.8	6,865.0	14,787.6	6,878.5	247.1	225.0	-104.95	367.1	-3,545.2	6,112.7	5,655.7	456.97	13.377	
14,100.0	6,865.0	14,787.6	6,878.5	247.8	225.0	-104.95	367.1	-3,545.2	6,137.9	5,680.2	457.65	13.412	
14,173.2	6,865.0	14,787.6	6,878.5	249.8	225.0	-104.95	367.1	-3,545.2	6,211.1	5,751.5	459.62	13.514	
14,200.0	6,865.0	14,787.6	6,878.5	250.5	225.0	-104.95	367.1	-3,545.2	6,237.9	5,777.5	460.34	13.551	
14,271.6	6,865.0	14,787.6	6,878.5	252.5	225.0	-104.95	367.1	-3,545.2	6,309.5	5,847.2	462.27	13.649	
14,300.0	6,865.0	14,787.6	6,878.5	253.3	225.0	-104.95	367.1	-3,545.2	6,337.9	5,874.8	463.03	13.688	
14,370.0	6,865.0	14,787.6	6,878.5	255.3	225.0	-104.95	367.1	-3,545.2	6,407.9	5,943.0	464.92	13.783	
14,400.0	6,865.0	14,787.6	6,878.5	256.1	225.0	-104.95	367.1	-3,545.2	6,437.8	5,972.1	465.73	13.823	
14,468.5	6,865.0	14,787.6	6,878.5	258.0	225.0	-104.95	367.1	-3,545.2	6,506.3	6,038.7	467.57	13.915	
14,500.0	6,865.0	14,787.6	6,878.5	258.9	225.0	-104.95	367.1	-3,545.2	6,537.8	6,069.4	468.42	13.957	
14,566.9	6,865.0	14,787.6	6,878.5	260.7	225.0	-104.95	367.1	-3,545.2	6,604.7	6,134.5	470.22	14.046	
14,600.0	6,865.0	14,787.6	6,878.5	261.7	225.0	-104.95	367.1	-3,545.2	6,637.8	6,166.7	471.12	14.090	
14,665.3	6,865.0	14,787.6	6,878.5	263.5	225.0	-104.95	367.1	-3,545.2	6,703.1	6,230.2	472.88	14.175	
14,700.0	6,865.0	14,787.6	6,878.5	264.4	225.0	-104.95	367.1	-3,545.2	6,737.8	6,264.0	473.81	14.220	
14,763.7	6,865.0	14,787.6	6,878.5	266.2	225.0	-104.95	367.1	-3,545.2	6,801.5	6,326.0	475.53	14.303	
14,800.0	6,865.0	14,787.6	6,878.5	267.2	225.0	-104.95	367.1	-3,545.2	6,837.8	6,361.2	476.51	14.350	
14,862.2	6,865.0	14,787.6	6,878.5	268.9	225.0	-104.95	367.1	-3,545.2	6,899.9	6,421.7	478.18	14.429	
14,900.0	6,865.0	14,787.6	6,878.5	270.0	225.0	-104.95	367.1	-3,545.2	6,937.7	6,458.5	479.20	14.478	

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS 3-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS 3-16-18	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	**Offset TVD Reference:**	Offset Datum

Offset Design SW NW SEC. 15 T5N R65W 6th P.M. - CARLSON G-15-16HN - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset 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
14,960.6	6,865.0	14,787.6	6,878.5	271.7	225.0	-104.95	367.1	-3,545.2	6,998.3	6,517.5	480.84	14.554	
15,000.0	6,865.0	14,787.6	6,878.5	272.8	225.0	-104.95	367.1	-3,545.2	7,037.7	6,555.8	481.90	14.604	
15,059.0	6,865.0	14,787.6	6,878.5	274.4	225.0	-104.95	367.1	-3,545.2	7,096.7	6,613.2	483.49	14.678	
15,100.0	6,865.0	14,787.6	6,878.5	275.6	225.0	-104.95	367.1	-3,545.2	7,137.7	6,653.1	484.60	14.729	
15,157.4	6,865.0	14,787.6	6,878.5	277.2	225.0	-104.95	367.1	-3,545.2	7,195.1	6,709.0	486.15	14.800	
15,200.0	6,865.0	14,787.6	6,878.5	278.3	225.0	-104.95	367.1	-3,545.2	7,237.7	6,750.4	487.30	14.853	
15,255.9	6,865.0	14,787.6	6,878.5	279.9	225.0	-104.95	367.1	-3,545.2	7,293.5	6,804.7	488.81	14.921	
15,300.0	6,865.0	14,787.6	6,878.5	281.1	225.0	-104.95	367.1	-3,545.2	7,337.7	6,847.7	490.00	14.975	
15,354.3	6,865.0	14,787.6	6,878.5	282.6	225.0	-104.95	367.1	-3,545.2	7,392.0	6,900.5	491.46	15.041	
15,400.0	6,865.0	14,787.6	6,878.5	283.9	225.0	-104.95	367.1	-3,545.2	7,437.6	6,945.0	492.70	15.096	
15,452.7	6,865.0	14,787.6	6,878.5	285.4	225.0	-104.95	367.1	-3,545.2	7,490.4	6,996.2	494.12	15.159	
15,500.0	6,865.0	14,787.6	6,878.5	286.7	225.0	-104.95	367.1	-3,545.2	7,537.6	7,042.2	495.40	15.215	
15,551.1	6,865.0	14,787.6	6,878.5	288.1	225.0	-104.95	367.1	-3,545.2	7,588.8	7,092.0	496.78	15.276	
15,600.0	6,865.0	14,787.6	6,878.5	289.5	225.0	-104.95	367.1	-3,545.2	7,637.6	7,139.5	498.10	15.334	
15,649.6	6,865.0	14,787.6	6,878.5	290.9	225.0	-104.95	367.1	-3,545.2	7,687.2	7,187.7	499.44	15.392	
15,700.0	6,865.0	14,787.6	6,878.5	292.3	225.0	-104.95	367.1	-3,545.2	7,737.6	7,236.8	500.80	15.450	
15,748.0	6,865.0	14,787.6	6,878.5	293.6	225.0	-104.95	367.1	-3,545.2	7,785.6	7,283.5	502.10	15.506	
15,800.0	6,865.0	14,787.6	6,878.5	295.1	225.0	-104.95	367.1	-3,545.2	7,837.6	7,334.1	503.50	15.566	
15,846.4	6,865.0	14,787.6	6,878.5	296.4	225.0	-104.95	367.1	-3,545.2	7,884.0	7,379.3	504.76	15.619	
15,900.0	6,865.0	14,787.6	6,878.5	297.8	225.0	-104.95	367.1	-3,545.2	7,937.6	7,431.4	506.20	15.681	
15,944.8	6,865.0	14,787.6	6,878.5	299.1	225.0	-104.95	367.1	-3,545.2	7,982.4	7,475.0	507.42	15.732	
16,000.0	6,865.0	14,787.6	6,878.5	300.6	225.0	-104.95	367.1	-3,545.2	8,037.6	7,528.7	508.91	15.794	
16,043.3	6,865.0	14,787.6	6,878.5	301.8	225.0	-104.95	367.1	-3,545.2	8,080.8	7,570.8	510.08	15.842	
16,100.0	6,865.0	14,787.6	6,878.5	303.4	225.0	-104.95	367.1	-3,545.2	8,137.5	7,625.9	511.61	15.906	
16,141.7	6,865.0	14,787.6	6,878.5	304.6	225.0	-104.95	367.1	-3,545.2	8,179.2	7,666.5	512.74	15.952	
16,200.0	6,865.0	14,787.6	6,878.5	306.2	225.0	-104.95	367.1	-3,545.2	8,237.5	7,723.2	514.31	16.017	
16,240.1	6,865.0	14,787.6	6,878.5	307.3	225.0	-104.95	367.1	-3,545.2	8,277.7	7,762.3	515.40	16.061	
16,300.0	6,865.0	14,787.6	6,878.5	309.0	225.0	-104.95	367.1	-3,545.2	8,337.5	7,820.5	517.02	16.126	
16,338.5	6,865.0	14,787.6	6,878.5	310.1	225.0	-104.95	367.1	-3,545.2	8,376.1	7,858.0	518.06	16.168	
16,400.0	6,865.0	14,787.6	6,878.5	311.8	225.0	-104.95	367.1	-3,545.2	8,437.5	7,917.8	519.72	16.235	
16,437.0	6,865.0	14,787.6	6,878.5	312.8	225.0	-104.95	367.1	-3,545.2	8,474.5	7,953.8	520.72	16.275	
16,500.0	6,865.0	14,787.6	6,878.5	314.6	225.0	-104.95	367.1	-3,545.2	8,537.5	8,015.1	522.42	16.342	
16,535.4	6,865.0	14,787.6	6,878.5	315.6	225.0	-104.95	367.1	-3,545.2	8,572.9	8,049.5	523.38	16.380	
16,600.0	6,865.0	14,787.6	6,878.5	317.4	225.0	-104.95	367.1	-3,545.2	8,637.5	8,112.4	525.13	16.448	
16,633.8	6,865.0	14,787.6	6,878.5	318.3	225.0	-104.95	367.1	-3,545.2	8,671.3	8,145.3	526.04	16.484	
16,700.0	6,865.0	14,787.6	6,878.5	320.2	225.0	-104.95	367.1	-3,545.2	8,737.5	8,209.6	527.83	16.553	
16,732.2	6,865.0	14,787.6	6,878.5	321.1	225.0	-104.95	367.1	-3,545.2	8,769.7	8,241.0	528.71	16.587	
16,800.0	6,865.0	14,787.6	6,878.5	323.0	225.0	-104.95	367.1	-3,545.2	8,837.5	8,306.9	530.54	16.658	
16,830.7	6,865.0	14,787.6	6,878.5	323.8	225.0	-104.95	367.1	-3,545.2	8,868.1	8,336.8	531.37	16.689	
16,900.0	6,865.0	14,787.6	6,878.5	325.7	225.0	-104.95	367.1	-3,545.2	8,937.5	8,404.2	533.24	16.761	
16,929.1	6,865.0	14,787.6	6,878.5	326.6	225.0	-104.95	367.1	-3,545.2	8,966.5	8,432.5	534.03	16.790	
17,000.0	6,865.0	14,787.6	6,878.5	328.5	225.0	-104.95	367.1	-3,545.2	9,037.4	8,501.5	535.95	16.862	
17,027.5	6,865.0	14,787.6	6,878.5	329.3	225.0	-104.95	367.1	-3,545.2	9,065.0	8,528.3	536.70	16.890	
17,100.0	6,865.0	14,787.6	6,878.5	331.3	225.0	-104.95	367.1	-3,545.2	9,137.4	8,598.8	538.66	16.963	
17,125.9	6,865.0	14,787.6	6,878.5	332.1	225.0	-104.95	367.1	-3,545.2	9,163.4	8,624.0	539.36	16.989	
17,200.0	6,865.0	14,787.6	6,878.5	334.1	225.0	-104.95	367.1	-3,545.2	9,237.4	8,696.1	541.36	17.063	
17,224.4	6,865.0	14,787.6	6,878.5	334.8	225.0	-104.95	367.1	-3,545.2	9,261.8	8,719.8	542.02	17.087	
17,300.0	6,865.0	14,787.6	6,878.5	336.9	225.0	-104.95	367.1	-3,545.2	9,337.4	8,793.3	544.07	17.162	
17,322.8	6,865.0	14,787.6	6,878.5	337.5	225.0	-104.95	367.1	-3,545.2	9,360.2	8,815.5	544.69	17.185	
17,400.0	6,865.0	14,787.6	6,878.5	339.7	225.0	-104.95	367.1	-3,545.2	9,437.4	8,890.6	546.78	17.260	
17,421.2	6,865.0	14,787.6	6,878.5	340.3	225.0	-104.95	367.1	-3,545.2	9,458.6	8,911.3	547.35	17.281	
17,500.0	6,865.0	14,787.6	6,878.5	342.5	225.0	-104.95	367.1	-3,545.2	9,537.4	8,987.9	549.49	17.357	

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS 3-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS 3-16-18	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	**Offset TVD Reference:**	Offset Datum

Offset Design SW NW SEC. 15 T5N R65W 6th P.M. - CARLSON G-15-16HN - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset 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
17,519.6	6,865.0	14,787.6	6,878.5	343.0	225.0	-104.95	367.1	-3,545.2	9,557.0	9,007.0	550.02	17.376	
17,600.0	6,865.0	14,787.6	6,878.5	345.3	225.0	-104.95	367.1	-3,545.2	9,637.4	9,085.2	552.19	17.453	
17,618.1	6,865.0	14,787.6	6,878.5	345.8	225.0	-104.95	367.1	-3,545.2	9,655.5	9,102.8	552.68	17.470	
17,700.0	6,865.0	14,787.6	6,878.5	348.1	225.0	-104.95	367.1	-3,545.2	9,737.4	9,182.5	554.90	17.548	
17,716.5	6,865.0	14,787.6	6,878.5	348.5	225.0	-104.95	367.1	-3,545.2	9,753.9	9,198.5	555.35	17.564	
17,800.0	6,865.0	14,787.6	6,878.5	350.9	225.0	-104.95	367.1	-3,545.2	9,837.4	9,279.8	557.61	17.642	
17,814.9	6,865.0	14,787.6	6,878.5	351.3	225.0	-104.95	367.1	-3,545.2	9,852.3	9,294.3	558.01	17.656	
17,900.0	6,865.0	14,787.6	6,878.5	353.7	225.0	-104.95	367.1	-3,545.2	9,937.4	9,377.0	560.32	17.735	
17,913.3	6,865.0	14,787.6	6,878.5	354.0	225.0	-104.95	367.1	-3,545.2	9,950.7	9,390.0	560.68	17.748	

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS 3-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS 3-16-18	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	**Offset TVD Reference:**	Offset Datum

Offset Design SW NW SEC. 15 T5N R65W 6th P.M. - EXIST VERT SANDUSKY #1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset 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
0.0	0.0	0.0	0.0	0.0	0.0	151.77	-51.4	27.6	61.0				
98.4	98.4	80.2	80.2	0.1	0.0	151.65	-51.5	27.8	58.5	58.3	0.14	422.461	CC, ES
100.0	100.0	81.7	81.7	0.1	0.0	151.64	-51.5	27.8	58.5	58.3	0.14	414.529	
196.8	196.8	178.5	178.5	0.3	0.2	151.29	-51.8	28.4	59.1	58.6	0.50	119.269	
200.0	200.0	181.6	181.6	0.3	0.2	151.28	-51.8	28.4	59.1	58.6	0.51	116.457	
295.3	295.3	277.0	277.0	0.5	0.3	151.11	-52.2	28.8	59.6	58.8	0.81	73.954	
300.0	300.0	281.7	281.7	0.5	0.3	151.11	-52.2	28.8	59.7	58.8	0.82	72.719	
393.7	393.7	375.4	375.4	0.8	0.3	151.37	-52.8	28.8	60.1	59.0	1.09	55.085	
400.0	400.0	381.7	381.7	0.8	0.4	151.40	-52.8	28.8	60.1	59.0	1.11	54.212	
492.1	492.1	473.9	473.9	1.0	0.4	151.93	-53.4	28.5	60.5	59.1	1.37	44.115	
500.0	500.0	481.8	481.8	1.0	0.4	151.98	-53.4	28.4	60.5	59.1	1.39	43.427	
590.5	590.5	572.4	572.4	1.2	0.5	152.54	-53.9	28.0	60.8	59.1	1.65	36.903	
600.0	600.0	581.9	581.9	1.2	0.5	152.60	-54.0	28.0	60.8	59.1	1.67	36.336	
689.0	689.0	670.8	670.8	1.4	0.5	-125.63	-54.4	27.5	61.7	59.8	1.92	32.195	
700.0	700.0	681.8	681.8	1.4	0.5	-125.82	-54.5	27.4	62.0	60.0	1.95	31.840	
787.4	787.3	769.2	769.2	1.6	0.6	-128.35	-55.0	27.0	64.8	62.7	2.17	29.828	
800.0	799.8	781.8	781.7	1.6	0.6	-128.84	-55.0	26.9	65.4	63.2	2.21	29.638	
885.8	885.4	867.4	867.3	1.8	0.6	-132.85	-55.4	26.4	70.2	67.8	2.44	28.793	
900.0	899.5	881.5	881.5	1.9	0.6	-133.61	-55.5	26.3	71.2	68.7	2.48	28.750	SF
984.2	983.1	965.4	965.3	2.1	0.6	-138.42	-55.7	25.8	78.3	75.6	2.72	28.840	
1,000.0	998.7	981.0	981.0	2.1	0.7	-139.34	-55.8	25.7	79.9	77.1	2.76	28.953	
1,082.7	1,080.4	1,063.0	1,063.0	2.4	0.7	-144.16	-55.9	25.0	89.5	86.5	3.01	29.775	
1,100.0	1,097.5	1,080.1	1,080.1	2.4	0.7	-145.15	-55.9	24.8	91.8	88.8	3.06	30.038	
1,181.1	1,177.1	1,160.1	1,160.1	2.7	0.7	-149.56	-55.8	24.0	104.0	100.7	3.31	31.439	
1,200.0	1,195.6	1,178.7	1,178.7	2.8	0.7	-150.52	-55.7	23.9	107.2	103.9	3.37	31.853	
1,279.5	1,273.2	1,256.8	1,256.7	3.1	0.8	-154.32	-55.4	23.0	122.0	118.4	3.62	33.708	
1,300.0	1,293.1	1,276.8	1,276.7	3.2	0.8	-155.23	-55.3	22.7	126.2	122.5	3.68	34.263	
1,377.9	1,368.4	1,352.8	1,352.7	3.5	0.8	-158.48	-54.6	21.9	143.5	139.5	3.94	36.441	
1,400.0	1,389.6	1,374.2	1,374.1	3.7	0.8	-159.35	-54.3	21.6	148.8	144.8	4.01	37.129	
1,476.4	1,462.8	1,447.4	1,447.4	4.1	0.8	-162.15	-53.0	20.9	168.4	164.2	4.26	39.539	
1,500.0	1,485.3	1,469.9	1,469.8	4.2	0.8	-162.97	-52.5	20.8	175.0	170.7	4.34	40.360	
1,574.8	1,556.1	1,540.2	1,540.1	4.6	0.8	-165.35	-50.6	20.6	197.3	192.7	4.59	42.949	
1,600.0	1,579.8	1,563.7	1,563.6	4.8	0.8	-166.07	-50.0	20.6	205.4	200.7	4.68	43.912	
1,621.5	1,600.0	1,583.7	1,583.6	4.9	0.8	-166.65	-49.5	20.6	212.5	207.7	4.75	44.731	
1,673.2	1,648.5	1,631.7	1,631.5	5.3	0.8	-168.02	-48.2	20.8	229.8	224.9	4.91	46.829	
1,686.5	1,660.9	1,644.0	1,643.9	5.4	0.8	-168.34	-47.8	20.9	234.3	229.4	4.95	47.303	
1,700.0	1,673.5	1,656.5	1,656.4	5.5	0.9	-168.64	-47.5	20.9	238.9	233.9	5.00	47.783	
1,771.6	1,740.2	1,722.4	1,722.2	6.0	0.9	-170.11	-45.5	21.5	264.6	259.3	5.25	50.376	
1,800.0	1,766.5	1,748.1	1,748.0	6.2	0.9	-170.64	-44.7	21.7	275.3	269.9	5.35	51.433	
1,870.1	1,830.8	1,811.2	1,811.0	6.8	0.9	-171.80	-42.9	22.5	303.1	297.5	5.61	54.060	
1,900.0	1,858.0	1,837.7	1,837.4	7.0	0.9	-172.23	-42.1	22.9	315.5	309.8	5.72	55.210	
1,968.5	1,919.9	1,897.6	1,897.4	7.6	0.9	-173.13	-40.5	23.9	345.4	339.4	5.97	57.823	
2,000.0	1,948.1	1,924.9	1,924.6	7.9	0.9	-173.50	-39.8	24.5	359.7	353.6	6.09	59.051	
2,066.9	2,007.5	1,982.2	1,981.9	8.5	0.9	-174.24	-38.2	25.9	391.4	385.0	6.35	61.618	
2,100.0	2,036.7	2,010.0	2,009.7	8.8	0.9	-174.57	-37.4	26.7	407.6	401.1	6.48	62.908	
2,165.3	2,093.6	2,063.9	2,063.5	9.5	0.9	-175.14	-36.0	28.4	441.0	434.2	6.74	65.402	
2,200.0	2,123.5	2,092.0	2,091.6	9.9	0.9	-175.41	-35.3	29.3	459.3	452.4	6.88	66.743	
2,215.0	2,136.4	2,104.2	2,103.8	10.0	0.9	-175.52	-35.1	29.8	467.3	460.4	6.94	67.315	
2,263.8	2,178.2	2,144.2	2,143.8	10.6	1.0	-175.90	-34.2	31.2	493.8	486.6	7.14	69.160	
2,300.0	2,209.2	2,173.9	2,173.4	11.0	1.0	-176.14	-33.7	32.4	513.4	506.1	7.29	70.465	
2,362.2	2,262.6	2,225.2	2,224.7	11.7	1.0	-176.52	-32.8	34.4	547.3	539.8	7.54	72.586	
2,400.0	2,295.0	2,256.7	2,256.1	12.1	1.0	-176.72	-32.3	35.7	567.9	560.2	7.69	73.810	

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

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS 3-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS 3-16-18	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	**Offset TVD Reference:**	Offset Datum

Offset Design SW NW SEC. 15 T5N R65W 6th P.M. - EXIST VERT SANDUSKY #1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset 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
2,460.6	2,346.9	2,306.9	2,306.3	12.8	1.0	-177.00	-31.7	37.7	601.0	593.1	7.94	75.654	
2,500.0	2,380.7	2,339.1	2,338.4	13.2	1.0	-177.16	-31.3	39.0	622.5	614.4	8.11	76.788	
2,559.0	2,431.3	2,387.1	2,386.4	13.9	1.0	-177.37	-30.9	41.0	654.9	646.6	8.35	78.396	
2,600.0	2,466.4	2,420.8	2,420.1	14.4	1.0	-177.50	-30.7	42.5	677.4	668.9	8.53	79.456	
2,657.5	2,515.7	2,468.4	2,467.7	15.0	1.0	-177.67	-30.3	44.6	709.1	700.3	8.77	80.858	
2,700.0	2,552.1	2,503.7	2,502.9	15.5	1.0	-177.79	-30.1	46.1	732.5	723.5	8.95	81.846	
2,755.9	2,600.0	2,550.6	2,549.7	16.1	1.0	-177.94	-29.7	48.2	763.3	754.1	9.19	83.080	
2,800.0	2,637.8	2,587.6	2,586.7	16.6	1.0	-178.05	-29.4	49.8	787.6	778.2	9.38	84.006	
2,854.3	2,684.4	2,632.3	2,631.4	17.3	1.1	-178.17	-29.1	51.8	817.5	807.9	9.61	85.082	
2,900.0	2,723.5	2,669.5	2,668.6	17.8	1.1	-178.27	-28.8	53.5	842.7	832.9	9.80	85.947	
2,952.7	2,768.8	2,713.1	2,712.1	18.4	1.1	-178.37	-28.5	55.5	871.8	861.8	10.03	86.897	
3,000.0	2,809.3	2,753.5	2,752.4	18.9	1.1	-178.46	-28.2	57.4	897.9	887.6	10.24	87.706	
3,051.2	2,853.1	2,797.3	2,796.2	19.5	1.1	-178.55	-27.8	59.3	926.1	915.6	10.46	88.534	
3,100.0	2,895.0	2,839.5	2,838.4	20.1	1.1	-178.64	-27.5	61.1	952.9	942.3	10.67	89.293	
3,149.6	2,937.5	2,882.5	2,881.4	20.6	1.1	-178.72	-27.1	62.9	980.1	969.3	10.89	90.023	
3,200.0	2,980.7	2,925.3	2,924.1	21.2	1.1	-178.80	-26.7	64.6	1,007.7	996.6	11.11	90.723	
3,248.0	3,021.9	2,965.5	2,964.2	21.8	1.1	-178.86	-26.4	66.2	1,034.0	1,022.7	11.32	91.356	
3,300.0	3,066.4	3,009.5	3,008.2	22.4	1.1	-178.92	-26.2	68.0	1,062.5	1,050.9	11.55	92.011	
3,346.4	3,106.2	3,051.1	3,049.8	22.9	1.2	-178.98	-26.0	69.5	1,087.8	1,076.1	11.75	92.559	
3,400.0	3,152.1	3,099.1	3,097.8	23.5	1.2	-179.04	-25.6	71.2	1,117.0	1,105.0	11.99	93.158	
3,444.9	3,190.6	3,139.2	3,137.8	24.1	1.2	-179.09	-25.3	72.6	1,141.3	1,129.1	12.19	93.637	
3,500.0	3,237.8	3,188.5	3,187.1	24.7	1.2	-179.15	-25.0	74.1	1,171.0	1,158.6	12.43	94.193	
3,543.3	3,275.0	3,226.2	3,224.8	25.2	1.2	-179.18	-24.7	75.2	1,194.3	1,181.7	12.63	94.600	
3,600.0	3,323.6	3,275.0	3,273.6	25.9	1.2	-179.22	-24.6	76.5	1,224.8	1,211.9	12.88	95.106	
3,641.7	3,359.3	3,311.1	3,309.7	26.3	1.2	-179.24	-24.6	77.4	1,247.2	1,234.1	13.07	95.457	
3,700.0	3,409.3	3,362.0	3,360.6	27.0	1.2	-179.27	-24.7	78.7	1,278.5	1,265.1	13.33	95.916	
3,740.1	3,443.7	3,397.1	3,395.7	27.5	1.2	-179.28	-24.8	79.5	1,299.9	1,286.4	13.51	96.217	
3,800.0	3,495.0	3,448.8	3,447.3	28.2	1.3	-179.29	-25.1	80.6	1,331.9	1,318.1	13.78	96.642	
3,838.6	3,528.1	3,482.0	3,480.6	28.6	1.3	-179.30	-25.2	81.4	1,352.5	1,338.5	13.96	96.904	
3,900.0	3,580.7	3,534.2	3,532.7	29.3	1.3	-179.31	-25.5	82.5	1,385.3	1,371.0	14.24	97.299	
3,937.0	3,612.4	3,565.3	3,563.8	29.8	1.3	-179.32	-25.6	83.1	1,405.0	1,390.6	14.41	97.528	
4,000.0	3,666.4	3,617.5	3,616.0	30.5	1.3	-179.33	-25.9	84.3	1,438.6	1,423.9	14.69	97.902	
4,035.4	3,696.8	3,645.9	3,644.4	30.9	1.3	-179.33	-26.1	84.9	1,457.6	1,442.7	14.86	98.104	
4,100.0	3,752.1	3,700.0	3,698.5	31.7	1.3	-179.33	-26.5	86.2	1,492.2	1,477.0	15.16	98.458	
4,133.8	3,781.2	3,725.0	3,723.5	32.0	1.3	-179.33	-26.8	86.8	1,510.4	1,495.0	15.31	98.645	
4,200.0	3,837.9	3,778.5	3,776.9	32.8	1.3	-179.34	-27.3	88.2	1,545.9	1,530.3	15.62	98.988	
4,232.3	3,865.5	3,804.7	3,803.1	33.2	1.3	-179.34	-27.5	88.9	1,563.3	1,547.6	15.77	99.152	
4,300.0	3,923.6	3,861.7	3,860.1	34.0	1.4	-179.34	-28.0	90.4	1,599.9	1,583.8	16.08	99.481	
4,330.7	3,949.9	3,887.5	3,885.9	34.3	1.4	-179.34	-28.2	91.2	1,616.4	1,600.2	16.22	99.625	
4,400.0	4,009.3	3,957.5	3,955.9	35.1	1.4	-179.35	-28.6	92.9	1,653.6	1,637.1	16.55	99.921	
4,429.1	4,034.3	3,988.5	3,986.8	35.5	1.4	-179.36	-28.6	93.5	1,669.1	1,652.4	16.69	100.030	
4,500.0	4,095.0	4,066.2	4,064.6	36.3	1.4	-179.39	-28.5	94.5	1,706.4	1,689.3	17.01	100.297	
4,527.5	4,118.6	4,096.8	4,095.2	36.6	1.4	-179.41	-28.3	94.7	1,720.7	1,703.5	17.14	100.388	
4,600.0	4,180.7	4,169.3	4,167.6	37.5	1.4	-179.44	-27.8	94.8	1,758.0	1,740.5	17.47	100.622	
4,626.0	4,203.0	4,195.2	4,193.6	37.8	1.4	-179.46	-27.6	94.7	1,771.3	1,753.7	17.59	100.697	
4,700.0	4,266.4	4,261.5	4,259.8	38.6	1.4	-179.49	-27.0	94.4	1,809.0	1,791.1	17.93	100.894	
4,724.4	4,287.4	4,283.2	4,281.5	38.9	1.4	-179.50	-26.8	94.3	1,821.5	1,803.4	18.04	100.955	
4,800.0	4,352.2	4,348.2	4,346.5	39.8	1.4	-179.52	-26.3	93.9	1,860.0	1,841.6	18.39	101.130	
4,822.8	4,371.7	4,367.6	4,365.9	40.1	1.4	-179.53	-26.1	93.8	1,871.6	1,853.1	18.50	101.180	
4,900.0	4,437.9	4,435.1	4,433.5	41.0	1.5	-179.56	-25.5	93.5	1,910.9	1,892.1	18.86	101.339	
4,921.2	4,456.1	4,454.3	4,452.6	41.2	1.5	-179.57	-25.3	93.4	1,921.7	1,902.8	18.96	101.378	
5,000.0	4,523.6	4,523.2	4,521.5	42.1	1.5	-179.59	-24.8	92.9	1,961.7	1,942.4	19.32	101.521	

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS 3-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS 3-16-18	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	**Offset TVD Reference:**	Offset Datum

Offset Design SW NW SEC. 15 T5N R65W 6th P.M. - EXIST VERT SANDUSKY #1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset 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
5,019.7	4,540.5	4,539.5	4,537.8	42.3	1.5	-179.60	-24.6	92.8	1,971.7	1,952.3	19.41	101.557	
5,100.0	4,609.3	4,606.2	4,604.5	43.3	1.5	-179.62	-24.2	92.3	2,012.6	1,992.8	19.79	101.701	
5,118.1	4,624.8	4,621.6	4,619.9	43.5	1.5	-179.62	-24.1	92.2	2,021.8	2,001.9	19.87	101.730	
5,200.0	4,695.0	4,691.1	4,689.4	44.4	1.5	-179.64	-23.8	91.9	2,063.6	2,043.3	20.26	101.859	
5,216.5	4,709.2	4,705.0	4,703.4	44.6	1.5	-179.64	-23.7	91.8	2,072.0	2,051.7	20.34	101.884	
5,300.0	4,780.7	4,775.0	4,773.3	45.6	1.5	-179.66	-23.5	91.4	2,114.6	2,093.9	20.73	102.009	
5,314.9	4,793.6	4,787.5	4,785.9	45.8	1.5	-179.66	-23.4	91.4	2,122.2	2,101.4	20.80	102.031	
5,400.0	4,866.5	4,857.3	4,855.6	46.8	1.5	-179.67	-23.1	91.1	2,165.7	2,144.5	21.20	102.152	
5,413.4	4,877.9	4,868.2	4,866.5	46.9	1.5	-179.68	-23.1	91.1	2,172.6	2,151.3	21.26	102.171	
5,500.0	4,952.2	4,938.3	4,936.6	47.9	1.5	-179.69	-22.8	91.0	2,217.0	2,195.4	21.67	102.290	
5,511.8	4,962.3	4,947.8	4,946.1	48.1	1.5	-179.69	-22.8	91.0	2,223.1	2,201.4	21.73	102.306	
5,600.0	5,037.9	5,018.0	5,016.3	49.1	1.5	-179.71	-22.5	91.0	2,268.6	2,246.4	22.15	102.425	
5,610.2	5,046.7	5,026.0	5,024.3	49.2	1.5	-179.71	-22.5	91.1	2,273.8	2,251.6	22.20	102.439	
5,700.0	5,123.6	5,100.0	5,098.3	50.3	1.6	-179.72	-22.4	91.3	2,320.3	2,297.7	22.63	102.548	
5,708.6	5,131.0	5,102.8	5,101.1	50.4	1.6	-179.72	-22.4	91.4	2,324.8	2,302.2	22.67	102.571	
5,800.0	5,209.3	5,178.7	5,177.0	51.4	1.6	-179.72	-22.4	91.8	2,372.3	2,349.2	23.11	102.671	
5,807.1	5,215.4	5,184.6	5,182.9	51.5	1.6	-179.72	-22.4	91.8	2,376.0	2,352.9	23.14	102.679	
5,900.0	5,295.0	5,258.1	5,256.4	52.6	1.6	-179.73	-22.5	92.3	2,424.4	2,400.8	23.59	102.787	
5,905.5	5,299.8	5,262.4	5,260.7	52.7	1.6	-179.73	-22.5	92.4	2,427.3	2,403.7	23.61	102.794	
6,000.0	5,380.8	5,340.3	5,338.6	53.8	1.6	-179.74	-22.5	93.1	2,476.7	2,452.7	24.07	102.896	
6,003.9	5,384.1	5,343.7	5,342.0	53.8	1.6	-179.74	-22.5	93.2	2,478.8	2,454.7	24.09	102.900	
6,100.0	5,466.5	5,428.1	5,426.4	54.9	1.6	-179.75	-22.3	94.0	2,529.1	2,504.5	24.56	102.984	
6,102.3	5,468.5	5,430.2	5,428.5	55.0	1.6	-179.75	-22.3	94.0	2,530.3	2,505.7	24.57	102.986	
6,200.0	5,552.2	5,517.1	5,515.4	56.1	1.6	-179.77	-21.9	94.8	2,581.2	2,556.2	25.05	103.063	
6,200.8	5,552.9	5,517.8	5,516.1	56.1	1.6	-179.77	-21.9	94.8	2,581.6	2,556.6	25.05	103.063	
6,299.2	5,637.2	5,600.0	5,598.3	57.3	1.7	-179.79	-21.4	95.4	2,632.9	2,607.4	25.53	103.146	
6,300.0	5,637.9	5,600.0	5,598.3	57.3	1.7	-179.79	-21.4	95.4	2,633.3	2,607.8	25.53	103.148	
6,397.6	5,721.6	5,666.7	5,665.0	58.4	1.7	-179.80	-21.1	96.1	2,684.5	2,658.5	26.00	103.261	
6,400.0	5,723.6	5,668.2	5,666.5	58.4	1.7	-179.80	-21.1	96.2	2,685.7	2,659.7	26.01	103.265	
6,496.0	5,806.0	5,739.6	5,737.8	59.6	1.7	-179.81	-21.1	97.4	2,736.6	2,710.2	26.47	103.368	
6,500.0	5,809.3	5,742.9	5,741.2	59.6	1.7	-179.81	-21.1	97.5	2,738.7	2,712.2	26.49	103.371	
6,594.5	5,890.3	5,824.8	5,823.0	60.7	1.7	-179.82	-21.2	99.0	2,788.9	2,761.9	26.96	103.435	
6,600.0	5,895.1	5,829.8	5,828.1	60.8	1.7	-179.82	-21.2	99.1	2,791.8	2,764.8	26.99	103.438	
6,692.9	5,974.7	5,914.5	5,912.8	61.9	1.7	-179.81	-21.7	100.4	2,840.9	2,813.5	27.45	103.487	
6,700.0	5,980.8	5,920.9	5,919.1	61.9	1.7	-179.81	-21.7	100.5	2,844.7	2,817.2	27.49	103.491	
6,791.3	6,059.1	6,003.0	6,001.2	63.0	1.8	-179.81	-22.2	101.7	2,892.9	2,864.9	27.94	103.533	
6,800.0	6,066.5	6,010.5	6,008.8	63.1	1.8	-179.81	-22.2	101.7	2,897.4	2,869.4	27.98	103.536	
6,889.7	6,143.4	6,088.5	6,086.8	64.1	1.8	-179.80	-22.7	102.7	2,944.7	2,916.3	28.43	103.575	
6,900.0	6,152.2	6,097.4	6,095.7	64.3	1.8	-179.80	-22.8	102.8	2,950.1	2,921.6	28.48	103.579	
6,988.2	6,227.8	6,178.0	6,176.2	65.3	1.8	-179.80	-23.3	103.8	2,996.4	2,967.5	28.92	103.597	
7,000.0	6,237.9	6,188.8	6,187.0	65.4	1.8	-179.80	-23.3	103.9	3,002.6	2,973.6	28.98	103.599	
7,086.6	6,312.2	6,262.8	6,261.0	66.4	1.8	-179.80	-23.6	104.6	3,048.0	3,018.6	29.41	103.623	
7,100.0	6,323.6	6,274.1	6,272.3	66.6	1.8	-179.80	-23.6	104.8	3,055.0	3,025.6	29.48	103.628	
7,185.0	6,396.5	6,347.5	6,345.7	67.6	1.8	-179.80	-23.7	105.6	3,099.6	3,069.7	29.91	103.644	
7,200.0	6,409.4	6,360.6	6,358.8	67.8	1.8	-179.80	-23.7	105.7	3,107.5	3,077.5	29.98	103.646	
7,283.4	6,480.9	6,434.1	6,432.3	68.7	1.9	-179.80	-23.9	106.4	3,151.2	3,120.8	30.40	103.653	
7,300.0	6,495.1	6,448.8	6,447.0	68.9	1.9	-179.80	-23.9	106.6	3,159.8	3,129.3	30.48	103.654	
7,371.5	6,556.4	6,512.4	6,510.7	69.8	1.9	-179.81	-24.0	107.1	3,197.2	3,166.4	30.84	103.654	
7,381.9	6,565.2	6,521.8	6,520.0	69.9	1.9	-179.80	-24.0	107.2	3,202.7	3,171.7	30.96	103.434	
7,400.0	6,580.4	6,537.9	6,536.1	70.1	1.9	-179.80	-24.0	107.4	3,212.7	3,181.5	31.15	103.132	
7,450.0	6,620.7	6,580.4	6,578.6	70.8	1.9	-179.79	-24.1	107.7	3,242.6	3,211.1	31.55	102.781	
7,480.3	6,643.8	6,604.5	6,602.7	71.3	1.9	-179.78	-24.1	107.8	3,262.4	3,230.7	31.70	102.910	

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS 3-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS 3-16-18	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	**Offset TVD Reference:**	Offset Datum

Offset Design SW NW SEC. 15 T5N R65W 6th P.M. - EXIST VERT SANDUSKY #1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset 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
7,500.0	6,658.2	6,618.7	6,616.9	71.6	1.9	-179.77	-24.2	107.9	3,275.9	3,244.2	31.76	103.150	
7,550.0	6,692.7	6,652.7	6,650.9	72.5	1.9	-179.75	-24.2	108.2	3,312.3	3,280.6	31.77	104.247	
7,578.7	6,711.1	6,670.7	6,668.9	73.0	1.9	-179.74	-24.3	108.3	3,334.6	3,302.9	31.69	105.208	
7,600.0	6,723.9	6,683.4	6,681.6	73.4	1.9	-179.72	-24.3	108.4	3,351.6	3,320.0	31.59	106.094	
7,650.0	6,751.6	6,700.0	6,698.2	74.5	1.9	-179.69	-24.3	108.5	3,393.4	3,362.2	31.19	108.790	
7,677.1	6,765.1	6,700.0	6,698.2	75.1	1.9	-179.66	-24.3	108.5	3,417.1	3,386.3	30.88	110.652	
7,700.0	6,775.6	6,700.0	6,698.2	75.6	1.9	-179.63	-24.3	108.5	3,437.6	3,407.0	30.57	112.435	
7,750.0	6,795.6	6,700.0	6,698.2	76.8	1.9	-179.54	-24.3	108.5	3,483.8	3,454.0	29.77	117.041	
7,775.6	6,804.3	6,700.0	6,698.2	77.4	1.9	-179.48	-24.3	108.5	3,508.0	3,478.8	29.28	119.801	
7,800.0	6,811.6	6,700.0	6,698.2	78.0	1.9	-179.39	-24.3	108.5	3,531.5	3,502.8	28.78	122.717	
7,838.2	6,821.0	6,700.0	6,698.2	78.9	1.9	-179.18	-24.3	108.5	3,568.8	3,540.9	27.92	127.838	
7,874.0	6,828.7	6,700.0	6,698.2	79.8	1.9	-179.18	-24.3	108.5	3,604.0	3,575.8	28.14	128.062	
7,900.0	6,834.2	6,700.0	6,698.2	80.5	1.9	-179.18	-24.3	108.5	3,629.6	3,601.2	28.31	128.222	
7,972.4	6,849.7	6,700.0	6,698.2	82.3	1.9	-179.18	-24.3	108.5	3,700.8	3,672.0	28.77	128.647	
8,000.0	6,855.0	6,700.0	6,698.2	83.0	1.9	-168.55	-24.3	108.5	3,728.0	3,694.5	33.51	111.261	
8,050.0	6,861.8	6,700.0	6,698.2	84.2	1.9	-129.87	-24.3	108.5	3,777.7	3,707.0	70.69	53.441	
8,070.8	6,863.5	6,700.0	6,698.2	84.8	1.9	-107.41	-24.3	108.5	3,798.5	3,714.8	83.66	45.406	
8,100.0	6,864.8	6,700.0	6,698.2	85.5	1.9	-82.04	-24.3	108.5	3,827.5	3,741.3	86.17	44.415	
8,115.3	6,865.0	6,700.0	6,698.2	85.9	1.9	-73.01	-24.3	108.5	3,842.6	3,758.4	84.19	45.643	
8,169.3	6,865.0	6,700.0	6,698.2	87.2	1.9	-73.01	-24.3	108.5	3,896.1	3,810.7	85.49	45.574	
8,200.0	6,865.0	6,700.0	6,698.2	88.0	1.9	-73.01	-24.3	108.5	3,926.6	3,840.4	86.23	45.536	
8,267.7	6,865.0	6,700.0	6,698.2	89.7	1.9	-73.01	-24.3	108.5	3,993.8	3,905.9	87.88	45.446	
8,300.0	6,865.0	6,700.0	6,698.2	90.5	1.9	-73.01	-24.3	108.5	4,025.8	3,937.1	88.66	45.405	
8,366.1	6,865.0	6,700.0	6,698.2	92.2	1.9	-73.01	-24.3	108.5	4,091.4	4,001.1	90.28	45.317	
8,400.0	6,865.0	6,700.0	6,698.2	93.1	1.9	-73.01	-24.3	108.5	4,125.0	4,033.9	91.11	45.273	
8,464.5	6,865.0	6,700.0	6,698.2	94.7	1.9	-73.01	-24.3	108.5	4,189.1	4,096.4	92.70	45.188	
8,500.0	6,865.0	6,700.0	6,698.2	95.6	1.9	-73.01	-24.3	108.5	4,224.3	4,130.7	93.58	45.142	
8,563.0	6,865.0	6,700.0	6,698.2	97.2	1.9	-73.01	-24.3	108.5	4,286.8	4,191.6	95.14	45.059	
8,600.0	6,865.0	6,700.0	6,698.2	98.2	1.9	-73.01	-24.3	108.5	4,323.5	4,227.5	96.05	45.012	
8,661.4	6,865.0	6,700.0	6,698.2	99.8	1.9	-73.01	-24.3	108.5	4,384.5	4,286.9	97.58	44.932	
8,700.0	6,865.0	6,700.0	6,698.2	100.8	1.9	-73.01	-24.3	108.5	4,422.9	4,324.3	98.54	44.883	
8,759.8	6,865.0	6,700.0	6,698.2	102.3	1.9	-73.01	-24.3	108.5	4,482.3	4,382.3	100.04	44.807	
8,800.0	6,865.0	6,700.0	6,698.2	103.4	1.9	-73.01	-24.3	108.5	4,522.2	4,421.2	101.04	44.756	
8,858.2	6,865.0	6,700.0	6,698.2	104.9	1.9	-73.01	-24.3	108.5	4,580.1	4,477.6	102.50	44.683	
8,900.0	6,865.0	6,700.0	6,698.2	106.0	1.9	-73.01	-24.3	108.5	4,621.6	4,518.0	103.55	44.632	
8,956.7	6,865.0	6,700.0	6,698.2	107.5	1.9	-73.01	-24.3	108.5	4,677.9	4,573.0	104.98	44.561	
9,000.0	6,865.0	6,700.0	6,698.2	108.6	1.9	-73.01	-24.3	108.5	4,721.0	4,614.9	106.07	44.509	
9,055.1	6,865.0	6,700.0	6,698.2	110.0	1.9	-73.01	-24.3	108.5	4,775.8	4,668.3	107.46	44.442	
9,100.0	6,865.0	6,700.0	6,698.2	111.2	1.9	-73.01	-24.3	108.5	4,820.4	4,711.8	108.60	44.389	
9,153.5	6,865.0	6,700.0	6,698.2	112.6	1.9	-73.01	-24.3	108.5	4,873.7	4,763.7	109.95	44.325	
9,200.0	6,865.0	6,700.0	6,698.2	113.8	1.9	-73.01	-24.3	108.5	4,919.9	4,808.7	111.13	44.271	
9,251.9	6,865.0	6,700.0	6,698.2	115.2	1.9	-73.01	-24.3	108.5	4,971.6	4,859.1	112.45	44.210	
9,300.0	6,865.0	6,700.0	6,698.2	116.5	1.9	-73.01	-24.3	108.5	5,019.4	4,905.7	113.67	44.156	
9,350.4	6,865.0	6,700.0	6,698.2	117.8	1.9	-73.01	-24.3	108.5	5,069.5	4,954.5	114.96	44.098	
9,400.0	6,865.0	6,700.0	6,698.2	119.1	1.9	-73.01	-24.3	108.5	5,118.8	5,002.6	116.22	44.043	
9,448.8	6,865.0	6,700.0	6,698.2	120.4	1.9	-73.01	-24.3	108.5	5,167.4	5,049.9	117.47	43.988	
9,500.0	6,865.0	6,700.0	6,698.2	121.8	1.9	-73.01	-24.3	108.5	5,218.4	5,099.6	118.78	43.933	
9,547.2	6,865.0	6,700.0	6,698.2	123.1	1.9	-73.01	-24.3	108.5	5,265.4	5,145.4	119.99	43.881	
9,600.0	6,865.0	6,700.0	6,698.2	124.5	1.9	-73.01	-24.3	108.5	5,317.9	5,196.5	121.34	43.825	
9,645.6	6,865.0	6,700.0	6,698.2	125.7	1.9	-73.01	-24.3	108.5	5,363.3	5,240.8	122.52	43.776	
9,700.0	6,865.0	6,700.0	6,698.2	127.1	1.9	-73.01	-24.3	108.5	5,417.4	5,293.5	123.91	43.720	
9,744.1	6,865.0	6,700.0	6,698.2	128.3	1.9	-73.01	-24.3	108.5	5,461.3	5,336.3	125.05	43.674	

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

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS 3-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS 3-16-18	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	**Offset TVD Reference:**	Offset Datum

Offset Design SW NW SEC. 15 T5N R65W 6th P.M. - EXIST VERT SANDUSKY #1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset 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
9,800.0	6,865.0	6,700.0	6,698.2	129.8	1.9	-73.01	-24.3	108.5	5,517.0	5,390.5	126.49	43.617	
9,842.5	6,865.0	6,700.0	6,698.2	131.0	1.9	-73.01	-24.3	108.5	5,559.3	5,431.7	127.58	43.574	
9,900.0	6,865.0	6,700.0	6,698.2	132.5	1.9	-73.01	-24.3	108.5	5,616.6	5,487.5	129.07	43.517	
9,940.9	6,865.0	6,700.0	6,698.2	133.6	1.9	-73.01	-24.3	108.5	5,657.3	5,527.2	130.12	43.477	
10,000.0	6,865.0	6,700.0	6,698.2	135.2	1.9	-73.01	-24.3	108.5	5,716.2	5,584.5	131.65	43.420	
10,039.3	6,865.0	6,700.0	6,698.2	136.2	1.9	-73.01	-24.3	108.5	5,755.4	5,622.7	132.67	43.382	
10,100.0	6,865.0	6,700.0	6,698.2	137.9	1.9	-73.01	-24.3	108.5	5,815.8	5,681.6	134.24	43.324	
10,137.8	6,865.0	6,700.0	6,698.2	138.9	1.9	-73.01	-24.3	108.5	5,853.4	5,718.2	135.22	43.289	
10,200.0	6,865.0	6,700.0	6,698.2	140.6	1.9	-73.01	-24.3	108.5	5,915.4	5,778.6	136.83	43.232	
10,236.2	6,865.0	6,700.0	6,698.2	141.5	1.9	-73.01	-24.3	108.5	5,951.5	5,813.7	137.77	43.198	
10,300.0	6,865.0	6,700.0	6,698.2	143.3	1.9	-73.01	-24.3	108.5	6,015.0	5,875.6	139.43	43.141	
10,334.6	6,865.0	6,700.0	6,698.2	144.2	1.9	-73.01	-24.3	108.5	6,049.6	5,909.2	140.33	43.110	
10,400.0	6,865.0	6,700.0	6,698.2	146.0	1.9	-73.01	-24.3	108.5	6,114.7	5,972.7	142.03	43.053	
10,433.0	6,865.0	6,700.0	6,698.2	146.9	1.9	-73.01	-24.3	108.5	6,147.6	6,004.7	142.89	43.024	
10,500.0	6,865.0	6,700.0	6,698.2	148.7	1.9	-73.01	-24.3	108.5	6,214.4	6,069.7	144.63	42.967	
10,531.5	6,865.0	6,700.0	6,698.2	149.5	1.9	-73.01	-24.3	108.5	6,245.7	6,100.3	145.45	42.940	
10,600.0	6,865.0	6,700.0	6,698.2	151.4	1.9	-73.01	-24.3	108.5	6,314.0	6,166.8	147.24	42.883	
10,629.9	6,865.0	6,700.0	6,698.2	152.2	1.9	-73.01	-24.3	108.5	6,343.8	6,195.8	148.02	42.858	
10,700.0	6,865.0	6,700.0	6,698.2	154.1	1.9	-73.01	-24.3	108.5	6,413.7	6,263.9	149.85	42.801	
10,728.3	6,865.0	6,700.0	6,698.2	154.9	1.9	-73.01	-24.3	108.5	6,441.9	6,291.3	150.59	42.778	
10,800.0	6,865.0	6,700.0	6,698.2	156.8	1.9	-73.01	-24.3	108.5	6,513.4	6,360.9	152.46	42.721	
10,826.7	6,865.0	6,700.0	6,698.2	157.6	1.9	-73.01	-24.3	108.5	6,540.1	6,386.9	153.16	42.700	
10,900.0	6,865.0	6,700.0	6,698.2	159.6	1.9	-73.01	-24.3	108.5	6,613.1	6,458.0	155.08	42.643	
10,925.2	6,865.0	6,700.0	6,698.2	160.3	1.9	-73.01	-24.3	108.5	6,638.2	6,482.5	155.74	42.624	
11,000.0	6,865.0	6,700.0	6,698.2	162.3	1.9	-73.01	-24.3	108.5	6,712.8	6,555.1	157.70	42.567	
11,023.6	6,865.0	6,700.0	6,698.2	162.9	1.9	-73.01	-24.3	108.5	6,736.3	6,578.0	158.32	42.549	
11,100.0	6,865.0	6,700.0	6,698.2	165.0	1.9	-73.01	-24.3	108.5	6,812.5	6,652.2	160.32	42.493	
11,122.0	6,865.0	6,700.0	6,698.2	165.6	1.9	-73.01	-24.3	108.5	6,834.5	6,673.6	160.90	42.477	
11,200.0	6,865.0	6,700.0	6,698.2	167.8	1.9	-73.01	-24.3	108.5	6,912.2	6,749.3	162.95	42.420	
11,220.4	6,865.0	6,700.0	6,698.2	168.3	1.9	-73.01	-24.3	108.5	6,932.6	6,769.2	163.48	42.406	
11,300.0	6,865.0	6,700.0	6,698.2	170.5	1.9	-73.01	-24.3	108.5	7,012.0	6,846.4	165.57	42.350	
11,318.9	6,865.0	6,700.0	6,698.2	171.0	1.9	-73.01	-24.3	108.5	7,030.8	6,864.7	166.07	42.337	
11,400.0	6,865.0	6,700.0	6,698.2	173.2	1.9	-73.01	-24.3	108.5	7,111.7	6,943.5	168.20	42.281	
11,417.3	6,865.0	6,700.0	6,698.2	173.7	1.9	-73.01	-24.3	108.5	7,129.0	6,960.3	168.66	42.269	
11,500.0	6,865.0	6,700.0	6,698.2	176.0	1.9	-73.01	-24.3	108.5	7,211.5	7,040.6	170.83	42.214	
11,515.7	6,865.0	6,700.0	6,698.2	176.4	1.9	-73.01	-24.3	108.5	7,227.1	7,055.9	171.25	42.203	
11,600.0	6,865.0	6,700.0	6,698.2	178.7	1.9	-73.01	-24.3	108.5	7,311.2	7,137.7	173.47	42.148	
11,614.1	6,865.0	6,700.0	6,698.2	179.1	1.9	-73.01	-24.3	108.5	7,325.3	7,151.5	173.84	42.139	
11,700.0	6,865.0	6,700.0	6,698.2	181.4	1.9	-73.01	-24.3	108.5	7,411.0	7,234.9	176.10	42.084	
11,712.6	6,865.0	6,700.0	6,698.2	181.8	1.9	-73.01	-24.3	108.5	7,423.5	7,247.1	176.43	42.076	
11,800.0	6,865.0	6,700.0	6,698.2	184.2	1.9	-73.01	-24.3	108.5	7,510.7	7,332.0	178.74	42.021	
11,811.0	6,865.0	6,700.0	6,698.2	184.5	1.9	-73.01	-24.3	108.5	7,521.7	7,342.7	179.03	42.014	
11,900.0	6,865.0	6,700.0	6,698.2	186.9	1.9	-73.01	-24.3	108.5	7,610.5	7,429.1	181.38	41.960	
11,909.4	6,865.0	6,700.0	6,698.2	187.2	1.9	-73.01	-24.3	108.5	7,619.9	7,438.3	181.63	41.954	
12,000.0	6,865.0	6,700.0	6,698.2	189.7	1.9	-73.01	-24.3	108.5	7,710.3	7,526.3	184.02	41.900	
12,007.8	6,865.0	6,700.0	6,698.2	189.9	1.9	-73.01	-24.3	108.5	7,718.1	7,533.9	184.22	41.895	
12,100.0	6,865.0	6,700.0	6,698.2	192.4	1.9	-73.01	-24.3	108.5	7,810.1	7,623.4	186.66	41.842	
12,106.3	6,865.0	6,700.0	6,698.2	192.6	1.9	-73.01	-24.3	108.5	7,816.3	7,629.5	186.82	41.838	
12,200.0	6,865.0	6,700.0	6,698.2	195.2	1.9	-73.01	-24.3	108.5	7,909.9	7,720.6	189.30	41.784	
12,204.7	6,865.0	6,700.0	6,698.2	195.3	1.9	-73.01	-24.3	108.5	7,914.6	7,725.1	189.43	41.782	
12,300.0	6,865.0	6,700.0	6,698.2	198.0	1.9	-73.01	-24.3	108.5	8,009.7	7,817.7	191.95	41.728	
12,303.1	6,865.0	6,700.0	6,698.2	198.0	1.9	-73.01	-24.3	108.5	8,012.8	7,820.7	192.03	41.727	

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS 3-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS 3-16-18	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	**Offset TVD Reference:**	Offset Datum

Offset Design SW NW SEC. 15 T5N R65W 6th P.M. - EXIST VERT SANDUSKY #1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset 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
12,400.0	6,865.0	6,700.0	6,698.2	200.7	1.9	-73.01	-24.3	108.5	8,109.5	7,914.9	194.59	41.674	
12,401.5	6,865.0	6,700.0	6,698.2	200.8	1.9	-73.01	-24.3	108.5	8,111.0	7,916.4	194.63	41.673	
12,500.0	6,865.0	6,700.0	6,698.2	203.5	1.9	-73.01	-24.3	108.5	8,209.3	8,012.0	197.24	41.620	
12,598.4	6,865.0	6,700.0	6,698.2	206.2	1.9	-73.01	-24.3	108.5	8,307.5	8,107.6	199.85	41.569	
12,600.0	6,865.0	6,700.0	6,698.2	206.2	1.9	-73.01	-24.3	108.5	8,309.1	8,109.2	199.89	41.568	
12,696.8	6,865.0	6,700.0	6,698.2	208.9	1.9	-73.01	-24.3	108.5	8,405.7	8,203.3	202.46	41.519	
12,700.0	6,865.0	6,700.0	6,698.2	209.0	1.9	-73.01	-24.3	108.5	8,408.9	8,206.3	202.54	41.517	
12,795.2	6,865.0	6,700.0	6,698.2	211.6	1.9	-73.01	-24.3	108.5	8,504.0	8,298.9	205.07	41.469	
12,800.0	6,865.0	6,700.0	6,698.2	211.8	1.9	-73.01	-24.3	108.5	8,508.7	8,303.5	205.19	41.467	
12,893.7	6,865.0	6,700.0	6,698.2	214.3	1.9	-73.01	-24.3	108.5	8,602.2	8,394.5	207.68	41.421	
12,900.0	6,865.0	6,700.0	6,698.2	214.5	1.9	-73.01	-24.3	108.5	8,608.5	8,400.7	207.85	41.418	
12,992.1	6,865.0	6,700.0	6,698.2	217.1	1.9	-73.01	-24.3	108.5	8,700.5	8,490.2	210.29	41.374	
13,000.0	6,865.0	6,700.0	6,698.2	217.3	1.9	-73.01	-24.3	108.5	8,708.4	8,497.9	210.50	41.370	
13,090.5	6,865.0	6,700.0	6,698.2	219.8	1.9	-73.01	-24.3	108.5	8,798.7	8,585.8	212.90	41.328	
13,100.0	6,865.0	6,700.0	6,698.2	220.0	1.9	-73.01	-24.3	108.5	8,808.2	8,595.0	213.15	41.323	
13,188.9	6,865.0	6,700.0	6,698.2	222.5	1.9	-73.01	-24.3	108.5	8,897.0	8,681.5	215.52	41.282	
13,200.0	6,865.0	6,700.0	6,698.2	222.8	1.9	-73.01	-24.3	108.5	8,908.0	8,692.2	215.81	41.277	
13,287.4	6,865.0	6,700.0	6,698.2	225.2	1.9	-73.01	-24.3	108.5	8,995.3	8,777.1	218.13	41.238	
13,300.0	6,865.0	6,700.0	6,698.2	225.6	1.9	-73.01	-24.3	108.5	9,007.9	8,789.4	218.47	41.232	
13,385.8	6,865.0	6,700.0	6,698.2	228.0	1.9	-73.01	-24.3	108.5	9,093.5	8,872.8	220.75	41.194	
13,400.0	6,865.0	6,700.0	6,698.2	228.4	1.9	-73.01	-24.3	108.5	9,107.7	8,886.6	221.12	41.188	
13,484.2	6,865.0	6,700.0	6,698.2	230.7	1.9	-73.01	-24.3	108.5	9,191.8	8,968.4	223.36	41.152	
13,500.0	6,865.0	6,700.0	6,698.2	231.1	1.9	-73.01	-24.3	108.5	9,207.5	8,983.8	223.78	41.145	
13,582.6	6,865.0	6,700.0	6,698.2	233.4	1.9	-73.01	-24.3	108.5	9,290.1	9,064.1	225.98	41.110	
13,600.0	6,865.0	6,700.0	6,698.2	233.9	1.9	-73.01	-24.3	108.5	9,307.4	9,081.0	226.44	41.103	
13,681.1	6,865.0	6,700.0	6,698.2	236.1	1.9	-73.01	-24.3	108.5	9,388.4	9,159.8	228.60	41.069	
13,700.0	6,865.0	6,700.0	6,698.2	236.7	1.9	-73.01	-24.3	108.5	9,407.2	9,178.1	229.10	41.061	
13,779.5	6,865.0	6,700.0	6,698.2	238.9	1.9	-73.01	-24.3	108.5	9,486.6	9,255.4	231.22	41.029	
13,800.0	6,865.0	6,700.0	6,698.2	239.4	1.9	-73.01	-24.3	108.5	9,507.1	9,275.3	231.77	41.020	
13,877.9	6,865.0	6,700.0	6,698.2	241.6	1.9	-73.01	-24.3	108.5	9,584.9	9,351.1	233.84	40.989	
13,900.0	6,865.0	6,700.0	6,698.2	242.2	1.9	-73.01	-24.3	108.5	9,607.0	9,372.5	234.43	40.981	
13,976.3	6,865.0	6,700.0	6,698.2	244.3	1.9	-73.01	-24.3	108.5	9,683.2	9,446.7	236.46	40.951	
14,000.0	6,865.0	6,700.0	6,698.2	245.0	1.9	-73.01	-24.3	108.5	9,706.8	9,469.7	237.09	40.941	
14,074.8	6,865.0	6,700.0	6,698.2	247.1	1.9	-73.01	-24.3	108.5	9,781.5	9,542.4	239.08	40.913	
14,100.0	6,865.0	6,700.0	6,698.2	247.8	1.9	-73.01	-24.3	108.5	9,806.7	9,566.9	239.75	40.903	
14,173.2	6,865.0	6,700.0	6,698.2	249.8	1.9	-73.01	-24.3	108.5	9,879.8	9,638.1	241.70	40.875	
14,200.0	6,865.0	6,700.0	6,698.2	250.5	1.9	-73.01	-24.3	108.5	9,906.6	9,664.1	242.42	40.865	
14,271.6	6,865.0	6,700.0	6,698.2	252.5	1.9	-73.01	-24.3	108.5	9,978.1	9,733.8	244.33	40.839	

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS 3-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS 3-16-18	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB-EST @ 4664.0usft (Original Well E Coordinates are relative to: VT-LDS 3-16-18
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 Grid Convergence at Surface is: 0.54°