EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)
SW NW SEC. 15 T5N R65W 6th P.M.
VT-LDS C4-16-18

ORIGINAL WELLBORE
PROPOSAL #2

Anticollision Report

10 March, 2016

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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	20,473.7	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	200.0	158.0	2,652.7	2,650.0	975.406	CC
ABDN VERT LORENZ FARM INC #1 - Wellbore #1 - Des	393.7	351.6	2,655.0	2,647.7	366.240	ES
ABDN VERT LORENZ FARM INC #1 - Wellbore #1 - Des	5,100.0	4,600.0	3,783.0	3,663.3	31.612	SF
CARLSON A-15-16HN - Wellbore #1 - Design #1	7,492.7	14,418.6	2,003.8	1,724.3	7.169	CC
CARLSON A-15-16HN - Wellbore #1 - Design #1	7,550.0	14,451.8	2,004.6	1,723.5	7.131	ES
CARLSON A-15-16HN - Wellbore #1 - Design #1	8,400.0	14,862.7	2,083.5	1,771.9	6.686	SF
CARLSON B-15-16HC - Wellbore #1 - Design #1	7,565.9	14,503.9	1,843.8	1,562.5	6.555	CC
CARLSON B-15-16HC - Wellbore #1 - Design #1	7,650.0	14,562.4	1,845.4	1,561.2	6.492	ES
CARLSON B-15-16HC - Wellbore #1 - Design #1	8,366.1	14,905.1	1,910.9	1,599.8	6.142	SF
CARLSON C-15-16HN - Wellbore #1 - Design #1	7,507.2	14,359.7	1,674.5	1,395.0	5.991	CC
CARLSON C-15-16HN - Wellbore #1 - Design #1	7,578.7	14,403.4	1,675.9	1,394.2	5.949	ES
CARLSON C-15-16HN - Wellbore #1 - Design #1	8,300.0	14,796.3	1,744.2	1,435.9	5.657	SF
CARLSON D-15-16HN - Wellbore #1 - Design #1	7,523.7	14,350.3	1,345.0	1,065.4	4.809	CC
CARLSON D-15-16HN - Wellbore #1 - Design #1	7,578.7	14,384.5	1,346.0	1,064.5	4.781	ES
CARLSON D-15-16HN - Wellbore #1 - Design #1	8,169.3	14,777.6	1,403.2	1,099.1	4.614	SF
CARLSON E-15-16HC - Wellbore #1 - Design #1	7,608.8	14,475.7	1,185.8	903.6	4.202	CC
CARLSON E-15-16HC - Wellbore #1 - Design #1	7,700.0	14,544.1	1,188.2	902.1	4.153	ES
CARLSON E-15-16HC - Wellbore #1 - Design #1	8,047.0	14,848.6	1,216.4	914.4	4.028	SF
CARLSON F-15-16HN - Wellbore #1 - Design #1	7,539.4	14,351.5	1,065.4	785.5	3.807	CC
CARLSON F-15-16HN - Wellbore #1 - Design #1	7,600.0	14,390.7	1,066.7	784.6	3.781	ES
CARLSON F-15-16HN - Wellbore #1 - Design #1	8,047.0	14,769.7	1,110.1	810.6	3.707	SF
CARLSON G-15-16HN - Wellbore #1 - Design #1	7,567.3	14,386.5	646.2	365.8	2.304	CC
CARLSON G-15-16HN - Wellbore #1 - Design #1	7,600.0	14,408.3	646.8	364.8	2.294	ES
CARLSON G-15-16HN - Wellbore #1 - Design #1	7,677.1	14,464.8	651.9	366.8	2.287	SF
CARLSON H-15-16HC - Wellbore #1 - Design #1	7,675.5	14,559.2	488.3	204.6	1.721	CC
CARLSON H-15-16HC - Wellbore #1 - Design #1	7,750.0	14,619.9	490.8	202.8	1.704	ES
CARLSON H-15-16HC - Wellbore #1 - Design #1	7,775.6	14,641.9	492.6	203.3	1.703	SF
CARLSON I-15-16HN - Wellbore #1 - Design #1	7,599.0	14,455.7	267.2	-14.1	0.950	Level 1, CC
CARLSON I-15-16HN - Wellbore #1 - Design #1	7,600.0	14,456.5	267.2	-14.2	0.950	Level 1, SF
CARLSON I-15-16HN - Wellbore #1 - Design #1	7,650.0	14,492.3	269.8	-14.3	0.950	Level 1, ES
CARLSON J-15-16HN - Wellbore #1 - Design #1	7,635.4	14,546.4	61.8	-220.6	0.219	Level 1, CC, ES, SF
CARLSON K-15-16HC - Wellbore #1 - Design #1	7,800.0	14,792.8	216.5	-72.8	0.748	Level 1, ES
CARLSON K-15-16HC - Wellbore #1 - Design #1	7,850.0	14,838.3	215.6	-72.8	0.748	Level 1, SF
CARLSON K-15-16HC - Wellbore #1 - Design #1	8,043.9	15,013.6	212.3	-71.0	0.749	Level 1, CC
CARLSON L-15-16HN - Wellbore #1 - Design #1	7,690.4	14,663.7	390.5	106.4	1.375	Level 3, CC, ES, SF
EXIST DD BMC #B8 - Wellbore #1 - Wellbore #1	12,265.5	7,255.9	2,574.3	2,360.4	12.036	CC
EXIST DD BMC #B8 - Wellbore #1 - Wellbore #1	12,303.1	7,255.7	2,574.6	2,359.6	11.979	ES

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 C4-16-18	**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 BMC #B8 - Wellbore #1 - Wellbore #1	13,100.0	7,251.4	2,706.2	2,469.3	11.424	SF
EXIST DD BUS BARN #A5 - Wellbore #1 - Wellbore #1	9,668.4	7,416.6	2,461.2	2,311.4	16.430	CC
EXIST DD BUS BARN #A5 - Wellbore #1 - Wellbore #1	9,744.1	7,415.5	2,462.4	2,310.6	16.221	ES
EXIST DD BUS BARN #A5 - Wellbore #1 - Wellbore #1	10,800.0	7,400.8	2,708.9	2,528.7	15.034	SF
EXIST DD CDOT 2 #D7 - Wellbore #1 - Wellbore #1	12,991.0	7,356.3	3,081.9	2,842.0	12.847	CC
EXIST DD CDOT 2 #D7 - Wellbore #1 - Wellbore #1	13,090.5	7,356.3	3,083.5	2,840.9	12.708	ES
EXIST DD CDOT 2 #D7 - Wellbore #1 - Wellbore #1	14,100.0	7,355.7	3,275.4	3,004.8	12.104	SF
EXIST DD CDOT 3 # D2 - Wellbore #1 - Wellbore #1	11,588.2	7,080.7	3,088.9	2,903.5	16.662	CC
EXIST DD CDOT 3 # D2 - Wellbore #1 - Wellbore #1	11,700.0	7,080.2	3,090.9	2,902.4	16.403	ES
EXIST DD CDOT 3 # D2 - Wellbore #1 - Wellbore #1	13,000.0	7,074.8	3,396.2	3,172.0	15.148	SF
EXIST DD CLARK #A1 - Wellbore #1 - Wellbore #1	10,268.7	7,950.0	1,556.6	1,398.8	9.869	CC
EXIST DD CLARK #A1 - Wellbore #1 - Wellbore #1	10,300.0	7,950.0	1,556.9	1,398.3	9.818	ES
EXIST DD CLARK #A1 - Wellbore #1 - Wellbore #1	10,700.0	7,950.0	1,615.2	1,445.9	9.539	SF
EXIST DD CLASSIC LANES #C9 - Wellbore #1 - Wellbo	13,596.0	7,848.0	1,146.4	873.6	4.202	CC
EXIST DD CLASSIC LANES #C9 - Wellbore #1 - Wellbo	13,600.0	7,848.2	1,146.4	873.4	4.200	ES
EXIST DD CLASSIC LANES #C9 - Wellbore #1 - Wellbo	13,700.0	7,851.0	1,151.1	875.4	4.175	SF
EXIST DD COUNTRYSIDE CENTER C3 - Wellbore #1 -	10,448.6	7,848.4	463.5	294.6	2.744	CC, ES
EXIST DD COUNTRYSIDE CENTER C3 - Wellbore #1 -	10,500.0	7,850.5	466.3	296.0	2.739	SF
EXIST DD DELTA PARK #A2 - Wellbore #1 - Wellbore #	9,629.7	7,802.7	1,144.5	993.9	7.600	CC
EXIST DD DELTA PARK #A2 - Wellbore #1 - Wellbore #	9,645.6	7,802.0	1,144.6	993.6	7.579	ES
EXIST DD DELTA PARK #A2 - Wellbore #1 - Wellbore #	9,842.5	7,782.1	1,163.9	1,007.5	7.442	SF
EXIST DD DISTRICT SIX #C6 - Wellbore #1 - Wellbore #	12,386.9	8,138.3	122.4	-101.3	0.547	Level 1, CC, ES, SF
EXIST DD DRIFTWOOD #D1 - Wellbore #1 - Wellbore #	12,837.2	7,416.8	1,870.5	1,634.0	7.908	CC
EXIST DD DRIFTWOOD #D1 - Wellbore #1 - Wellbore #	12,893.7	7,413.5	1,871.3	1,633.3	7.860	ES
EXIST DD DRIFTWOOD #D1 - Wellbore #1 - Wellbore #	13,200.0	7,398.0	1,905.2	1,658.8	7.731	SF
EXIST DD EHRLICH MOTORS #D8 - Wellbore #1 - Well	14,218.1	7,736.7	3,100.5	2,802.5	10.405	CC
EXIST DD EHRLICH MOTORS #D8 - Wellbore #1 - Well	14,300.0	7,754.0	3,101.6	2,801.3	10.329	ES
EXIST DD EHRLICH MOTORS #D8 - Wellbore #1 - Well	15,157.4	7,840.0	3,237.3	2,913.3	9.991	SF
EXIST DD GARDEN CITY #D5 - Wellbore #1 - Wellbore	13,669.8	7,699.0	2,406.9	2,135.2	8.858	CC
EXIST DD GARDEN CITY #D5 - Wellbore #1 - Wellbore	13,700.0	7,699.0	2,407.1	2,134.6	8.832	ES
EXIST DD GARDEN CITY #D5 - Wellbore #1 - Wellbore	14,271.6	7,699.0	2,481.0	2,192.6	8.604	SF
EXIST DD GREELEY IND SOUTH #B9 - Wellbore #1 - W	12,359.7	7,651.1	1,264.3	1,043.8	5.735	CC
EXIST DD GREELEY IND SOUTH #B9 - Wellbore #1 - W	12,400.0	7,654.7	1,264.9	1,043.4	5.710	ES
EXIST DD GREELEY IND SOUTH #B9 - Wellbore #1 - W	12,598.4	7,672.4	1,286.4	1,059.7	5.674	SF
EXIST DD HWY 34-1 #A-7 - Wellbore #1 - Wellbore #1	10,248.1	7,120.4	3,180.5	3,025.0	20.445	CC
EXIST DD HWY 34-1 #A-7 - Wellbore #1 - Wellbore #1	10,334.6	7,120.4	3,181.7	3,023.8	20.151	ES
EXIST DD HWY 34-1 #A-7 - Wellbore #1 - Wellbore #1	12,007.8	7,120.3	3,634.9	3,431.4	17.864	SF
EXIST DD HWY 34-2 #A-8 - Wellbore #1 - Wellbore #1	9,025.2	7,473.4	3,166.0	3,020.5	21.760	CC
EXIST DD HWY 34-2 #A-8 - Wellbore #1 - Wellbore #1	9,100.0	7,472.6	3,166.8	3,019.4	21.479	ES
EXIST DD HWY 34-2 #A-8 - Wellbore #1 - Wellbore #1	10,900.0	7,455.5	3,679.4	3,483.8	18.818	SF
EXIST DD HWY 85-1 #B-12 - Wellbore #1 - Wellbore #1	10,881.6	7,153.9	2,503.4	2,335.9	14.941	CC
EXIST DD HWY 85-1 #B-12 - Wellbore #1 - Wellbore #1	10,925.2	7,153.7	2,503.8	2,335.1	14.838	ES
EXIST DD HWY 85-1 #B-12 - Wellbore #1 - Wellbore #1	11,909.4	7,150.3	2,706.2	2,510.6	13.834	SF
EXIST DD HWY 85-2 #B11 - Wellbore #1 - Wellbore #1	11,112.2	7,698.8	1,125.0	949.1	6.398	CC
EXIST DD HWY 85-2 #B11 - Wellbore #1 - Wellbore #1	11,122.0	7,698.8	1,125.0	948.9	6.389	ES
EXIST DD HWY 85-2 #B11 - Wellbore #1 - Wellbore #1	11,300.0	7,698.9	1,140.5	959.7	6.308	SF
EXIST DD HWY 85-3 #C4 - Wellbore #1 - Wellbore #1	10,955.8	7,994.1	72.7	-108.2	0.402	Level 1, CC, ES, SF
EXIST DD KUETTEL #11-15 - Wellbore #1 - Wellbore #1	3,455.4	4,109.8	2,314.5	2,285.1	78.760	CC
EXIST DD KUETTEL #11-15 - Wellbore #1 - Wellbore #1	3,500.0	4,128.2	2,314.8	2,285.1	77.845	ES
EXIST DD KUETTEL #11-15 - Wellbore #1 - Wellbore #1	14,400.0	7,144.3	9,979.8	9,713.9	37.527	SF
EXIST DD KUETTEL #21-15 - Wellbore #1 - Wellbore #1	0.0	0.0	2,421.0			
EXIST DD KUETTEL #21-15 - Wellbore #1 - Wellbore #1	200.0	188.2	2,421.2	2,420.7	4,761.151	ES
EXIST DD KUETTEL #21-15 - Wellbore #1 - Wellbore #1	12,900.0	7,312.0	9,952.1	9,720.7	43.010	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	2,159.6	2,832.6	2,285.1	2,265.3	115.069	CC
EXIST DD KUETTEL #CNW-15 - Wellbore #1 - Wellbore	2,200.0	2,870.0	2,285.4	2,265.0	112.369	ES
EXIST DD KUETTEL #CNW-15 - Wellbore #1 - Wellbore	13,681.1	7,219.3	9,988.8	9,742.7	40.581	SF
EXIST DD PARKVIEW AOUTH #A3 - Wellbore #1 - Well	8,482.6	8,140.0	1,002.0	860.7	7.091	CC
EXIST DD PARKVIEW AOUTH #A3 - Wellbore #1 - Well	8,500.0	8,140.0	1,002.2	860.4	7.070	ES
EXIST DD PARKVIEW AOUTH #A3 - Wellbore #1 - Well	8,661.4	8,112.7	1,017.5	871.4	6.965	SF
EXIST DD SAM PAK #A6 - Wellbore #1 - Wellbore #1	8,252.0	7,882.0	2,388.2	2,247.5	16.978	CC
EXIST DD SAM PAK #A6 - Wellbore #1 - Wellbore #1	8,300.0	7,882.0	2,388.7	2,246.8	16.839	ES
EXIST DD SAM PAK #A6 - Wellbore #1 - Wellbore #1	9,300.0	7,707.7	2,602.0	2,435.2	15.593	SF
EXIST DD SMITH 5 SPOT #A4 - Wellbore #1 - Wellbore	9,083.3	7,726.3	1,918.7	1,774.1	13.262	CC
EXIST DD SMITH 5 SPOT #A4 - Wellbore #1 - Wellbore	9,153.5	7,716.4	1,920.0	1,773.5	13.104	ES
EXIST DD SMITH 5 SPOT #A4 - Wellbore #1 - Wellbore	9,744.1	7,647.9	2,027.4	1,865.4	12.508	SF
EXIST DD STATE #16-6B - Wellbore #1 - Wellbore #1	8,314.8	7,321.0	124.0	19.5	1.186	Level 2, CC, ES, SF
EXIST DD UNION PACIFIC #C5 - Wellbore #1 - Wellbor	11,689.0	7,773.0	502.6	305.2	2.546	CC
EXIST DD UNION PACIFIC #C5 - Wellbore #1 - Wellbor	11,700.0	7,773.0	502.7	305.0	2.543	ES
EXIST DD UNION PACIFIC #C5 - Wellbore #1 - Wellbor	11,712.6	7,773.0	503.1	305.1	2.540	SF
EXIST DD UNIVERSITY 5 SPOT #D4 - Wellbore #1 - W	14,247.6	7,957.4	1,847.1	1,543.3	6.080	CC
EXIST DD UNIVERSITY 5 SPOT #D4 - Wellbore #1 - W	14,300.0	7,958.8	1,847.9	1,542.6	6.053	ES
EXIST DD UNIVERSITY 5 SPOT #D4 - Wellbore #1 - W	14,566.9	7,965.7	1,874.5	1,561.9	5.995	SF
EXIST DD UNIVERSITY SQUARE #D6 - Wellbore #1 - V	15,047.1	8,199.0	2,475.0	2,133.5	7.248	CC
EXIST DD UNIVERSITY SQUARE #D6 - Wellbore #1 - V	15,100.0	8,199.0	2,475.6	2,132.6	7.219	ES
EXIST DD UNIVERSITY SQUARE #D6 - Wellbore #1 - V	15,551.1	8,199.0	2,525.8	2,170.3	7.105	SF
EXIST DD VOLK #C7 - Wellbore #1 - Wellbore #1	12,943.5	7,931.1	542.6	298.1	2.219	CC, ES
EXIST DD VOLK #C7 - Wellbore #1 - Wellbore #1	12,992.1	7,931.1	544.7	298.9	2.216	SF
EXIST DD WHEELER #D3 - Wellbore #1 - Wellbore #1	14,868.5	8,295.7	1,264.0	928.1	3.762	CC
EXIST DD WHEELER #D3 - Wellbore #1 - Wellbore #1	14,900.0	8,296.5	1,264.4	927.6	3.754	ES
EXIST DD WHEELER #D3 - Wellbore #1 - Wellbore #1	15,000.0	8,299.0	1,270.8	931.2	3.742	SF
EXIST VERT EISENMAN #22-15 - Wellbore #1 - Wellbor	221.9	216.5	1,700.4	1,699.8	2,879.175	CC, ES
EXIST VERT EISENMAN #22-15 - Wellbore #1 - Wellbor	8,000.0	6,600.0	5,110.0	5,034.9	68.031	SF
EXIST VERT FAY #1 - Wellbore #1 - Design #1	6,303.9	5,736.4	119.4	-49.6	0.707	Level 1, CC, ES, SF
EXIST VERT HARRINGTON #1 - Wellbore #1 - Design #	625.6	586.1	1,243.1	1,230.5	98.542	CC
EXIST VERT HARRINGTON #1 - Wellbore #1 - Design #	1,082.7	1,030.8	1,247.4	1,223.8	52.698	ES
EXIST VERT HARRINGTON #1 - Wellbore #1 - Design #	8,047.0	7,018.7	3,662.4	3,444.7	16.825	SF
EXIST VERT SANDUSKY #1 - Wellbore #1 - Wellbore #1	98.4	80.7	129.0	128.9	925.264	CC, ES
EXIST VERT SANDUSKY #1 - Wellbore #1 - Wellbore #1	14,370.0	6,700.0	9,998.5	9,818.9	55.678	SF
VETTING 12 - ORIGINAL WELLBORE - PROPOSAL #2	98.6	99.6	102.6	102.4	546.136	CC
VETTING 12 - ORIGINAL WELLBORE - PROPOSAL #2	13,300.0	15,042.0	521.1	97.0	1.229	Level 2, ES, SF
VETTING 13 - ORIGINAL WELLBORE - PROPOSAL #2	197.5	198.5	99.3	98.7	157.616	CC
VETTING 13 - ORIGINAL WELLBORE - PROPOSAL #2	200.0	200.0	99.4	98.7	155.366	ES
VETTING 13 - ORIGINAL WELLBORE - PROPOSAL #2	13,385.8	15,280.6	668.1	210.2	1.459	Level 3, SF
VETTING 14 - ORIGINAL WELLBORE - PROPOSAL #2	200.0	201.0	101.4	100.8	158.024	CC, ES
VETTING 14 - ORIGINAL WELLBORE - PROPOSAL #2	13,385.8	15,100.4	854.3	407.3	1.911	SF
VETTING 15 - ORIGINAL WELLBORE - PROPOSAL #2	200.0	201.0	109.8	109.1	171.071	CC, ES
VETTING 15 - ORIGINAL WELLBORE - PROPOSAL #2	13,400.0	15,171.7	1,179.9	725.8	2.598	SF
VETTING 16 - ORIGINAL WELLBORE - PROPOSAL #2	200.0	201.0	123.6	123.0	192.609	CC, ES
VETTING 16 - ORIGINAL WELLBORE - PROPOSAL #2	13,400.0	15,409.8	1,327.2	867.1	2.884	SF
VETTING 17 - ORIGINAL WELLBORE - PROPOSAL #2	200.0	201.0	139.4	138.8	217.295	CC, ES
VETTING 17 - ORIGINAL WELLBORE - PROPOSAL #2	13,484.2	15,284.8	1,510.8	1,051.4	3.288	SF
VETTING 18 - ORIGINAL WELLBORE - PROPOSAL #2	200.0	201.0	155.4	154.8	242.204	CC, ES
VETTING 18 - ORIGINAL WELLBORE - PROPOSAL #2	13,500.0	15,420.3	1,840.2	1,379.0	3.991	SF
VETTING 19 - ORIGINAL WELLBORE - PROPOSAL #2	200.0	201.0	175.4	174.7	273.746	CC, ES
VETTING 19 - ORIGINAL WELLBORE - PROPOSAL #2	13,582.6	15,682.9	2,002.6	1,536.8	4.299	SF
VETTING 20 - ORIGINAL WELLBORE - PROPOSAL #2	200.0	201.0	194.0	193.3	302.280	CC, ES

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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 20 - ORIGINAL WELLBORE - PROPOSAL #2	13,582.6	15,616.6	2,174.1	1,709.3	4.677	SF
VETTING 21 - ORIGINAL WELLBORE - PROPOSAL #2	200.0	201.0	216.0	215.3	336.569	CC, ES
VETTING 21 - ORIGINAL WELLBORE - PROPOSAL #2	13,681.1	15,843.4	2,515.5	2,047.4	5.373	SF
VETTING 22 - ORIGINAL WELLBORE - PROPOSAL #2	200.0	201.0	236.0	235.3	367.736	CC, ES
VETTING 22 - ORIGINAL WELLBORE - PROPOSAL #2	13,700.0	16,129.6	2,673.0	2,203.1	5.689	SF
VETTING 23 - ORIGINAL WELLBORE - PROPOSAL #2	200.0	201.0	259.1	258.5	403.772	CC, ES
VETTING 23 - ORIGINAL WELLBORE - PROPOSAL #2	13,779.5	16,069.4	2,854.8	2,383.0	6.051	SF
VETTING 24 - ORIGINAL WELLBORE - PROPOSAL #2	200.0	201.0	280.7	280.1	437.447	CC, ES
VETTING 24 - ORIGINAL WELLBORE - PROPOSAL #2	13,900.0	16,281.8	3,202.1	2,726.6	6.734	SF
VT-ALLES 1-16-18 - ORIGINAL WELLBORE - PROPOS	100.0	100.0	25.3	25.1	133.366	CC
VT-ALLES 1-16-18 - ORIGINAL WELLBORE - PROPOS	20,472.4	20,226.0	257.9	-307.4	0.456	Level 1, SF
VT-ALLES 1-16-18 - ORIGINAL WELLBORE - PROPOS	20,473.7	20,226.0	257.9	-307.5	0.456	Level 1, ES
VT-GLENMERE 3-16-18 - ORIGINAL WELLBORE - PRC	200.0	200.0	191.1	190.5	298.846	CC, ES
VT-GLENMERE 3-16-18 - ORIGINAL WELLBORE - PRC	20,473.7	20,685.7	1,846.5	1,004.4	2.193	SF
VT-GLENMERE C1-16-18 - ORIGINAL WELLBORE - PF	200.0	200.0	216.4	215.8	338.455	CC, ES
VT-GLENMERE C1-16-18 - ORIGINAL WELLBORE - PF	20,473.7	20,858.8	2,000.0	1,153.5	2.363	SF
VT-LDS 1-16-18 - ORIGINAL WELLBORE - PROPOSAL	200.0	201.0	165.8	165.1	258.330	CC, ES
VT-LDS 1-16-18 - ORIGINAL WELLBORE - PROPOSAL	20,473.7	20,535.3	1,517.2	678.6	1.809	SF
VT-LDS 2-16-18 - ORIGINAL WELLBORE - PROPOSAL	200.0	201.0	117.9	117.2	183.699	CC, ES
VT-LDS 2-16-18 - ORIGINAL WELLBORE - PROPOSAL	20,473.7	20,459.0	1,192.9	360.4	1.433	Level 3, SF
VT-LDS 3-16-18 - ORIGINAL WELLBORE - PROPOSAL	200.0	201.0	95.3	94.7	148.546	CC
VT-LDS 3-16-18 - ORIGINAL WELLBORE - PROPOSAL	20,473.7	20,396.7	867.6	46.0	1.056	Level 2, ES, SF
VT-LDS 4-16-18 - ORIGINAL WELLBORE - PROPOSAL	200.0	200.0	47.9	47.3	74.915	CC
VT-LDS 4-16-18 - ORIGINAL WELLBORE - PROPOSAL	20,473.7	20,284.5	532.8	-251.7	0.679	Level 1, ES, SF
VT-LDS 5-16-18 - ORIGINAL WELLBORE - PROPOSAL	200.0	201.0	22.6	21.9	35.183	CC
VT-LDS 5-16-18 - ORIGINAL WELLBORE - PROPOSAL	20,473.7	20,297.7	255.5	-306.1	0.455	Level 1, ES, SF
VT-LDS C2-16-18 - ORIGINAL WELLBORE - PROPOSA	200.0	200.0	143.2	142.6	223.948	CC, ES
VT-LDS C2-16-18 - ORIGINAL WELLBORE - PROPOSA	20,473.7	20,645.2	1,340.6	497.5	1.590	SF
VT-LDS C3-16-18 - ORIGINAL WELLBORE - PROPOSA	200.0	201.0	70.5	69.8	109.834	CC
VT-LDS C3-16-18 - ORIGINAL WELLBORE - PROPOSA	20,473.7	20,506.6	655.8	-183.9	0.781	Level 1, 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	154.55	-2,395.3	1,139.8	2,653.0				
98.4	98.4	56.4	56.4	0.1	0.6	154.55	-2,395.3	1,139.8	2,652.7	2,652.0	0.69	3,860.021	
100.0	100.0	58.0	58.0	0.1	0.6	154.55	-2,395.3	1,139.8	2,652.7	2,652.0	0.71	3,759.709	
196.8	196.8	154.8	154.8	0.3	2.3	154.55	-2,395.3	1,139.8	2,652.7	2,650.0	2.64	1,005.069	
200.0	200.0	158.0	158.0	0.3	2.4	154.55	-2,395.3	1,139.8	2,652.7	2,650.0	2.72	975.406	CC
295.3	295.3	253.3	253.3	0.5	4.5	-110.51	-2,395.3	1,139.8	2,653.2	2,648.2	5.01	529.906	
300.0	300.0	258.0	258.0	0.5	4.6	-110.51	-2,395.3	1,139.8	2,653.3	2,648.2	5.12	518.700	
393.7	393.6	351.6	351.6	0.7	6.5	-110.58	-2,395.3	1,139.8	2,655.0	2,647.7	7.25	366.240	ES
400.0	399.8	357.8	357.8	0.8	6.6	-110.58	-2,395.3	1,139.8	2,655.1	2,647.7	7.39	359.215	
492.1	491.6	449.6	449.6	1.0	8.5	-110.69	-2,395.3	1,139.8	2,657.9	2,648.4	9.49	280.184	
500.0	499.5	457.5	457.5	1.0	8.7	-110.70	-2,395.3	1,139.8	2,658.2	2,648.5	9.66	275.046	
590.5	589.3	547.3	547.3	1.3	10.5	-110.84	-2,395.3	1,139.8	2,662.1	2,650.4	11.74	226.807	
600.0	598.7	556.7	556.7	1.3	10.7	-110.86	-2,395.3	1,139.8	2,662.6	2,650.6	11.95	222.758	
689.0	686.6	644.6	644.6	1.6	12.5	-111.04	-2,395.3	1,139.8	2,667.5	2,653.5	14.01	190.392	

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 C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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 J-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	78.62	888.2	4,413.5	4,502.0				
98.4	98.4	78.9	78.9	0.1	0.1	78.62	888.2	4,413.5	4,502.0	4,501.8	0.14	N/A	
100.0	100.0	80.5	80.5	0.1	0.1	78.62	888.2	4,413.5	4,502.0	4,501.8	0.15	N/A	
196.8	196.8	177.3	177.3	0.3	0.2	78.62	888.2	4,413.5	4,502.0	4,501.4	0.55	8,177.010	
200.0	200.0	180.5	180.5	0.3	0.2	78.62	888.2	4,413.5	4,502.0	4,501.4	0.56	7,971.975	
295.3	295.3	275.8	275.8	0.5	0.5	173.58	888.2	4,413.5	4,503.5	4,502.6	0.99	4,550.564	
300.0	300.0	280.5	280.5	0.5	0.5	173.58	888.2	4,413.5	4,503.7	4,502.7	1.01	4,456.445	
393.7	393.6	374.1	374.1	0.7	0.7	173.58	888.2	4,413.5	4,508.5	4,507.0	1.43	3,150.032	
400.0	399.8	380.3	380.3	0.8	0.7	173.58	888.2	4,413.5	4,508.9	4,507.4	1.46	3,090.222	
492.1	491.6	472.1	472.1	1.0	0.9	173.57	888.2	4,413.5	4,516.8	4,514.9	1.88	2,404.552	
500.0	499.5	480.0	480.0	1.0	0.9	173.57	888.2	4,413.5	4,517.6	4,515.7	1.91	2,360.461	
590.5	589.3	569.8	569.8	1.3	1.1	173.56	888.2	4,413.5	4,528.4	4,526.1	2.33	1,944.117	
600.0	598.7	579.2	579.2	1.3	1.1	173.56	888.2	4,413.5	4,529.7	4,527.3	2.37	1,909.525	
689.0	686.6	662.1	662.1	1.6	1.3	173.55	887.7	4,413.6	4,543.4	4,540.6	2.76	1,648.248	
700.0	697.5	672.1	672.1	1.6	1.3	173.55	887.5	4,413.7	4,545.3	4,542.5	2.80	1,621.826	
787.4	783.3	751.3	751.3	2.0	1.5	173.57	885.3	4,414.3	4,561.8	4,558.7	3.17	1,439.632	
800.0	795.6	762.7	762.6	2.0	1.5	173.57	884.9	4,414.4	4,564.4	4,561.2	3.22	1,417.391	
885.8	879.3	839.6	839.4	2.4	1.6	173.60	881.0	4,415.5	4,583.7	4,580.2	3.59	1,278.060	
900.0	893.1	852.2	852.0	2.5	1.7	173.61	880.2	4,415.7	4,587.2	4,583.5	3.65	1,257.770	
984.2	974.5	926.6	926.2	2.9	1.8	173.66	874.7	4,417.2	4,609.1	4,605.1	4.02	1,146.080	
1,000.0	989.6	940.4	940.0	3.0	1.9	173.67	873.6	4,417.5	4,613.5	4,609.4	4.09	1,127.400	
1,082.7	1,068.8	1,012.3	1,011.5	3.5	2.0	173.73	866.8	4,419.3	4,637.8	4,633.4	4.47	1,036.411	
1,100.0	1,085.3	1,027.2	1,026.3	3.6	2.1	173.75	865.2	4,419.8	4,643.2	4,638.7	4.56	1,019.077	
1,181.1	1,162.0	1,100.0	1,098.6	4.1	2.2	173.83	856.7	4,422.1	4,670.0	4,665.0	4.96	942.204	
1,200.0	1,179.8	1,112.3	1,110.7	4.2	2.3	173.85	855.1	4,422.5	4,676.5	4,671.5	5.04	927.803	
1,279.5	1,254.2	1,178.6	1,176.4	4.8	2.5	173.94	846.0	4,425.0	4,705.5	4,700.0	5.45	863.843	
1,300.0	1,273.2	1,200.0	1,197.5	5.0	2.5	173.97	842.8	4,425.8	4,713.3	4,707.7	5.56	848.187	
1,377.9	1,345.0	1,258.8	1,255.6	5.6	2.7	174.06	833.5	4,428.4	4,744.3	4,738.4	5.95	797.603	
1,400.0	1,365.2	1,276.5	1,273.0	5.8	2.8	174.09	830.5	4,429.2	4,753.5	4,747.4	6.07	782.545	
1,476.4	1,434.6	1,337.0	1,332.4	6.4	3.0	174.20	819.8	4,432.1	4,786.4	4,780.0	6.49	737.485	
1,500.0	1,455.8	1,355.4	1,350.5	6.7	3.0	174.23	816.4	4,433.0	4,797.0	4,790.4	6.62	724.538	
1,550.0	1,500.6	1,393.9	1,388.2	7.1	3.2	174.30	808.9	4,435.1	4,820.1	4,813.2	6.90	698.942	
1,574.8	1,522.7	1,412.9	1,406.8	7.4	3.3	174.37	805.1	4,436.1	4,831.7	4,824.7	7.05	685.474	
1,600.0	1,545.1	1,432.1	1,425.5	7.6	3.3	174.43	801.1	4,437.2	4,843.6	4,836.4	7.21	672.108	
1,673.2	1,610.4	1,487.5	1,479.5	8.3	3.6	174.63	789.2	4,440.4	4,878.1	4,870.5	7.67	636.374	
1,700.0	1,634.2	1,507.6	1,499.1	8.6	3.7	174.70	784.7	4,441.7	4,890.8	4,883.0	7.84	624.058	
1,771.6	1,698.1	1,561.1	1,551.0	9.3	3.9	174.90	772.2	4,445.1	4,924.8	4,916.5	8.31	592.742	
1,800.0	1,723.3	1,582.1	1,571.3	9.5	4.0	174.98	767.0	4,446.5	4,938.3	4,929.8	8.50	581.290	
1,870.1	1,785.8	1,638.0	1,625.3	10.2	4.3	175.20	753.1	4,450.3	4,971.7	4,962.7	8.98	553.568	
1,900.0	1,812.4	1,663.1	1,649.5	10.5	4.4	175.30	746.8	4,452.0	4,986.0	4,976.8	9.20	542.043	
1,968.5	1,873.5	1,720.6	1,705.1	11.2	4.7	175.52	732.4	4,455.9	5,018.8	5,009.1	9.70	517.558	
2,000.0	1,901.5	11,967.4	6,878.5	11.5	143.0	-173.17	-314.8	-513.0	5,003.8	4,965.7	38.07	131.439	
2,066.9	1,961.2	11,997.7	6,878.5	12.2	143.8	-173.15	-314.9	-543.3	4,944.1	4,905.6	38.43	128.636	
2,100.0	1,990.6	12,012.6	6,878.5	12.5	144.3	-173.14	-315.0	-558.3	4,914.6	4,876.0	38.62	127.268	
2,165.3	2,048.9	12,042.2	6,878.5	13.2	145.1	-173.12	-315.2	-587.8	4,856.3	4,817.3	38.98	124.598	
2,200.0	2,079.7	12,057.9	6,878.5	13.5	145.5	-173.11	-315.3	-603.5	4,825.4	4,786.3	39.17	123.200	
2,263.8	2,136.6	12,086.7	6,878.5	14.1	146.3	-173.09	-315.5	-632.4	4,768.6	4,729.0	39.52	120.657	
2,300.0	2,168.8	12,103.1	6,878.5	14.5	146.8	-173.08	-315.6	-648.8	4,736.3	4,696.5	39.72	119.230	
2,362.2	2,224.3	12,131.3	6,878.5	15.1	147.6	-173.06	-315.7	-676.9	4,680.8	4,640.7	40.07	116.810	
2,400.0	2,257.9	12,148.4	6,878.5	15.5	148.0	-173.05	-315.8	-694.0	4,647.1	4,606.8	40.28	115.358	
2,460.6	2,312.0	12,175.8	6,878.5	16.1	148.8	-173.03	-316.0	-721.5	4,593.0	4,552.4	40.63	113.057	
2,500.0	2,347.0	12,193.6	6,878.5	16.5	149.3	-173.01	-316.1	-739.3	4,557.9	4,517.1	40.85	111.580	

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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 J-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
2,559.0	2,399.7	12,220.4	6,878.5	17.1	150.0	-172.99	-316.2	-766.0	4,505.3	4,464.1	41.18	109.393	
2,600.0	2,436.1	12,238.9	6,878.5	17.5	150.6	-172.98	-316.4	-784.5	4,468.7	4,427.3	41.42	107.894	
2,657.5	2,487.4	12,264.9	6,878.5	18.0	151.3	-172.96	-316.5	-810.5	4,417.5	4,375.8	41.75	105.816	
2,700.0	2,525.2	12,284.1	6,878.5	18.5	151.8	-172.94	-316.6	-829.8	4,379.6	4,337.6	41.99	104.297	
2,755.9	2,575.1	12,309.4	6,878.5	19.0	152.5	-172.92	-316.8	-855.1	4,329.7	4,287.4	42.31	102.324	
2,800.0	2,614.3	12,329.4	6,878.5	19.5	153.1	-172.90	-316.9	-875.0	4,290.4	4,247.8	42.57	100.786	
2,854.3	2,662.7	12,354.0	6,878.5	20.0	153.8	-172.88	-317.0	-899.6	4,242.0	4,199.1	42.89	98.913	
2,900.0	2,703.4	12,374.6	6,878.5	20.5	154.3	-172.86	-317.1	-920.3	4,201.3	4,158.1	43.15	97.358	
2,952.7	2,750.4	12,398.5	6,878.5	21.0	155.0	-172.84	-317.3	-944.1	4,154.2	4,110.8	43.46	95.582	
3,000.0	2,792.5	12,419.9	6,878.5	21.5	155.6	-172.82	-317.4	-965.5	4,112.1	4,068.3	43.74	94.011	
3,051.2	2,838.1	12,443.1	6,878.5	22.0	156.2	-172.80	-317.5	-988.7	4,066.5	4,022.4	44.04	92.328	
3,100.0	2,881.6	12,465.1	6,878.5	22.5	156.9	-172.77	-317.7	-1,010.8	4,022.9	3,978.6	44.33	90.742	
3,149.6	2,925.8	12,487.6	6,878.5	23.0	157.5	-172.75	-317.8	-1,033.2	3,978.7	3,934.1	44.63	89.149	
3,200.0	2,970.7	12,510.4	6,878.5	23.5	158.1	-172.73	-317.9	-1,056.0	3,933.8	3,888.8	44.93	87.549	
3,248.0	3,013.5	12,532.1	6,878.5	23.9	158.7	-172.70	-318.1	-1,077.8	3,890.9	3,845.7	45.22	86.041	
3,300.0	3,059.8	12,555.6	6,878.5	24.5	159.4	-172.68	-318.2	-1,101.3	3,844.6	3,799.1	45.54	84.429	
3,346.4	3,101.2	12,576.7	6,878.5	24.9	160.0	-172.66	-318.3	-1,122.3	3,803.2	3,757.4	45.82	83.004	
3,400.0	3,148.9	12,600.9	6,878.5	25.5	160.6	-172.63	-318.5	-1,146.5	3,755.4	3,709.3	46.15	81.380	
3,444.9	3,188.9	12,621.2	6,878.5	25.9	161.2	-172.61	-318.6	-1,166.8	3,715.4	3,669.0	46.42	80.034	
3,500.0	3,238.0	12,646.2	6,878.5	26.5	161.9	-172.58	-318.7	-1,191.8	3,666.3	3,619.5	46.76	78.400	
3,543.3	3,276.6	12,665.7	6,878.5	26.9	162.5	-172.55	-318.9	-1,211.4	3,627.7	3,580.6	47.03	77.130	
3,600.0	3,327.2	12,691.4	6,878.5	27.5	163.2	-172.52	-319.0	-1,237.0	3,577.1	3,529.7	47.39	75.486	
3,641.7	3,364.3	12,710.3	6,878.5	27.9	163.7	-172.50	-319.1	-1,255.9	3,539.9	3,492.3	47.65	74.290	
3,700.0	3,416.3	12,736.7	6,878.5	28.5	164.4	-172.46	-319.3	-1,282.3	3,487.9	3,439.9	48.02	72.637	
3,740.1	3,452.0	12,754.8	6,878.5	28.9	164.9	-172.44	-319.4	-1,300.4	3,452.2	3,403.9	48.27	71.511	
3,800.0	3,505.4	12,781.9	6,878.5	29.5	165.7	-172.40	-319.5	-1,327.5	3,398.8	3,350.1	48.66	69.850	
3,838.6	3,539.7	12,799.4	6,878.5	29.9	166.2	-172.38	-319.6	-1,345.0	3,364.4	3,315.5	48.91	68.791	
3,900.0	3,594.5	12,827.2	6,878.5	30.5	167.0	-172.33	-319.8	-1,372.8	3,309.6	3,260.3	49.31	67.123	
3,937.0	3,627.4	12,843.9	6,878.5	30.8	167.4	-172.31	-319.9	-1,389.5	3,276.6	3,227.1	49.55	66.130	
4,000.0	3,683.6	12,872.4	6,878.5	31.5	168.2	-172.27	-320.1	-1,418.0	3,220.5	3,170.5	49.96	64.455	
4,035.4	3,715.1	12,888.4	6,878.5	31.8	168.7	-172.24	-320.2	-1,434.1	3,188.9	3,138.7	50.20	63.524	
4,100.0	3,772.7	12,917.7	6,878.5	32.5	169.5	-172.19	-320.3	-1,463.3	3,131.3	3,080.7	50.63	61.844	
4,133.8	3,802.8	12,933.0	6,878.5	32.8	169.9	-172.17	-320.4	-1,478.6	3,101.1	3,050.3	50.86	60.973	
4,200.0	3,861.8	12,962.9	6,878.5	33.5	170.7	-172.12	-320.6	-1,508.5	3,042.2	2,990.8	51.31	59.288	
4,232.3	3,890.5	12,977.5	6,878.5	33.8	171.1	-172.09	-320.7	-1,523.1	3,013.4	2,961.8	51.53	58.474	
4,300.0	3,950.9	13,008.2	6,878.5	34.5	172.0	-172.04	-320.9	-1,553.8	2,953.0	2,901.0	52.00	56.785	
4,330.7	3,978.2	13,022.1	6,878.5	34.8	172.4	-172.01	-320.9	-1,567.7	2,925.6	2,873.4	52.22	56.027	
4,400.0	4,040.0	13,053.4	6,878.5	35.5	173.3	-171.95	-321.1	-1,599.0	2,863.8	2,811.1	52.71	54.334	
4,429.1	4,065.9	13,066.6	6,878.5	35.8	173.6	-171.92	-321.2	-1,612.2	2,837.9	2,785.0	52.92	53.629	
4,500.0	4,129.1	13,098.7	6,878.5	36.5	174.5	-171.86	-321.4	-1,644.3	2,774.7	2,721.3	53.43	51.933	
4,527.5	4,153.6	13,111.1	6,878.5	36.8	174.9	-171.83	-321.5	-1,656.7	2,750.1	2,696.5	53.63	51.280	
4,600.0	4,218.2	13,143.9	6,878.5	37.5	175.8	-171.76	-321.7	-1,689.5	2,685.5	2,631.4	54.17	49.580	
4,626.0	4,241.3	13,155.7	6,878.5	37.7	176.1	-171.73	-321.7	-1,701.3	2,662.4	2,608.0	54.36	48.977	
4,700.0	4,307.3	13,189.2	6,878.5	38.5	177.0	-171.65	-321.9	-1,734.8	2,596.4	2,541.5	54.92	47.275	
4,724.4	4,329.0	13,200.2	6,878.5	38.7	177.4	-171.63	-322.0	-1,745.8	2,574.6	2,519.5	55.11	46.720	
4,800.0	4,396.4	13,234.4	6,878.5	39.5	178.3	-171.54	-322.2	-1,780.0	2,507.3	2,451.6	55.70	45.016	
4,822.8	4,416.7	13,244.7	6,878.5	39.7	178.6	-171.52	-322.2	-1,790.4	2,486.9	2,431.0	55.88	44.507	
4,900.0	4,485.5	13,279.7	6,878.5	40.5	179.6	-171.42	-322.5	-1,825.3	2,418.1	2,361.6	56.50	42.801	
4,921.2	4,504.4	13,289.3	6,878.5	40.7	179.8	-171.40	-322.5	-1,834.9	2,399.2	2,342.5	56.67	42.336	
5,000.0	4,574.6	13,324.9	6,878.5	41.5	180.8	-171.29	-322.7	-1,870.5	2,329.0	2,271.6	57.32	40.630	
5,019.7	4,592.1	13,333.8	6,878.5	41.7	181.1	-171.27	-322.8	-1,879.4	2,311.4	2,253.9	57.49	40.207	
5,100.0	4,663.7	13,370.2	6,878.5	42.5	182.1	-171.15	-323.0	-1,915.8	2,239.8	2,181.6	58.18	38.500	

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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 J-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
5,118.1	4,679.8	13,378.4	6,878.5	42.7	182.3	-171.13	-323.0	-1,924.0	2,223.7	2,165.4	58.33	38.119	
5,200.0	4,752.8	13,415.4	6,878.5	43.5	183.4	-171.00	-323.3	-1,961.0	2,150.7	2,091.6	59.07	36.412	
5,216.5	4,767.5	13,422.9	6,878.5	43.7	183.6	-170.98	-323.3	-1,968.5	2,136.0	2,076.7	59.22	36.071	
5,300.0	4,841.9	13,460.7	6,878.5	44.5	184.6	-170.84	-323.5	-2,006.3	2,061.6	2,001.6	59.99	34.363	
5,314.9	4,855.2	13,467.4	6,878.5	44.6	184.8	-170.81	-323.6	-2,013.0	2,048.2	1,988.1	60.13	34.061	
5,400.0	4,931.0	13,505.9	6,878.5	45.5	185.9	-170.66	-323.8	-2,051.5	1,972.4	1,911.5	60.96	32.354	
5,413.4	4,942.9	13,512.0	6,878.5	45.6	186.1	-170.63	-323.8	-2,057.6	1,960.5	1,899.4	61.10	32.088	
5,500.0	5,020.1	13,551.2	6,878.5	46.5	187.2	-170.46	-324.0	-2,096.8	1,883.3	1,821.3	61.99	30.382	
5,511.8	5,030.6	13,556.5	6,878.5	46.6	187.3	-170.44	-324.1	-2,102.1	1,872.8	1,810.7	62.11	30.152	
5,600.0	5,109.2	13,596.4	6,878.5	47.5	188.4	-170.25	-324.3	-2,142.0	1,794.2	1,731.1	63.07	28.447	
5,610.2	5,118.3	13,601.1	6,878.5	47.6	188.5	-170.22	-324.3	-2,146.7	1,785.1	1,721.9	63.18	28.252	
5,700.0	5,198.3	13,641.7	6,878.5	48.5	189.7	-170.01	-324.6	-2,187.3	1,705.1	1,640.8	64.22	26.549	
5,708.6	5,206.0	13,645.6	6,878.5	48.6	189.8	-169.99	-324.6	-2,191.2	1,697.4	1,633.0	64.33	26.386	
5,800.0	5,287.4	13,686.9	6,878.5	49.5	190.9	-169.74	-324.8	-2,232.5	1,616.0	1,550.5	65.46	24.686	
5,807.1	5,293.7	13,690.1	6,878.5	49.6	191.0	-169.72	-324.9	-2,235.7	1,609.7	1,544.1	65.55	24.556	
5,900.0	5,376.5	13,732.2	6,878.5	50.5	192.2	-169.45	-325.1	-2,277.8	1,526.9	1,460.1	66.80	22.858	
5,905.5	5,381.4	13,734.7	6,878.5	50.6	192.3	-169.43	-325.1	-2,280.3	1,522.0	1,455.1	66.87	22.759	
6,000.0	5,465.6	13,777.4	6,878.5	51.5	193.5	-169.12	-325.4	-2,323.0	1,437.8	1,369.5	68.25	21.065	
6,003.9	5,469.1	13,779.2	6,878.5	51.6	193.5	-169.10	-325.4	-2,324.8	1,434.3	1,366.0	68.31	20.996	
6,100.0	5,554.7	13,822.7	6,878.5	52.5	194.7	-168.74	-325.6	-2,368.3	1,348.7	1,278.8	69.86	19.307	
6,102.3	5,556.8	13,823.7	6,878.5	52.5	194.8	-168.73	-325.7	-2,369.4	1,346.6	1,276.7	69.89	19.266	
6,200.0	5,643.8	13,867.9	6,878.5	53.5	196.0	-168.32	-325.9	-2,413.5	1,259.6	1,188.0	71.64	17.583	
6,200.8	5,644.5	13,868.3	6,878.5	53.5	196.0	-168.31	-325.9	-2,413.9	1,258.9	1,187.3	71.65	17.570	
6,299.2	5,732.2	13,912.8	6,878.5	54.5	197.3	-167.83	-326.2	-2,458.4	1,171.3	1,097.7	73.63	15.908	
6,300.0	5,732.9	13,913.2	6,878.5	54.5	197.3	-167.83	-326.2	-2,458.8	1,170.6	1,096.9	73.65	15.895	
6,397.6	5,819.9	13,957.4	6,878.5	55.5	198.5	-167.27	-326.4	-2,503.0	1,083.7	1,007.8	75.88	14.281	
6,400.0	5,822.0	13,958.4	6,878.5	55.5	198.5	-167.26	-326.4	-2,504.0	1,081.5	1,005.6	75.94	14.242	
6,496.0	5,907.5	14,001.9	6,878.5	56.5	199.7	-166.61	-326.7	-2,547.5	996.1	917.6	78.49	12.691	
6,500.0	5,911.1	14,003.7	6,878.5	56.5	199.8	-166.58	-326.7	-2,549.3	992.5	913.9	78.60	12.628	
6,594.5	5,995.2	14,046.4	6,878.5	57.5	201.0	-165.83	-327.0	-2,592.0	908.5	826.9	81.56	11.139	
6,600.0	6,000.2	14,048.9	6,878.5	57.5	201.1	-165.78	-327.0	-2,594.5	903.6	821.8	81.75	11.053	
6,692.9	6,082.9	14,091.0	6,878.5	58.5	202.2	-164.88	-327.2	-2,636.6	821.0	735.7	85.25	9.631	
6,700.0	6,089.3	14,094.2	6,878.5	58.5	202.3	-164.81	-327.2	-2,639.8	814.7	729.1	85.54	9.524	
6,791.3	6,170.6	14,135.5	6,878.5	59.5	203.5	-163.72	-327.5	-2,681.1	733.5	643.7	89.78	8.170	
6,800.0	6,178.4	14,139.4	6,878.5	59.5	203.6	-163.60	-327.5	-2,685.0	725.8	635.6	90.23	8.044	
6,889.7	6,258.3	14,180.1	6,878.5	60.4	204.7	-162.25	-327.7	-2,725.7	646.1	550.6	95.51	6.765	
6,900.0	6,267.5	14,184.7	6,878.5	60.5	204.9	-162.08	-327.8	-2,730.3	637.0	540.8	96.19	6.623	
6,988.2	6,346.0	14,224.6	6,878.5	61.4	206.0	-160.34	-328.0	-2,770.2	558.9	455.9	102.97	5.428	
7,000.0	6,356.6	14,229.9	6,878.5	61.5	206.1	-160.07	-328.0	-2,775.5	548.4	444.4	104.02	5.272	
7,086.6	6,433.7	14,269.1	6,878.5	62.4	207.2	-157.77	-328.3	-2,814.7	471.8	358.7	113.06	4.173	
7,100.0	6,445.7	14,275.2	6,878.5	62.6	207.4	-157.35	-328.3	-2,820.8	460.0	345.3	114.71	4.010	
7,185.0	6,521.4	14,313.7	6,878.5	63.4	208.5	-154.13	-328.5	-2,859.3	385.0	257.7	127.32	3.024	
7,200.0	6,534.8	14,320.4	6,878.5	63.6	208.7	-153.45	-328.6	-2,866.0	371.9	241.9	130.00	2.861	
7,283.4	6,609.1	14,358.2	6,878.5	64.4	209.7	-148.66	-328.8	-2,903.8	298.9	150.4	148.50	2.013	
7,300.0	6,623.9	14,365.7	6,878.5	64.6	209.9	-147.47	-328.8	-2,911.3	284.5	131.5	153.05	1.859	
7,381.9	6,696.8	14,402.7	6,878.5	65.4	211.0	-139.73	-329.1	-2,948.3	214.1	32.7	181.40	1.180	Level 2
7,400.0	6,713.0	14,411.0	6,878.5	65.6	211.2	-137.48	-329.1	-2,956.5	198.7	9.5	189.23	1.050	Level 2
7,435.0	6,744.2	14,426.8	6,878.5	65.9	211.6	-132.36	-329.2	-2,972.4	169.5	-36.6	206.14	0.822	Level 1
7,450.0	6,757.4	14,433.7	6,878.5	66.1	211.8	-131.40	-329.2	-2,979.3	157.3	-52.1	209.45	0.751	Level 1
7,480.3	6,783.7	14,448.9	6,878.5	66.4	212.2	-128.49	-329.3	-2,994.5	133.8	-85.0	218.78	0.611	Level 1
7,500.0	6,800.3	14,459.4	6,878.5	66.6	212.5	-125.82	-329.4	-3,005.0	119.4	-107.4	226.74	0.527	Level 1
7,550.0	6,840.7	14,488.7	6,878.5	67.3	213.4	-115.51	-329.6	-3,034.3	87.5	-165.2	252.78	0.346	Level 1

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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 J-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
7,578.7	6,862.7	14,507.1	6,878.5	67.8	213.9	-106.73	-329.7	-3,052.7	73.7	-195.2	268.90	0.274	Level 1
7,600.0	6,878.4	14,521.4	6,878.5	68.1	214.3	-98.75	-329.8	-3,067.0	66.5	-211.9	278.40	0.239	Level 1
7,635.4	6,903.3	14,546.4	6,878.5	68.7	215.0	-83.24	-329.9	-3,092.0	61.8	-220.6	282.34	0.219	Level 1, CC, ES, SF
7,650.0	6,913.2	14,557.2	6,878.5	68.9	215.3	-76.43	-330.0	-3,102.8	62.5	-215.4	277.94	0.225	Level 1
7,677.1	6,930.7	14,577.9	6,878.5	69.5	215.9	-64.19	-330.1	-3,123.5	67.4	-193.6	261.01	0.258	Level 1
7,700.0	6,944.6	14,595.9	6,878.5	69.9	216.4	-54.95	-330.2	-3,141.5	74.1	-167.0	241.06	0.307	Level 1
7,750.0	6,972.6	14,637.2	6,878.5	70.9	217.5	-39.36	-330.4	-3,182.8	92.2	-103.6	195.78	0.471	Level 1
7,775.6	6,985.4	14,659.3	6,878.5	71.4	218.1	-33.63	-330.6	-3,204.9	102.0	-74.4	176.37	0.578	Level 1
7,800.0	6,996.8	14,680.8	6,878.5	72.0	218.7	-29.24	-330.7	-3,226.4	111.0	-49.9	160.91	0.690	Level 1
7,850.0	7,017.1	14,726.3	6,878.5	73.1	220.0	-22.66	-331.0	-3,271.9	128.1	-9.3	137.38	0.932	Level 1
7,874.0	7,025.5	14,748.8	6,878.5	73.7	220.6	-20.32	-331.1	-3,294.4	135.2	6.1	129.11	1.047	Level 2
7,900.0	7,033.4	14,773.4	6,878.5	74.3	221.3	-18.22	-331.2	-3,319.0	142.1	20.4	121.77	1.167	Level 2
7,950.0	7,045.5	14,821.8	6,878.5	75.5	222.7	-15.10	-331.5	-3,367.4	152.6	41.5	111.12	1.374	Level 3
7,972.4	7,049.5	14,843.8	6,878.5	76.0	223.3	-14.00	-331.7	-3,389.4	156.1	48.7	107.41	1.453	Level 3
8,000.0	7,053.3	14,871.0	6,878.5	76.7	224.0	-12.83	-331.8	-3,416.6	159.3	55.8	103.49	1.539	
8,047.0	7,056.7	14,901.4	6,878.5	77.8	224.9	-11.70	-332.0	-3,447.0	162.6	63.3	99.31	1.638	
8,070.8	7,057.5	14,901.4	6,878.5	78.4	224.9	-11.70	-332.0	-3,447.0	167.1	67.6	99.49	1.679	
8,100.0	7,058.4	14,901.4	6,878.5	79.1	224.9	-11.70	-332.0	-3,447.0	176.8	77.0	99.72	1.773	
8,123.5	7,059.1	14,901.4	6,878.5	79.7	224.9	-11.70	-332.0	-3,447.0	187.5	87.6	99.89	1.877	
8,150.0	7,059.8	14,901.4	6,878.5	80.3	224.9	-10.01	-332.0	-3,447.0	202.2	107.4	94.79	2.133	
8,169.3	7,060.0	14,901.4	6,878.5	80.8	224.9	-8.51	-332.0	-3,447.0	214.2	123.5	90.76	2.360	
8,179.6	7,060.0	14,901.4	6,878.5	81.1	224.9	-7.62	-332.0	-3,447.0	221.1	132.5	88.58	2.495	
8,200.0	7,060.0	14,901.4	6,878.5	81.6	224.9	-7.62	-332.0	-3,447.0	235.3	146.5	88.72	2.652	
8,267.7	7,060.0	14,901.4	6,878.5	83.2	224.9	-7.62	-332.0	-3,447.0	287.8	198.6	89.18	3.227	
8,300.0	7,060.0	14,901.4	6,878.5	84.0	224.9	-7.62	-332.0	-3,447.0	314.9	225.5	89.40	3.523	
8,366.1	7,060.0	14,901.4	6,878.5	85.7	224.9	-7.62	-332.0	-3,447.0	373.1	283.2	89.86	4.152	
8,400.0	7,060.0	14,901.4	6,878.5	86.5	224.9	-7.62	-332.0	-3,447.0	403.8	313.7	90.09	4.482	
8,464.5	7,060.0	14,901.4	6,878.5	88.1	224.9	-7.62	-332.0	-3,447.0	463.5	373.0	90.54	5.120	
8,500.0	7,060.0	14,901.4	6,878.5	89.0	224.9	-7.62	-332.0	-3,447.0	496.9	406.1	90.79	5.473	
8,563.0	7,060.0	14,901.4	6,878.5	90.6	224.9	-7.62	-332.0	-3,447.0	556.7	465.5	91.23	6.102	
8,600.0	7,060.0	14,901.4	6,878.5	91.5	224.9	-7.62	-332.0	-3,447.0	592.2	500.7	91.50	6.473	
8,661.4	7,060.0	14,901.4	6,878.5	93.1	224.9	-7.62	-332.0	-3,447.0	651.5	559.5	91.93	7.086	
8,700.0	7,060.0	14,901.4	6,878.5	94.1	224.9	-7.62	-332.0	-3,447.0	688.9	596.7	92.21	7.471	
8,759.8	7,060.0	14,901.4	6,878.5	95.6	224.9	-7.62	-332.0	-3,447.0	747.1	654.5	92.64	8.065	
8,800.0	7,060.0	14,901.4	6,878.5	96.6	224.9	-7.62	-332.0	-3,447.0	786.4	693.5	92.93	8.462	
8,858.2	7,060.0	14,901.4	6,878.5	98.1	224.9	-7.62	-332.0	-3,447.0	843.5	750.1	93.35	9.035	
8,900.0	7,060.0	14,901.4	6,878.5	99.2	224.9	-7.62	-332.0	-3,447.0	884.5	790.8	93.65	9.444	
8,956.7	7,060.0	14,901.4	6,878.5	100.7	224.9	-7.62	-332.0	-3,447.0	940.2	846.1	94.07	9.995	
9,000.0	7,060.0	14,901.4	6,878.5	101.8	224.9	-7.62	-332.0	-3,447.0	982.9	888.5	94.38	10.414	
9,055.1	7,060.0	14,901.4	6,878.5	103.2	224.9	-7.62	-332.0	-3,447.0	1,037.3	942.5	94.79	10.943	
9,100.0	7,060.0	14,901.4	6,878.5	104.4	224.9	-7.62	-332.0	-3,447.0	1,081.6	986.5	95.12	11.371	
9,153.5	7,060.0	14,901.4	6,878.5	105.8	224.9	-7.62	-332.0	-3,447.0	1,134.6	1,039.1	95.52	11.878	
9,200.0	7,060.0	14,901.4	6,878.5	107.0	224.9	-7.62	-332.0	-3,447.0	1,180.6	1,084.7	95.86	12.316	
9,251.9	7,060.0	14,901.4	6,878.5	108.4	224.9	-7.62	-332.0	-3,447.0	1,232.1	1,135.8	96.25	12.801	
9,300.0	7,060.0	14,901.4	6,878.5	109.6	224.9	-7.62	-332.0	-3,447.0	1,279.7	1,183.1	96.60	13.247	
9,350.4	7,060.0	14,901.4	6,878.5	110.9	224.9	-7.62	-332.0	-3,447.0	1,329.7	1,232.7	96.98	13.711	
9,400.0	7,060.0	14,901.4	6,878.5	112.2	224.9	-7.62	-332.0	-3,447.0	1,378.9	1,281.6	97.35	14.165	
9,448.8	7,060.0	14,901.4	6,878.5	113.5	224.9	-7.62	-332.0	-3,447.0	1,427.4	1,329.7	97.72	14.607	
9,500.0	7,060.0	14,901.4	6,878.5	114.9	224.9	-7.62	-332.0	-3,447.0	1,478.3	1,380.2	98.10	15.069	
9,547.2	7,060.0	14,901.4	6,878.5	116.1	224.9	-7.62	-332.0	-3,447.0	1,525.2	1,426.8	98.46	15.491	
9,600.0	7,060.0	14,901.4	6,878.5	117.5	224.9	-7.62	-332.0	-3,447.0	1,577.7	1,478.9	98.86	15.959	
9,645.6	7,060.0	14,901.4	6,878.5	118.7	224.9	-7.62	-332.0	-3,447.0	1,623.1	1,523.9	99.20	16.362	

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 C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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 J-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
9,700.0	7,060.0	14,901.4	6,878.5	120.2	224.9	-7.62	-332.0	-3,447.0	1,677.2	1,577.6	99.62	16.837	
9,744.1	7,060.0	14,901.4	6,878.5	121.3	224.9	-7.62	-332.0	-3,447.0	1,721.1	1,621.1	99.95	17.219	
9,800.0	7,060.0	14,901.4	6,878.5	122.8	224.9	-7.62	-332.0	-3,447.0	1,776.8	1,676.4	100.38	17.701	
9,842.5	7,060.0	14,901.4	6,878.5	123.9	224.9	-7.62	-332.0	-3,447.0	1,819.1	1,718.4	100.70	18.064	
9,900.0	7,060.0	14,901.4	6,878.5	125.5	224.9	-7.62	-332.0	-3,447.0	1,876.4	1,775.2	101.14	18.552	
9,940.9	7,060.0	14,901.4	6,878.5	126.6	224.9	-7.62	-332.0	-3,447.0	1,917.1	1,815.7	101.45	18.897	
10,000.0	7,060.0	14,901.4	6,878.5	128.1	224.9	-7.62	-332.0	-3,447.0	1,976.0	1,874.1	101.90	19.391	
10,039.3	7,060.0	14,901.4	6,878.5	129.2	224.9	-7.62	-332.0	-3,447.0	2,015.2	1,913.0	102.21	19.717	
10,100.0	7,060.0	14,901.4	6,878.5	130.8	224.9	-7.62	-332.0	-3,447.0	2,075.7	1,973.0	102.67	20.216	
10,137.8	7,060.0	14,901.4	6,878.5	131.8	224.9	-7.62	-332.0	-3,447.0	2,113.3	2,010.4	102.96	20.525	
10,200.0	7,060.0	14,901.4	6,878.5	133.5	224.9	-7.62	-332.0	-3,447.0	2,175.4	2,071.9	103.44	21.030	
10,236.2	7,060.0	14,901.4	6,878.5	134.5	224.9	-7.62	-332.0	-3,447.0	2,211.5	2,107.7	103.72	21.321	
10,300.0	7,060.0	14,901.4	6,878.5	136.2	224.9	-7.62	-332.0	-3,447.0	2,275.1	2,170.9	104.21	21.831	
10,334.6	7,060.0	14,901.4	6,878.5	137.1	224.9	-7.62	-332.0	-3,447.0	2,309.6	2,205.2	104.48	22.106	
10,400.0	7,060.0	14,901.4	6,878.5	138.9	224.9	-7.62	-332.0	-3,447.0	2,374.8	2,269.9	104.99	22.620	
10,433.0	7,060.0	14,901.4	6,878.5	139.8	224.9	-7.62	-332.0	-3,447.0	2,407.8	2,302.6	105.24	22.878	
10,500.0	7,060.0	14,901.4	6,878.5	141.6	224.9	-7.62	-332.0	-3,447.0	2,474.6	2,368.9	105.76	23.398	
10,531.5	7,060.0	14,901.4	6,878.5	142.4	224.9	-7.62	-332.0	-3,447.0	2,506.0	2,400.0	106.01	23.640	
10,600.0	7,060.0	14,901.4	6,878.5	144.3	224.9	-7.62	-332.0	-3,447.0	2,574.4	2,467.9	106.54	24.164	
10,629.9	7,060.0	14,901.4	6,878.5	145.1	224.9	-7.62	-332.0	-3,447.0	2,604.3	2,497.5	106.77	24.390	
10,700.0	7,060.0	14,901.4	6,878.5	147.0	224.9	-7.62	-332.0	-3,447.0	2,674.2	2,566.9	107.32	24.918	
10,728.3	7,060.0	14,901.4	6,878.5	147.8	224.9	-7.62	-332.0	-3,447.0	2,702.5	2,595.0	107.54	25.130	
10,800.0	7,060.0	14,901.4	6,878.5	149.7	224.9	-7.62	-332.0	-3,447.0	2,774.0	2,665.9	108.10	25.662	
10,826.7	7,060.0	14,901.4	6,878.5	150.4	224.9	-7.62	-332.0	-3,447.0	2,800.7	2,692.4	108.31	25.859	
10,900.0	7,060.0	14,901.4	6,878.5	152.4	224.9	-7.62	-332.0	-3,447.0	2,873.9	2,765.0	108.88	26.395	
10,925.2	7,060.0	14,901.4	6,878.5	153.1	224.9	-7.62	-332.0	-3,447.0	2,899.0	2,789.9	109.08	26.577	
11,000.0	7,060.0	14,901.4	6,878.5	155.1	224.9	-7.62	-332.0	-3,447.0	2,973.7	2,864.0	109.66	27.117	
11,023.6	7,060.0	14,901.4	6,878.5	155.8	224.9	-7.62	-332.0	-3,447.0	2,997.3	2,887.4	109.85	27.285	
11,100.0	7,060.0	14,901.4	6,878.5	157.8	224.9	-7.62	-332.0	-3,447.0	3,073.6	2,963.1	110.45	27.828	
11,122.0	7,060.0	14,901.4	6,878.5	158.4	224.9	-7.62	-332.0	-3,447.0	3,095.6	2,984.9	110.62	27.984	
11,200.0	7,060.0	14,901.4	6,878.5	160.6	224.9	-7.62	-332.0	-3,447.0	3,173.4	3,062.2	111.23	28.530	
11,220.4	7,060.0	14,901.4	6,878.5	161.1	224.9	-7.62	-332.0	-3,447.0	3,193.9	3,082.5	111.39	28.672	
11,300.0	7,060.0	14,901.4	6,878.5	163.3	224.9	-7.62	-332.0	-3,447.0	3,273.3	3,161.3	112.02	29.221	
11,318.9	7,060.0	14,901.4	6,878.5	163.8	224.9	-7.62	-332.0	-3,447.0	3,292.2	3,180.0	112.17	29.350	
11,400.0	7,060.0	14,901.4	6,878.5	166.0	224.9	-7.62	-332.0	-3,447.0	3,373.2	3,260.4	112.81	29.902	
11,417.3	7,060.0	14,901.4	6,878.5	166.5	224.9	-7.62	-332.0	-3,447.0	3,390.5	3,277.5	112.94	30.019	
11,500.0	7,060.0	14,901.4	6,878.5	168.8	224.9	-7.62	-332.0	-3,447.0	3,473.1	3,359.5	113.59	30.574	
11,515.7	7,060.0	14,901.4	6,878.5	169.2	224.9	-7.62	-332.0	-3,447.0	3,488.8	3,375.1	113.72	30.679	
11,600.0	7,060.0	14,901.4	6,878.5	171.5	224.9	-7.62	-332.0	-3,447.0	3,573.0	3,458.6	114.38	31.237	
11,614.1	7,060.0	14,901.4	6,878.5	171.9	224.9	-7.62	-332.0	-3,447.0	3,587.1	3,472.6	114.50	31.329	
11,700.0	7,060.0	14,901.4	6,878.5	174.2	224.9	-7.62	-332.0	-3,447.0	3,672.9	3,557.7	115.17	31.890	
11,712.6	7,060.0	14,901.4	6,878.5	174.6	224.9	-7.62	-332.0	-3,447.0	3,685.4	3,570.1	115.27	31.971	
11,800.0	7,060.0	14,901.4	6,878.5	177.0	224.9	-7.62	-332.0	-3,447.0	3,772.8	3,656.8	115.96	32.534	
11,811.0	7,060.0	14,901.4	6,878.5	177.3	224.9	-7.62	-332.0	-3,447.0	3,783.8	3,667.7	116.05	32.604	
11,900.0	7,060.0	14,901.4	6,878.5	179.7	224.9	-7.62	-332.0	-3,447.0	3,872.7	3,755.9	116.76	33.169	
11,909.4	7,060.0	14,901.4	6,878.5	180.0	224.9	-7.62	-332.0	-3,447.0	3,882.1	3,765.3	116.83	33.228	
12,000.0	7,060.0	14,901.4	6,878.5	182.4	224.9	-7.62	-332.0	-3,447.0	3,972.6	3,855.0	117.55	33.795	
12,007.8	7,060.0	14,901.4	6,878.5	182.7	224.9	-7.62	-332.0	-3,447.0	3,980.4	3,862.8	117.61	33.844	
12,100.0	7,060.0	14,901.4	6,878.5	185.2	224.9	-7.62	-332.0	-3,447.0	4,072.5	3,954.2	118.34	34.413	
12,106.3	7,060.0	14,901.4	6,878.5	185.4	224.9	-7.62	-332.0	-3,447.0	4,078.8	3,960.4	118.39	34.451	
12,200.0	7,060.0	14,901.4	6,878.5	187.9	224.9	-7.62	-332.0	-3,447.0	4,172.4	4,053.3	119.14	35.022	
12,204.7	7,060.0	14,901.4	6,878.5	188.1	224.9	-7.62	-332.0	-3,447.0	4,177.1	4,057.9	119.17	35.051	

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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 J-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
12,300.0	7,060.0	14,901.4	6,878.5	190.7	224.9	-7.62	-332.0	-3,447.0	4,272.3	4,152.4	119.93	35.624	
12,303.1	7,060.0	14,901.4	6,878.5	190.8	224.9	-7.62	-332.0	-3,447.0	4,275.5	4,155.5	119.95	35.642	
12,400.0	7,060.0	14,901.4	6,878.5	193.4	224.9	-7.62	-332.0	-3,447.0	4,372.3	4,251.5	120.73	36.217	
12,401.5	7,060.0	14,901.4	6,878.5	193.5	224.9	-7.62	-332.0	-3,447.0	4,373.8	4,253.1	120.74	36.226	
12,500.0	7,060.0	14,901.4	6,878.5	196.2	224.9	-7.62	-332.0	-3,447.0	4,472.2	4,350.7	121.52	36.802	
12,598.4	7,060.0	14,901.4	6,878.5	198.9	224.9	-7.62	-332.0	-3,447.0	4,570.5	4,448.2	122.30	37.370	
12,600.0	7,060.0	14,901.4	6,878.5	198.9	224.9	-7.62	-332.0	-3,447.0	4,572.1	4,449.8	122.32	37.379	
12,696.8	7,060.0	14,901.4	6,878.5	201.6	224.9	-7.62	-332.0	-3,447.0	4,668.9	4,545.8	123.09	37.931	
12,700.0	7,060.0	14,901.4	6,878.5	201.7	224.9	-7.62	-332.0	-3,447.0	4,672.1	4,549.0	123.11	37.949	
12,795.2	7,060.0	14,901.4	6,878.5	204.3	224.9	-7.62	-332.0	-3,447.0	4,767.3	4,643.4	123.87	38.485	
12,800.0	7,060.0	14,901.4	6,878.5	204.5	224.9	-7.62	-332.0	-3,447.0	4,772.0	4,648.1	123.91	38.512	
12,893.7	7,060.0	14,901.4	6,878.5	207.0	224.9	-7.62	-332.0	-3,447.0	4,865.6	4,741.0	124.66	39.032	
12,900.0	7,060.0	14,901.4	6,878.5	207.2	224.9	-7.62	-332.0	-3,447.0	4,872.0	4,747.3	124.71	39.067	
12,992.1	7,060.0	14,901.4	6,878.5	209.8	224.9	-7.62	-332.0	-3,447.0	4,964.0	4,838.6	125.44	39.572	
13,000.0	7,060.0	14,901.4	6,878.5	210.0	224.9	-7.62	-332.0	-3,447.0	4,971.9	4,846.4	125.51	39.615	
13,090.5	7,060.0	14,901.4	6,878.5	212.5	224.9	-7.62	-332.0	-3,447.0	5,062.4	4,936.2	126.23	40.104	
13,100.0	7,060.0	14,901.4	6,878.5	212.7	224.9	-7.62	-332.0	-3,447.0	5,071.9	4,945.5	126.31	40.155	
13,188.9	7,060.0	14,901.4	6,878.5	215.2	224.9	-7.62	-332.0	-3,447.0	5,160.8	5,033.7	127.02	40.631	
13,200.0	7,060.0	14,901.4	6,878.5	215.5	224.9	-7.62	-332.0	-3,447.0	5,171.8	5,044.7	127.10	40.689	
13,287.4	7,060.0	14,901.4	6,878.5	217.9	224.9	-7.62	-332.0	-3,447.0	5,259.1	5,131.3	127.80	41.150	
13,300.0	7,060.0	14,901.4	6,878.5	218.3	224.9	-7.62	-332.0	-3,447.0	5,271.8	5,143.8	127.90	41.216	
13,385.8	7,060.0	14,901.4	6,878.5	220.6	224.9	-7.62	-332.0	-3,447.0	5,357.5	5,228.9	128.59	41.663	
13,400.0	7,060.0	14,901.4	6,878.5	221.0	224.9	-7.62	-332.0	-3,447.0	5,371.7	5,243.0	128.70	41.737	
13,484.2	7,060.0	14,901.4	6,878.5	223.4	224.9	-7.62	-332.0	-3,447.0	5,455.9	5,326.5	129.38	42.170	
13,500.0	7,060.0	14,901.4	6,878.5	223.8	224.9	-7.62	-332.0	-3,447.0	5,471.7	5,342.2	129.50	42.251	
13,582.6	7,060.0	14,901.4	6,878.5	226.1	224.9	-7.62	-332.0	-3,447.0	5,554.3	5,424.1	130.17	42.671	
13,600.0	7,060.0	14,901.4	6,878.5	226.6	224.9	-7.62	-332.0	-3,447.0	5,571.6	5,441.3	130.31	42.758	
13,681.1	7,060.0	14,901.4	6,878.5	228.8	224.9	-7.62	-332.0	-3,447.0	5,652.7	5,521.7	130.95	43.165	
13,700.0	7,060.0	14,901.4	6,878.5	229.3	224.9	-7.62	-332.0	-3,447.0	5,671.6	5,540.5	131.11	43.259	
13,779.5	7,060.0	14,901.4	6,878.5	231.5	224.9	-7.62	-332.0	-3,447.0	5,751.0	5,619.3	131.74	43.653	
13,800.0	7,060.0	14,901.4	6,878.5	232.1	224.9	-7.62	-332.0	-3,447.0	5,771.5	5,639.6	131.91	43.754	
13,877.9	7,060.0	14,901.4	6,878.5	234.3	224.9	-7.62	-332.0	-3,447.0	5,849.4	5,716.9	132.53	44.136	
13,900.0	7,060.0	14,901.4	6,878.5	234.9	224.9	-7.62	-332.0	-3,447.0	5,871.5	5,738.8	132.71	44.243	
13,976.3	7,060.0	14,901.4	6,878.5	237.0	224.9	-7.62	-332.0	-3,447.0	5,947.8	5,814.5	133.32	44.613	
14,000.0	7,060.0	14,901.4	6,878.5	237.6	224.9	-7.62	-332.0	-3,447.0	5,971.5	5,837.9	133.51	44.726	
14,074.8	7,060.0	14,901.4	6,878.5	239.7	224.9	-7.62	-332.0	-3,447.0	6,046.2	5,912.1	134.11	45.083	
14,100.0	7,060.0	14,901.4	6,878.5	240.4	224.9	-7.62	-332.0	-3,447.0	6,071.4	5,937.1	134.31	45.203	
14,173.2	7,060.0	14,901.4	6,878.5	242.4	224.9	-7.62	-332.0	-3,447.0	6,144.6	6,009.7	134.90	45.549	
14,200.0	7,060.0	14,901.4	6,878.5	243.2	224.9	-7.62	-332.0	-3,447.0	6,171.4	6,036.3	135.12	45.675	
14,271.6	7,060.0	14,901.4	6,878.5	245.2	224.9	-7.62	-332.0	-3,447.0	6,243.0	6,107.3	135.69	46.009	
14,300.0	7,060.0	14,901.4	6,878.5	246.0	224.9	-7.62	-332.0	-3,447.0	6,271.3	6,135.4	135.92	46.140	
14,370.0	7,060.0	14,901.4	6,878.5	247.9	224.9	-7.62	-332.0	-3,447.0	6,341.4	6,204.9	136.48	46.463	
14,400.0	7,060.0	14,901.4	6,878.5	248.7	224.9	-7.62	-332.0	-3,447.0	6,371.3	6,234.6	136.72	46.600	
14,468.5	7,060.0	14,901.4	6,878.5	250.6	224.9	-7.62	-332.0	-3,447.0	6,439.8	6,302.5	137.27	46.912	
14,500.0	7,060.0	14,901.4	6,878.5	251.5	224.9	-7.62	-332.0	-3,447.0	6,471.3	6,333.8	137.53	47.055	
14,566.9	7,060.0	14,901.4	6,878.5	253.4	224.9	-7.62	-332.0	-3,447.0	6,538.2	6,400.1	138.06	47.356	
14,600.0	7,060.0	14,901.4	6,878.5	254.3	224.9	-7.62	-332.0	-3,447.0	6,571.3	6,432.9	138.33	47.504	
14,665.3	7,060.0	14,901.4	6,878.5	256.1	224.9	-7.62	-332.0	-3,447.0	6,636.6	6,497.7	138.85	47.795	
14,700.0	7,060.0	14,901.4	6,878.5	257.1	224.9	-7.62	-332.0	-3,447.0	6,671.2	6,532.1	139.13	47.948	
14,763.7	7,060.0	14,901.4	6,878.5	258.8	224.9	-7.62	-332.0	-3,447.0	6,735.0	6,595.3	139.65	48.229	
14,800.0	7,060.0	14,901.4	6,878.5	259.9	224.9	-7.62	-332.0	-3,447.0	6,771.2	6,631.3	139.94	48.387	
14,862.2	7,060.0	14,901.4	6,878.5	261.6	224.9	-7.62	-332.0	-3,447.0	6,833.3	6,692.9	140.44	48.657	

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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 J-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
14,900.0	7,060.0	14,901.4	6,878.5	262.6	224.9	-7.62	-332.0	-3,447.0	6,871.2	6,730.4	140.74	48.821	
14,960.6	7,060.0	14,901.4	6,878.5	264.3	224.9	-7.62	-332.0	-3,447.0	6,931.7	6,790.5	141.23	49.081	
15,000.0	7,060.0	14,901.4	6,878.5	265.4	224.9	-7.62	-332.0	-3,447.0	6,971.1	6,829.6	141.55	49.250	
15,059.0	7,060.0	14,901.4	6,878.5	267.1	224.9	-7.62	-332.0	-3,447.0	7,030.1	6,888.1	142.02	49.500	
15,100.0	7,060.0	14,901.4	6,878.5	268.2	224.9	-7.62	-332.0	-3,447.0	7,071.1	6,928.8	142.35	49.674	
15,157.4	7,060.0	14,901.4	6,878.5	269.8	224.9	-7.62	-332.0	-3,447.0	7,128.5	6,985.7	142.81	49.915	
15,200.0	7,060.0	14,901.4	6,878.5	271.0	224.9	-7.62	-332.0	-3,447.0	7,171.1	7,027.9	143.16	50.093	
15,255.9	7,060.0	14,901.4	6,878.5	272.5	224.9	-7.62	-332.0	-3,447.0	7,226.9	7,083.3	143.61	50.325	
15,300.0	7,060.0	14,901.4	6,878.5	273.8	224.9	-7.62	-332.0	-3,447.0	7,271.1	7,127.1	143.96	50.507	
15,354.3	7,060.0	14,901.4	6,878.5	275.3	224.9	-7.62	-332.0	-3,447.0	7,325.3	7,180.9	144.40	50.730	
15,400.0	7,060.0	14,901.4	6,878.5	276.5	224.9	-7.62	-332.0	-3,447.0	7,371.0	7,226.3	144.77	50.916	
15,452.7	7,060.0	14,901.4	6,878.5	278.0	224.9	-7.62	-332.0	-3,447.0	7,423.7	7,278.6	145.19	51.131	
15,500.0	7,060.0	14,901.4	6,878.5	279.3	224.9	-7.62	-332.0	-3,447.0	7,471.0	7,325.4	145.57	51.321	
15,551.1	7,060.0	14,901.4	6,878.5	280.7	224.9	-7.62	-332.0	-3,447.0	7,522.1	7,376.2	145.99	51.527	
15,600.0	7,060.0	14,901.4	6,878.5	282.1	224.9	-7.62	-332.0	-3,447.0	7,571.0	7,424.6	146.38	51.722	
15,649.6	7,060.0	14,901.4	6,878.5	283.5	224.9	-7.62	-332.0	-3,447.0	7,620.5	7,473.8	146.78	51.919	
15,700.0	7,060.0	14,901.4	6,878.5	284.9	224.9	-7.62	-332.0	-3,447.0	7,671.0	7,523.8	147.18	52.118	
15,748.0	7,060.0	14,901.4	6,878.5	286.2	224.9	-7.62	-332.0	-3,447.0	7,718.9	7,571.4	147.57	52.306	
15,800.0	7,060.0	14,901.4	6,878.5	287.7	224.9	-7.62	-332.0	-3,447.0	7,770.9	7,622.9	147.99	52.510	
15,846.4	7,060.0	14,901.4	6,878.5	289.0	224.9	-7.62	-332.0	-3,447.0	7,817.4	7,669.0	148.37	52.690	
15,900.0	7,060.0	14,901.4	6,878.5	290.5	224.9	-7.62	-332.0	-3,447.0	7,870.9	7,722.1	148.80	52.897	
15,944.8	7,060.0	14,901.4	6,878.5	291.7	224.9	-7.62	-332.0	-3,447.0	7,915.8	7,766.6	149.16	53.069	
16,000.0	7,060.0	14,901.4	6,878.5	293.2	224.9	-7.62	-332.0	-3,447.0	7,970.9	7,821.3	149.60	53.280	
16,043.3	7,060.0	14,901.4	6,878.5	294.4	224.9	-7.62	-332.0	-3,447.0	8,014.2	7,864.2	149.95	53.445	
16,100.0	7,060.0	14,901.4	6,878.5	296.0	224.9	-7.62	-332.0	-3,447.0	8,070.9	7,920.5	150.41	53.659	
16,141.7	7,060.0	14,901.4	6,878.5	297.2	224.9	-7.62	-332.0	-3,447.0	8,112.6	7,961.8	150.75	53.816	
16,200.0	7,060.0	14,901.4	6,878.5	298.8	224.9	-7.62	-332.0	-3,447.0	8,170.9	8,019.6	151.22	54.034	
16,240.1	7,060.0	14,901.4	6,878.5	299.9	224.9	-7.62	-332.0	-3,447.0	8,211.0	8,059.4	151.54	54.183	
16,300.0	7,060.0	14,901.4	6,878.5	301.6	224.9	-7.62	-332.0	-3,447.0	8,270.8	8,118.8	152.02	54.405	
16,338.5	7,060.0	14,901.4	6,878.5	302.7	224.9	-7.62	-332.0	-3,447.0	8,309.4	8,157.0	152.34	54.547	
16,400.0	7,060.0	14,901.4	6,878.5	304.4	224.9	-7.62	-332.0	-3,447.0	8,370.8	8,218.0	152.83	54.772	
16,437.0	7,060.0	14,901.4	6,878.5	305.4	224.9	-7.62	-332.0	-3,447.0	8,407.8	8,254.7	153.13	54.906	
16,500.0	7,060.0	14,901.4	6,878.5	307.2	224.9	-7.62	-332.0	-3,447.0	8,470.8	8,317.2	153.64	55.135	
16,535.4	7,060.0	14,901.4	6,878.5	308.2	224.9	-7.62	-332.0	-3,447.0	8,506.2	8,352.3	153.92	55.262	
16,600.0	7,060.0	14,901.4	6,878.5	310.0	224.9	-7.62	-332.0	-3,447.0	8,570.8	8,416.3	154.45	55.494	
16,633.8	7,060.0	14,901.4	6,878.5	310.9	224.9	-7.62	-332.0	-3,447.0	8,604.6	8,449.9	154.72	55.614	
16,700.0	7,060.0	14,901.4	6,878.5	312.8	224.9	-7.62	-332.0	-3,447.0	8,670.8	8,515.5	155.25	55.849	
16,732.2	7,060.0	14,901.4	6,878.5	313.7	224.9	-7.62	-332.0	-3,447.0	8,703.0	8,547.5	155.51	55.963	
16,800.0	7,060.0	14,901.4	6,878.5	315.5	224.9	-7.62	-332.0	-3,447.0	8,770.7	8,614.7	156.06	56.201	
16,830.7	7,060.0	14,901.4	6,878.5	316.4	224.9	-7.62	-332.0	-3,447.0	8,801.4	8,645.1	156.31	56.308	
16,900.0	7,060.0	14,901.4	6,878.5	318.3	224.9	-7.62	-332.0	-3,447.0	8,870.7	8,713.9	156.87	56.549	
16,929.1	7,060.0	14,901.4	6,878.5	319.1	224.9	-7.62	-332.0	-3,447.0	8,899.8	8,742.7	157.10	56.649	
17,000.0	7,060.0	14,901.4	6,878.5	321.1	224.9	-7.62	-332.0	-3,447.0	8,970.7	8,813.0	157.68	56.893	
17,027.5	7,060.0	14,901.4	6,878.5	321.9	224.9	-7.62	-332.0	-3,447.0	8,998.2	8,840.3	157.90	56.987	
17,100.0	7,060.0	14,901.4	6,878.5	323.9	224.9	-7.62	-332.0	-3,447.0	9,070.7	8,912.2	158.48	57.234	
17,125.9	7,060.0	14,901.4	6,878.5	324.6	224.9	-7.62	-332.0	-3,447.0	9,096.6	8,937.9	158.69	57.322	
17,200.0	7,060.0	14,901.4	6,878.5	326.7	224.9	-7.62	-332.0	-3,447.0	9,170.7	9,011.4	159.29	57.571	
17,224.4	7,060.0	14,901.4	6,878.5	327.4	224.9	-7.62	-332.0	-3,447.0	9,195.0	9,035.6	159.49	57.653	
17,300.0	7,060.0	14,901.4	6,878.5	329.5	224.9	-7.62	-332.0	-3,447.0	9,270.7	9,110.6	160.10	57.905	
17,322.8	7,060.0	14,901.4	6,878.5	330.1	224.9	-7.62	-332.0	-3,447.0	9,293.5	9,133.2	160.29	57.981	
17,400.0	7,060.0	14,901.4	6,878.5	332.3	224.9	-7.62	-332.0	-3,447.0	9,370.6	9,209.7	160.91	58.236	
17,421.2	7,060.0	14,901.4	6,878.5	332.9	224.9	-7.62	-332.0	-3,447.0	9,391.9	9,230.8	161.08	58.305	

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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 J-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
17,500.0	7,060.0	14,901.4	6,878.5	335.1	224.9	-7.62	-332.0	-3,447.0	9,470.6	9,308.9	161.72	58.563	
17,519.6	7,060.0	14,901.4	6,878.5	335.6	224.9	-7.62	-332.0	-3,447.0	9,490.3	9,328.4	161.88	58.627	
17,600.0	7,060.0	14,901.4	6,878.5	337.9	224.9	-7.62	-332.0	-3,447.0	9,570.6	9,408.1	162.53	58.887	
17,618.1	7,060.0	14,901.4	6,878.5	338.4	224.9	-7.62	-332.0	-3,447.0	9,588.7	9,426.0	162.67	58.945	
17,700.0	7,060.0	14,901.4	6,878.5	340.7	224.9	-7.62	-332.0	-3,447.0	9,670.6	9,507.3	163.34	59.207	
17,716.5	7,060.0	14,901.4	6,878.5	341.1	224.9	-7.62	-332.0	-3,447.0	9,687.1	9,523.6	163.47	59.260	
17,800.0	7,060.0	14,901.4	6,878.5	343.5	224.9	-7.62	-332.0	-3,447.0	9,770.6	9,606.4	164.14	59.525	
17,814.9	7,060.0	14,901.4	6,878.5	343.9	224.9	-7.62	-332.0	-3,447.0	9,785.5	9,621.2	164.26	59.572	
17,900.0	7,060.0	14,901.4	6,878.5	346.2	224.9	-7.62	-332.0	-3,447.0	9,870.6	9,705.6	164.95	59.839	
17,913.3	7,060.0	14,901.4	6,878.5	346.6	224.9	-7.62	-332.0	-3,447.0	9,883.9	9,718.9	165.06	59.881	
18,000.0	7,060.0	14,901.4	6,878.5	349.0	224.9	-7.62	-332.0	-3,447.0	9,970.6	9,804.8	165.76	60.150	
18,011.8	7,060.0	14,901.4	6,878.5	349.4	224.9	-7.62	-332.0	-3,447.0	9,982.3	9,816.5	165.86	60.186	

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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 DD STATE #16-6B - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 usft

Survey Program: 508-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	-96.00	-262.5	-2,497.5	2,511.2				
98.4	98.4	98.4	98.4	0.1	0.1	-96.00	-262.5	-2,497.5	2,511.2	2,511.1	0.19	N/A	
100.0	100.0	100.0	100.0	0.1	0.1	-96.00	-262.5	-2,497.5	2,511.2	2,511.0	0.19	N/A	
196.8	196.8	196.8	196.8	0.3	0.2	-96.00	-262.5	-2,497.5	2,511.2	2,510.7	0.51	4,953.122	
200.0	200.0	200.0	200.0	0.3	0.2	-96.00	-262.5	-2,497.5	2,511.2	2,510.7	0.52	4,855.616	
295.3	295.3	295.3	295.3	0.5	0.3	-1.04	-262.5	-2,497.5	2,509.7	2,508.8	0.82	3,064.136	
300.0	300.0	300.0	300.0	0.5	0.3	-1.04	-262.5	-2,497.5	2,509.5	2,508.7	0.83	3,009.171	
393.7	393.6	393.6	393.6	0.7	0.4	-1.05	-262.5	-2,497.5	2,504.7	2,503.6	1.14	2,195.331	
400.0	399.8	399.8	399.8	0.8	0.4	-1.05	-262.5	-2,497.5	2,504.3	2,503.1	1.16	2,155.839	
492.1	491.6	491.6	491.6	1.0	0.5	-1.05	-262.5	-2,497.5	2,496.4	2,494.9	1.49	1,680.295	
500.0	499.5	499.5	499.5	1.0	0.5	-1.05	-262.5	-2,497.5	2,495.6	2,494.0	1.51	1,648.479	
590.5	589.3	584.4	584.4	1.3	0.7	-1.06	-262.5	-2,497.6	2,484.7	2,482.8	1.91	1,300.994	
600.0	598.7	593.2	593.2	1.3	0.7	-1.06	-262.5	-2,497.6	2,483.5	2,481.5	1.95	1,272.618	
689.0	686.6	675.8	675.8	1.6	0.9	-1.07	-262.3	-2,497.9	2,470.0	2,467.7	2.35	1,051.025	
700.0	697.5	686.0	686.0	1.6	0.9	-1.07	-262.2	-2,497.9	2,468.2	2,465.8	2.40	1,028.852	
787.4	783.3	766.8	766.8	2.0	1.1	-1.07	-261.9	-2,498.4	2,452.2	2,449.4	2.79	877.799	
800.0	795.6	778.4	778.4	2.0	1.1	-1.07	-261.8	-2,498.5	2,449.7	2,446.8	2.85	859.608	
885.8	879.3	857.2	857.2	2.4	1.3	-1.07	-261.3	-2,499.2	2,431.2	2,428.0	3.24	750.298	
900.0	893.1	870.2	870.2	2.5	1.3	-1.07	-261.2	-2,499.3	2,428.0	2,424.7	3.30	734.858	
984.2	974.5	947.0	947.0	2.9	1.5	-1.07	-260.6	-2,500.2	2,407.3	2,403.6	3.69	652.236	
1,000.0	989.6	961.3	961.3	3.0	1.5	-1.07	-260.5	-2,500.4	2,403.1	2,399.4	3.76	638.804	
1,082.7	1,068.8	1,039.3	1,039.3	3.5	1.7	-1.07	-259.7	-2,501.5	2,380.2	2,376.0	4.15	573.921	
1,100.0	1,085.3	1,056.8	1,056.8	3.6	1.7	-1.07	-259.5	-2,501.7	2,375.1	2,370.9	4.23	561.847	
1,181.1	1,162.0	1,138.1	1,138.0	4.1	1.9	-1.07	-258.8	-2,502.7	2,349.8	2,345.2	4.61	509.406	
1,200.0	1,179.8	1,156.9	1,156.8	4.2	1.9	-1.07	-258.7	-2,502.9	2,343.6	2,338.9	4.70	498.600	
1,279.5	1,254.2	1,235.5	1,235.5	4.8	2.1	-1.08	-258.2	-2,503.6	2,316.0	2,310.9	5.08	455.569	
1,300.0	1,273.2	1,255.6	1,255.6	5.0	2.1	-1.08	-258.1	-2,503.8	2,308.6	2,303.4	5.18	445.965	
1,377.9	1,345.0	1,331.5	1,331.5	5.6	2.3	-1.10	-257.7	-2,504.4	2,278.9	2,273.3	5.54	411.343	
1,400.0	1,365.2	1,352.8	1,352.8	5.8	2.3	-1.10	-257.6	-2,504.5	2,270.1	2,264.4	5.66	401.380	
1,476.4	1,434.6	1,425.9	1,425.9	6.4	2.5	-1.13	-257.4	-2,504.9	2,238.4	2,232.4	6.02	371.629	
1,500.0	1,455.8	1,448.4	1,448.3	6.7	2.5	-1.14	-257.3	-2,504.9	2,228.2	2,222.1	6.14	363.057	
1,550.0	1,500.6	1,494.4	1,494.3	7.1	2.6	-1.15	-257.2	-2,505.1	2,206.1	2,199.7	6.38	345.834	
1,574.8	1,522.7	1,516.6	1,516.6	7.4	2.6	-1.16	-257.2	-2,505.2	2,194.9	2,188.4	6.51	337.309	
1,600.0	1,545.1	1,539.2	1,539.2	7.6	2.7	-1.16	-257.1	-2,505.2	2,183.5	2,176.9	6.64	328.944	
1,673.2	1,610.4	1,604.8	1,604.8	8.3	2.8	-1.18	-257.0	-2,505.4	2,150.4	2,143.4	7.02	306.361	
1,700.0	1,634.2	1,628.8	1,628.8	8.6	2.9	-1.18	-256.9	-2,505.5	2,138.4	2,131.2	7.16	298.652	
1,771.6	1,698.1	1,693.1	1,693.0	9.3	3.0	-1.19	-256.7	-2,505.7	2,106.0	2,098.4	7.54	279.409	
1,800.0	1,723.3	1,718.5	1,718.4	9.5	3.1	-1.20	-256.6	-2,505.8	2,093.2	2,085.5	7.69	272.281	
1,870.1	1,785.8	1,781.3	1,781.2	10.2	3.2	-1.20	-256.3	-2,505.9	2,061.5	2,053.5	8.06	255.762	
1,900.0	1,812.4	1,808.1	1,808.0	10.5	3.2	-1.21	-256.1	-2,506.0	2,048.0	2,039.8	8.22	249.142	
1,968.5	1,873.5	1,869.4	1,869.4	11.2	3.4	-1.22	-255.8	-2,506.2	2,017.0	2,008.4	8.59	234.882	
2,000.0	1,901.5	1,897.7	1,897.6	11.5	3.4	-1.22	-255.7	-2,506.2	2,002.8	1,994.0	8.76	228.711	
2,066.9	1,961.2	1,957.6	1,957.5	12.2	3.6	-1.23	-255.3	-2,506.4	1,972.5	1,963.4	9.12	216.335	
2,100.0	1,990.6	1,960.0	1,959.9	12.5	3.6	-1.23	-255.3	-2,506.4	1,957.7	1,948.5	9.25	211.702	
2,165.3	2,048.9	1,991.5	1,991.4	13.2	3.6	-1.23	-255.2	-2,506.9	1,929.2	1,919.6	9.55	202.050	
2,200.0	2,079.7	2,003.1	2,003.0	13.5	3.7	-1.24	-255.2	-2,507.3	1,914.6	1,904.9	9.70	197.361	
2,263.8	2,136.6	2,050.0	2,049.8	14.1	3.8	-1.26	-255.7	-2,510.1	1,888.9	1,878.9	10.02	188.596	
2,300.0	2,168.8	2,050.0	2,049.8	14.5	3.8	-1.26	-255.7	-2,510.1	1,874.3	1,864.1	10.15	184.582	
2,362.2	2,224.3	2,050.0	2,049.8	15.1	3.8	-1.26	-255.7	-2,510.1	1,850.5	1,840.1	10.39	178.065	
2,400.0	2,257.9	2,050.0	2,049.8	15.5	3.8	-1.26	-255.7	-2,510.1	1,836.9	1,826.4	10.54	174.329	
2,460.6	2,312.0	2,092.8	2,092.4	16.1	3.9	-1.27	-256.3	-2,514.4	1,815.2	1,804.4	10.84	167.512	
2,500.0	2,347.0	2,106.7	2,106.2	16.5	3.9	-1.28	-256.4	-2,516.2	1,802.0	1,791.0	11.01	163.691	

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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 DD STATE #16-6B - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 508-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
2,559.0	2,399.7	2,142.0	2,141.1	17.1	4.0	-1.27	-256.5	-2,521.5	1,783.1	1,771.9	11.29	157.992	
2,600.0	2,436.1	2,142.0	2,141.1	17.5	4.0	-1.27	-256.5	-2,521.5	1,770.5	1,759.0	11.44	154.708	
2,657.5	2,487.4	2,142.0	2,141.1	18.0	4.0	-1.27	-256.5	-2,521.5	1,754.1	1,742.5	11.67	150.369	
2,700.0	2,525.2	2,181.8	2,180.2	18.5	4.1	-1.26	-256.5	-2,528.8	1,742.1	1,730.2	11.90	146.396	
2,755.9	2,575.1	2,204.0	2,202.0	19.0	4.1	-1.25	-256.4	-2,533.4	1,727.6	1,715.4	12.15	142.132	
2,800.0	2,614.3	2,235.0	2,232.1	19.5	4.2	-1.22	-256.1	-2,540.6	1,716.9	1,704.6	12.38	138.698	
2,854.3	2,662.7	2,235.0	2,232.1	20.0	4.2	-1.22	-256.1	-2,540.6	1,704.5	1,691.9	12.59	135.394	
2,900.0	2,703.4	2,266.0	2,262.1	20.5	4.3	-1.18	-255.5	-2,548.4	1,694.7	1,681.9	12.83	132.105	
2,952.7	2,750.4	2,290.5	2,285.7	21.0	4.4	-1.15	-254.9	-2,555.1	1,684.2	1,671.2	13.08	128.744	
3,000.0	2,792.5	2,326.0	2,319.6	21.5	4.5	-1.08	-253.8	-2,565.5	1,675.7	1,662.4	13.34	125.647	
3,051.2	2,838.1	2,326.0	2,319.6	22.0	4.5	-1.08	-253.8	-2,565.5	1,667.0	1,653.5	13.53	123.166	
3,100.0	2,881.6	2,326.0	2,319.6	22.5	4.5	-1.08	-253.8	-2,565.5	1,660.2	1,646.5	13.72	120.969	
3,149.6	2,925.8	2,373.1	2,364.1	23.0	4.7	-0.97	-251.8	-2,580.7	1,653.0	1,639.0	14.02	117.873	
3,200.0	2,970.7	2,419.0	2,406.7	23.5	4.9	-0.84	-249.6	-2,597.5	1,647.8	1,633.4	14.32	115.036	
3,248.0	3,013.5	2,419.0	2,406.7	23.9	4.9	-0.84	-249.6	-2,597.5	1,642.6	1,628.1	14.51	113.202	
3,300.0	3,059.8	2,419.0	2,406.7	24.5	4.9	-0.84	-249.6	-2,597.5	1,638.6	1,623.9	14.71	111.377	
3,346.4	3,101.2	2,453.1	2,438.0	24.9	5.1	-0.74	-247.8	-2,611.1	1,635.6	1,620.6	14.98	109.182	
3,400.0	3,148.9	2,475.9	2,458.7	25.5	5.3	-0.68	-246.8	-2,620.7	1,633.2	1,618.0	15.25	107.115	
3,444.9	3,188.9	2,512.0	2,491.0	25.9	5.5	-0.57	-245.2	-2,636.6	1,632.2	1,616.7	15.51	105.210	
3,492.8	3,231.7	2,512.0	2,491.0	26.4	5.5	-0.57	-245.2	-2,636.6	1,631.5	1,615.8	15.70	103.915	
3,500.0	3,238.0	2,512.0	2,491.0	26.5	5.5	-0.57	-245.2	-2,636.6	1,631.5	1,615.8	15.73	103.732	
3,543.3	3,276.6	2,512.0	2,491.0	26.9	5.5	-0.57	-245.2	-2,636.6	1,632.3	1,616.4	15.90	102.680	
3,600.0	3,327.2	2,558.5	2,532.0	27.5	5.8	-0.47	-244.0	-2,658.5	1,633.4	1,617.1	16.25	100.498	
3,641.7	3,364.3	2,575.3	2,546.6	27.9	6.0	-0.44	-243.9	-2,666.8	1,635.3	1,618.8	16.46	99.337	
3,700.0	3,416.3	2,605.0	2,572.1	28.5	6.2	-0.40	-244.1	-2,682.1	1,639.0	1,622.2	16.77	97.749	
3,740.1	3,452.0	2,605.0	2,572.1	28.9	6.2	-0.40	-244.1	-2,682.1	1,642.3	1,625.3	16.92	97.040	
3,800.0	3,505.4	2,637.5	2,599.5	29.5	6.5	-0.37	-244.8	-2,699.5	1,648.1	1,630.9	17.24	95.593	
3,838.6	3,539.7	2,652.2	2,611.7	29.9	6.6	-0.35	-245.1	-2,707.7	1,652.7	1,635.2	17.43	94.801	
3,900.0	3,594.5	2,698.0	2,649.0	30.5	7.1	-0.33	-246.7	-2,734.2	1,661.4	1,643.6	17.83	93.178	
3,937.0	3,627.4	2,698.0	2,649.0	30.8	7.1	-0.33	-246.7	-2,734.2	1,666.8	1,648.8	17.97	92.728	
4,000.0	3,683.6	2,730.1	2,674.7	31.5	7.4	-0.31	-248.0	-2,753.4	1,677.3	1,659.0	18.32	91.549	
4,035.4	3,715.1	2,757.8	2,696.8	31.8	7.7	-0.30	-249.1	-2,770.1	1,683.5	1,665.0	18.55	90.755	
4,100.0	3,772.7	2,815.7	2,742.8	32.5	8.4	-0.28	-251.6	-2,805.2	1,695.2	1,676.2	18.99	89.251	
4,133.8	3,802.8	2,852.5	2,772.0	32.8	8.8	-0.27	-253.4	-2,827.4	1,701.3	1,682.0	19.25	88.393	
4,200.0	3,861.8	2,963.0	2,860.6	33.5	10.0	-0.24	-258.2	-2,893.2	1,712.5	1,692.6	19.88	86.143	
4,232.3	3,890.5	3,019.9	2,907.0	33.8	10.7	-0.20	-260.0	-2,926.1	1,717.2	1,697.0	20.21	84.984	
4,300.0	3,950.9	3,103.1	2,975.6	34.5	11.6	-0.14	-262.4	-2,973.2	1,726.0	1,705.2	20.77	83.094	
4,330.7	3,978.2	3,130.7	2,998.3	34.8	11.9	-0.11	-262.8	-2,988.8	1,730.0	1,709.0	20.99	82.403	
4,400.0	4,040.0	3,244.2	3,092.3	35.5	13.2	0.06	-263.0	-3,052.4	1,738.6	1,716.9	21.69	80.141	
4,429.1	4,065.9	3,278.3	3,120.9	35.8	13.6	0.12	-262.9	-3,071.0	1,741.6	1,719.7	21.94	79.383	
4,500.0	4,129.1	3,361.3	3,190.6	36.5	14.5	0.30	-261.2	-3,116.2	1,748.7	1,726.2	22.54	77.591	
4,527.5	4,153.6	3,423.6	3,243.4	36.8	15.2	0.44	-259.8	-3,149.2	1,751.1	1,728.2	22.89	76.506	
4,600.0	4,218.2	3,531.4	3,335.7	37.5	16.3	0.74	-255.3	-3,204.5	1,755.7	1,732.1	23.59	74.413	
4,626.0	4,241.3	3,563.3	3,363.2	37.7	16.7	0.85	-253.4	-3,220.6	1,757.1	1,733.3	23.82	73.765	
4,700.0	4,307.3	3,709.6	3,490.5	38.5	18.2	1.37	-243.5	-3,292.1	1,760.1	1,735.4	24.69	71.280	
4,724.4	4,329.0	3,735.8	3,513.5	38.7	18.4	1.47	-241.3	-3,304.4	1,760.4	1,735.5	24.89	70.716	
4,800.0	4,396.4	3,801.0	3,570.9	39.5	19.0	1.76	-235.3	-3,334.7	1,761.1	1,735.7	25.45	69.190	
4,822.8	4,416.7	3,823.7	3,590.9	39.7	19.3	1.86	-233.0	-3,345.3	1,761.4	1,735.8	25.64	68.705	
4,900.0	4,485.5	3,870.4	3,631.6	40.5	19.8	2.07	-228.4	-3,367.6	1,763.4	1,737.3	26.14	67.471	
4,921.2	4,504.4	3,894.0	3,652.1	40.7	20.0	2.18	-226.0	-3,379.1	1,764.3	1,737.9	26.32	67.035	
5,000.0	4,574.6	3,947.5	3,698.3	41.5	20.6	2.41	-221.1	-3,405.6	1,767.7	1,740.9	26.85	65.825	
5,019.7	4,592.1	3,964.8	3,713.3	41.7	20.7	2.48	-219.6	-3,414.2	1,768.7	1,741.7	27.01	65.493	

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 C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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 DD STATE #16-6B - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 508-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
5,100.0	4,663.7	4,038.1	3,776.5	42.5	21.5	2.75	-214.2	-3,450.8	1,772.8	1,745.2	27.63	64.159	
5,118.1	4,679.8	4,776.2	4,468.0	42.7	26.3	5.08	-171.8	-3,685.0	1,772.9	1,742.6	30.20	58.700	
5,200.0	4,752.8	4,963.5	4,654.5	43.5	26.7	5.52	-167.2	-3,700.3	1,741.2	1,710.3	30.92	56.304	
5,216.5	4,767.5	4,980.3	4,671.4	43.7	26.7	5.56	-166.9	-3,701.3	1,734.5	1,703.5	31.02	55.913	
5,300.0	4,841.9	5,065.4	4,756.3	44.5	26.8	5.75	-165.4	-3,705.8	1,700.8	1,669.3	31.52	53.962	
5,314.9	4,855.2	5,080.6	4,771.5	44.6	26.8	5.78	-165.2	-3,706.5	1,694.7	1,663.1	31.61	53.618	
5,400.0	4,931.0	5,166.9	4,857.7	45.5	26.9	5.96	-164.3	-3,710.6	1,659.8	1,627.7	32.11	51.687	
5,413.4	4,942.9	5,180.4	4,871.2	45.6	27.0	5.99	-164.2	-3,711.1	1,654.3	1,622.1	32.19	51.388	
5,500.0	5,020.1	5,267.9	4,958.6	46.5	27.1	6.17	-163.8	-3,714.7	1,618.3	1,585.6	32.71	49.477	
5,511.8	5,030.6	5,279.8	4,970.5	46.6	27.1	6.19	-163.8	-3,715.1	1,613.4	1,580.6	32.78	49.220	
5,600.0	5,109.2	5,368.4	5,059.0	47.5	27.2	6.35	-164.1	-3,718.2	1,576.3	1,543.0	33.31	47.329	
5,610.2	5,118.3	5,378.6	5,069.2	47.6	27.2	6.37	-164.1	-3,718.5	1,572.0	1,538.6	33.37	47.112	
5,700.0	5,198.3	5,468.3	5,158.9	48.5	27.3	6.52	-164.9	-3,721.1	1,533.7	1,499.8	33.90	45.241	
5,708.6	5,206.0	5,476.9	5,167.5	48.6	27.3	6.54	-165.0	-3,721.3	1,530.0	1,496.1	33.95	45.063	
5,800.0	5,287.4	5,567.7	5,258.3	49.5	27.4	6.68	-166.4	-3,723.4	1,490.6	1,456.1	34.50	43.211	
5,807.1	5,293.7	5,574.7	5,265.3	49.6	27.4	6.69	-166.5	-3,723.5	1,487.5	1,453.0	34.54	43.069	
5,900.0	5,376.5	5,666.6	5,357.2	50.5	27.5	6.81	-168.5	-3,725.0	1,446.9	1,411.8	35.09	41.237	
5,905.5	5,381.4	5,672.0	5,362.6	50.6	27.5	6.82	-168.6	-3,725.1	1,444.5	1,409.4	35.12	41.130	
6,000.0	5,465.6	5,764.9	5,455.4	51.5	27.7	6.93	-171.2	-3,726.1	1,402.7	1,367.0	35.68	39.316	
6,003.9	5,469.1	5,768.8	5,459.3	51.6	27.7	6.93	-171.4	-3,726.1	1,400.9	1,365.2	35.70	39.242	
6,100.0	5,554.7	5,862.7	5,553.1	52.5	27.8	7.02	-174.6	-3,726.6	1,357.9	1,321.7	36.26	37.447	
6,102.3	5,556.8	5,865.0	5,555.4	52.5	27.8	7.03	-174.7	-3,726.6	1,356.9	1,320.6	36.28	37.404	
6,200.0	5,643.8	5,958.0	5,648.4	53.5	27.9	7.10	-178.4	-3,726.5	1,312.6	1,275.8	36.84	35.631	
6,200.8	5,644.5	5,958.0	5,648.4	53.5	27.9	7.10	-178.4	-3,726.5	1,312.3	1,275.4	36.84	35.619	
6,299.2	5,732.2	6,046.9	5,737.1	54.5	28.0	7.16	-182.1	-3,726.2	1,267.5	1,230.1	37.40	33.887	
6,300.0	5,732.9	6,047.6	5,737.8	54.5	28.0	7.16	-182.1	-3,726.2	1,267.1	1,229.7	37.41	33.873	
6,397.6	5,819.9	6,133.4	5,823.6	55.5	28.0	7.25	-185.3	-3,726.0	1,222.8	1,184.8	37.97	32.206	
6,400.0	5,822.0	6,135.5	5,825.7	55.5	28.1	7.25	-185.4	-3,726.0	1,221.7	1,183.7	37.98	32.166	
6,496.0	5,907.5	6,219.9	5,910.1	56.5	28.1	7.36	-188.2	-3,725.8	1,178.2	1,139.6	38.54	30.570	
6,500.0	5,911.1	6,223.4	5,913.6	56.5	28.1	7.37	-188.3	-3,725.8	1,176.4	1,137.8	38.56	30.505	
6,594.5	5,995.2	6,306.6	5,996.7	57.5	28.2	7.51	-190.8	-3,725.7	1,133.6	1,094.5	39.12	28.976	
6,600.0	6,000.2	6,311.4	6,001.6	57.5	28.2	7.51	-190.9	-3,725.7	1,131.1	1,092.0	39.16	28.888	
6,692.9	6,082.9	6,393.3	6,083.4	58.5	28.3	7.68	-193.0	-3,725.7	1,089.2	1,049.5	39.72	27.424	
6,700.0	6,089.3	6,399.5	6,089.6	58.5	28.3	7.69	-193.1	-3,725.7	1,086.0	1,046.2	39.76	27.313	
6,791.3	6,170.6	6,480.0	6,170.1	59.5	28.4	7.89	-194.8	-3,725.8	1,044.8	1,004.5	40.33	25.910	
6,800.0	6,178.4	6,487.7	6,177.8	59.5	28.4	7.91	-194.9	-3,725.8	1,040.9	1,000.5	40.38	25.778	
6,889.7	6,258.3	6,566.9	6,256.9	60.4	28.5	8.14	-196.3	-3,725.9	1,000.6	959.6	40.95	24.433	
6,900.0	6,267.5	6,575.9	6,266.0	60.5	28.5	8.17	-196.4	-3,726.0	996.0	954.9	41.02	24.281	
6,988.2	6,346.0	6,653.7	6,343.8	61.4	28.6	8.44	-197.4	-3,726.2	956.4	914.8	41.60	22.991	
7,000.0	6,356.6	6,664.2	6,354.2	61.5	28.6	8.48	-197.6	-3,726.2	951.1	909.4	41.68	22.820	
7,086.6	6,433.7	6,740.7	6,430.7	62.4	28.6	8.79	-198.2	-3,726.4	912.4	870.1	42.27	21.582	
7,100.0	6,445.7	6,752.5	6,442.5	62.6	28.6	8.84	-198.3	-3,726.5	906.4	864.0	42.37	21.393	
7,185.0	6,521.4	6,827.6	6,517.7	63.4	28.7	9.20	-198.7	-3,726.8	868.5	825.5	42.98	20.205	
7,200.0	6,534.8	6,840.9	6,530.9	63.6	28.7	9.27	-198.7	-3,726.9	861.8	818.7	43.09	19.999	
7,283.4	6,609.1	6,914.6	6,604.7	64.4	28.8	9.68	-198.8	-3,727.2	824.7	781.0	43.73	18.859	
7,300.0	6,623.9	6,929.3	6,619.3	64.6	28.8	9.77	-198.8	-3,727.3	817.4	773.5	43.86	18.635	
7,381.9	6,696.8	7,001.7	6,691.7	65.4	28.9	10.24	-198.5	-3,727.7	781.1	736.6	44.53	17.540	
7,400.0	6,713.0	7,017.7	6,707.8	65.6	28.9	10.35	-198.4	-3,727.8	773.1	728.4	44.68	17.301	
7,435.0	6,744.2	7,048.7	6,738.7	65.9	28.9	10.58	-198.2	-3,728.0	757.6	712.6	44.99	16.840	
7,450.0	6,757.4	7,061.9	6,751.9	66.1	28.9	10.83	-198.1	-3,728.1	750.8	705.7	45.12	16.641	
7,480.3	6,783.7	7,087.9	6,778.0	66.4	29.0	11.39	-197.9	-3,728.3	736.1	690.7	45.37	16.225	
7,500.0	6,800.3	7,104.4	6,794.5	66.6	29.0	11.81	-197.8	-3,728.4	725.8	680.3	45.52	15.944	

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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 DD STATE #16-6B - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 508-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
7,550.0	6,840.7	7,144.7	6,834.7	67.3	29.0	13.10	-197.3	-3,728.7	697.2	651.2	45.96	15.170	
7,578.7	6,862.7	7,166.6	6,856.7	67.8	29.0	14.02	-197.1	-3,728.9	679.3	633.0	46.29	14.674	
7,600.0	6,878.4	7,182.3	6,872.3	68.1	29.1	14.79	-196.9	-3,729.0	665.3	618.7	46.60	14.277	
7,650.0	6,913.2	7,216.9	6,906.9	68.9	29.1	17.03	-196.4	-3,729.3	630.4	582.7	47.70	13.216	
7,677.1	6,930.7	7,234.4	6,924.4	69.5	29.1	18.54	-196.1	-3,729.4	610.2	561.6	48.62	12.550	
7,700.0	6,944.6	7,248.3	6,938.3	69.9	29.1	20.02	-195.9	-3,729.5	592.7	543.0	49.66	11.935	
7,750.0	6,972.6	7,276.3	6,966.3	70.9	29.2	24.05	-195.4	-3,729.8	552.6	499.5	53.08	10.410	
7,775.6	6,985.4	7,289.2	6,979.2	71.4	29.2	26.66	-195.2	-3,729.9	531.3	475.6	55.65	9.546	
7,800.0	6,996.8	7,300.6	6,990.7	72.0	29.2	29.57	-195.0	-3,730.0	510.5	451.7	58.75	8.689	
7,850.0	7,017.1	7,321.0	7,011.0	73.1	29.2	37.10	-194.6	-3,730.2	466.7	399.3	67.35	6.929	
7,874.0	7,025.5	7,321.0	7,011.0	73.7	29.2	40.04	-194.6	-3,730.2	445.3	374.4	70.84	6.286	
7,900.0	7,033.4	7,321.0	7,011.0	74.3	29.2	43.52	-194.6	-3,730.2	422.0	347.0	74.95	5.630	
7,950.0	7,045.5	7,321.0	7,011.0	75.5	29.2	51.01	-194.6	-3,730.2	377.1	293.5	83.57	4.512	
7,972.4	7,049.5	7,321.0	7,011.0	76.0	29.2	54.65	-194.6	-3,730.2	356.9	269.4	87.52	4.079	
8,000.0	7,053.3	7,321.0	7,011.0	76.7	29.2	59.29	-194.6	-3,730.2	332.3	240.0	92.22	3.603	
8,047.0	7,056.7	7,321.0	7,011.0	77.8	29.2	67.33	-194.6	-3,730.2	290.6	191.3	99.31	2.926	
8,070.8	7,057.5	7,321.0	7,011.0	78.4	29.2	67.33	-194.6	-3,730.2	269.9	170.1	99.85	2.703	
8,100.0	7,058.4	7,321.0	7,011.0	79.1	29.2	67.33	-194.6	-3,730.2	245.4	144.9	100.51	2.442	
8,123.5	7,059.1	7,321.0	7,011.0	79.7	29.2	67.33	-194.6	-3,730.2	226.5	125.4	101.04	2.241	
8,150.0	7,059.8	7,321.0	7,011.0	80.3	29.2	67.03	-194.6	-3,730.2	205.8	104.5	101.36	2.031	
8,169.3	7,060.0	7,321.0	7,011.0	80.8	29.2	66.83	-194.6	-3,730.2	191.2	89.7	101.48	1.884	
8,179.6	7,060.0	7,321.0	7,011.0	81.1	29.2	66.74	-194.6	-3,730.2	183.5	82.0	101.51	1.808	
8,200.0	7,060.0	7,321.0	7,011.0	81.6	29.2	66.74	-194.6	-3,730.2	169.0	67.1	101.97	1.658	
8,267.7	7,060.0	7,321.0	7,011.0	83.2	29.2	66.74	-194.6	-3,730.2	132.7	29.2	103.52	1.282	Level 3
8,300.0	7,060.0	7,321.0	7,011.0	84.0	29.2	66.74	-194.6	-3,730.2	124.9	20.7	104.26	1.198	Level 2
8,314.8	7,060.0	7,321.0	7,011.0	84.4	29.2	66.74	-194.6	-3,730.2	124.0	19.5	104.60	1.186	Level 2, CC, ES, SF
8,366.1	7,060.0	7,321.0	7,011.0	85.7	29.2	66.74	-194.6	-3,730.2	134.2	28.5	105.78	1.269	Level 3
8,400.0	7,060.0	7,321.0	7,011.0	86.5	29.2	66.74	-194.6	-3,730.2	150.5	43.9	106.56	1.412	Level 3
8,464.5	7,060.0	7,321.0	7,011.0	88.1	29.2	66.74	-194.6	-3,730.2	194.4	86.4	108.06	1.799	
8,500.0	7,060.0	7,321.0	7,011.0	89.0	29.2	66.74	-194.6	-3,730.2	222.9	114.0	108.89	2.047	
8,563.0	7,060.0	7,321.0	7,011.0	90.6	29.2	66.74	-194.6	-3,730.2	277.4	167.1	110.36	2.514	
8,600.0	7,060.0	7,321.0	7,011.0	91.5	29.2	66.74	-194.6	-3,730.2	311.0	199.8	111.22	2.796	
8,661.4	7,060.0	7,321.0	7,011.0	93.1	29.2	66.74	-194.6	-3,730.2	368.1	255.4	112.67	3.267	
8,700.0	7,060.0	7,321.0	7,011.0	94.1	29.2	66.74	-194.6	-3,730.2	404.7	291.1	113.58	3.563	
8,759.8	7,060.0	7,321.0	7,011.0	95.6	29.2	66.74	-194.6	-3,730.2	462.0	347.0	115.00	4.017	
8,800.0	7,060.0	7,321.0	7,011.0	96.6	29.2	66.74	-194.6	-3,730.2	500.8	384.8	115.95	4.319	
8,858.2	7,060.0	7,321.0	7,011.0	98.1	29.2	66.74	-194.6	-3,730.2	557.4	440.1	117.33	4.751	
8,900.0	7,060.0	7,321.0	7,011.0	99.2	29.2	66.74	-194.6	-3,730.2	598.2	479.8	118.33	5.055	
8,956.7	7,060.0	7,321.0	7,011.0	100.7	29.2	66.74	-194.6	-3,730.2	653.7	534.0	119.68	5.462	
9,000.0	7,060.0	7,321.0	7,011.0	101.8	29.2	66.74	-194.6	-3,730.2	696.3	575.6	120.72	5.768	
9,055.1	7,060.0	7,321.0	7,011.0	103.2	29.2	66.74	-194.6	-3,730.2	750.6	628.5	122.04	6.150	
9,100.0	7,060.0	7,321.0	7,011.0	104.4	29.2	66.74	-194.6	-3,730.2	794.9	671.8	123.12	6.456	
9,153.5	7,060.0	7,321.0	7,011.0	105.8	29.2	66.74	-194.6	-3,730.2	847.8	723.4	124.42	6.814	
9,200.0	7,060.0	7,321.0	7,011.0	107.0	29.2	66.74	-194.6	-3,730.2	893.8	768.3	125.54	7.120	
9,251.9	7,060.0	7,321.0	7,011.0	108.4	29.2	66.74	-194.6	-3,730.2	945.3	818.5	126.80	7.455	
9,300.0	7,060.0	7,321.0	7,011.0	109.6	29.2	66.74	-194.6	-3,730.2	992.9	865.0	127.96	7.760	
9,350.4	7,060.0	7,321.0	7,011.0	110.9	29.2	66.74	-194.6	-3,730.2	1,042.9	913.8	129.18	8.073	
9,400.0	7,060.0	7,321.0	7,011.0	112.2	29.2	66.74	-194.6	-3,730.2	1,092.2	961.8	130.39	8.377	
9,448.8	7,060.0	7,321.0	7,011.0	113.5	29.2	66.74	-194.6	-3,730.2	1,140.7	1,009.2	131.58	8.669	
9,500.0	7,060.0	7,321.0	7,011.0	114.9	29.2	66.74	-194.6	-3,730.2	1,191.6	1,058.8	132.83	8.971	
9,547.2	7,060.0	7,321.0	7,011.0	116.1	29.2	66.74	-194.6	-3,730.2	1,238.6	1,104.6	133.99	9.244	
9,600.0	7,060.0	7,321.0	7,011.0	117.5	29.2	66.74	-194.6	-3,730.2	1,291.1	1,155.9	135.28	9.544	

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 C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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 DD STATE #16-6B - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 508-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
9,645.6	7,060.0	7,321.0	7,011.0	118.7	29.2	66.74	-194.6	-3,730.2	1,336.6	1,200.2	136.40	9.799	
9,700.0	7,060.0	7,321.0	7,011.0	120.2	29.2	66.74	-194.6	-3,730.2	1,390.7	1,253.0	137.73	10.097	
9,744.1	7,060.0	7,321.0	7,011.0	121.3	29.2	66.74	-194.6	-3,730.2	1,434.6	1,295.8	138.82	10.335	
9,800.0	7,060.0	7,321.0	7,011.0	122.8	29.2	66.74	-194.6	-3,730.2	1,490.3	1,350.1	140.19	10.631	
9,842.5	7,060.0	7,321.0	7,011.0	123.9	29.2	66.74	-194.6	-3,730.2	1,532.7	1,391.5	141.24	10.852	
9,900.0	7,060.0	7,321.0	7,011.0	125.5	29.2	66.74	-194.6	-3,730.2	1,590.0	1,447.4	142.66	11.145	
9,940.9	7,060.0	7,321.0	7,011.0	126.6	29.2	66.74	-194.6	-3,730.2	1,630.8	1,487.1	143.67	11.351	
10,000.0	7,060.0	7,321.0	7,011.0	128.1	29.2	66.74	-194.6	-3,730.2	1,689.7	1,544.6	145.13	11.643	
10,039.3	7,060.0	7,321.0	7,011.0	129.2	29.2	66.74	-194.6	-3,730.2	1,729.0	1,582.9	146.11	11.834	
10,100.0	7,060.0	7,321.0	7,011.0	130.8	29.2	66.74	-194.6	-3,730.2	1,789.5	1,641.9	147.61	12.123	
10,137.8	7,060.0	7,321.0	7,011.0	131.8	29.2	66.74	-194.6	-3,730.2	1,827.2	1,678.6	148.55	12.300	
10,200.0	7,060.0	7,321.0	7,011.0	133.5	29.2	66.74	-194.6	-3,730.2	1,889.2	1,739.2	150.09	12.587	
10,236.2	7,060.0	7,321.0	7,011.0	134.5	29.2	66.74	-194.6	-3,730.2	1,925.4	1,774.4	150.99	12.751	
10,300.0	7,060.0	7,321.0	7,011.0	136.2	29.2	66.74	-194.6	-3,730.2	1,989.0	1,836.5	152.58	13.036	
10,334.6	7,060.0	7,321.0	7,011.0	137.1	29.2	66.74	-194.6	-3,730.2	2,023.6	1,870.2	153.44	13.188	
10,400.0	7,060.0	7,321.0	7,011.0	138.9	29.2	66.74	-194.6	-3,730.2	2,088.9	1,933.8	155.07	13.470	
10,433.0	7,060.0	7,321.0	7,011.0	139.8	29.2	66.74	-194.6	-3,730.2	2,121.8	1,965.9	155.90	13.610	
10,500.0	7,060.0	7,321.0	7,011.0	141.6	29.2	66.74	-194.6	-3,730.2	2,188.7	2,031.1	157.57	13.890	
10,531.5	7,060.0	7,321.0	7,011.0	142.4	29.2	66.74	-194.6	-3,730.2	2,220.1	2,061.8	158.36	14.020	
10,600.0	7,060.0	7,321.0	7,011.0	144.3	29.2	66.74	-194.6	-3,730.2	2,288.5	2,128.5	160.07	14.297	
10,629.9	7,060.0	7,321.0	7,011.0	145.1	29.2	66.74	-194.6	-3,730.2	2,318.4	2,157.6	160.82	14.416	
10,700.0	7,060.0	7,321.0	7,011.0	147.0	29.2	66.74	-194.6	-3,730.2	2,388.4	2,225.8	162.58	14.691	
10,728.3	7,060.0	7,321.0	7,011.0	147.8	29.2	66.74	-194.6	-3,730.2	2,416.7	2,253.4	163.29	14.800	
10,800.0	7,060.0	7,321.0	7,011.0	149.7	29.2	66.74	-194.6	-3,730.2	2,488.3	2,323.2	165.08	15.073	
10,826.7	7,060.0	7,321.0	7,011.0	150.4	29.2	66.74	-194.6	-3,730.2	2,515.0	2,349.2	165.76	15.173	
10,900.0	7,060.0	7,321.0	7,011.0	152.4	29.2	66.74	-194.6	-3,730.2	2,588.1	2,420.5	167.60	15.443	
10,925.2	7,060.0	7,321.0	7,011.0	153.1	29.2	66.74	-194.6	-3,730.2	2,613.3	2,445.1	168.23	15.534	
11,000.0	7,060.0	7,321.0	7,011.0	155.1	29.2	66.74	-194.6	-3,730.2	2,688.0	2,517.9	170.11	15.802	
11,023.6	7,060.0	7,321.0	7,011.0	155.8	29.2	66.74	-194.6	-3,730.2	2,711.6	2,540.9	170.71	15.885	
11,100.0	7,060.0	7,321.0	7,011.0	157.8	29.2	66.74	-194.6	-3,730.2	2,787.9	2,615.3	172.63	16.150	
11,122.0	7,060.0	7,321.0	7,011.0	158.4	29.2	66.74	-194.6	-3,730.2	2,809.9	2,636.7	173.18	16.225	
11,200.0	7,060.0	7,321.0	7,011.0	160.6	29.2	66.74	-194.6	-3,730.2	2,887.8	2,712.7	175.15	16.488	
11,220.4	7,060.0	7,321.0	7,011.0	161.1	29.2	66.74	-194.6	-3,730.2	2,908.3	2,732.6	175.67	16.556	
11,300.0	7,060.0	7,321.0	7,011.0	163.3	29.2	66.74	-194.6	-3,730.2	2,987.7	2,810.1	177.67	16.816	
11,318.9	7,060.0	7,321.0	7,011.0	163.8	29.2	66.74	-194.6	-3,730.2	3,006.6	2,828.5	178.15	16.877	
11,400.0	7,060.0	7,321.0	7,011.0	166.0	29.2	66.74	-194.6	-3,730.2	3,087.7	2,907.5	180.20	17.135	
11,417.3	7,060.0	7,321.0	7,011.0	166.5	29.2	66.74	-194.6	-3,730.2	3,104.9	2,924.3	180.64	17.189	
11,500.0	7,060.0	7,321.0	7,011.0	168.8	29.2	66.74	-194.6	-3,730.2	3,187.6	3,004.9	182.73	17.444	
11,515.7	7,060.0	7,321.0	7,011.0	169.2	29.2	66.74	-194.6	-3,730.2	3,203.3	3,020.2	183.13	17.492	
11,600.0	7,060.0	7,321.0	7,011.0	171.5	29.2	66.74	-194.6	-3,730.2	3,287.5	3,102.3	185.26	17.746	
11,614.1	7,060.0	7,321.0	7,011.0	171.9	29.2	66.74	-194.6	-3,730.2	3,301.6	3,116.0	185.62	17.787	
11,700.0	7,060.0	7,321.0	7,011.0	174.2	29.2	66.74	-194.6	-3,730.2	3,387.4	3,199.6	187.79	18.038	
11,712.6	7,060.0	7,321.0	7,011.0	174.6	29.2	66.74	-194.6	-3,730.2	3,400.0	3,211.9	188.11	18.075	
11,800.0	7,060.0	7,321.0	7,011.0	177.0	29.2	66.74	-194.6	-3,730.2	3,487.4	3,297.0	190.33	18.323	
11,811.0	7,060.0	7,321.0	7,011.0	177.3	29.2	66.74	-194.6	-3,730.2	3,498.4	3,307.8	190.61	18.354	
11,900.0	7,060.0	7,321.0	7,011.0	179.7	29.2	66.74	-194.6	-3,730.2	3,587.3	3,394.4	192.86	18.600	
11,909.4	7,060.0	7,321.0	7,011.0	180.0	29.2	66.74	-194.6	-3,730.2	3,596.7	3,403.6	193.10	18.626	
12,000.0	7,060.0	7,321.0	7,011.0	182.4	29.2	66.74	-194.6	-3,730.2	3,687.3	3,491.9	195.40	18.870	
12,007.8	7,060.0	7,321.0	7,011.0	182.7	29.2	66.74	-194.6	-3,730.2	3,695.1	3,499.5	195.60	18.891	
12,100.0	7,060.0	7,321.0	7,011.0	185.2	29.2	66.74	-194.6	-3,730.2	3,787.2	3,589.3	197.94	19.133	
12,106.3	7,060.0	7,321.0	7,011.0	185.4	29.2	66.74	-194.6	-3,730.2	3,793.5	3,595.4	198.10	19.149	
12,200.0	7,060.0	7,321.0	7,011.0	187.9	29.2	66.74	-194.6	-3,730.2	3,887.1	3,686.7	200.49	19.388	

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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 DD STATE #16-6B - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 usft

Survey Program: 508-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
12,204.7	7,060.0	7,321.0	7,011.0	188.1	29.2	66.74	-194.6	-3,730.2	3,891.8	3,691.2	200.61	19.400	
12,300.0	7,060.0	7,321.0	7,011.0	190.7	29.2	66.74	-194.6	-3,730.2	3,987.1	3,784.1	203.03	19.638	
12,303.1	7,060.0	7,321.0	7,011.0	190.8	29.2	66.74	-194.6	-3,730.2	3,990.2	3,787.1	203.11	19.645	
12,400.0	7,060.0	7,321.0	7,011.0	193.4	29.2	66.74	-194.6	-3,730.2	4,087.1	3,881.5	205.58	19.881	
12,401.5	7,060.0	7,321.0	7,011.0	193.5	29.2	66.74	-194.6	-3,730.2	4,088.6	3,883.0	205.62	19.884	
12,500.0	7,060.0	7,321.0	7,011.0	196.2	29.2	66.74	-194.6	-3,730.2	4,187.0	3,978.9	208.13	20.118	
12,598.4	7,060.0	7,321.0	7,011.0	198.9	29.2	66.74	-194.6	-3,730.2	4,285.4	4,074.7	210.63	20.345	
12,600.0	7,060.0	7,321.0	7,011.0	198.9	29.2	66.74	-194.6	-3,730.2	4,287.0	4,076.3	210.68	20.349	
12,696.8	7,060.0	7,321.0	7,011.0	201.6	29.2	66.74	-194.6	-3,730.2	4,383.7	4,170.6	213.15	20.567	
12,700.0	7,060.0	7,321.0	7,011.0	201.7	29.2	66.74	-194.6	-3,730.2	4,386.9	4,173.7	213.23	20.574	
12,795.2	7,060.0	7,321.0	7,011.0	204.3	29.2	66.74	-194.6	-3,730.2	4,482.1	4,266.5	215.66	20.784	
12,800.0	7,060.0	7,321.0	7,011.0	204.5	29.2	66.74	-194.6	-3,730.2	4,486.9	4,271.1	215.78	20.794	
12,893.7	7,060.0	7,321.0	7,011.0	207.0	29.2	66.74	-194.6	-3,730.2	4,580.5	4,362.4	218.17	20.995	
12,900.0	7,060.0	7,321.0	7,011.0	207.2	29.2	66.74	-194.6	-3,730.2	4,586.8	4,368.5	218.33	21.009	
12,992.1	7,060.0	7,321.0	7,011.0	209.8	29.2	66.74	-194.6	-3,730.2	4,678.9	4,458.2	220.68	21.202	
13,000.0	7,060.0	7,321.0	7,011.0	210.0	29.2	66.74	-194.6	-3,730.2	4,686.8	4,465.9	220.89	21.218	
13,090.5	7,060.0	7,321.0	7,011.0	212.5	29.2	66.74	-194.6	-3,730.2	4,777.3	4,554.1	223.20	21.404	
13,100.0	7,060.0	7,321.0	7,011.0	212.7	29.2	66.74	-194.6	-3,730.2	4,786.8	4,563.3	223.44	21.423	
13,188.9	7,060.0	7,321.0	7,011.0	215.2	29.2	66.74	-194.6	-3,730.2	4,875.7	4,650.0	225.72	21.601	
13,200.0	7,060.0	7,321.0	7,011.0	215.5	29.2	66.74	-194.6	-3,730.2	4,886.7	4,660.7	226.00	21.623	
13,287.4	7,060.0	7,321.0	7,011.0	217.9	29.2	66.74	-194.6	-3,730.2	4,974.1	4,745.9	228.24	21.794	
13,300.0	7,060.0	7,321.0	7,011.0	218.3	29.2	66.74	-194.6	-3,730.2	4,986.7	4,758.2	228.56	21.818	
13,385.8	7,060.0	7,321.0	7,011.0	220.6	29.2	66.74	-194.6	-3,730.2	5,072.5	4,841.7	230.75	21.982	
13,400.0	7,060.0	7,321.0	7,011.0	221.0	29.2	66.74	-194.6	-3,730.2	5,086.7	4,855.6	231.12	22.009	
13,484.2	7,060.0	7,321.0	7,011.0	223.4	29.2	66.74	-194.6	-3,730.2	5,170.9	4,937.6	233.27	22.167	
13,500.0	7,060.0	7,321.0	7,011.0	223.8	29.2	66.74	-194.6	-3,730.2	5,186.7	4,953.0	233.68	22.196	
13,582.6	7,060.0	7,321.0	7,011.0	226.1	29.2	66.74	-194.6	-3,730.2	5,269.3	5,033.5	235.80	22.347	
13,600.0	7,060.0	7,321.0	7,011.0	226.6	29.2	66.74	-194.6	-3,730.2	5,286.6	5,050.4	236.24	22.378	
13,681.1	7,060.0	7,321.0	7,011.0	228.8	29.2	66.74	-194.6	-3,730.2	5,367.7	5,129.4	238.32	22.523	
13,700.0	7,060.0	7,321.0	7,011.0	229.3	29.2	66.74	-194.6	-3,730.2	5,386.6	5,147.8	238.80	22.557	
13,779.5	7,060.0	7,321.0	7,011.0	231.5	29.2	66.74	-194.6	-3,730.2	5,466.1	5,225.2	240.84	22.696	
13,800.0	7,060.0	7,321.0	7,011.0	232.1	29.2	66.74	-194.6	-3,730.2	5,486.6	5,245.2	241.37	22.731	
13,877.9	7,060.0	7,321.0	7,011.0	234.3	29.2	66.74	-194.6	-3,730.2	5,564.5	5,321.1	243.36	22.865	
13,900.0	7,060.0	7,321.0	7,011.0	234.9	29.2	66.74	-194.6	-3,730.2	5,586.5	5,342.6	243.93	22.902	
13,976.3	7,060.0	7,321.0	7,011.0	237.0	29.2	66.74	-194.6	-3,730.2	5,662.9	5,417.0	245.89	23.030	
14,000.0	7,060.0	7,321.0	7,011.0	237.6	29.2	66.74	-194.6	-3,730.2	5,686.5	5,440.0	246.49	23.070	
14,074.8	7,060.0	7,321.0	7,011.0	239.7	29.2	66.74	-194.6	-3,730.2	5,761.3	5,512.9	248.41	23.192	
14,100.0	7,060.0	7,321.0	7,011.0	240.4	29.2	66.74	-194.6	-3,730.2	5,786.5	5,537.4	249.06	23.233	
14,173.2	7,060.0	7,321.0	7,011.0	242.4	29.2	66.74	-194.6	-3,730.2	5,859.7	5,608.7	250.94	23.351	
14,200.0	7,060.0	7,321.0	7,011.0	243.2	29.2	66.74	-194.6	-3,730.2	5,886.5	5,634.8	251.63	23.394	
14,271.6	7,060.0	7,321.0	7,011.0	245.2	29.2	66.74	-194.6	-3,730.2	5,958.1	5,704.6	253.47	23.506	
14,300.0	7,060.0	7,321.0	7,011.0	246.0	29.2	66.74	-194.6	-3,730.2	5,986.5	5,732.3	254.20	23.551	
14,370.0	7,060.0	7,321.0	7,011.0	247.9	29.2	66.74	-194.6	-3,730.2	6,056.5	5,800.5	255.99	23.659	
14,400.0	7,060.0	7,321.0	7,011.0	248.7	29.2	66.74	-194.6	-3,730.2	6,086.4	5,829.7	256.76	23.704	
14,468.5	7,060.0	7,321.0	7,011.0	250.6	29.2	66.74	-194.6	-3,730.2	6,154.9	5,896.4	258.52	23.808	
14,500.0	7,060.0	7,321.0	7,011.0	251.5	29.2	66.74	-194.6	-3,730.2	6,186.4	5,927.1	259.33	23.855	
14,566.9	7,060.0	7,321.0	7,011.0	253.4	29.2	66.74	-194.6	-3,730.2	6,253.3	5,992.2	261.05	23.954	
14,600.0	7,060.0	7,321.0	7,011.0	254.3	29.2	66.74	-194.6	-3,730.2	6,286.4	6,024.5	261.90	24.003	
14,665.3	7,060.0	7,321.0	7,011.0	256.1	29.2	66.74	-194.6	-3,730.2	6,351.7	6,088.1	263.58	24.098	
14,700.0	7,060.0	7,321.0	7,011.0	257.1	29.2	66.74	-194.6	-3,730.2	6,386.4	6,121.9	264.47	24.148	
14,763.7	7,060.0	7,321.0	7,011.0	258.8	29.2	66.74	-194.6	-3,730.2	6,450.1	6,184.0	266.11	24.238	
14,800.0	7,060.0	7,321.0	7,011.0	259.9	29.2	66.74	-194.6	-3,730.2	6,486.4	6,219.3	267.04	24.289	

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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 DD STATE #16-6B - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 508-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
14,862.2	7,060.0	7,321.0	7,011.0	261.6	29.2	66.74	-194.6	-3,730.2	6,548.5	6,279.9	268.64	24.376	
14,900.0	7,060.0	7,321.0	7,011.0	262.6	29.2	66.74	-194.6	-3,730.2	6,586.3	6,316.7	269.62	24.429	
14,960.6	7,060.0	7,321.0	7,011.0	264.3	29.2	66.74	-194.6	-3,730.2	6,646.9	6,375.8	271.17	24.512	
15,000.0	7,060.0	7,321.0	7,011.0	265.4	29.2	66.74	-194.6	-3,730.2	6,686.3	6,414.1	272.19	24.565	
15,059.0	7,060.0	7,321.0	7,011.0	267.1	29.2	66.74	-194.6	-3,730.2	6,745.3	6,471.6	273.71	24.644	
15,100.0	7,060.0	7,321.0	7,011.0	268.2	29.2	66.74	-194.6	-3,730.2	6,786.3	6,511.5	274.76	24.699	
15,157.4	7,060.0	7,321.0	7,011.0	269.8	29.2	66.74	-194.6	-3,730.2	6,843.7	6,567.5	276.24	24.775	
15,200.0	7,060.0	7,321.0	7,011.0	271.0	29.2	66.74	-194.6	-3,730.2	6,886.3	6,608.9	277.33	24.830	
15,255.9	7,060.0	7,321.0	7,011.0	272.5	29.2	66.74	-194.6	-3,730.2	6,942.2	6,663.4	278.77	24.903	
15,300.0	7,060.0	7,321.0	7,011.0	273.8	29.2	66.74	-194.6	-3,730.2	6,986.3	6,706.4	279.91	24.959	
15,354.3	7,060.0	7,321.0	7,011.0	275.3	29.2	66.74	-194.6	-3,730.2	7,040.6	6,759.3	281.31	25.028	
15,400.0	7,060.0	7,321.0	7,011.0	276.5	29.2	66.74	-194.6	-3,730.2	7,086.3	6,803.8	282.48	25.086	
15,452.7	7,060.0	7,321.0	7,011.0	278.0	29.2	66.74	-194.6	-3,730.2	7,139.0	6,855.1	283.84	25.151	
15,500.0	7,060.0	7,321.0	7,011.0	279.3	29.2	66.74	-194.6	-3,730.2	7,186.2	6,901.2	285.06	25.210	
15,551.1	7,060.0	7,321.0	7,011.0	280.7	29.2	66.74	-194.6	-3,730.2	7,237.4	6,951.0	286.38	25.272	
15,600.0	7,060.0	7,321.0	7,011.0	282.1	29.2	66.74	-194.6	-3,730.2	7,286.2	6,998.6	287.63	25.331	
15,649.6	7,060.0	7,321.0	7,011.0	283.5	29.2	66.74	-194.6	-3,730.2	7,335.8	7,046.9	288.91	25.391	
15,700.0	7,060.0	7,321.0	7,011.0	284.9	29.2	66.74	-194.6	-3,730.2	7,386.2	7,096.0	290.21	25.451	
15,748.0	7,060.0	7,321.0	7,011.0	286.2	29.2	66.74	-194.6	-3,730.2	7,434.2	7,142.8	291.45	25.508	
15,800.0	7,060.0	7,321.0	7,011.0	287.7	29.2	66.74	-194.6	-3,730.2	7,486.2	7,193.4	292.79	25.569	
15,846.4	7,060.0	7,321.0	7,011.0	289.0	29.2	66.74	-194.6	-3,730.2	7,532.6	7,238.6	293.98	25.622	
15,900.0	7,060.0	7,321.0	7,011.0	290.5	29.2	66.74	-194.6	-3,730.2	7,586.2	7,290.8	295.37	25.684	
15,944.8	7,060.0	7,321.0	7,011.0	291.7	29.2	66.74	-194.6	-3,730.2	7,631.0	7,334.5	296.52	25.735	
16,000.0	7,060.0	7,321.0	7,011.0	293.2	29.2	66.74	-194.6	-3,730.2	7,686.2	7,388.2	297.94	25.797	
16,043.3	7,060.0	7,321.0	7,011.0	294.4	29.2	66.74	-194.6	-3,730.2	7,729.4	7,430.4	299.06	25.846	
16,100.0	7,060.0	7,321.0	7,011.0	296.0	29.2	66.74	-194.6	-3,730.2	7,786.2	7,485.6	300.52	25.909	
16,141.7	7,060.0	7,321.0	7,011.0	297.2	29.2	66.74	-194.6	-3,730.2	7,827.9	7,526.3	301.60	25.955	
16,200.0	7,060.0	7,321.0	7,011.0	298.8	29.2	66.74	-194.6	-3,730.2	7,886.1	7,583.0	303.10	26.018	
16,240.1	7,060.0	7,321.0	7,011.0	299.9	29.2	66.74	-194.6	-3,730.2	7,926.3	7,622.1	304.13	26.062	
16,300.0	7,060.0	7,321.0	7,011.0	301.6	29.2	66.74	-194.6	-3,730.2	7,986.1	7,680.5	305.68	26.126	
16,338.5	7,060.0	7,321.0	7,011.0	302.7	29.2	66.74	-194.6	-3,730.2	8,024.7	7,718.0	306.67	26.167	
16,400.0	7,060.0	7,321.0	7,011.0	304.4	29.2	66.74	-194.6	-3,730.2	8,086.1	7,777.9	308.26	26.232	
16,437.0	7,060.0	7,321.0	7,011.0	305.4	29.2	66.74	-194.6	-3,730.2	8,123.1	7,813.9	309.21	26.270	
16,500.0	7,060.0	7,321.0	7,011.0	307.2	29.2	66.74	-194.6	-3,730.2	8,186.1	7,875.3	310.84	26.336	
16,535.4	7,060.0	7,321.0	7,011.0	308.2	29.2	66.74	-194.6	-3,730.2	8,221.5	7,909.8	311.75	26.372	
16,600.0	7,060.0	7,321.0	7,011.0	310.0	29.2	66.74	-194.6	-3,730.2	8,286.1	7,972.7	313.42	26.438	
16,633.8	7,060.0	7,321.0	7,011.0	310.9	29.2	66.74	-194.6	-3,730.2	8,319.9	8,005.6	314.29	26.472	
16,700.0	7,060.0	7,321.0	7,011.0	312.8	29.2	66.74	-194.6	-3,730.2	8,386.1	8,070.1	316.00	26.538	
16,732.2	7,060.0	7,321.0	7,011.0	313.7	29.2	66.74	-194.6	-3,730.2	8,418.3	8,101.5	316.83	26.570	
16,800.0	7,060.0	7,321.0	7,011.0	315.5	29.2	66.74	-194.6	-3,730.2	8,486.1	8,167.5	318.58	26.637	
16,830.7	7,060.0	7,321.0	7,011.0	316.4	29.2	66.74	-194.6	-3,730.2	8,516.7	8,197.4	319.37	26.667	
16,900.0	7,060.0	7,321.0	7,011.0	318.3	29.2	66.74	-194.6	-3,730.2	8,586.1	8,264.9	321.16	26.734	
16,929.1	7,060.0	7,321.0	7,011.0	319.1	29.2	66.74	-194.6	-3,730.2	8,615.2	8,293.2	321.91	26.762	
17,000.0	7,060.0	7,321.0	7,011.0	321.1	29.2	66.74	-194.6	-3,730.2	8,686.1	8,362.3	323.74	26.830	
17,027.5	7,060.0	7,321.0	7,011.0	321.9	29.2	66.74	-194.6	-3,730.2	8,713.6	8,389.1	324.45	26.856	
17,100.0	7,060.0	7,321.0	7,011.0	323.9	29.2	66.74	-194.6	-3,730.2	8,786.0	8,459.7	326.32	26.924	
17,125.9	7,060.0	7,321.0	7,011.0	324.6	29.2	66.74	-194.6	-3,730.2	8,812.0	8,485.0	327.00	26.948	
17,200.0	7,060.0	7,321.0	7,011.0	326.7	29.2	66.74	-194.6	-3,730.2	8,886.0	8,557.1	328.91	27.017	
17,224.4	7,060.0	7,321.0	7,011.0	327.4	29.2	66.74	-194.6	-3,730.2	8,910.4	8,580.9	329.54	27.039	
17,300.0	7,060.0	7,321.0	7,011.0	329.5	29.2	66.74	-194.6	-3,730.2	8,986.0	8,654.5	331.49	27.108	
17,322.8	7,060.0	7,321.0	7,011.0	330.1	29.2	66.74	-194.6	-3,730.2	9,008.8	8,676.7	332.08	27.129	
17,400.0	7,060.0	7,321.0	7,011.0	332.3	29.2	66.74	-194.6	-3,730.2	9,086.0	8,751.9	334.07	27.198	

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 C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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 DD STATE #16-6B - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 508-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
17,421.2	7,060.0	7,321.0	7,011.0	332.9	29.2	66.74	-194.6	-3,730.2	9,107.2	8,772.6	334.62	27.217	
17,500.0	7,060.0	7,321.0	7,011.0	335.1	29.2	66.74	-194.6	-3,730.2	9,186.0	8,849.3	336.66	27.286	
17,519.6	7,060.0	7,321.0	7,011.0	335.6	29.2	66.74	-194.6	-3,730.2	9,205.7	8,868.5	337.16	27.303	
17,600.0	7,060.0	7,321.0	7,011.0	337.9	29.2	66.74	-194.6	-3,730.2	9,286.0	8,946.8	339.24	27.373	
17,618.1	7,060.0	7,321.0	7,011.0	338.4	29.2	66.74	-194.6	-3,730.2	9,304.1	8,964.4	339.71	27.389	
17,700.0	7,060.0	7,321.0	7,011.0	340.7	29.2	66.74	-194.6	-3,730.2	9,386.0	9,044.2	341.82	27.459	
17,716.5	7,060.0	7,321.0	7,011.0	341.1	29.2	66.74	-194.6	-3,730.2	9,402.5	9,060.2	342.25	27.473	
17,800.0	7,060.0	7,321.0	7,011.0	343.5	29.2	66.74	-194.6	-3,730.2	9,486.0	9,141.6	344.41	27.543	
17,814.9	7,060.0	7,321.0	7,011.0	343.9	29.2	66.74	-194.6	-3,730.2	9,500.9	9,156.1	344.79	27.555	
17,900.0	7,060.0	7,321.0	7,011.0	346.2	29.2	66.74	-194.6	-3,730.2	9,586.0	9,239.0	346.99	27.626	
17,913.3	7,060.0	7,321.0	7,011.0	346.6	29.2	66.74	-194.6	-3,730.2	9,599.3	9,252.0	347.34	27.637	
18,000.0	7,060.0	7,321.0	7,011.0	349.0	29.2	66.74	-194.6	-3,730.2	9,686.0	9,336.4	349.58	27.708	
18,011.8	7,060.0	7,321.0	7,011.0	349.4	29.2	66.74	-194.6	-3,730.2	9,697.7	9,347.9	349.88	27.717	
18,100.0	7,060.0	7,321.0	7,011.0	351.8	29.2	66.74	-194.6	-3,730.2	9,786.0	9,433.8	352.16	27.788	
18,110.2	7,060.0	7,321.0	7,011.0	352.1	29.2	66.74	-194.6	-3,730.2	9,796.2	9,443.7	352.43	27.796	
18,200.0	7,060.0	7,321.0	7,011.0	354.6	29.2	66.74	-194.6	-3,730.2	9,885.9	9,531.2	354.75	27.868	
18,208.6	7,060.0	7,321.0	7,011.0	354.9	29.2	66.74	-194.6	-3,730.2	9,894.6	9,539.6	354.97	27.874	
18,300.0	7,060.0	7,321.0	7,011.0	357.4	29.2	66.74	-194.6	-3,730.2	9,985.9	9,628.6	357.33	27.946	
18,307.0	7,060.0	7,321.0	7,011.0	357.6	29.2	66.74	-194.6	-3,730.2	9,993.0	9,635.5	357.52	27.951	

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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	108.30	-40.4	122.3	129.9				
98.4	98.4	80.7	80.7	0.1	0.0	108.32	-40.5	122.5	129.0	128.9	0.14	925.264	CC, ES
100.0	100.0	82.3	82.3	0.1	0.0	108.32	-40.5	122.5	129.0	128.9	0.14	908.046	
196.8	196.8	178.9	178.9	0.3	0.2	108.38	-40.9	123.1	129.7	129.2	0.50	261.251	
200.0	200.0	182.1	182.1	0.3	0.2	108.38	-40.9	123.1	129.7	129.2	0.51	255.065	
295.3	295.3	277.8	277.8	0.5	0.3	-156.81	-41.3	123.5	131.7	130.9	0.82	161.332	
300.0	300.0	282.6	282.6	0.5	0.3	-156.83	-41.3	123.5	131.9	131.0	0.83	158.756	
393.7	393.6	376.6	376.6	0.7	0.3	-157.38	-41.8	123.5	136.4	135.3	1.11	122.806	
400.0	399.8	382.9	382.9	0.8	0.4	-157.43	-41.9	123.5	136.8	135.7	1.13	121.143	
492.1	491.6	474.9	474.9	1.0	0.4	-158.33	-42.5	123.2	144.0	142.6	1.41	101.967	
500.0	499.5	482.8	482.8	1.0	0.4	-158.42	-42.5	123.1	144.7	143.3	1.44	100.780	
590.5	589.3	572.9	572.9	1.3	0.5	-159.62	-43.0	122.7	154.6	152.9	1.72	89.844	
600.0	598.7	582.3	582.3	1.3	0.5	-159.76	-43.0	122.7	155.8	154.1	1.75	89.004	
689.0	686.6	670.2	670.2	1.6	0.5	-161.10	-43.5	122.2	168.4	166.4	2.04	82.553	
700.0	697.5	681.1	681.1	1.6	0.5	-161.27	-43.5	122.1	170.2	168.1	2.08	81.986	
787.4	783.3	767.1	767.1	2.0	0.6	-162.63	-44.0	121.7	185.6	183.2	2.37	78.327	
800.0	795.6	779.5	779.5	2.0	0.6	-162.83	-44.1	121.6	188.0	185.6	2.41	77.975	
885.8	879.3	863.3	863.3	2.4	0.6	-164.15	-44.5	121.1	205.9	203.2	2.71	76.071	
900.0	893.1	877.1	877.1	2.5	0.6	-164.37	-44.6	121.0	209.1	206.4	2.76	75.905	
984.2	974.5	959.0	959.0	2.9	0.6	-165.63	-44.8	120.5	229.6	226.5	3.05	75.196	
1,000.0	989.6	974.3	974.3	3.0	0.6	-165.86	-44.8	120.4	233.6	230.5	3.11	75.184	
1,082.7	1,068.8	1,054.0	1,054.0	3.5	0.7	-167.03	-44.9	119.8	256.3	252.9	3.41	75.230	
1,100.0	1,085.3	1,070.6	1,070.6	3.6	0.7	-167.26	-44.9	119.6	261.4	257.9	3.47	75.349	
1,181.1	1,162.0	1,148.0	1,148.0	4.1	0.7	-168.31	-44.9	118.9	286.3	282.5	3.77	75.893	
1,200.0	1,179.8	1,166.0	1,165.9	4.2	0.7	-168.54	-44.8	118.7	292.4	288.5	3.84	76.126	
1,279.5	1,254.2	1,241.0	1,240.9	4.8	0.7	-169.47	-44.6	117.9	319.3	315.1	4.15	76.976	
1,300.0	1,273.2	1,260.1	1,260.1	5.0	0.8	-169.70	-44.5	117.6	326.6	322.3	4.22	77.351	
1,377.9	1,345.0	1,332.4	1,332.3	5.6	0.8	-170.55	-43.9	116.8	355.5	350.9	4.52	78.701	
1,400.0	1,365.2	1,352.6	1,352.6	5.8	0.8	-170.79	-43.7	116.6	364.0	359.4	4.61	78.914	
1,476.4	1,434.6	1,421.5	1,421.4	6.4	0.8	-171.59	-42.6	115.8	394.9	390.0	4.92	80.282	
1,500.0	1,455.8	1,442.2	1,442.2	6.7	0.8	-171.83	-42.2	115.7	404.9	399.9	5.02	80.731	
1,550.0	1,500.6	1,485.7	1,485.6	7.1	0.8	-172.33	-41.2	115.4	426.7	421.5	5.22	81.739	
1,574.8	1,522.7	1,507.2	1,507.1	7.4	0.8	-172.60	-40.6	115.4	437.8	432.5	5.32	82.353	
1,600.0	1,545.1	1,529.0	1,528.9	7.6	0.8	-172.86	-40.0	115.3	449.1	443.7	5.42	82.927	
1,673.2	1,610.4	1,592.4	1,592.3	8.3	0.8	-173.57	-38.3	115.4	482.2	476.5	5.70	84.637	
1,700.0	1,634.2	1,615.6	1,615.4	8.6	0.8	-173.80	-37.7	115.4	494.4	488.6	5.80	85.228	
1,771.6	1,698.1	1,677.5	1,677.3	9.3	0.9	-174.39	-35.9	115.8	527.1	521.0	6.08	86.711	
1,800.0	1,723.3	1,701.9	1,701.7	9.5	0.9	-174.61	-35.2	116.0	540.1	534.0	6.19	87.250	
1,870.1	1,785.8	1,762.3	1,762.1	10.2	0.9	-175.10	-33.4	116.6	572.5	566.0	6.46	88.564	
1,900.0	1,812.4	1,788.1	1,787.9	10.5	0.9	-175.29	-32.6	116.9	586.4	579.8	6.58	89.090	
1,968.5	1,873.5	1,846.3	1,846.0	11.2	0.9	-175.69	-31.0	117.7	618.3	611.4	6.85	90.239	
2,000.0	1,901.5	1,872.8	1,872.6	11.5	0.9	-175.86	-30.3	118.2	633.0	626.1	6.98	90.742	
2,066.9	1,961.2	1,929.0	1,928.7	12.2	0.9	-176.18	-28.8	119.3	664.6	657.4	7.24	91.762	
2,100.0	1,990.6	1,956.6	1,956.3	12.5	0.9	-176.33	-28.0	120.0	680.3	672.9	7.38	92.246	
2,165.3	2,048.9	2,011.0	2,010.6	13.2	0.9	-176.61	-26.5	121.4	711.5	703.9	7.64	93.168	
2,200.0	2,079.7	2,039.7	2,039.3	13.5	0.9	-176.75	-25.7	122.3	728.2	720.4	7.78	93.640	
2,263.8	2,136.6	2,092.3	2,091.9	14.1	0.9	-176.97	-24.4	124.0	759.1	751.0	8.03	94.475	
2,300.0	2,168.8	2,122.9	2,122.4	14.5	0.9	-177.09	-23.7	125.1	776.7	768.5	8.18	94.939	
2,362.2	2,224.3	2,175.7	2,175.3	15.1	1.0	-177.26	-22.7	127.1	807.0	798.6	8.43	95.701	
2,400.0	2,257.9	2,208.0	2,207.5	15.5	1.0	-177.36	-22.2	128.4	825.5	816.9	8.59	96.148	
2,460.6	2,312.0	2,260.8	2,260.2	16.1	1.0	-177.50	-21.4	130.5	855.2	846.3	8.83	96.846	
2,500.0	2,347.0	2,295.1	2,294.5	16.5	1.0	-177.58	-20.9	131.9	874.4	865.5	8.99	97.276	

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 C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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
2,559.0	2,399.7	2,345.3	2,344.7	17.1	1.0	-177.68	-20.4	133.9	903.4	894.2	9.23	97.888	
2,600.0	2,436.1	2,380.0	2,379.3	17.5	1.0	-177.74	-20.1	135.4	923.5	914.1	9.40	98.297	
2,657.5	2,487.4	2,429.2	2,428.4	18.0	1.0	-177.82	-19.7	137.5	951.8	942.2	9.63	98.840	
2,700.0	2,525.2	2,465.8	2,465.0	18.5	1.0	-177.87	-19.4	139.2	972.7	962.9	9.80	99.223	
2,755.9	2,575.1	2,514.1	2,513.3	19.0	1.0	-177.94	-19.1	141.3	1,000.3	990.3	10.03	99.705	
2,800.0	2,614.3	2,552.6	2,551.8	19.5	1.0	-178.00	-18.8	143.0	1,022.1	1,011.8	10.21	100.073	
2,854.3	2,662.7	2,600.0	2,599.1	20.0	1.0	-178.06	-18.4	145.1	1,048.8	1,038.4	10.44	100.506	
2,900.0	2,703.4	2,638.8	2,637.9	20.5	1.1	-178.11	-18.1	146.8	1,071.4	1,060.7	10.62	100.850	
2,952.7	2,750.4	2,683.5	2,682.6	21.0	1.1	-178.16	-17.7	148.8	1,097.4	1,086.6	10.84	101.235	
3,000.0	2,792.5	2,724.9	2,723.9	21.5	1.1	-178.21	-17.4	150.8	1,120.8	1,109.8	11.04	101.565	
3,051.2	2,838.1	2,770.7	2,769.7	22.0	1.1	-178.26	-17.1	152.8	1,146.1	1,134.8	11.25	101.902	
3,100.0	2,881.6	2,814.7	2,813.6	22.5	1.1	-178.31	-16.8	154.8	1,170.2	1,158.7	11.45	102.210	
3,149.6	2,925.8	2,859.8	2,858.6	23.0	1.1	-178.36	-16.4	156.7	1,194.5	1,182.9	11.65	102.511	
3,200.0	2,970.7	2,905.5	2,904.3	23.5	1.1	-178.40	-16.0	158.5	1,219.2	1,207.4	11.86	102.799	
3,248.0	3,013.5	2,947.8	2,946.6	23.9	1.1	-178.44	-15.6	160.2	1,242.8	1,230.7	12.06	103.054	
3,300.0	3,059.8	2,993.7	2,992.4	24.5	1.1	-178.48	-15.4	162.0	1,268.2	1,255.9	12.27	103.317	
3,346.4	3,101.2	3,036.7	3,035.4	24.9	1.2	-178.51	-15.1	163.7	1,290.9	1,278.4	12.47	103.534	
3,400.0	3,148.9	3,086.9	3,085.6	25.5	1.2	-178.55	-14.8	165.5	1,316.9	1,304.2	12.69	103.766	
3,444.9	3,188.9	3,129.2	3,127.9	25.9	1.2	-178.59	-14.5	166.9	1,338.6	1,325.7	12.88	103.949	
3,500.0	3,238.0	3,181.4	3,180.1	26.5	1.2	-178.63	-14.1	168.6	1,365.2	1,352.1	13.11	104.158	
3,543.3	3,276.6	3,221.8	3,220.4	26.9	1.2	-178.66	-13.8	169.7	1,385.9	1,372.6	13.29	104.306	
3,600.0	3,327.2	3,274.1	3,272.6	27.5	1.2	-178.69	-13.7	171.2	1,413.0	1,399.5	13.52	104.482	
3,641.7	3,364.3	3,312.5	3,311.1	27.9	1.2	-178.70	-13.7	172.2	1,432.9	1,419.2	13.70	104.599	
3,700.0	3,416.3	3,366.4	3,364.9	28.5	1.2	-178.72	-13.8	173.5	1,460.6	1,446.7	13.95	104.742	
3,740.1	3,452.0	3,403.4	3,402.0	28.9	1.2	-178.73	-13.9	174.3	1,479.7	1,465.6	14.11	104.832	
3,800.0	3,505.4	3,457.6	3,456.1	29.5	1.3	-178.74	-14.2	175.5	1,508.0	1,493.6	14.37	104.954	
3,838.6	3,539.7	3,492.5	3,491.1	29.9	1.3	-178.74	-14.3	176.3	1,526.2	1,511.7	14.53	105.027	
3,900.0	3,594.5	3,546.6	3,545.1	30.5	1.3	-178.75	-14.6	177.4	1,555.2	1,540.5	14.79	105.131	
3,937.0	3,627.4	3,578.9	3,577.4	30.8	1.3	-178.75	-14.8	178.1	1,572.7	1,557.8	14.95	105.192	
4,000.0	3,683.6	3,632.9	3,631.4	31.5	1.3	-178.76	-15.1	179.3	1,602.5	1,587.3	15.22	105.288	
4,035.4	3,715.1	3,662.9	3,661.4	31.8	1.3	-178.76	-15.3	180.0	1,619.3	1,603.9	15.37	105.339	
4,100.0	3,772.7	3,717.3	3,715.8	32.5	1.3	-178.76	-15.8	181.3	1,649.9	1,634.3	15.65	105.431	
4,133.8	3,802.8	3,745.6	3,744.1	32.8	1.3	-178.76	-16.1	182.0	1,666.0	1,650.2	15.80	105.477	
4,200.0	3,861.8	3,801.0	3,799.4	33.5	1.3	-178.76	-16.6	183.5	1,697.6	1,681.5	16.08	105.568	
4,232.3	3,890.5	3,829.1	3,827.5	33.8	1.3	-178.76	-16.8	184.2	1,713.0	1,696.8	16.22	105.609	
4,300.0	3,950.9	3,888.1	3,886.5	34.5	1.4	-178.76	-17.3	185.9	1,745.4	1,728.8	16.51	105.694	
4,330.7	3,978.2	3,918.5	3,916.9	34.8	1.4	-178.76	-17.5	186.7	1,760.0	1,743.4	16.65	105.727	
4,400.0	4,040.0	3,994.1	3,992.5	35.5	1.4	-178.77	-17.7	188.3	1,792.8	1,775.8	16.95	105.776	
4,429.1	4,065.9	4,026.8	4,025.2	35.8	1.4	-178.78	-17.7	188.8	1,806.4	1,789.3	17.07	105.800	
4,500.0	4,129.1	4,106.7	4,105.0	36.5	1.4	-178.82	-17.3	189.4	1,839.1	1,821.7	17.38	105.842	
4,527.5	4,153.6	4,135.4	4,133.7	36.8	1.4	-178.84	-17.1	189.5	1,851.6	1,834.2	17.49	105.858	
4,600.0	4,218.2	4,209.8	4,208.2	37.5	1.4	-178.88	-16.5	189.4	1,884.4	1,866.6	17.80	105.879	
4,626.0	4,241.3	4,233.7	4,232.1	37.7	1.4	-178.90	-16.3	189.3	1,896.1	1,878.2	17.91	105.882	
4,700.0	4,307.3	4,301.8	4,300.1	38.5	1.4	-178.94	-15.7	188.9	1,929.4	1,911.2	18.22	105.887	
4,724.4	4,329.0	4,323.3	4,321.6	38.7	1.4	-178.95	-15.6	188.8	1,940.4	1,922.1	18.33	105.884	
4,800.0	4,396.4	4,389.9	4,388.3	39.5	1.4	-178.99	-15.0	188.4	1,974.4	1,955.8	18.65	105.875	
4,822.8	4,416.7	4,410.7	4,409.0	39.7	1.5	-179.00	-14.8	188.3	1,984.7	1,965.9	18.75	105.870	
4,900.0	4,485.5	4,483.3	4,481.6	40.5	1.5	-179.04	-14.2	187.9	2,019.3	2,000.2	19.08	105.846	
4,921.2	4,504.4	4,503.0	4,501.4	40.7	1.5	-179.05	-14.0	187.7	2,028.8	2,009.7	19.17	105.838	
5,000.0	4,574.6	4,571.3	4,569.6	41.5	1.5	-179.08	-13.5	187.2	2,064.1	2,044.6	19.51	105.818	
5,019.7	4,592.1	4,588.4	4,586.7	41.7	1.5	-179.09	-13.4	187.1	2,073.0	2,053.4	19.59	105.813	
5,100.0	4,663.7	4,659.4	4,657.7	42.5	1.5	-179.11	-13.0	186.7	2,109.0	2,089.1	19.94	105.785	

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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
5,118.1	4,679.8	4,675.4	4,673.7	42.7	1.5	-179.12	-12.9	186.6	2,117.2	2,097.2	20.02	105.778	
5,200.0	4,752.8	4,747.2	4,745.5	43.5	1.5	-179.14	-12.7	186.3	2,154.0	2,133.6	20.37	105.747	
5,216.5	4,767.5	4,761.6	4,759.9	43.7	1.5	-179.15	-12.6	186.2	2,161.4	2,141.0	20.44	105.741	
5,300.0	4,841.9	4,833.3	4,831.6	44.5	1.5	-179.17	-12.3	185.9	2,199.0	2,178.2	20.80	105.712	
5,314.9	4,855.2	4,845.9	4,844.2	44.6	1.5	-179.18	-12.3	185.9	2,205.8	2,184.9	20.87	105.706	
5,400.0	4,931.0	4,917.6	4,915.9	45.5	1.5	-179.20	-12.0	185.7	2,244.3	2,223.0	21.24	105.678	
5,413.4	4,942.9	4,928.8	4,927.1	45.6	1.5	-179.20	-11.9	185.7	2,250.3	2,229.0	21.30	105.673	
5,500.0	5,020.1	5,000.0	4,998.3	46.5	1.5	-179.22	-11.7	185.7	2,289.7	2,268.0	21.67	105.648	
5,511.8	5,030.6	5,010.9	5,009.2	46.6	1.5	-179.22	-11.6	185.7	2,295.1	2,273.3	21.73	105.640	
5,600.0	5,109.2	5,083.1	5,081.4	47.5	1.5	-179.24	-11.5	186.0	2,335.4	2,313.2	22.11	105.613	
5,610.2	5,118.3	5,091.4	5,089.8	47.6	1.5	-179.24	-11.5	186.0	2,340.0	2,317.9	22.16	105.611	
5,700.0	5,198.3	5,169.0	5,167.3	48.5	1.6	-179.25	-11.5	186.4	2,381.2	2,358.7	22.56	105.569	
5,708.6	5,206.0	5,176.5	5,174.8	48.6	1.6	-179.25	-11.5	186.5	2,385.2	2,362.6	22.59	105.565	
5,800.0	5,287.4	5,252.3	5,250.6	49.5	1.6	-179.26	-11.5	187.0	2,427.2	2,404.2	23.00	105.532	
5,807.1	5,293.7	5,258.0	5,256.3	49.6	1.6	-179.26	-11.5	187.0	2,430.5	2,407.5	23.03	105.530	
5,900.0	5,376.5	5,336.6	5,334.9	50.5	1.6	-179.27	-11.6	187.8	2,473.5	2,450.0	23.45	105.499	
5,905.5	5,381.4	5,341.5	5,339.8	50.6	1.6	-179.27	-11.6	187.8	2,476.0	2,452.5	23.47	105.496	
6,000.0	5,465.6	5,426.2	5,424.5	51.5	1.6	-179.29	-11.4	188.7	2,519.7	2,495.8	23.89	105.454	
6,003.9	5,469.1	5,429.7	5,428.0	51.6	1.6	-179.29	-11.4	188.7	2,521.5	2,497.6	23.91	105.452	
6,100.0	5,554.7	5,517.1	5,515.4	52.5	1.6	-179.31	-11.0	189.5	2,565.9	2,541.6	24.34	105.407	
6,102.3	5,556.8	5,519.3	5,517.6	52.5	1.6	-179.31	-11.0	189.5	2,567.0	2,542.7	24.35	105.406	
6,200.0	5,643.8	5,600.0	5,598.3	53.5	1.7	-179.34	-10.5	190.1	2,612.1	2,587.3	24.79	105.379	
6,200.8	5,644.5	5,600.0	5,598.3	53.5	1.7	-179.34	-10.5	190.1	2,612.4	2,587.6	24.79	105.380	
6,299.2	5,732.2	5,674.9	5,673.2	54.5	1.7	-179.35	-10.2	191.0	2,658.2	2,632.9	25.23	105.364	
6,300.0	5,732.9	5,675.4	5,673.7	54.5	1.7	-179.35	-10.2	191.0	2,658.5	2,633.3	25.23	105.364	
6,397.6	5,819.9	5,755.3	5,753.6	55.5	1.7	-179.36	-10.2	192.4	2,704.4	2,678.7	25.67	105.344	
6,400.0	5,822.0	5,757.4	5,755.7	55.5	1.7	-179.36	-10.2	192.5	2,705.5	2,679.9	25.68	105.343	
6,496.0	5,907.5	5,847.4	5,845.6	56.5	1.7	-179.36	-10.4	194.1	2,750.6	2,724.5	26.12	105.294	
6,500.0	5,911.1	5,851.3	5,849.5	56.5	1.7	-179.36	-10.4	194.1	2,752.5	2,726.4	26.14	105.292	
6,594.5	5,995.2	5,941.6	5,939.8	57.5	1.7	-179.36	-10.9	195.5	2,796.6	2,770.0	26.57	105.235	
6,600.0	6,000.2	5,946.7	5,944.9	57.5	1.7	-179.36	-11.0	195.6	2,799.2	2,772.6	26.60	105.232	
6,692.9	6,082.9	6,032.4	6,030.7	58.5	1.8	-179.35	-11.4	196.7	2,842.4	2,815.4	27.02	105.178	
6,700.0	6,089.3	6,038.9	6,037.2	58.5	1.8	-179.35	-11.5	196.8	2,845.7	2,818.7	27.06	105.174	
6,791.3	6,170.6	6,123.2	6,121.4	59.5	1.8	-179.35	-12.0	197.9	2,888.2	2,860.7	27.48	105.114	
6,800.0	6,178.4	6,131.3	6,129.5	59.5	1.8	-179.35	-12.1	197.9	2,892.2	2,864.7	27.52	105.108	
6,889.7	6,258.3	6,214.1	6,212.3	60.4	1.8	-179.35	-12.5	198.8	2,933.7	2,905.8	27.93	105.043	
6,900.0	6,267.5	6,222.9	6,221.1	60.5	1.8	-179.35	-12.5	198.9	2,938.5	2,910.5	27.98	105.037	
6,988.2	6,346.0	6,300.0	6,298.2	61.4	1.8	-179.35	-12.7	199.7	2,979.3	2,950.9	28.38	104.982	
7,000.0	6,356.6	6,309.4	6,307.6	61.5	1.8	-179.35	-12.8	199.8	2,984.8	2,956.4	28.43	104.977	
7,086.6	6,433.7	6,388.3	6,386.6	62.4	1.8	-179.36	-12.9	200.7	3,024.9	2,996.1	28.83	104.910	
7,100.0	6,445.7	6,400.6	6,398.8	62.6	1.8	-179.36	-12.9	200.8	3,031.1	3,002.2	28.90	104.900	
7,185.0	6,521.4	6,478.9	6,477.1	63.4	1.9	-179.36	-13.0	201.5	3,070.4	3,041.1	29.29	104.830	
7,200.0	6,534.8	6,492.7	6,490.9	63.6	1.9	-179.36	-13.0	201.7	3,077.3	3,048.0	29.36	104.818	
7,283.4	6,609.1	6,571.5	6,569.7	64.4	1.9	-179.37	-13.2	202.3	3,115.8	3,086.1	29.75	104.741	
7,300.0	6,623.9	6,587.1	6,585.4	64.6	1.9	-179.37	-13.2	202.4	3,123.4	3,093.6	29.82	104.726	
7,381.9	6,696.8	6,659.9	6,658.1	65.4	1.9	-179.37	-13.3	202.9	3,161.1	3,130.9	30.20	104.658	
7,400.0	6,713.0	6,675.8	6,674.0	65.6	1.9	-179.37	-13.4	203.0	3,169.4	3,139.1	30.29	104.644	
7,435.0	6,744.2	6,700.0	6,698.2	65.9	1.9	-179.37	-13.4	203.2	3,185.5	3,155.1	30.44	104.635	
7,450.0	6,757.4	6,700.0	6,698.2	66.1	1.9	-179.36	-13.4	203.2	3,192.7	3,162.1	30.62	104.281	
7,480.3	6,783.7	6,700.0	6,698.2	66.4	1.9	-179.34	-13.4	203.2	3,208.3	3,177.4	30.92	103.766	
7,500.0	6,800.3	6,700.0	6,698.2	66.6	1.9	-179.33	-13.4	203.2	3,219.3	3,188.2	31.08	103.592	
7,550.0	6,840.7	6,700.0	6,698.2	67.3	1.9	-179.28	-13.4	203.2	3,249.9	3,218.6	31.36	103.648	

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 C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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
7,578.7	6,862.7	6,700.0	6,698.2	67.8	1.9	-179.25	-13.4	203.2	3,269.3	3,237.9	31.43	104.006	
7,600.0	6,878.4	6,700.0	6,698.2	68.1	1.9	-179.22	-13.4	203.2	3,284.4	3,252.9	31.45	104.441	
7,650.0	6,913.2	6,700.0	6,698.2	68.9	1.9	-179.14	-13.4	203.2	3,322.2	3,290.8	31.35	105.981	
7,677.1	6,930.7	6,700.0	6,698.2	69.5	1.9	-179.08	-13.4	203.2	3,344.0	3,312.8	31.21	107.132	
7,700.0	6,944.6	6,700.0	6,698.2	69.9	1.9	-179.03	-13.4	203.2	3,362.9	3,331.9	31.05	108.291	
7,750.0	6,972.6	6,700.0	6,698.2	70.9	1.9	-178.87	-13.4	203.2	3,406.3	3,375.7	30.57	111.408	
7,775.6	6,985.4	6,700.0	6,698.2	71.4	1.9	-178.76	-13.4	203.2	3,429.3	3,399.0	30.26	113.326	
7,800.0	6,996.8	6,700.0	6,698.2	72.0	1.9	-178.63	-13.4	203.2	3,451.8	3,421.9	29.92	115.379	
7,850.0	7,017.1	6,700.0	6,698.2	73.1	1.9	-178.24	-13.4	203.2	3,499.0	3,469.9	29.10	120.225	
7,874.0	7,025.5	6,700.0	6,698.2	73.7	1.9	-177.95	-13.4	203.2	3,522.1	3,493.4	28.68	122.829	
7,900.0	7,033.4	6,700.0	6,698.2	74.3	1.9	-177.49	-13.4	203.2	3,547.5	3,519.3	28.21	125.770	
7,950.0	7,045.5	6,700.0	6,698.2	75.5	1.9	-175.51	-13.4	203.2	3,596.9	3,569.3	27.62	130.233	
7,972.4	7,049.5	6,700.0	6,698.2	76.0	1.9	-173.01	-13.4	203.2	3,619.2	3,591.0	28.25	128.102	
8,000.0	7,053.3	6,700.0	6,698.2	76.7	1.9	-157.83	-13.4	203.2	3,646.8	3,606.3	40.46	90.126	
8,047.0	7,056.7	6,700.0	6,698.2	77.8	1.9	-7.71	-13.4	203.2	3,693.7	3,667.2	26.58	138.985	
8,070.8	7,057.5	6,700.0	6,698.2	78.4	1.9	-7.71	-13.4	203.2	3,717.5	3,690.8	26.74	139.046	
8,100.0	7,058.4	6,700.0	6,698.2	79.1	1.9	-7.71	-13.4	203.2	3,746.6	3,719.7	26.93	139.120	
8,123.5	7,059.1	6,700.0	6,698.2	79.7	1.9	-7.71	-13.4	203.2	3,770.1	3,743.0	27.09	139.173	
8,150.0	7,059.8	6,700.0	6,698.2	80.3	1.9	25.52	-13.4	203.2	3,796.5	3,752.0	44.54	85.248	
8,169.3	7,060.0	6,700.0	6,698.2	80.8	1.9	38.32	-13.4	203.2	3,815.7	3,758.3	57.45	66.416	
8,179.6	7,060.0	6,700.0	6,698.2	81.1	1.9	42.86	-13.4	203.2	3,826.0	3,764.4	61.61	62.104	
8,200.0	7,060.0	6,700.0	6,698.2	81.6	1.9	42.86	-13.4	203.2	3,846.2	3,784.3	61.96	62.076	
8,267.7	7,060.0	6,700.0	6,698.2	83.2	1.9	42.86	-13.4	203.2	3,913.4	3,850.3	63.13	61.986	
8,300.0	7,060.0	6,700.0	6,698.2	84.0	1.9	42.86	-13.4	203.2	3,945.5	3,881.8	63.69	61.944	
8,366.1	7,060.0	6,700.0	6,698.2	85.7	1.9	42.86	-13.4	203.2	4,011.1	3,946.3	64.85	61.850	
8,400.0	7,060.0	6,700.0	6,698.2	86.5	1.9	42.86	-13.4	203.2	4,044.8	3,979.3	65.45	61.803	
8,464.5	7,060.0	6,700.0	6,698.2	88.1	1.9	42.86	-13.4	203.2	4,108.9	4,042.3	66.59	61.708	
8,500.0	7,060.0	6,700.0	6,698.2	89.0	1.9	42.86	-13.4	203.2	4,144.1	4,076.9	67.21	61.658	
8,563.0	7,060.0	6,700.0	6,698.2	90.6	1.9	42.86	-13.4	203.2	4,206.7	4,138.4	68.33	61.562	
8,600.0	7,060.0	6,700.0	6,698.2	91.5	1.9	42.86	-13.4	203.2	4,243.5	4,174.5	68.99	61.508	
8,661.4	7,060.0	6,700.0	6,698.2	93.1	1.9	42.86	-13.4	203.2	4,304.5	4,234.4	70.09	61.413	
8,700.0	7,060.0	6,700.0	6,698.2	94.1	1.9	42.86	-13.4	203.2	4,342.9	4,272.1	70.78	61.356	
8,759.8	7,060.0	6,700.0	6,698.2	95.6	1.9	42.86	-13.4	203.2	4,402.4	4,330.5	71.86	61.263	
8,800.0	7,060.0	6,700.0	6,698.2	96.6	1.9	42.86	-13.4	203.2	4,442.3	4,369.7	72.58	61.202	
8,858.2	7,060.0	6,700.0	6,698.2	98.1	1.9	42.86	-13.4	203.2	4,500.2	4,426.6	73.64	61.111	
8,900.0	7,060.0	6,700.0	6,698.2	99.2	1.9	42.86	-13.4	203.2	4,541.8	4,467.4	74.40	61.047	
8,956.7	7,060.0	6,700.0	6,698.2	100.7	1.9	42.86	-13.4	203.2	4,598.1	4,522.7	75.43	60.959	
9,000.0	7,060.0	6,700.0	6,698.2	101.8	1.9	42.86	-13.4	203.2	4,641.2	4,565.0	76.22	60.893	
9,055.1	7,060.0	6,700.0	6,698.2	103.2	1.9	42.86	-13.4	203.2	4,696.1	4,618.8	77.23	60.807	
9,100.0	7,060.0	6,700.0	6,698.2	104.4	1.9	42.86	-13.4	203.2	4,740.7	4,662.7	78.05	60.739	
9,153.5	7,060.0	6,700.0	6,698.2	105.8	1.9	42.86	-13.4	203.2	4,794.0	4,715.0	79.04	60.656	
9,200.0	7,060.0	6,700.0	6,698.2	107.0	1.9	42.86	-13.4	203.2	4,840.3	4,760.4	79.89	60.586	
9,251.9	7,060.0	6,700.0	6,698.2	108.4	1.9	42.86	-13.4	203.2	4,892.0	4,811.1	80.85	60.507	
9,300.0	7,060.0	6,700.0	6,698.2	109.6	1.9	42.86	-13.4	203.2	4,939.8	4,858.1	81.74	60.435	
9,350.4	7,060.0	6,700.0	6,698.2	110.9	1.9	42.86	-13.4	203.2	4,989.9	4,907.3	82.67	60.359	
9,400.0	7,060.0	6,700.0	6,698.2	112.2	1.9	42.86	-13.4	203.2	5,039.3	4,955.8	83.59	60.285	
9,448.8	7,060.0	6,700.0	6,698.2	113.5	1.9	42.86	-13.4	203.2	5,087.9	5,003.4	84.50	60.213	
9,500.0	7,060.0	6,700.0	6,698.2	114.9	1.9	42.86	-13.4	203.2	5,138.9	5,053.5	85.45	60.138	
9,547.2	7,060.0	6,700.0	6,698.2	116.1	1.9	42.86	-13.4	203.2	5,185.9	5,099.6	86.33	60.069	
9,600.0	7,060.0	6,700.0	6,698.2	117.5	1.9	42.86	-13.4	203.2	5,238.5	5,151.2	87.32	59.993	
9,645.6	7,060.0	6,700.0	6,698.2	118.7	1.9	42.86	-13.4	203.2	5,284.0	5,195.8	88.17	59.927	
9,700.0	7,060.0	6,700.0	6,698.2	120.2	1.9	42.86	-13.4	203.2	5,338.1	5,248.9	89.19	59.850	

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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
9,744.1	7,060.0	6,700.0	6,698.2	121.3	1.9	42.86	-13.4	203.2	5,382.0	5,292.0	90.02	59.788	
9,800.0	7,060.0	6,700.0	6,698.2	122.8	1.9	42.86	-13.4	203.2	5,437.7	5,346.7	91.07	59.710	
9,842.5	7,060.0	6,700.0	6,698.2	123.9	1.9	42.86	-13.4	203.2	5,480.1	5,388.2	91.87	59.651	
9,900.0	7,060.0	6,700.0	6,698.2	125.5	1.9	42.86	-13.4	203.2	5,537.4	5,444.4	92.95	59.572	
9,940.9	7,060.0	6,700.0	6,698.2	126.6	1.9	42.86	-13.4	203.2	5,578.1	5,484.4	93.72	59.517	
10,000.0	7,060.0	6,700.0	6,698.2	128.1	1.9	42.86	-13.4	203.2	5,637.0	5,542.2	94.84	59.438	
10,039.3	7,060.0	6,700.0	6,698.2	129.2	1.9	42.86	-13.4	203.2	5,676.2	5,580.6	95.58	59.385	
10,100.0	7,060.0	6,700.0	6,698.2	130.8	1.9	42.86	-13.4	203.2	5,736.7	5,639.9	96.73	59.305	
10,137.8	7,060.0	6,700.0	6,698.2	131.8	1.9	42.86	-13.4	203.2	5,774.3	5,676.9	97.45	59.256	
10,200.0	7,060.0	6,700.0	6,698.2	133.5	1.9	42.86	-13.4	203.2	5,836.3	5,737.7	98.63	59.176	
10,236.2	7,060.0	6,700.0	6,698.2	134.5	1.9	42.86	-13.4	203.2	5,872.4	5,773.1	99.31	59.130	
10,300.0	7,060.0	6,700.0	6,698.2	136.2	1.9	42.86	-13.4	203.2	5,936.0	5,835.5	100.53	59.049	
10,334.6	7,060.0	6,700.0	6,698.2	137.1	1.9	42.86	-13.4	203.2	5,970.5	5,869.3	101.19	59.006	
10,400.0	7,060.0	6,700.0	6,698.2	138.9	1.9	42.86	-13.4	203.2	6,035.7	5,933.3	102.43	58.925	
10,433.0	7,060.0	6,700.0	6,698.2	139.8	1.9	42.86	-13.4	203.2	6,068.6	5,965.6	103.06	58.885	
10,500.0	7,060.0	6,700.0	6,698.2	141.6	1.9	42.86	-13.4	203.2	6,135.4	6,031.1	104.34	58.804	
10,531.5	7,060.0	6,700.0	6,698.2	142.4	1.9	42.86	-13.4	203.2	6,166.8	6,061.8	104.94	58.766	
10,600.0	7,060.0	6,700.0	6,698.2	144.3	1.9	42.86	-13.4	203.2	6,235.1	6,128.9	106.25	58.685	
10,629.9	7,060.0	6,700.0	6,698.2	145.1	1.9	42.86	-13.4	203.2	6,264.9	6,158.1	106.82	58.650	
10,700.0	7,060.0	6,700.0	6,698.2	147.0	1.9	42.86	-13.4	203.2	6,334.8	6,226.7	108.16	58.569	
10,728.3	7,060.0	6,700.0	6,698.2	147.8	1.9	42.86	-13.4	203.2	6,363.1	6,254.4	108.70	58.537	
10,800.0	7,060.0	6,700.0	6,698.2	149.7	1.9	42.86	-13.4	203.2	6,434.6	6,324.5	110.08	58.456	
10,826.7	7,060.0	6,700.0	6,698.2	150.4	1.9	42.86	-13.4	203.2	6,461.2	6,350.6	110.59	58.426	
10,900.0	7,060.0	6,700.0	6,698.2	152.4	1.9	42.86	-13.4	203.2	6,534.3	6,422.3	111.99	58.345	
10,925.2	7,060.0	6,700.0	6,698.2	153.1	1.9	42.86	-13.4	203.2	6,559.4	6,446.9	112.48	58.317	
11,000.0	7,060.0	6,700.0	6,698.2	155.1	1.9	42.86	-13.4	203.2	6,634.0	6,520.1	113.92	58.236	
11,023.6	7,060.0	6,700.0	6,698.2	155.8	1.9	42.86	-13.4	203.2	6,657.6	6,543.2	114.37	58.211	
11,100.0	7,060.0	6,700.0	6,698.2	157.8	1.9	42.86	-13.4	203.2	6,733.8	6,618.0	115.84	58.130	
11,122.0	7,060.0	6,700.0	6,698.2	158.4	1.9	42.86	-13.4	203.2	6,755.8	6,639.5	116.26	58.107	
11,200.0	7,060.0	6,700.0	6,698.2	160.6	1.9	42.86	-13.4	203.2	6,833.5	6,715.8	117.77	58.027	
11,220.4	7,060.0	6,700.0	6,698.2	161.1	1.9	42.86	-13.4	203.2	6,854.0	6,735.8	118.16	58.006	
11,300.0	7,060.0	6,700.0	6,698.2	163.3	1.9	42.86	-13.4	203.2	6,933.3	6,813.6	119.69	57.925	
11,318.9	7,060.0	6,700.0	6,698.2	163.8	1.9	42.86	-13.4	203.2	6,952.1	6,832.1	120.06	57.906	
11,400.0	7,060.0	6,700.0	6,698.2	166.0	1.9	42.86	-13.4	203.2	7,033.1	6,911.5	121.62	57.826	
11,417.3	7,060.0	6,700.0	6,698.2	166.5	1.9	42.86	-13.4	203.2	7,050.4	6,928.4	121.96	57.809	
11,500.0	7,060.0	6,700.0	6,698.2	168.8	1.9	42.86	-13.4	203.2	7,132.9	7,009.3	123.56	57.729	
11,515.7	7,060.0	6,700.0	6,698.2	169.2	1.9	42.86	-13.4	203.2	7,148.6	7,024.7	123.86	57.714	
11,600.0	7,060.0	6,700.0	6,698.2	171.5	1.9	42.86	-13.4	203.2	7,232.7	7,107.2	125.49	57.635	
11,614.1	7,060.0	6,700.0	6,698.2	171.9	1.9	42.86	-13.4	203.2	7,246.8	7,121.0	125.77	57.621	
11,700.0	7,060.0	6,700.0	6,698.2	174.2	1.9	42.86	-13.4	203.2	7,332.4	7,205.0	127.43	57.542	
11,712.6	7,060.0	6,700.0	6,698.2	174.6	1.9	42.86	-13.4	203.2	7,345.0	7,217.3	127.67	57.531	
11,800.0	7,060.0	6,700.0	6,698.2	177.0	1.9	42.86	-13.4	203.2	7,432.2	7,302.9	129.37	57.452	
11,811.0	7,060.0	6,700.0	6,698.2	177.3	1.9	42.86	-13.4	203.2	7,443.2	7,313.6	129.58	57.442	
11,900.0	7,060.0	6,700.0	6,698.2	179.7	1.9	42.86	-13.4	203.2	7,532.0	7,400.7	131.30	57.363	
11,909.4	7,060.0	6,700.0	6,698.2	180.0	1.9	42.86	-13.4	203.2	7,541.4	7,410.0	131.49	57.355	
12,000.0	7,060.0	6,700.0	6,698.2	182.4	1.9	42.86	-13.4	203.2	7,631.9	7,498.6	133.25	57.277	
12,007.8	7,060.0	6,700.0	6,698.2	182.7	1.9	42.86	-13.4	203.2	7,639.7	7,506.3	133.40	57.270	
12,100.0	7,060.0	6,700.0	6,698.2	185.2	1.9	42.86	-13.4	203.2	7,731.7	7,596.5	135.19	57.192	
12,106.3	7,060.0	6,700.0	6,698.2	185.4	1.9	42.86	-13.4	203.2	7,737.9	7,602.6	135.31	57.187	
12,200.0	7,060.0	6,700.0	6,698.2	187.9	1.9	42.86	-13.4	203.2	7,831.5	7,694.3	137.13	57.109	
12,204.7	7,060.0	6,700.0	6,698.2	188.1	1.9	42.86	-13.4	203.2	7,836.2	7,698.9	137.22	57.105	
12,300.0	7,060.0	6,700.0	6,698.2	190.7	1.9	42.86	-13.4	203.2	7,931.3	7,792.2	139.08	57.028	

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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
12,303.1	7,060.0	6,700.0	6,698.2	190.8	1.9	42.86	-13.4	203.2	7,934.4	7,795.3	139.14	57.025	
12,400.0	7,060.0	6,700.0	6,698.2	193.4	1.9	42.86	-13.4	203.2	8,031.1	7,890.1	141.02	56.949	
12,401.5	7,060.0	6,700.0	6,698.2	193.5	1.9	42.86	-13.4	203.2	8,032.7	7,891.6	141.05	56.947	
12,500.0	7,060.0	6,700.0	6,698.2	196.2	1.9	42.86	-13.4	203.2	8,131.0	7,988.0	142.97	56.871	
12,598.4	7,060.0	6,700.0	6,698.2	198.9	1.9	42.86	-13.4	203.2	8,229.2	8,084.3	144.89	56.796	
12,600.0	7,060.0	6,700.0	6,698.2	198.9	1.9	42.86	-13.4	203.2	8,230.8	8,085.9	144.92	56.795	
12,696.8	7,060.0	6,700.0	6,698.2	201.6	1.9	42.86	-13.4	203.2	8,327.5	8,180.7	146.81	56.723	
12,700.0	7,060.0	6,700.0	6,698.2	201.7	1.9	42.86	-13.4	203.2	8,330.6	8,183.8	146.87	56.721	
12,795.2	7,060.0	6,700.0	6,698.2	204.3	1.9	42.86	-13.4	203.2	8,425.7	8,277.0	148.73	56.651	
12,800.0	7,060.0	6,700.0	6,698.2	204.5	1.9	42.86	-13.4	203.2	8,430.5	8,281.7	148.82	56.648	
12,893.7	7,060.0	6,700.0	6,698.2	207.0	1.9	42.86	-13.4	203.2	8,524.0	8,373.4	150.65	56.581	
12,900.0	7,060.0	6,700.0	6,698.2	207.2	1.9	42.86	-13.4	203.2	8,530.3	8,379.5	150.78	56.576	
12,992.1	7,060.0	6,700.0	6,698.2	209.8	1.9	42.86	-13.4	203.2	8,622.3	8,469.7	152.57	56.512	
13,000.0	7,060.0	6,700.0	6,698.2	210.0	1.9	42.86	-13.4	203.2	8,630.2	8,477.4	152.73	56.506	
13,090.5	7,060.0	6,700.0	6,698.2	212.5	1.9	42.86	-13.4	203.2	8,720.6	8,566.1	154.50	56.444	
13,100.0	7,060.0	6,700.0	6,698.2	212.7	1.9	42.86	-13.4	203.2	8,730.0	8,575.3	154.68	56.438	
13,188.9	7,060.0	6,700.0	6,698.2	215.2	1.9	42.86	-13.4	203.2	8,818.8	8,662.4	156.42	56.378	
13,200.0	7,060.0	6,700.0	6,698.2	215.5	1.9	42.86	-13.4	203.2	8,829.9	8,673.2	156.64	56.371	
13,287.4	7,060.0	6,700.0	6,698.2	217.9	1.9	42.86	-13.4	203.2	8,917.1	8,758.8	158.35	56.313	
13,300.0	7,060.0	6,700.0	6,698.2	218.3	1.9	42.86	-13.4	203.2	8,929.7	8,771.1	158.60	56.305	
13,385.8	7,060.0	6,700.0	6,698.2	220.6	1.9	42.86	-13.4	203.2	9,015.4	8,855.1	160.27	56.250	
13,400.0	7,060.0	6,700.0	6,698.2	221.0	1.9	42.86	-13.4	203.2	9,029.6	8,869.0	160.55	56.241	
13,484.2	7,060.0	6,700.0	6,698.2	223.4	1.9	42.86	-13.4	203.2	9,113.7	8,951.5	162.20	56.188	
13,500.0	7,060.0	6,700.0	6,698.2	223.8	1.9	42.86	-13.4	203.2	9,129.5	8,967.0	162.51	56.178	
13,582.6	7,060.0	6,700.0	6,698.2	226.1	1.9	42.86	-13.4	203.2	9,212.0	9,047.9	164.13	56.127	
13,600.0	7,060.0	6,700.0	6,698.2	226.6	1.9	42.86	-13.4	203.2	9,229.3	9,064.9	164.47	56.116	
13,681.1	7,060.0	6,700.0	6,698.2	228.8	1.9	42.86	-13.4	203.2	9,310.3	9,144.2	166.06	56.067	
13,700.0	7,060.0	6,700.0	6,698.2	229.3	1.9	42.86	-13.4	203.2	9,329.2	9,162.8	166.43	56.055	
13,779.5	7,060.0	6,700.0	6,698.2	231.5	1.9	42.86	-13.4	203.2	9,408.6	9,240.6	167.99	56.008	
13,800.0	7,060.0	6,700.0	6,698.2	232.1	1.9	42.86	-13.4	203.2	9,429.1	9,260.7	168.39	55.996	
13,877.9	7,060.0	6,700.0	6,698.2	234.3	1.9	42.86	-13.4	203.2	9,506.9	9,337.0	169.92	55.950	
13,900.0	7,060.0	6,700.0	6,698.2	234.9	1.9	42.86	-13.4	203.2	9,529.0	9,358.6	170.35	55.937	
13,976.3	7,060.0	6,700.0	6,698.2	237.0	1.9	42.86	-13.4	203.2	9,605.2	9,433.4	171.85	55.894	
14,000.0	7,060.0	6,700.0	6,698.2	237.6	1.9	42.86	-13.4	203.2	9,628.8	9,456.5	172.31	55.880	
14,074.8	7,060.0	6,700.0	6,698.2	239.7	1.9	42.86	-13.4	203.2	9,703.5	9,529.7	173.78	55.838	
14,100.0	7,060.0	6,700.0	6,698.2	240.4	1.9	42.86	-13.4	203.2	9,728.7	9,554.4	174.27	55.824	
14,173.2	7,060.0	6,700.0	6,698.2	242.4	1.9	42.86	-13.4	203.2	9,801.8	9,626.1	175.71	55.784	
14,200.0	7,060.0	6,700.0	6,698.2	243.2	1.9	42.86	-13.4	203.2	9,828.6	9,652.4	176.24	55.769	
14,271.6	7,060.0	6,700.0	6,698.2	245.2	1.9	42.86	-13.4	203.2	9,900.1	9,722.5	177.64	55.730	
14,300.0	7,060.0	6,700.0	6,698.2	246.0	1.9	42.86	-13.4	203.2	9,928.5	9,750.3	178.20	55.715	
14,370.0	7,060.0	6,700.0	6,698.2	247.9	1.9	42.86	-13.4	203.2	9,998.5	9,818.9	179.58	55.678	SF

Company:	EXTRACTION OIL & GAS	**Local Co-ordinate Reference:**	Well VT-LDS C4-16-18
Project:	WELD COUNTY, COLORADO (NAD 83)	**TVD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	**MD Reference:**	KB-EST @ 4663.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	VT-LDS C4-16-18	**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 @ 4663.0usft (Original Well E	Coordinates are relative to: VT-LDS C4-16-18
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°