

EXTRACTION OIL & GAS

**WELD COUNTY, COLORADO (NAD 83)
SW NW SEC. 15 T5N R65W 6th P.M.
VETTING 12**

**ORIGINAL WELLBORE
PROPOSAL #3**

Anticollision Report

19 May, 2016



Anticollision Report



Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well VETTING 12
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 12	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 #3	Offset TVD Reference:	Offset Datum

Reference	PROPOSAL #3		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.0usft	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	19/05/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	15,040.4	PROPOSAL #3 (ORIGINAL WELLBORE)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
NE NE SEC. 20 T5N R65W 6th P.M.						
GP-ALLES 2-17-13 - ORIGINAL WELLBORE - PROPOS	15,040.4	7,975.6	68.1	-93.0	0.423	Level 1, CC, ES, SF
GP-ALLES 3-17-13 - ORIGINAL WELLBORE - PROPOS	15,040.4	7,888.7	401.2	120.7	1.431	Level 3, CC, ES, SF
GP-ALLES C5-17-13 - ORIGINAL WELLBORE - PROPC	15,000.0	7,973.7	270.3	5.6	1.021	Level 2, ES, SF
GP-ALLES C5-17-13 - ORIGINAL WELLBORE - PROPC	15,040.4	8,004.1	267.0	7.0	1.027	Level 2, CC
SW NW SEC. 15 T5N R65W 6th P.M.						
ABDN VERT LORENZ FARM INC #1 - Wellbore #1 - De	4,749.4	4,600.0	2,156.8	2,045.1	19.306	CC
ABDN VERT LORENZ FARM INC #1 - Wellbore #1 - De	4,750.0	4,600.0	2,156.8	2,045.1	19.305	ES, SF
CARLSON A-15-16HN - Wellbore #1 - FINAL SURVEYS	9,796.6	14,866.0	2,568.5	2,251.8	8.111	CC
CARLSON A-15-16HN - Wellbore #1 - FINAL SURVEYS	9,900.0	14,866.0	2,570.6	2,251.1	8.045	ES
CARLSON A-15-16HN - Wellbore #1 - FINAL SURVEYS	10,400.0	14,866.0	2,638.4	2,305.1	7.914	SF
CARLSON B-15-16HC - Wellbore #1 - Wellbore #1	9,792.5	14,917.0	2,400.0	2,083.9	7.593	CC
CARLSON B-15-16HC - Wellbore #1 - Wellbore #1	9,900.0	14,917.0	2,402.4	2,083.4	7.530	ES
CARLSON B-15-16HC - Wellbore #1 - Wellbore #1	10,300.0	14,917.0	2,453.1	2,123.0	7.431	SF
CARLSON C-15-16HN - Wellbore #1 - Wellbore #1	9,781.2	14,752.0	2,237.1	1,921.3	7.084	CC
CARLSON C-15-16HN - Wellbore #1 - Wellbore #1	9,800.0	14,752.0	2,237.2	1,920.9	7.072	ES
CARLSON C-15-16HN - Wellbore #1 - Wellbore #1	10,200.0	14,752.0	2,276.0	1,948.6	6.952	SF
CARLSON D-15-16HN - Wellbore #1 - Wellbore #1	8,991.3	14,028.0	1,910.3	1,636.7	6.982	CC
CARLSON D-15-16HN - Wellbore #1 - Wellbore #1	9,800.0	14,760.0	1,918.8	1,602.9	6.074	ES
CARLSON D-15-16HN - Wellbore #1 - Wellbore #1	10,100.0	14,760.0	1,945.7	1,621.5	6.002	SF
CARLSON E-15-16HC - Wellbore #1 - Wellbore #1	9,774.2	14,837.0	1,753.9	1,440.6	5.599	CC
CARLSON E-15-16HC - Wellbore #1 - Wellbore #1	9,800.0	14,837.0	1,754.1	1,440.1	5.587	ES
CARLSON E-15-16HC - Wellbore #1 - Wellbore #1	10,000.0	14,837.0	1,768.3	1,448.9	5.536	SF
CARLSON F-15-16HN - Wellbore #1 - Wellbore #1	9,140.2	14,098.5	1,626.6	1,344.8	5.773	CC
CARLSON F-15-16HN - Wellbore #1 - Wellbore #1	9,800.0	14,691.0	1,627.0	1,311.0	5.149	ES
CARLSON F-15-16HN - Wellbore #1 - Wellbore #1	10,000.0	14,691.0	1,642.1	1,320.6	5.107	SF
CARLSON G-15-16HN - Wellbore #1 - Wellbore #1	8,535.8	13,579.7	1,211.3	963.5	4.888	CC
CARLSON G-15-16HN - Wellbore #1 - Wellbore #1	9,800.0	14,774.0	1,219.6	904.6	3.872	ES
CARLSON G-15-16HN - Wellbore #1 - Wellbore #1	9,900.0	14,774.0	1,226.7	909.0	3.861	SF
CARLSON H-15-16HC - Wellbore #1 - Wellbore #1	8,196.0	13,332.9	1,057.7	830.7	4.660	CC
CARLSON H-15-16HC - Wellbore #1 - Wellbore #1	9,772.0	14,861.0	1,068.3	757.6	3.438	ES
CARLSON H-15-16HC - Wellbore #1 - Wellbore #1	9,900.0	14,861.0	1,078.3	764.1	3.432	SF
CARLSON I-15-16HN - Wellbore #1 - Wellbore #1	9,731.5	14,870.0	833.6	519.7	2.656	CC
CARLSON I-15-16HN - Wellbore #1 - Wellbore #1	9,772.0	14,870.0	834.1	519.7	2.652	ES
CARLSON I-15-16HN - Wellbore #1 - Wellbore #1	9,800.0	14,870.0	835.4	520.1	2.650	SF
CARLSON J-15-16HN - Wellbore #1 - Wellbore #1	9,726.8	14,898.0	471.3	162.1	1.524	CC, ES, SF
CARLSON K-15-16HC - Wellbore #1 - Wellbore #1	9,728.3	15,003.0	379.1	101.3	1.365	Level 3, CC, ES, SF

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

Anticollision Report



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Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 12	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 #3	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.						
CARLSON L-15-16HN - Wellbore #1 - Wellbore #1	8,987.5	14,256.1	178.9	-93.7	0.656	Level 1, CC
CARLSON L-15-16HN - Wellbore #1 - Wellbore #1	9,719.9	14,985.0	183.0	-129.4	0.586	Level 1, ES, SF
EXIST DD BMC #B8 - Wellbore #1 - Wellbore #1	13,936.5	7,067.7	2,066.5	1,835.6	8.950	CC
EXIST DD BMC #B8 - Wellbore #1 - Wellbore #1	14,000.0	7,067.5	2,067.5	1,834.8	8.885	ES
EXIST DD BMC #B8 - Wellbore #1 - Wellbore #1	14,500.0	7,066.5	2,141.9	1,895.2	8.682	SF
EXIST DD BUS BARN #A5 - Wellbore #1 - Wellbore #1	11,344.2	7,224.0	1,900.0	1,735.8	11.568	CC
EXIST DD BUS BARN #A5 - Wellbore #1 - Wellbore #1	11,400.0	7,223.3	1,900.8	1,735.0	11.464	ES
EXIST DD BUS BARN #A5 - Wellbore #1 - Wellbore #1	12,000.0	7,215.8	2,010.0	1,827.4	11.010	SF
EXIST DD CDOT 2 #D7 - Wellbore #1 - Wellbore #1	14,650.9	7,146.6	2,590.9	2,334.0	10.086	CC
EXIST DD CDOT 2 #D7 - Wellbore #1 - Wellbore #1	14,700.0	7,146.6	2,591.4	2,333.1	10.034	ES
EXIST DD CDOT 2 #D7 - Wellbore #1 - Wellbore #1	15,040.4	7,146.8	2,620.0	2,352.2	9.782	SF
EXIST DD CDOT 3 # D2 - Wellbore #1 - Wellbore #1	13,248.8	6,892.4	2,566.7	2,365.4	12.748	CC
EXIST DD CDOT 3 # D2 - Wellbore #1 - Wellbore #1	13,300.0	6,892.1	2,567.2	2,364.5	12.661	ES
EXIST DD CDOT 3 # D2 - Wellbore #1 - Wellbore #1	14,200.0	6,887.3	2,737.3	2,509.3	12.006	SF
EXIST DD CLARK #A1 - Wellbore #1 - Wellbore #1	11,960.8	7,950.0	1,059.6	893.4	6.374	CC
EXIST DD CLARK #A1 - Wellbore #1 - Wellbore #1	12,000.0	7,950.0	1,060.3	893.1	6.339	ES
EXIST DD CLARK #A1 - Wellbore #1 - Wellbore #1	12,100.0	7,950.0	1,068.7	898.8	6.289	SF
EXIST DD CLASSIC LANES #C9 - Wellbore #1 - Wellbo	15,040.4	7,633.3	718.1	433.6	2.524	CC, ES, SF
EXIST DD COUNTRYSIDE CENTER C3 - Wellbore #1 -	12,152.5	7,632.7	71.0	-113.8	0.384	Level 1, CC, ES, SF
EXIST DD DELTA PARK #A2 - Wellbore #1 - Wellbore #	11,357.9	7,549.4	620.9	456.1	3.768	CC, ES
EXIST DD DELTA PARK #A2 - Wellbore #1 - Wellbore #	11,400.0	7,545.2	622.3	456.2	3.747	SF
EXIST DD DISTRICT SIX #C6 - Wellbore #1 - Wellbore #	14,106.1	7,924.1	617.6	375.1	2.547	CC, ES, SF
EXIST DD DRIFTWOOD #D1 - Wellbore #1 - Wellbore #	14,533.5	7,240.2	1,371.3	1,116.3	5.377	CC
EXIST DD DRIFTWOOD #D1 - Wellbore #1 - Wellbore #	14,600.0	7,235.1	1,372.9	1,116.0	5.345	ES
EXIST DD DRIFTWOOD #D1 - Wellbore #1 - Wellbore #	14,700.0	7,227.4	1,381.3	1,121.7	5.321	SF
EXIST DD EHRlich MOTORS #D8 - Wellbore #1 - Well	15,040.4	7,331.2	2,755.5	2,465.3	9.496	CC, ES, SF
EXIST DD GARDEN CITY #D5 - Wellbore #1 - Wellbore	15,040.4	7,517.6	1,973.2	1,693.7	7.060	CC, ES, SF
EXIST DD GREELEY IND SOUTH #B9 - Wellbore #1 - V	14,031.4	7,420.9	785.9	549.1	3.320	CC, ES
EXIST DD GREELEY IND SOUTH #B9 - Wellbore #1 - V	14,100.0	7,428.8	788.8	550.4	3.308	SF
EXIST DD HWY 34-1 #A-7 - Wellbore #1 - Wellbore #1	11,906.1	6,937.7	2,630.1	2,459.6	15.434	CC
EXIST DD HWY 34-1 #A-7 - Wellbore #1 - Wellbore #1	12,000.0	6,937.8	2,631.7	2,458.7	15.209	ES
EXIST DD HWY 34-1 #A-7 - Wellbore #1 - Wellbore #1	13,000.0	6,938.2	2,848.5	2,647.4	14.169	SF
EXIST DD HWY 34-2 #A-8 - Wellbore #1 - Wellbore #1	10,685.9	7,290.0	2,590.8	2,432.1	16.318	CC
EXIST DD HWY 34-2 #A-8 - Wellbore #1 - Wellbore #1	10,800.0	7,288.5	2,593.4	2,431.4	16.014	ES
EXIST DD HWY 34-2 #A-8 - Wellbore #1 - Wellbore #1	11,900.0	7,274.5	2,861.2	2,668.5	14.853	SF
EXIST DD HWY 85-1 #B-12 - Wellbore #1 - Wellbore #1	12,554.0	6,967.9	1,966.7	1,783.4	10.730	CC
EXIST DD HWY 85-1 #B-12 - Wellbore #1 - Wellbore #1	12,600.0	6,967.8	1,967.2	1,782.7	10.658	ES
EXIST DD HWY 85-1 #B-12 - Wellbore #1 - Wellbore #1	13,100.0	6,967.2	2,041.1	1,842.5	10.278	SF
EXIST DD HWY 85-2 #B11 - Wellbore #1 - Wellbore #1	12,813.2	7,406.6	663.4	473.4	3.492	CC, ES
EXIST DD HWY 85-2 #B11 - Wellbore #1 - Wellbore #1	12,900.0	7,406.6	669.0	476.7	3.478	SF
EXIST DD HWY 85-3 #C4 - Wellbore #1 - Wellbore #1	12,679.1	7,748.4	588.5	390.9	2.977	CC
EXIST DD HWY 85-3 #C4 - Wellbore #1 - Wellbore #1	12,700.0	7,748.8	588.9	390.6	2.970	ES, SF
EXIST DD KUETTEL #11-15 - Wellbore #1 - Wellbore #1	6,384.0	6,514.7	2,180.8	2,134.6	47.209	ES
EXIST DD KUETTEL #11-15 - Wellbore #1 - Wellbore #1	6,429.7	6,561.0	2,180.4	2,149.4	70.323	CC
EXIST DD KUETTEL #11-15 - Wellbore #1 - Wellbore #1	15,040.4	6,979.2	9,016.4	8,761.4	35.365	SF
EXIST DD KUETTEL #21-15 - Wellbore #1 - Wellbore #1	0.0	0.0	2,522.9			
EXIST DD KUETTEL #21-15 - Wellbore #1 - Wellbore #1	100.0	89.1	2,523.0	2,522.8	10,000.000	ES
EXIST DD KUETTEL #21-15 - Wellbore #1 - Wellbore #1	14,500.0	7,124.1	9,929.5	9,682.7	40.230	SF
EXIST DD KUETTEL #CNW-15 - Wellbore #1 - Wellbore	6,384.0	6,553.7	2,052.3	2,005.9	44.277	ES
EXIST DD KUETTEL #CNW-15 - Wellbore #1 - Wellbore	6,391.1	6,559.6	2,052.3	2,011.4	50.184	CC
EXIST DD KUETTEL #CNW-15 - Wellbore #1 - Wellbore	15,040.4	7,100.3	9,700.1	9,444.0	37.875	SF
EXIST DD PARKVIEW AOUTH #A3 - Wellbore #1 - Well	10,235.3	7,873.0	458.4	305.1	2.990	CC, ES
EXIST DD PARKVIEW AOUTH #A3 - Wellbore #1 - Well	10,300.0	7,861.3	462.8	307.2	2.974	SF

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Anticollision Report



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Reference Design:	PROPOSAL #3	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 SAM PAK #A6 - Wellbore #1 - Wellbore #1	9,963.1	7,691.0	1,811.4	1,658.9	11.880	CC
EXIST DD SAM PAK #A6 - Wellbore #1 - Wellbore #1	10,000.0	7,691.0	1,811.8	1,658.3	11.804	ES
EXIST DD SAM PAK #A6 - Wellbore #1 - Wellbore #1	10,600.0	7,564.9	1,916.1	1,746.2	11.277	SF
EXIST DD SMITH 5 SPOT #A4 - Wellbore #1 - Wellbore	10,798.5	7,524.0	1,369.1	1,211.0	8.659	CC
EXIST DD SMITH 5 SPOT #A4 - Wellbore #1 - Wellbore	10,800.0	7,523.8	1,369.1	1,210.9	8.656	ES
EXIST DD SMITH 5 SPOT #A4 - Wellbore #1 - Wellbore	11,100.0	7,482.9	1,401.2	1,234.4	8.403	SF
EXIST DD STATE #16-6B - Wellbore #1 - Wellbore #1	10,040.8	7,165.3	699.3	572.5	5.515	CC, ES
EXIST DD STATE #16-6B - Wellbore #1 - Wellbore #1	10,100.0	7,165.8	701.8	573.4	5.464	SF
EXIST DD UNION PACIFIC #C5 - Wellbore #1 - Wellbore	13,393.3	7,567.2	10.5	-204.4	0.049	Level 1, CC, ES, SF
EXIST DD UNIVERSITY 5 SPOT #D4 - Wellbore #1 - V	15,040.4	7,735.9	1,649.5	1,352.2	5.548	CC, ES, SF
EXIST DD UNIVERSITY SQUARE #D6 - Wellbore #1 - V	15,040.4	7,335.2	2,566.1	2,265.6	8.539	CC, ES, SF
EXIST DD VOLK #C7 - Wellbore #1 - Wellbore #1	14,656.1	7,735.1	51.5	-212.1	0.195	Level 1, CC, ES, SF
EXIST DD WHEELER #D3 - Wellbore #1 - Wellbore #1	15,040.4	8,003.0	1,722.0	1,410.7	5.532	CC, ES, SF
EXIST VERT EISENMAN #22-15 - Wellbore #1 - Wellbor	154.6	148.4	1,702.6	1,702.2	4,996.196	CC
EXIST VERT EISENMAN #22-15 - Wellbore #1 - Wellbor	200.0	195.1	1,702.7	1,702.2	3,363.796	ES
EXIST VERT EISENMAN #22-15 - Wellbore #1 - Wellbor	14,600.0	6,600.0	9,997.0	9,778.7	45.788	SF
EXIST VERT FAY #1 - Wellbore #1 - Design #1	8,764.4	6,864.0	809.5	609.2	4.042	CC
EXIST VERT FAY #1 - Wellbore #1 - Design #1	8,800.0	6,864.0	810.3	609.1	4.027	ES
EXIST VERT FAY #1 - Wellbore #1 - Design #1	8,900.0	6,864.0	820.8	616.9	4.025	SF
EXIST VERT HARRINGTON #1 - Wellbore #1 - Design #	6,384.0	6,252.9	598.4	458.3	4.272	CC
EXIST VERT HARRINGTON #1 - Wellbore #1 - Design #	6,400.0	6,268.9	598.6	451.2	4.063	ES, SF
EXIST VERT SANDUSKY #1 - Wellbore #1 - Wellbore #	100.0	81.5	147.1	146.9	1,046.180	CC, ES
EXIST VERT SANDUSKY #1 - Wellbore #1 - Wellbore #	15,040.4	6,700.0	8,981.2	8,744.2	37.899	SF
VETTING 13 - ORIGINAL WELLBORE - PROPOSAL #3	100.0	100.0	25.3	25.1	134.163	CC
VETTING 13 - ORIGINAL WELLBORE - PROPOSAL #3	6,400.0	6,399.9	57.4	13.6	1.311	Level 3, ES, SF
VETTING 14 - ORIGINAL WELLBORE - PROPOSAL #2	100.0	100.0	47.9	47.7	253.734	CC
VETTING 14 - ORIGINAL WELLBORE - PROPOSAL #2	15,040.4	15,100.4	346.1	-128.8	0.729	Level 1, ES, SF
VETTING 15 - ORIGINAL WELLBORE - PROPOSAL #2	100.0	100.0	73.2	73.0	387.884	CC, ES
VETTING 15 - ORIGINAL WELLBORE - PROPOSAL #2	15,040.4	15,171.7	677.6	201.6	1.423	Level 3, SF
VETTING 16 - ORIGINAL WELLBORE - PROPOSAL #2	100.0	100.0	95.3	95.1	504.889	CC, ES
VETTING 16 - ORIGINAL WELLBORE - PROPOSAL #2	15,040.4	15,409.8	863.9	399.8	1.862	SF
VETTING 17 - ORIGINAL WELLBORE - PROPOSAL #2	100.0	100.0	120.6	120.5	639.004	CC, ES
VETTING 17 - ORIGINAL WELLBORE - PROPOSAL #2	15,040.4	15,284.8	1,005.5	528.9	2.110	SF
VETTING 18 - ORIGINAL WELLBORE - PROPOSAL #2	100.0	100.0	143.2	143.0	758.500	CC, ES
VETTING 18 - ORIGINAL WELLBORE - PROPOSAL #2	15,040.4	15,420.3	1,337.0	860.5	2.806	SF
VETTING 19 - ORIGINAL WELLBORE - PROPOSAL #2	100.0	100.0	168.5	168.3	897.989	CC, ES
VETTING 19 - ORIGINAL WELLBORE - PROPOSAL #2	15,040.4	15,682.9	1,513.6	1,041.0	3.203	SF
VETTING 20 - ORIGINAL WELLBORE - PROPOSAL #2	100.0	100.0	191.1	190.9	1,012.170	CC, ES
VETTING 20 - ORIGINAL WELLBORE - PROPOSAL #2	15,040.4	15,616.6	1,664.9	1,187.7	3.489	SF
VETTING 21 - ORIGINAL WELLBORE - PROPOSAL #2	100.0	100.0	216.4	216.2	1,146.324	CC, ES
VETTING 21 - ORIGINAL WELLBORE - PROPOSAL #2	15,040.4	15,843.4	1,996.5	1,519.2	4.183	SF
VETTING 22 - ORIGINAL WELLBORE - PROPOSAL #2	100.0	100.0	239.0	238.8	1,265.865	CC, ES
VETTING 22 - ORIGINAL WELLBORE - PROPOSAL #2	15,040.4	16,129.6	2,169.2	1,694.0	4.565	SF
VETTING 23 - ORIGINAL WELLBORE - PROPOSAL #2	100.0	100.0	264.3	264.1	1,400.013	CC, ES
VETTING 23 - ORIGINAL WELLBORE - PROPOSAL #2	15,040.4	16,069.4	2,324.3	1,846.5	4.864	SF
VETTING 24 - ORIGINAL WELLBORE - PROPOSAL #2	100.0	100.0	286.4	286.2	1,516.996	CC, ES
VETTING 24 - ORIGINAL WELLBORE - PROPOSAL #2	15,040.4	16,281.8	2,655.9	2,177.9	5.557	SF
VT-ALLES 1-16-18 - ORIGINAL WELLBORE - PROPOS	100.0	99.0	99.3	99.2	528.847	CC
VT-ALLES 1-16-18 - ORIGINAL WELLBORE - PROPOS	15,040.4	13,042.3	317.5	-137.8	0.697	Level 1, ES, SF
VT-GLENMERE 3-16-18 - ORIGINAL WELLBORE - PRC	100.0	99.0	237.6	237.5	1,264.986	CC, ES
VT-GLENMERE 3-16-18 - ORIGINAL WELLBORE - PRC	15,040.4	13,444.1	2,302.1	1,835.3	4.932	SF
VT-GLENMERE C1-16-18 - ORIGINAL WELLBORE - PF	100.0	99.0	261.0	260.8	1,389.075	CC, ES
VT-GLENMERE C1-16-18 - ORIGINAL WELLBORE - PF	15,040.4	13,672.8	2,473.8	2,008.1	5.312	SF

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

Anticollision Report



Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well VETTING 12
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 12	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 #3	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-INC												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	175.62	-1,139.2	87.2	1,143.2				
100.0	100.0	61.0	61.0	0.1	0.6	175.62	-1,139.2	87.2	1,142.5	1,141.8	0.70	1,624.067	
200.0	200.0	161.0	161.0	0.3	2.4	-31.35	-1,139.2	87.2	1,141.0	1,138.3	2.73	418.262	
300.0	299.8	260.8	260.8	0.5	4.6	-31.54	-1,139.2	87.2	1,136.6	1,131.5	5.12	222.038	
400.0	399.5	360.5	360.5	0.8	6.7	-31.85	-1,139.2	87.2	1,129.1	1,121.8	7.39	152.843	
500.0	498.7	459.7	459.7	1.1	8.7	-32.29	-1,139.2	87.2	1,118.8	1,109.2	9.63	116.206	
600.0	597.5	558.5	558.5	1.5	10.7	-32.86	-1,139.2	87.2	1,105.6	1,093.7	11.85	93.292	
699.9	695.5	656.5	656.5	1.9	12.7	-33.58	-1,139.2	87.2	1,089.5	1,075.5	14.06	77.500	
700.0	695.6	656.6	656.6	1.9	12.7	-33.58	-1,139.2	87.2	1,089.5	1,075.5	14.06	77.486	
800.0	793.4	754.4	754.4	2.3	14.6	-34.19	-1,139.2	87.2	1,072.1	1,055.8	16.33	65.648	
900.0	891.3	852.3	852.3	2.7	16.6	-34.82	-1,139.2	87.2	1,054.9	1,036.3	18.61	56.678	
1,000.0	989.1	950.1	950.1	3.2	18.6	-35.47	-1,139.2	87.2	1,037.8	1,016.9	20.90	49.653	
1,100.0	1,086.9	1,047.9	1,047.9	3.6	20.5	-36.15	-1,139.2	87.2	1,020.8	997.6	23.20	44.007	
1,200.0	1,184.7	1,145.7	1,145.7	4.1	22.5	-36.84	-1,139.2	87.2	1,003.9	978.4	25.50	39.372	
1,300.0	1,282.5	1,243.5	1,243.5	4.5	24.5	-37.56	-1,139.2	87.2	987.3	959.4	27.81	35.500	
1,400.0	1,380.3	1,341.3	1,341.3	5.0	26.4	-38.30	-1,139.2	87.2	970.7	940.6	30.13	32.220	
1,500.0	1,478.1	1,439.1	1,439.1	5.5	28.4	-39.07	-1,139.2	87.2	954.4	921.9	32.45	29.407	
1,600.0	1,576.0	1,537.0	1,537.0	5.9	30.4	-39.86	-1,139.2	87.2	938.2	903.4	34.79	26.969	
1,700.0	1,673.8	1,634.8	1,634.8	6.4	32.4	-40.68	-1,139.2	87.2	922.2	885.0	37.13	24.837	
1,800.0	1,771.6	1,732.6	1,732.6	6.8	34.3	-41.53	-1,139.2	87.2	906.3	866.9	39.48	22.958	
1,900.0	1,869.4	1,830.4	1,830.4	7.3	36.3	-42.41	-1,139.2	87.2	890.7	848.9	41.84	21.291	
2,000.0	1,967.2	1,928.2	1,928.2	7.8	38.3	-43.31	-1,139.2	87.2	875.3	831.1	44.20	19.802	
2,100.0	2,065.0	2,026.0	2,026.0	8.2	40.2	-44.25	-1,139.2	87.2	860.2	813.6	46.58	18.466	
2,200.0	2,162.9	2,123.9	2,123.9	8.7	42.2	-45.23	-1,139.2	87.2	845.2	796.3	48.97	17.261	
2,300.0	2,260.7	2,221.7	2,221.7	9.1	44.2	-46.23	-1,139.2	87.2	830.6	779.2	51.37	16.170	
2,400.0	2,358.5	2,319.5	2,319.5	9.6	46.1	-47.27	-1,139.2	87.2	816.2	762.4	53.77	15.178	
2,500.0	2,456.3	2,417.3	2,417.3	10.1	48.1	-48.35	-1,139.2	87.2	802.0	745.8	56.19	14.274	
2,600.0	2,554.1	2,515.1	2,515.1	10.5	50.1	-49.47	-1,139.2	87.2	788.2	729.6	58.62	13.446	
2,700.0	2,651.9	2,612.9	2,612.9	11.0	52.0	-50.62	-1,139.2	87.2	774.7	713.6	61.06	12.688	
2,800.0	2,749.7	2,710.7	2,710.7	11.4	54.0	-51.81	-1,139.2	87.2	761.5	698.0	63.51	11.991	
2,900.0	2,847.6	2,808.6	2,808.6	11.9	56.0	-53.05	-1,139.2	87.2	748.6	682.7	65.97	11.348	
3,000.0	2,945.4	2,906.4	2,906.4	12.3	57.9	-54.32	-1,139.2	87.2	736.1	667.7	68.44	10.756	
3,100.0	3,043.2	3,004.2	3,004.2	12.8	59.9	-55.64	-1,139.2	87.2	724.0	653.1	70.92	10.209	
3,200.0	3,141.0	3,102.0	3,102.0	13.3	61.9	-57.00	-1,139.2	87.2	712.3	638.9	73.41	9.703	
3,300.0	3,238.8	3,199.8	3,199.8	13.7	63.8	-58.40	-1,139.2	87.2	701.0	625.1	75.92	9.234	
3,400.0	3,336.6	3,297.6	3,297.6	14.2	65.8	-59.84	-1,139.2	87.2	690.2	611.8	78.43	8.800	
3,500.0	3,434.5	3,395.5	3,395.5	14.7	67.8	-61.33	-1,139.2	87.2	679.8	598.9	80.95	8.398	
3,600.0	3,532.3	3,493.3	3,493.3	15.1	69.7	-62.87	-1,139.2	87.2	669.9	586.4	83.48	8.025	
3,700.0	3,630.1	3,591.1	3,591.1	15.6	71.7	-64.44	-1,139.2	87.2	660.5	574.5	86.01	7.679	
3,800.0	3,727.9	3,688.9	3,688.9	16.0	73.7	-66.06	-1,139.2	87.2	651.7	563.1	88.55	7.359	
3,900.0	3,825.7	3,786.7	3,786.7	16.5	75.6	-67.72	-1,139.2	87.2	643.4	552.3	91.10	7.062	
4,000.0	3,923.5	3,884.5	3,884.5	17.0	77.6	-69.42	-1,139.2	87.2	635.6	542.0	93.65	6.788	
4,100.0	4,021.3	3,982.3	3,982.3	17.4	79.6	-71.16	-1,139.2	87.2	628.5	532.3	96.19	6.533	
4,200.0	4,119.2	4,080.2	4,080.2	17.9	81.5	-72.94	-1,139.2	87.2	621.9	523.2	98.74	6.299	
4,300.0	4,217.0	4,178.0	4,178.0	18.3	83.5	-74.75	-1,139.2	87.2	616.0	514.7	101.28	6.082	
4,400.0	4,314.8	4,275.8	4,275.8	18.8	85.5	-76.60	-1,139.2	87.2	610.8	507.0	103.82	5.883	
4,500.0	4,412.6	4,373.6	4,373.6	19.3	87.4	-78.47	-1,139.2	87.2	606.2	499.8	106.35	5.700	
4,600.0	4,510.4	4,471.4	4,471.4	19.7	89.4	-80.36	-1,139.2	87.2	602.3	493.4	108.88	5.532	
4,696.0	4,604.3	4,565.3	4,565.3	20.2	91.3	-82.21	-1,139.2	87.2	599.2	487.9	111.29	5.384	
4,700.0	4,608.2	4,569.2	4,569.2	20.2	91.4	-82.26	-1,139.2	87.2	599.1	487.7	111.39	5.379	
4,725.0	4,633.0	4,594.0	4,594.0	20.2	91.9	-82.51	-1,139.2	87.2	598.6	486.6	111.97	5.346	
4,750.0	4,657.9	4,618.9	4,618.9	20.3	92.4	-82.62	-1,139.2	87.2	598.4	485.9	112.53	5.318	

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

Anticollision Report



Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well VETTING 12
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 12	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 #3	Offset TVD Reference:	Offset Datum

Offset Design SW NW SEC. 15 T5N R65W 6th P.M. - EXIST VERT HARRINGTON #1 - Wellbore #1 - Design #1												Offset Site Error:	0.0 usft
Survey Program: 0-INC												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,756.0	4,663.9	4,624.9	4,624.9	20.3	92.5	124.29	-1,139.2	87.2	598.4	493.6	104.75	5.712	
4,800.0	4,707.9	4,668.9	4,668.9	20.3	93.4	124.29	-1,139.2	87.2	598.4	492.7	105.71	5.661	
4,900.0	4,807.9	4,768.9	4,768.9	20.4	95.4	124.29	-1,139.2	87.2	598.4	490.5	107.86	5.548	
5,000.0	4,907.9	4,868.9	4,868.9	20.5	97.4	124.29	-1,139.2	87.2	598.4	488.4	110.02	5.439	
5,100.0	5,007.9	4,968.9	4,968.9	20.6	99.4	124.29	-1,139.2	87.2	598.4	486.2	112.17	5.334	
5,200.0	5,107.9	5,068.9	5,068.9	20.7	101.4	124.29	-1,139.2	87.2	598.4	484.0	114.33	5.234	
5,300.0	5,207.9	5,168.9	5,168.9	20.8	103.4	124.29	-1,139.2	87.2	598.4	481.9	116.50	5.136	
5,400.0	5,307.9	5,268.9	5,268.9	20.9	105.4	124.29	-1,139.2	87.2	598.4	479.7	118.66	5.043	
5,500.0	5,407.9	5,368.9	5,368.9	21.0	107.5	124.29	-1,139.2	87.2	598.4	477.5	120.83	4.952	
5,600.0	5,507.9	5,468.9	5,468.9	21.1	109.5	124.29	-1,139.2	87.2	598.4	475.4	122.99	4.865	
5,700.0	5,607.9	5,568.9	5,568.9	21.2	111.5	124.29	-1,139.2	87.2	598.4	473.2	125.16	4.781	
5,800.0	5,707.9	5,668.9	5,668.9	21.3	113.5	124.29	-1,139.2	87.2	598.4	471.0	127.34	4.699	
5,900.0	5,807.9	5,768.9	5,768.9	21.4	115.5	124.29	-1,139.2	87.2	598.4	468.9	129.51	4.620	
6,000.0	5,907.9	5,868.9	5,868.9	21.5	117.5	124.29	-1,139.2	87.2	598.4	466.7	131.69	4.544	
6,100.0	6,007.9	5,968.9	5,968.9	21.6	119.5	124.29	-1,139.2	87.2	598.4	464.5	133.86	4.470	
6,200.0	6,107.9	6,068.9	6,068.9	21.7	121.5	124.29	-1,139.2	87.2	598.4	462.3	136.04	4.398	
6,300.0	6,207.9	6,168.9	6,168.9	21.8	123.5	124.29	-1,139.2	87.2	598.4	460.1	138.22	4.329	
6,384.0	6,291.9	6,252.9	6,252.9	21.9	125.2	124.29	-1,139.2	87.2	598.4	458.3	140.06	4.272 CC	
6,400.0	6,307.9	6,268.9	6,268.9	21.9	125.6	-145.71	-1,139.2	87.2	598.6	451.2	147.32	4.063 ES, SF	
6,450.0	6,357.7	6,318.7	6,318.7	22.0	126.6	-145.74	-1,139.2	87.2	601.5	453.7	147.79	4.070	
6,500.0	6,407.1	6,368.1	6,368.1	22.1	127.6	-145.79	-1,139.2	87.2	608.1	460.6	147.50	4.122	
6,550.0	6,455.6	6,416.6	6,416.6	22.3	128.5	-145.83	-1,139.2	87.2	618.2	471.8	146.47	4.221	
6,600.0	6,502.8	6,463.8	6,463.8	22.4	129.5	-145.86	-1,139.2	87.2	632.0	487.3	144.69	4.368	
6,650.0	6,548.4	6,509.4	6,509.4	22.7	130.4	-145.81	-1,139.2	87.2	649.4	507.2	142.20	4.566	
6,700.0	6,592.1	6,553.1	6,553.1	22.9	131.3	-145.66	-1,139.2	87.2	670.2	531.2	139.09	4.819	
6,750.0	6,633.5	6,594.5	6,594.5	23.2	132.1	-145.34	-1,139.2	87.2	694.6	559.1	135.47	5.127	
6,800.0	6,672.3	6,633.3	6,633.3	23.5	132.9	-144.80	-1,139.2	87.2	722.3	590.8	131.56	5.491	
6,850.0	6,708.2	6,669.2	6,669.2	23.8	133.6	-143.94	-1,139.2	87.2	753.3	625.6	127.64	5.902	
6,900.0	6,741.0	6,702.0	6,702.0	24.3	134.3	-142.67	-1,139.2	87.2	787.2	663.1	124.13	6.342	
6,950.0	6,770.3	6,731.3	6,731.3	24.7	134.9	-140.85	-1,139.2	87.2	824.0	702.4	121.61	6.776	
7,000.0	6,796.0	6,757.0	6,757.0	25.2	135.4	-138.29	-1,139.2	87.2	863.3	742.5	120.82	7.145	
7,050.0	6,817.8	6,778.8	6,778.8	25.8	135.8	-134.71	-1,139.2	87.2	904.9	782.2	122.61	7.380	
7,100.0	6,835.6	6,796.6	6,796.6	26.4	136.2	-129.72	-1,139.2	87.2	948.3	820.5	127.79	7.421	
7,150.0	6,849.4	6,810.4	6,810.4	27.1	136.4	-122.76	-1,139.2	87.2	993.4	856.7	136.72	7.266	
7,200.0	6,858.8	6,819.8	6,819.8	27.8	136.6	-113.14	-1,139.2	87.2	1,039.7	891.3	148.41	7.006	
7,250.0	6,864.0	6,825.0	6,825.0	28.6	136.7	-100.37	-1,139.2	87.2	1,086.9	927.7	159.19	6.828	
7,284.2	6,865.0	6,826.0	6,826.0	29.2	136.8	-90.00	-1,139.2	87.2	1,119.4	956.7	162.69	6.881	
7,300.0	6,865.0	6,826.0	6,826.0	29.5	136.8	-90.00	-1,139.2	87.2	1,134.5	971.5	163.02	6.959	
7,400.0	6,865.0	6,826.0	6,826.0	31.3	136.8	-90.00	-1,139.2	87.2	1,230.3	1,065.2	165.16	7.449	
7,500.0	6,865.0	6,826.0	6,826.0	33.2	136.8	-90.00	-1,139.2	87.2	1,326.8	1,159.4	167.42	7.925	
7,600.0	6,865.0	6,826.0	6,826.0	35.3	136.8	-90.00	-1,139.2	87.2	1,423.7	1,254.0	169.76	8.387	
7,700.0	6,865.0	6,826.0	6,826.0	37.5	136.8	-90.00	-1,139.2	87.2	1,521.1	1,348.9	172.16	8.835	
7,800.0	6,865.0	6,826.0	6,826.0	39.8	136.8	-90.00	-1,139.2	87.2	1,618.7	1,444.1	174.63	9.270	
7,900.0	6,865.0	6,826.0	6,826.0	42.1	136.8	-90.00	-1,139.2	87.2	1,716.7	1,539.5	177.14	9.691	
8,000.0	6,865.0	6,826.0	6,826.0	44.5	136.8	-90.00	-1,139.2	87.2	1,814.8	1,635.1	179.68	10.100	
8,100.0	6,865.0	6,826.0	6,826.0	47.0	136.8	-90.00	-1,139.2	87.2	1,913.2	1,730.9	182.26	10.497	
8,200.0	6,865.0	6,826.0	6,826.0	49.5	136.8	-90.00	-1,139.2	87.2	2,011.7	1,826.8	184.86	10.882	
8,300.0	6,865.0	6,826.0	6,826.0	52.0	136.8	-90.00	-1,139.2	87.2	2,110.3	1,922.9	187.49	11.256	
8,400.0	6,865.0	6,826.0	6,826.0	54.6	136.8	-90.00	-1,139.2	87.2	2,209.1	2,019.0	190.13	11.619	
8,500.0	6,865.0	6,826.0	6,826.0	57.2	136.8	-90.00	-1,139.2	87.2	2,308.0	2,115.2	192.79	11.971	
8,600.0	6,865.0	6,826.0	6,826.0	59.8	136.8	-90.00	-1,139.2	87.2	2,407.0	2,211.5	195.47	12.314	
8,700.0	6,865.0	6,826.0	6,826.0	62.4	136.8	-90.00	-1,139.2	87.2	2,506.0	2,307.9	198.15	12.647	

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

Anticollision Report



Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well VETTING 12
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 12	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 #3	Offset TVD Reference:	Offset Datum

Offset Design SW NW SEC. 15 T5N R65W 6th P.M. - EXIST VERT HARRINGTON #1 - Wellbore #1 - Design #1												Offset Site Error:	0.0 usft
Survey Program: 0-INC												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,800.0	6,865.0	6,826.0	6,826.0	65.1	136.8	-90.00	-1,139.2	87.2	2,605.2	2,404.3	200.85	12.971	
8,900.0	6,865.0	6,826.0	6,826.0	67.7	136.8	-90.00	-1,139.2	87.2	2,704.3	2,500.8	203.56	13.285	
9,000.0	6,865.0	6,826.0	6,826.0	70.4	136.8	-90.00	-1,139.2	87.2	2,803.6	2,597.3	206.27	13.592	
9,100.0	6,865.0	6,826.0	6,826.0	73.1	136.8	-90.00	-1,139.2	87.2	2,902.9	2,693.9	208.99	13.890	
9,200.0	6,865.0	6,826.0	6,826.0	75.8	136.8	-90.00	-1,139.2	87.2	3,002.2	2,790.5	211.72	14.180	
9,300.0	6,865.0	6,826.0	6,826.0	78.5	136.8	-90.00	-1,139.2	87.2	3,101.6	2,887.2	214.46	14.463	
9,400.0	6,865.0	6,826.0	6,826.0	81.2	136.8	-90.00	-1,139.2	87.2	3,201.0	2,983.9	217.20	14.738	
9,500.0	6,865.0	6,826.0	6,826.0	83.9	136.8	-90.00	-1,139.2	87.2	3,300.5	3,080.6	219.94	15.006	
9,600.0	6,865.0	6,826.0	6,826.0	86.6	136.8	-90.00	-1,139.2	87.2	3,400.0	3,177.3	222.69	15.268	
9,700.0	6,865.0	6,826.0	6,826.0	89.3	136.8	-90.00	-1,139.2	87.2	3,499.5	3,274.1	225.44	15.523	
9,719.9	6,865.0	6,826.0	6,826.0	89.9	136.8	-90.00	-1,139.2	87.2	3,519.4	3,293.4	225.99	15.573	
9,772.0	6,865.0	6,826.0	6,826.0	91.3	136.8	-90.00	-1,139.2	87.2	3,571.2	3,344.1	227.11	15.725	
9,800.0	6,865.0	6,826.0	6,826.0	92.1	136.8	-90.00	-1,139.2	87.2	3,599.2	3,371.3	227.88	15.794	
9,900.0	6,865.0	6,826.0	6,826.0	94.8	136.8	-90.00	-1,139.2	87.2	3,699.0	3,468.3	230.64	16.038	
10,000.0	6,865.0	6,826.0	6,826.0	97.5	136.8	-90.00	-1,139.2	87.2	3,798.8	3,565.4	233.41	16.275	
10,100.0	6,865.0	6,826.0	6,826.0	100.3	136.8	-90.00	-1,139.2	87.2	3,898.6	3,662.4	236.18	16.507	
10,200.0	6,865.0	6,826.0	6,826.0	103.0	136.8	-90.00	-1,139.2	87.2	3,998.4	3,759.4	238.95	16.733	
10,300.0	6,865.0	6,826.0	6,826.0	105.8	136.8	-90.00	-1,139.2	87.2	4,098.2	3,856.5	241.73	16.954	
10,400.0	6,865.0	6,826.0	6,826.0	108.5	136.8	-90.00	-1,139.2	87.2	4,198.0	3,953.5	244.50	17.170	
10,500.0	6,865.0	6,826.0	6,826.0	111.3	136.8	-90.00	-1,139.2	87.2	4,297.9	4,050.6	247.28	17.380	
10,600.0	6,865.0	6,826.0	6,826.0	114.0	136.8	-90.00	-1,139.2	87.2	4,397.7	4,147.7	250.06	17.586	
10,700.0	6,865.0	6,826.0	6,826.0	116.8	136.8	-90.00	-1,139.2	87.2	4,497.6	4,244.7	252.85	17.788	
10,800.0	6,865.0	6,826.0	6,826.0	119.6	136.8	-90.00	-1,139.2	87.2	4,597.4	4,341.8	255.63	17.985	
10,900.0	6,865.0	6,826.0	6,826.0	122.3	136.8	-90.00	-1,139.2	87.2	4,697.3	4,438.9	258.42	18.177	
11,000.0	6,865.0	6,826.0	6,826.0	125.1	136.8	-90.00	-1,139.2	87.2	4,797.2	4,536.0	261.20	18.366	
11,100.0	6,865.0	6,826.0	6,826.0	127.9	136.8	-90.00	-1,139.2	87.2	4,897.1	4,633.1	263.99	18.550	
11,200.0	6,865.0	6,826.0	6,826.0	130.7	136.8	-90.00	-1,139.2	87.2	4,996.9	4,730.2	266.78	18.731	
11,300.0	6,865.0	6,826.0	6,826.0	133.4	136.8	-90.00	-1,139.2	87.2	5,096.8	4,827.2	269.57	18.907	
11,400.0	6,865.0	6,826.0	6,826.0	136.2	136.8	-90.00	-1,139.2	87.2	5,196.7	4,924.3	272.36	19.080	
11,500.0	6,865.0	6,826.0	6,826.0	139.0	136.8	-90.00	-1,139.2	87.2	5,296.6	5,021.5	275.15	19.250	
11,600.0	6,865.0	6,826.0	6,826.0	141.8	136.8	-90.00	-1,139.2	87.2	5,396.5	5,118.6	277.95	19.416	
11,700.0	6,865.0	6,826.0	6,826.0	144.6	136.8	-90.00	-1,139.2	87.2	5,496.4	5,215.7	280.74	19.578	
11,800.0	6,865.0	6,826.0	6,826.0	147.3	136.8	-90.00	-1,139.2	87.2	5,596.3	5,312.8	283.54	19.738	
11,900.0	6,865.0	6,826.0	6,826.0	150.1	136.8	-90.00	-1,139.2	87.2	5,696.2	5,409.9	286.33	19.894	
12,000.0	6,865.0	6,826.0	6,826.0	152.9	136.8	-90.00	-1,139.2	87.2	5,796.1	5,507.0	289.13	20.047	
12,100.0	6,865.0	6,826.0	6,826.0	155.7	136.8	-90.00	-1,139.2	87.2	5,896.0	5,604.1	291.92	20.197	
12,200.0	6,865.0	6,826.0	6,826.0	158.5	136.8	-90.00	-1,139.2	87.2	5,996.0	5,701.2	294.72	20.344	
12,300.0	6,865.0	6,826.0	6,826.0	161.3	136.8	-90.00	-1,139.2	87.2	6,095.9	5,798.4	297.52	20.489	
12,400.0	6,865.0	6,826.0	6,826.0	164.1	136.8	-90.00	-1,139.2	87.2	6,195.8	5,895.5	300.32	20.631	
12,500.0	6,865.0	6,826.0	6,826.0	166.8	136.8	-90.00	-1,139.2	87.2	6,295.7	5,992.6	303.12	20.770	
12,600.0	6,865.0	6,826.0	6,826.0	169.6	136.8	-90.00	-1,139.2	87.2	6,395.7	6,089.7	305.92	20.906	
12,700.0	6,865.0	6,826.0	6,826.0	172.4	136.8	-90.00	-1,139.2	87.2	6,495.6	6,186.9	308.72	21.040	
12,800.0	6,865.0	6,826.0	6,826.0	175.2	136.8	-90.00	-1,139.2	87.2	6,595.5	6,284.0	311.52	21.172	
12,900.0	6,865.0	6,826.0	6,826.0	178.0	136.8	-90.00	-1,139.2	87.2	6,695.5	6,381.1	314.32	21.301	
13,000.0	6,865.0	6,826.0	6,826.0	180.8	136.8	-90.00	-1,139.2	87.2	6,795.4	6,478.3	317.13	21.428	
13,100.0	6,865.0	6,826.0	6,826.0	183.6	136.8	-90.00	-1,139.2	87.2	6,895.3	6,575.4	319.93	21.553	
13,200.0	6,865.0	6,826.0	6,826.0	186.4	136.8	-90.00	-1,139.2	87.2	6,995.3	6,672.5	322.73	21.675	
13,300.0	6,865.0	6,826.0	6,826.0	189.2	136.8	-90.00	-1,139.2	87.2	7,095.2	6,769.7	325.53	21.796	
13,400.0	6,865.0	6,826.0	6,826.0	192.0	136.8	-90.00	-1,139.2	87.2	7,195.2	6,866.8	328.34	21.914	
13,500.0	6,865.0	6,826.0	6,826.0	194.8	136.8	-90.00	-1,139.2	87.2	7,295.1	6,964.0	331.14	22.030	
13,600.0	6,865.0	6,826.0	6,826.0	197.6	136.8	-90.00	-1,139.2	87.2	7,395.0	7,061.1	333.95	22.144	
13,700.0	6,865.0	6,826.0	6,826.0	200.4	136.8	-90.00	-1,139.2	87.2	7,495.0	7,158.2	336.75	22.257	

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

Anticollision Report



Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well VETTING 12
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 12	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 #3	Offset TVD Reference:	Offset Datum

Offset Design		SW NW SEC. 15 T5N R65W 6th P.M. - EXIST VERT HARRINGTON #1 - Wellbore #1 - Design #1										Offset Site Error:	0.0 usft
Survey Program: 0-INC												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
13,800.0	6,865.0	6,826.0	6,826.0	203.2	136.8	-90.00	-1,139.2	87.2	7,594.9	7,255.4	339.56	22.367	
13,900.0	6,865.0	6,826.0	6,826.0	206.0	136.8	-90.00	-1,139.2	87.2	7,694.9	7,352.5	342.36	22.476	
14,000.0	6,865.0	6,826.0	6,826.0	208.8	136.8	-90.00	-1,139.2	87.2	7,794.8	7,449.7	345.17	22.583	
14,100.0	6,865.0	6,826.0	6,826.0	211.6	136.8	-90.00	-1,139.2	87.2	7,894.8	7,546.8	347.97	22.688	
14,200.0	6,865.0	6,826.0	6,826.0	214.4	136.8	-90.00	-1,139.2	87.2	7,994.8	7,644.0	350.78	22.791	
14,300.0	6,865.0	6,826.0	6,826.0	217.2	136.8	-90.00	-1,139.2	87.2	8,094.7	7,741.1	353.59	22.893	
14,400.0	6,865.0	6,826.0	6,826.0	220.0	136.8	-90.00	-1,139.2	87.2	8,194.7	7,838.3	356.39	22.993	
14,500.0	6,865.0	6,826.0	6,826.0	222.8	136.8	-90.00	-1,139.2	87.2	8,294.6	7,935.4	359.20	23.092	
14,600.0	6,865.0	6,826.0	6,826.0	225.6	136.8	-90.00	-1,139.2	87.2	8,394.6	8,032.6	362.01	23.189	
14,700.0	6,865.0	6,826.0	6,826.0	228.4	136.8	-90.00	-1,139.2	87.2	8,494.5	8,129.7	364.81	23.285	
14,800.0	6,865.0	6,826.0	6,826.0	231.2	136.8	-90.00	-1,139.2	87.2	8,594.5	8,226.9	367.62	23.379	
14,900.0	6,865.0	6,826.0	6,826.0	234.0	136.8	-90.00	-1,139.2	87.2	8,694.5	8,324.0	370.43	23.471	
15,000.0	6,865.0	6,826.0	6,826.0	236.8	136.8	-90.00	-1,139.2	87.2	8,794.4	8,421.2	373.24	23.563	
15,040.4	6,865.0	6,826.0	6,826.0	237.9	136.8	-90.00	-1,139.2	87.2	8,834.8	8,460.5	374.37	23.599	

Anticollision Report



Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well VETTING 12
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 12	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 #3	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 100-GYD_CT												Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	65.23	61.6	133.4	148.0				
100.0	100.0	81.5	81.5	0.1	0.0	65.30	61.5	133.6	147.1	146.9	0.14	1,046.180	CC, ES
200.0	200.0	181.4	181.4	0.3	0.2	-141.80	61.1	134.2	148.9	148.3	0.51	294.252	
300.0	299.8	281.9	281.9	0.5	0.3	-142.75	60.7	134.7	153.2	152.4	0.83	184.299	
400.0	399.5	382.3	382.3	0.8	0.4	-144.40	60.1	134.6	159.9	158.8	1.15	138.805	
500.0	498.7	481.8	481.8	1.1	0.4	-146.56	59.5	134.3	169.4	167.9	1.49	113.747	
600.0	597.5	580.8	580.7	1.5	0.5	-149.06	59.0	133.8	182.0	180.2	1.84	98.824	
699.9	695.5	679.0	679.0	1.9	0.5	-151.70	58.5	133.3	197.9	195.7	2.21	89.733	
700.0	695.6	679.1	679.1	1.9	0.5	-151.70	58.5	133.3	198.0	195.8	2.21	89.727	
800.0	793.4	777.2	777.2	2.3	0.6	-154.27	57.9	132.8	215.8	213.3	2.53	85.201	
900.0	891.3	874.9	874.9	2.7	0.6	-156.47	57.5	132.2	234.0	231.2	2.85	81.996	
1,000.0	989.1	972.8	972.8	3.2	0.6	-158.38	57.2	131.6	252.6	249.5	3.17	79.717	
1,100.0	1,086.9	1,070.7	1,070.6	3.6	0.7	-160.09	57.1	130.8	271.5	268.0	3.48	78.062	
1,200.0	1,184.7	1,168.4	1,168.4	4.1	0.7	-161.63	57.2	129.8	290.5	286.8	3.78	76.872	
1,300.0	1,282.5	1,265.7	1,265.7	4.5	0.8	-163.03	57.6	128.7	309.9	305.8	4.08	76.000	
1,400.0	1,380.3	1,361.5	1,361.5	5.0	0.8	-164.31	58.4	127.6	329.8	325.4	4.37	75.443	
1,500.0	1,478.1	1,455.7	1,455.6	5.5	0.8	-165.50	60.1	126.7	350.6	345.9	4.66	75.190	
1,600.0	1,576.0	1,550.4	1,550.3	5.9	0.8	-166.56	62.6	126.4	372.5	367.5	4.95	75.199	
1,700.0	1,673.8	1,645.8	1,645.7	6.4	0.8	-167.46	65.2	126.7	395.0	389.8	5.24	75.406	
1,800.0	1,771.6	1,741.3	1,741.1	6.8	0.9	-168.24	68.0	127.5	418.1	412.6	5.52	75.689	
1,900.0	1,869.4	1,837.7	1,837.5	7.3	0.9	-168.89	70.8	128.7	441.5	435.7	5.81	75.997	
2,000.0	1,967.2	1,933.1	1,932.8	7.8	0.9	-169.39	73.3	130.5	465.1	459.0	6.10	76.292	
2,100.0	2,065.0	2,027.9	2,027.6	8.2	0.9	-169.78	76.0	133.1	489.3	482.9	6.39	76.598	
2,200.0	2,162.9	2,125.4	2,125.0	8.7	0.9	-170.04	78.3	136.4	513.7	507.0	6.68	76.885	
2,300.0	2,260.7	2,223.7	2,223.2	9.1	1.0	-170.21	80.1	140.2	537.8	530.8	6.97	77.135	
2,400.0	2,358.5	2,322.6	2,321.9	9.6	1.0	-170.33	81.4	144.2	561.7	554.4	7.26	77.314	
2,500.0	2,456.3	2,420.6	2,419.9	10.1	1.0	-170.38	82.2	148.3	585.3	577.8	7.56	77.423	
2,600.0	2,554.1	2,517.3	2,516.5	10.5	1.0	-170.42	82.9	152.6	608.9	601.1	7.86	77.493	
2,700.0	2,651.9	2,613.9	2,613.0	11.0	1.0	-170.45	83.7	156.8	632.6	624.5	8.16	77.556	
2,800.0	2,749.7	2,711.1	2,710.1	11.4	1.1	-170.47	84.5	161.3	656.4	647.9	8.46	77.613	
2,900.0	2,847.6	2,808.8	2,807.7	11.9	1.1	-170.49	85.2	165.6	680.1	671.3	8.76	77.665	
3,000.0	2,945.4	2,906.9	2,905.7	12.3	1.1	-170.54	86.1	169.7	703.7	694.6	9.05	77.711	
3,100.0	3,043.2	3,006.9	3,005.6	12.8	1.1	-170.59	86.7	173.7	727.0	717.6	9.35	77.732	
3,200.0	3,141.0	3,104.5	3,103.1	13.3	1.2	-170.65	87.4	177.3	750.1	740.5	9.65	77.736	
3,300.0	3,238.8	3,205.6	3,204.2	13.7	1.2	-170.75	88.1	180.4	773.0	763.1	9.95	77.718	
3,400.0	3,336.6	3,308.9	3,307.5	14.2	1.2	-170.85	88.3	183.2	795.3	785.0	10.24	77.663	
3,500.0	3,434.5	3,409.8	3,408.3	14.7	1.2	-170.94	88.0	185.6	817.0	806.4	10.53	77.560	
3,600.0	3,532.3	3,509.0	3,507.5	15.1	1.3	-171.02	87.6	187.8	838.4	827.5	10.83	77.426	
3,700.0	3,630.1	3,606.4	3,604.9	15.6	1.3	-171.11	87.1	189.8	859.7	848.6	11.12	77.286	
3,800.0	3,727.9	3,706.0	3,704.5	16.0	1.3	-171.16	86.3	192.1	881.0	869.6	11.42	77.136	
3,900.0	3,825.7	3,801.5	3,799.9	16.5	1.3	-171.20	85.4	194.6	902.3	890.5	11.72	76.992	
4,000.0	3,923.5	3,897.7	3,896.1	17.0	1.4	-171.23	84.7	197.3	923.7	911.7	12.02	76.856	
4,100.0	4,021.3	3,996.0	3,994.3	17.4	1.4	-171.30	84.3	199.5	945.3	932.9	12.32	76.742	
4,200.0	4,119.2	4,094.7	4,093.1	17.9	1.4	-171.44	84.6	200.5	966.7	954.1	12.61	76.663	
4,300.0	4,217.0	4,196.5	4,194.8	18.3	1.4	-171.66	85.4	200.6	987.9	975.0	12.90	76.588	
4,400.0	4,314.8	4,294.5	4,292.9	18.8	1.4	-171.88	86.2	200.1	1,008.9	995.7	13.19	76.504	
4,500.0	4,412.6	4,391.7	4,390.0	19.3	1.5	-172.09	87.1	199.6	1,029.9	1,016.4	13.48	76.416	
4,600.0	4,510.4	4,491.4	4,489.8	19.7	1.5	-172.31	87.9	198.9	1,050.8	1,037.1	13.77	76.331	
4,696.0	4,604.3	4,586.3	4,584.6	20.2	1.5	-172.50	88.6	198.3	1,070.8	1,056.8	14.04	76.247	
4,700.0	4,608.2	4,590.3	4,588.6	20.2	1.5	-172.53	88.6	198.3	1,071.6	1,057.6	14.03	76.395	
4,725.0	4,633.0	4,615.2	4,613.6	20.2	1.5	-172.67	88.8	198.1	1,075.4	1,061.5	13.90	77.383	
4,750.0	4,657.9	4,640.5	4,638.8	20.3	1.5	-172.73	88.9	198.0	1,077.0	1,063.3	13.75	78.338	

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

Anticollision Report



Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well VETTING 12
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 12	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 #3	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 100-GYD_CT												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
4,756.0	4,663.9	4,646.5	4,644.9	20.3	1.5	34.18	88.9	197.9	1,077.1	1,055.5	21.58	49.916	
4,800.0	4,707.9	4,691.1	4,689.4	20.3	1.5	34.17	89.1	197.7	1,077.1	1,055.5	21.63	49.804	
4,900.0	4,807.9	4,790.6	4,788.9	20.4	1.5	34.13	89.5	197.2	1,077.2	1,055.5	21.72	49.583	
5,000.0	4,907.9	4,889.0	4,887.4	20.5	1.5	34.11	89.9	196.9	1,077.3	1,055.5	21.82	49.365	
5,100.0	5,007.9	4,988.0	4,986.3	20.6	1.5	34.09	90.3	196.8	1,077.6	1,055.7	21.93	49.150	
5,200.0	5,107.9	5,088.0	5,086.3	20.7	1.5	34.10	90.5	197.1	1,078.0	1,055.9	22.03	48.935	
5,300.0	5,207.9	5,188.5	5,186.8	20.8	1.6	34.12	90.5	197.7	1,078.3	1,056.1	22.14	48.707	
5,400.0	5,307.9	5,286.6	5,284.9	20.9	1.6	34.16	90.4	198.4	1,078.6	1,056.4	22.25	48.478	
5,500.0	5,407.9	5,384.0	5,382.4	21.0	1.6	34.20	90.5	199.4	1,079.2	1,056.9	22.36	48.259	
5,600.0	5,507.9	5,481.4	5,479.7	21.1	1.6	34.23	90.8	200.3	1,080.0	1,057.6	22.48	48.049	
5,700.0	5,607.9	5,581.5	5,579.8	21.2	1.7	34.25	91.4	201.1	1,081.0	1,058.4	22.59	47.844	
5,800.0	5,707.9	5,680.6	5,678.9	21.3	1.7	34.28	91.9	202.2	1,082.0	1,059.2	22.71	47.638	
5,900.0	5,807.9	5,781.7	5,780.0	21.4	1.7	34.36	91.8	204.0	1,083.0	1,060.1	22.83	47.428	
6,000.0	5,907.9	5,887.7	5,885.9	21.5	1.7	34.45	91.4	205.9	1,083.6	1,060.7	22.96	47.200	
6,100.0	6,007.9	5,988.0	5,986.3	21.6	1.8	34.53	90.8	207.3	1,083.9	1,060.9	23.08	46.955	
6,200.0	6,107.9	6,090.3	6,088.6	21.7	1.8	34.61	90.2	208.6	1,084.2	1,061.0	23.21	46.704	
6,300.0	6,207.9	6,189.7	6,187.9	21.8	1.8	34.68	89.6	209.7	1,084.3	1,061.0	23.34	46.448	
6,384.0	6,291.9	6,271.1	6,269.3	21.9	1.8	34.72	89.3	210.6	1,084.6	1,061.1	23.46	46.238	
6,400.0	6,307.9	6,286.5	6,284.7	21.9	1.8	124.72	89.3	210.7	1,084.8	1,068.1	16.67	65.076	
6,450.0	6,357.7	6,336.1	6,334.3	22.0	1.8	124.72	89.2	211.3	1,087.1	1,070.2	16.89	64.353	
6,500.0	6,407.1	6,385.8	6,384.0	22.1	1.8	124.69	89.2	211.8	1,091.8	1,074.7	17.13	63.752	
6,550.0	6,455.6	6,434.5	6,432.8	22.3	1.9	124.62	89.1	212.3	1,099.1	1,081.8	17.37	63.284	
6,600.0	6,502.8	6,482.0	6,480.2	22.4	1.9	124.49	89.0	212.7	1,109.0	1,091.4	17.62	62.948	
6,650.0	6,548.4	6,528.1	6,526.3	22.7	1.9	124.27	88.9	213.1	1,121.4	1,103.6	17.88	62.724	
6,700.0	6,592.1	6,572.5	6,570.7	22.9	1.9	123.92	88.9	213.5	1,136.5	1,118.4	18.16	62.570	
6,750.0	6,635.5	6,614.1	6,612.3	23.2	1.9	123.40	88.8	213.7	1,154.2	1,135.7	18.49	62.423	
6,800.0	6,672.3	6,652.4	6,650.6	23.5	1.9	122.62	88.7	214.0	1,174.6	1,155.8	18.88	62.201	
6,850.0	6,708.2	6,687.7	6,685.9	23.8	1.9	121.56	88.6	214.3	1,197.7	1,178.3	19.38	61.811	
6,900.0	6,741.0	6,700.0	6,698.2	24.3	1.9	119.39	88.6	214.4	1,223.6	1,203.6	20.01	61.149	
6,950.0	6,770.3	6,700.0	6,698.2	24.7	1.9	116.23	88.6	214.4	1,252.6	1,231.8	20.82	60.158	
7,000.0	6,796.0	6,700.0	6,698.2	25.2	1.9	112.48	88.6	214.4	1,284.4	1,262.6	21.79	58.936	
7,050.0	6,817.8	6,700.0	6,698.2	25.8	1.9	108.09	88.6	214.4	1,318.5	1,295.7	22.87	57.661	
7,100.0	6,835.6	6,700.0	6,698.2	26.4	1.9	103.08	88.6	214.4	1,354.6	1,330.6	23.96	56.531	
7,150.0	6,849.4	6,700.0	6,698.2	27.1	1.9	97.48	88.6	214.4	1,392.2	1,367.2	25.00	55.685	
7,200.0	6,858.8	6,700.0	6,698.2	27.8	1.9	91.39	88.6	214.4	1,430.9	1,404.9	25.96	55.116	
7,250.0	6,864.0	6,700.0	6,698.2	28.6	1.9	84.98	88.6	214.4	1,470.3	1,443.5	26.86	54.749	
7,284.2	6,865.0	6,700.0	6,698.2	29.2	1.9	80.52	88.6	214.4	1,497.6	1,470.2	27.38	54.697	
7,300.0	6,865.0	6,700.0	6,698.2	29.5	1.9	80.52	88.6	214.4	1,510.2	1,482.5	27.70	54.517	
7,400.0	6,865.0	6,700.0	6,698.2	31.3	1.9	80.52	88.6	214.4	1,591.4	1,561.6	29.82	53.375	
7,500.0	6,865.0	6,700.0	6,698.2	33.2	1.9	80.52	88.6	214.4	1,674.8	1,642.7	32.04	52.272	
7,600.0	6,865.0	6,700.0	6,698.2	35.3	1.9	80.52	88.6	214.4	1,759.8	1,725.4	34.35	51.234	
7,700.0	6,865.0	6,700.0	6,698.2	37.5	1.9	80.52	88.6	214.4	1,846.3	1,809.6	36.73	50.274	
7,800.0	6,865.0	6,700.0	6,698.2	39.8	1.9	80.52	88.6	214.4	1,934.2	1,895.0	39.16	49.394	
7,900.0	6,865.0	6,700.0	6,698.2	42.1	1.9	80.52	88.6	214.4	2,023.1	1,981.5	41.64	48.591	
8,000.0	6,865.0	6,700.0	6,698.2	44.5	1.9	80.52	88.6	214.4	2,113.1	2,069.0	44.15	47.860	
8,100.0	6,865.0	6,700.0	6,698.2	47.0	1.9	80.52	88.6	214.4	2,203.9	2,157.2	46.70	47.196	
8,200.0	6,865.0	6,700.0	6,698.2	49.5	1.9	80.52	88.6	214.4	2,295.5	2,246.2	49.27	46.591	
8,300.0	6,865.0	6,700.0	6,698.2	52.0	1.9	80.52	88.6	214.4	2,387.8	2,335.9	51.86	46.040	
8,400.0	6,865.0	6,700.0	6,698.2	54.6	1.9	80.52	88.6	214.4	2,480.6	2,426.2	54.48	45.537	
8,500.0	6,865.0	6,700.0	6,698.2	57.2	1.9	80.52	88.6	214.4	2,574.0	2,516.9	57.10	45.076	
8,600.0	6,865.0	6,700.0	6,698.2	59.8	1.9	80.52	88.6	214.4	2,667.9	2,608.2	59.75	44.654	
8,700.0	6,865.0	6,700.0	6,698.2	62.4	1.9	80.52	88.6	214.4	2,762.2	2,699.8	62.40	44.266	

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

Anticollision Report



Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well VETTING 12
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 12	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 #3	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 100-GYD_CT												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
8,800.0	6,865.0	6,700.0	6,698.2	65.1	1.9	80.52	88.6	214.4	2,856.9	2,791.8	65.07	43.908	
8,900.0	6,865.0	6,700.0	6,698.2	67.7	1.9	80.52	88.6	214.4	2,951.9	2,884.2	67.74	43.578	
9,000.0	6,865.0	6,700.0	6,698.2	70.4	1.9	80.52	88.6	214.4	3,047.3	2,976.9	70.42	43.273	
9,100.0	6,865.0	6,700.0	6,698.2	73.1	1.9	80.52	88.6	214.4	3,143.0	3,069.8	73.11	42.989	
9,200.0	6,865.0	6,700.0	6,698.2	75.8	1.9	80.52	88.6	214.4	3,238.9	3,163.1	75.81	42.726	
9,300.0	6,865.0	6,700.0	6,698.2	78.5	1.9	80.52	88.6	214.4	3,335.0	3,256.5	78.51	42.480	
9,400.0	6,865.0	6,700.0	6,698.2	81.2	1.9	80.52	88.6	214.4	3,431.4	3,350.2	81.21	42.251	
9,500.0	6,865.0	6,700.0	6,698.2	83.9	1.9	80.52	88.6	214.4	3,528.0	3,444.0	83.92	42.037	
9,600.0	6,865.0	6,700.0	6,698.2	86.6	1.9	80.52	88.6	214.4	3,624.7	3,538.1	86.64	41.836	
9,700.0	6,865.0	6,700.0	6,698.2	89.3	1.9	80.52	88.6	214.4	3,721.6	3,632.3	89.36	41.648	
9,719.9	6,865.0	6,700.0	6,698.2	89.9	1.9	80.52	88.6	214.4	3,741.0	3,651.1	89.90	41.612	
9,772.0	6,865.0	6,700.0	6,698.2	91.3	1.9	81.45	88.6	214.4	3,791.3	3,700.2	91.18	41.581	
9,800.0	6,865.0	6,700.0	6,698.2	92.1	1.9	81.45	88.6	214.4	3,818.4	3,726.4	91.94	41.529	
9,900.0	6,865.0	6,700.0	6,698.2	94.8	1.9	81.45	88.6	214.4	3,915.0	3,820.3	94.68	41.349	
10,000.0	6,865.0	6,700.0	6,698.2	97.5	1.9	81.45	88.6	214.4	4,011.7	3,914.3	97.42	41.179	
10,100.0	6,865.0	6,700.0	6,698.2	100.3	1.9	81.45	88.6	214.4	4,108.6	4,008.5	100.16	41.019	
10,200.0	6,865.0	6,700.0	6,698.2	103.0	1.9	81.45	88.6	214.4	4,205.7	4,102.8	102.91	40.868	
10,300.0	6,865.0	6,700.0	6,698.2	105.8	1.9	81.45	88.6	214.4	4,302.9	4,197.2	105.66	40.726	
10,400.0	6,865.0	6,700.0	6,698.2	108.5	1.9	81.45	88.6	214.4	4,400.2	4,291.8	108.40	40.591	
10,500.0	6,865.0	6,700.0	6,698.2	111.3	1.9	81.45	88.6	214.4	4,497.6	4,386.5	111.16	40.462	
10,600.0	6,865.0	6,700.0	6,698.2	114.0	1.9	81.45	88.6	214.4	4,595.2	4,481.3	113.91	40.341	
10,700.0	6,865.0	6,700.0	6,698.2	116.8	1.9	81.45	88.6	214.4	4,692.8	4,576.2	116.66	40.225	
10,800.0	6,865.0	6,700.0	6,698.2	119.6	1.9	81.45	88.6	214.4	4,790.6	4,671.2	119.42	40.116	
10,900.0	6,865.0	6,700.0	6,698.2	122.3	1.9	81.45	88.6	214.4	4,888.4	4,766.2	122.18	40.011	
11,000.0	6,865.0	6,700.0	6,698.2	125.1	1.9	81.45	88.6	214.4	4,986.3	4,861.4	124.94	39.911	
11,100.0	6,865.0	6,700.0	6,698.2	127.9	1.9	81.45	88.6	214.4	5,084.3	4,956.6	127.70	39.816	
11,200.0	6,865.0	6,700.0	6,698.2	130.7	1.9	81.45	88.6	214.4	5,182.4	5,052.0	130.46	39.725	
11,300.0	6,865.0	6,700.0	6,698.2	133.4	1.9	81.45	88.6	214.4	5,280.6	5,147.3	133.22	39.638	
11,400.0	6,865.0	6,700.0	6,698.2	136.2	1.9	81.45	88.6	214.4	5,378.8	5,242.8	135.98	39.555	
11,500.0	6,865.0	6,700.0	6,698.2	139.0	1.9	81.45	88.6	214.4	5,477.1	5,338.3	138.75	39.475	
11,600.0	6,865.0	6,700.0	6,698.2	141.8	1.9	81.45	88.6	214.4	5,575.4	5,433.9	141.51	39.398	
11,700.0	6,865.0	6,700.0	6,698.2	144.6	1.9	81.45	88.6	214.4	5,673.8	5,529.5	144.28	39.325	
11,800.0	6,865.0	6,700.0	6,698.2	147.3	1.9	81.45	88.6	214.4	5,772.3	5,625.2	147.05	39.255	
11,900.0	6,865.0	6,700.0	6,698.2	150.1	1.9	81.45	88.6	214.4	5,870.8	5,721.0	149.81	39.187	
12,000.0	6,865.0	6,700.0	6,698.2	152.9	1.9	81.45	88.6	214.4	5,969.3	5,816.8	152.58	39.122	
12,100.0	6,865.0	6,700.0	6,698.2	155.7	1.9	81.45	88.6	214.4	6,068.0	5,912.6	155.35	39.059	
12,200.0	6,865.0	6,700.0	6,698.2	158.5	1.9	81.45	88.6	214.4	6,166.6	6,008.5	158.12	38.999	
12,300.0	6,865.0	6,700.0	6,698.2	161.3	1.9	81.45	88.6	214.4	6,265.3	6,104.4	160.89	38.941	
12,400.0	6,865.0	6,700.0	6,698.2	164.1	1.9	81.45	88.6	214.4	6,364.0	6,200.4	163.66	38.885	
12,500.0	6,865.0	6,700.0	6,698.2	166.8	1.9	81.45	88.6	214.4	6,462.8	6,296.4	166.44	38.831	
12,600.0	6,865.0	6,700.0	6,698.2	169.6	1.9	81.45	88.6	214.4	6,561.6	6,392.4	169.21	38.778	
12,700.0	6,865.0	6,700.0	6,698.2	172.4	1.9	81.45	88.6	214.4	6,660.5	6,488.5	171.98	38.728	
12,800.0	6,865.0	6,700.0	6,698.2	175.2	1.9	81.45	88.6	214.4	6,759.3	6,584.6	174.75	38.679	
12,900.0	6,865.0	6,700.0	6,698.2	178.0	1.9	81.45	88.6	214.4	6,858.3	6,680.7	177.53	38.632	
13,000.0	6,865.0	6,700.0	6,698.2	180.8	1.9	81.45	88.6	214.4	6,957.2	6,776.9	180.30	38.586	
13,100.0	6,865.0	6,700.0	6,698.2	183.6	1.9	81.45	88.6	214.4	7,056.2	6,873.1	183.08	38.542	
13,200.0	6,865.0	6,700.0	6,698.2	186.4	1.9	81.45	88.6	214.4	7,155.2	6,969.3	185.85	38.499	
13,300.0	6,865.0	6,700.0	6,698.2	189.2	1.9	81.45	88.6	214.4	7,254.2	7,065.6	188.63	38.458	
13,400.0	6,865.0	6,700.0	6,698.2	192.0	1.9	81.45	88.6	214.4	7,353.3	7,161.9	191.40	38.418	
13,500.0	6,865.0	6,700.0	6,698.2	194.8	1.9	81.45	88.6	214.4	7,452.3	7,258.2	194.18	38.379	
13,600.0	6,865.0	6,700.0	6,698.2	197.6	1.9	81.45	88.6	214.4	7,551.5	7,354.5	196.95	38.341	
13,700.0	6,865.0	6,700.0	6,698.2	200.4	1.9	81.45	88.6	214.4	7,650.6	7,450.9	199.73	38.304	

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

Anticollision Report



Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well VETTING 12
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 12	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 #3	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	Offset	Semi Major Axis		Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,800.0	6,865.0	6,700.0	6,698.2	203.2	1.9	81.45	88.6	214.4	7,749.7	7,547.2	202.51	38.269	
13,900.0	6,865.0	6,700.0	6,698.2	206.0	1.9	81.45	88.6	214.4	7,848.9	7,643.6	205.29	38.234	
14,000.0	6,865.0	6,700.0	6,698.2	208.8	1.9	81.45	88.6	214.4	7,948.1	7,740.0	208.06	38.200	
14,100.0	6,865.0	6,700.0	6,698.2	211.6	1.9	81.45	88.6	214.4	8,047.3	7,836.5	210.84	38.168	
14,200.0	6,865.0	6,700.0	6,698.2	214.4	1.9	81.45	88.6	214.4	8,146.5	7,932.9	213.62	38.136	
14,300.0	6,865.0	6,700.0	6,698.2	217.2	1.9	81.45	88.6	214.4	8,245.8	8,029.4	216.40	38.105	
14,400.0	6,865.0	6,700.0	6,698.2	220.0	1.9	81.45	88.6	214.4	8,345.1	8,125.9	219.18	38.075	
14,500.0	6,865.0	6,700.0	6,698.2	222.8	1.9	81.45	88.6	214.4	8,444.4	8,222.4	221.95	38.045	
14,600.0	6,865.0	6,700.0	6,698.2	225.6	1.9	81.45	88.6	214.4	8,543.7	8,318.9	224.73	38.017	
14,700.0	6,865.0	6,700.0	6,698.2	228.4	1.9	81.45	88.6	214.4	8,643.0	8,415.5	227.51	37.989	
14,800.0	6,865.0	6,700.0	6,698.2	231.2	1.9	81.45	88.6	214.4	8,742.3	8,512.0	230.29	37.962	
14,900.0	6,865.0	6,700.0	6,698.2	234.0	1.9	81.45	88.6	214.4	8,841.7	8,608.6	233.07	37.935	
15,000.0	6,865.0	6,700.0	6,698.2	236.8	1.9	81.45	88.6	214.4	8,941.0	8,705.2	235.85	37.910	
15,040.4	6,865.0	6,700.0	6,698.2	237.9	1.9	81.45	88.6	214.4	8,981.2	8,744.2	236.98	37.899 SF	

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well VETTING 12
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Reference Site:	SW NW SEC. 15 T5N R65W 6th P.M.	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	VETTING 12	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 #3	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB-EST @ 4664.0usft (Original Well ECoordinates are relative to: VETTING 12

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°

Separation Factor Plot

