

EXTRACTION OIL & GAS

Broomfield County

Sec 10-T1S-R68W

INTERCHANGE A S22-30-11N

ORIGINAL WELLBORE

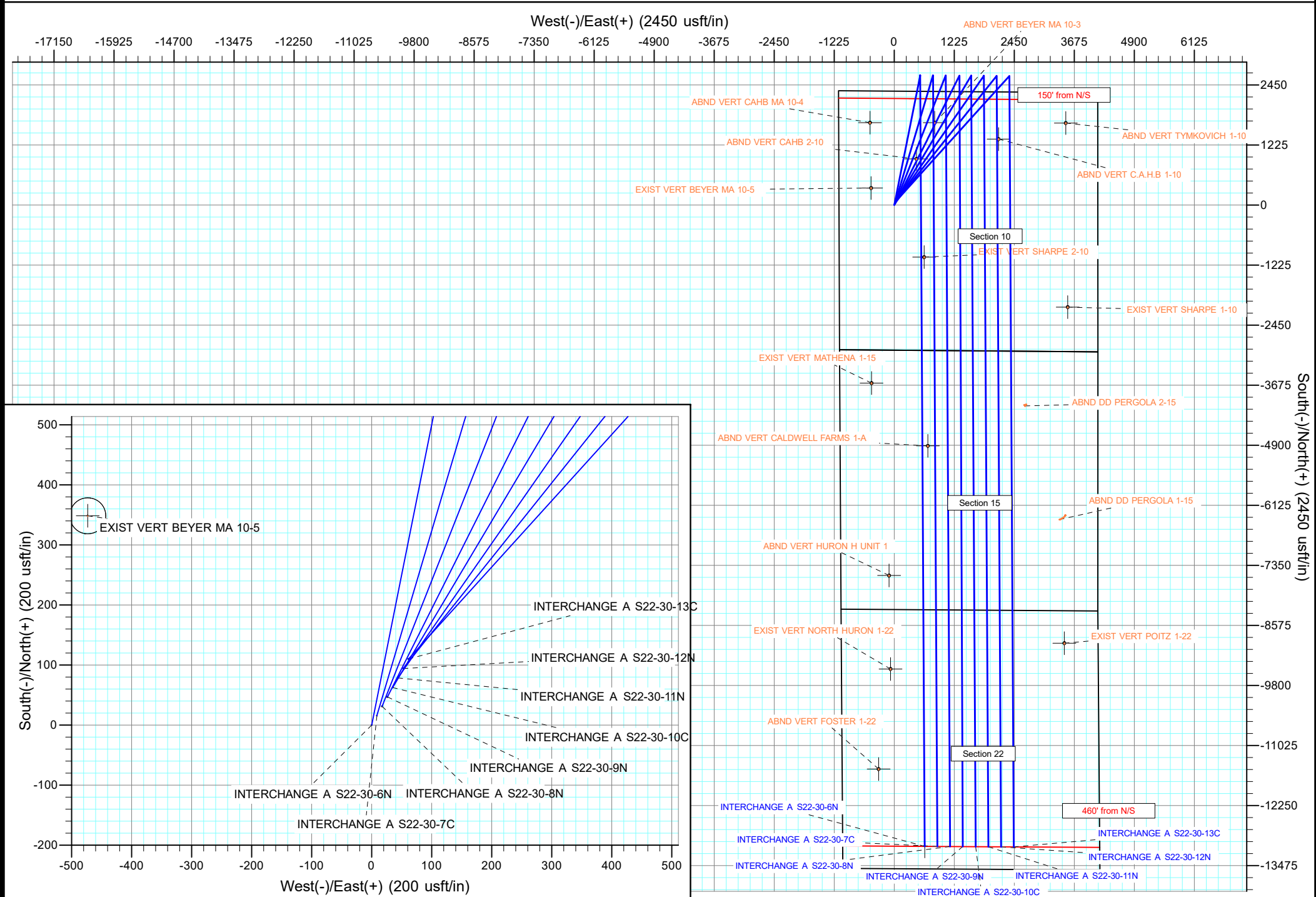
PROPOSAL 1

Anticollision Report

23 January, 2018



Project: Broomfield County
Site: Sec 10-T1S-R68W
Well: INTERCHANGE A S22-30-6N
ORIGINAL WELLBORE
PROPOSAL 1



Anticollision Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well INTERCHANGE A S22-30-11N
Project:	Broomfield County	TVD Reference:	KB 25' @ 5257.00usft
Reference Site:	Sec 10-T1S-R68W	MD Reference:	KB 25' @ 5257.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	INTERCHANGE A S22-30-11N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDT_32Bit_ODBC
Reference Design:	PROPOSAL 1	Offset TVD Reference:	Offset Datum

Reference	PROPOSAL 1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999.98 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	1/23/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	24,116.75	PROPOSAL 1 (ORIGINAL WELLBORE)	MWD OWSG	OWSG MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Sec 10-T1S-R68W						
ABND VERT BEYER MA 10-3 - Wellbore #1 - Design #1	4,602.55	4,139.80	275.19	158.07	2.350	CC, ES
ABND VERT BEYER MA 10-3 - Wellbore #1 - Design #1	4,700.00	4,224.65	279.34	160.02	2.341	SF
ABND VERT C.A.H.B 1-10 - Wellbore #1 - Design #1	9,682.80	7,767.98	292.36	91.75	1.457	Level 3, CC, ES, SF
ABND VERT CAHB 2-10 - Wellbore #1 - Design #1	2,935.47	2,686.18	157.85	85.21	2.173	CC, ES, SF
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	3,063.85	2,817.96	1,360.03	1,283.57	17.788	CC
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	3,200.00	2,936.52	1,361.68	1,281.62	17.009	ES
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	9,400.00	7,824.99	2,332.28	2,128.88	11.467	SF
ABND VERT TYMKOVICH 1-10 - Wellbore #1 - Design #	6,295.72	5,180.00	2,078.87	2,013.59	31.843	CC
ABND VERT TYMKOVICH 1-10 - Wellbore #1 - Design #	6,300.00	5,180.00	2,078.88	2,013.56	31.828	ES
ABND VERT TYMKOVICH 1-10 - Wellbore #1 - Design #	6,600.00	5,180.00	2,101.02	2,034.13	31.408	SF
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	300.00	290.00	583.00	576.80	94.039	CC
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	700.00	688.70	587.20	571.44	37.264	ES
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	10,900.00	7,829.96	2,327.13	2,123.10	11.406	SF
EXIST VERT SHARPE 1-10 - Wellbore #1 - Design #1	13,117.86	7,759.92	1,683.83	1,458.89	7.486	CC, ES
EXIST VERT SHARPE 1-10 - Wellbore #1 - Design #1	13,300.00	7,759.92	1,693.65	1,465.57	7.426	SF
EXIST VERT SHARPE 2-10 - Wellbore #1 - Design #1	12,081.14	7,808.06	1,241.73	1,028.77	5.831	CC
EXIST VERT SHARPE 2-10 - Wellbore #1 - Design #1	12,100.00	7,808.06	1,241.87	1,028.75	5.827	ES, SF
INTERCHANGE A S22-30-10C - ORIGINAL WELLBORE	300.00	300.00	18.23	16.53	10.707	CC
INTERCHANGE A S22-30-10C - ORIGINAL WELLBORE	24,000.00	32,753.66	369.98	-152.34	0.708	Level 1, ES, SF
INTERCHANGE A S22-30-12N - ORIGINAL WELLBORE	200.00	200.00	17.91	16.93	18.170	CC
INTERCHANGE A S22-30-12N - ORIGINAL WELLBORE	24,116.75	24,168.20	259.34	-244.92	0.514	Level 1, ES, SF
INTERCHANGE A S22-30-13C - ORIGINAL WELLBORE	100.00	75.00	35.82	35.59	152.278	CC, ES
INTERCHANGE A S22-30-13C - ORIGINAL WELLBORE	24,116.75	24,455.09	593.52	141.58	1.313	Level 3, SF
INTERCHANGE A S22-30-6N - ORIGINAL WELLBORE	300.00	300.00	90.01	88.31	52.863	CC, ES
INTERCHANGE A S22-30-6N - ORIGINAL WELLBORE	24,116.75	23,979.14	1,300.15	795.02	2.574	SF
INTERCHANGE A S22-30-7C - ORIGINAL WELLBORE	300.00	300.00	72.10	70.40	42.344	CC, ES
INTERCHANGE A S22-30-7C - ORIGINAL WELLBORE	24,100.00	24,222.75	1,073.72	577.20	2.162	SF
INTERCHANGE A S22-30-8N - ORIGINAL WELLBORE	300.00	300.00	54.19	52.49	31.825	CC, ES
INTERCHANGE A S22-30-8N - ORIGINAL WELLBORE	24,112.56	24,014.67	781.58	276.39	1.547	SF
INTERCHANGE A S22-30-9N - ORIGINAL WELLBORE	300.00	300.00	36.14	34.44	21.226	CC
INTERCHANGE A S22-30-9N - ORIGINAL WELLBORE	24,116.75	24,037.00	522.36	18.27	1.036	Level 2, ES, 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 INTERCHANGE A S22-30-11N
Project:	Broomfield County	TVD Reference:	KB 25' @ 5257.00usft
Reference Site:	Sec 10-T1S-R68W	MD Reference:	KB 25' @ 5257.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	INTERCHANGE A S22-30-11N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDT_32Bit_ODBC
Reference Design:	PROPOSAL 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Sec 15-T1S-R68W						
ABND DD PERGOLA 1-15 - Wellbore #1 - Wellbore #1	17,451.13	7,500.00	1,510.26	1,346.66	9.231	CC
ABND DD PERGOLA 1-15 - Wellbore #1 - Wellbore #1	17,500.00	7,500.00	1,511.05	1,346.14	9.163	ES
ABND DD PERGOLA 1-15 - Wellbore #1 - Wellbore #1	17,700.00	7,500.00	1,530.62	1,361.77	9.065	SF
ABND DD PERGOLA 2-15 - Wellbore #1 - Wellbore #1	15,127.14	7,500.00	847.96	723.89	6.835	CC, ES
ABND DD PERGOLA 2-15 - Wellbore #1 - Wellbore #1	15,200.00	7,500.00	851.08	724.80	6.739	SF
ABND VERT CALDWELL FARMS 1-A - Wellbore #1 - De	15,931.87	7,788.87	1,188.31	919.77	4.425	CC, ES, SF
ABND VERT HURON H UNIT 1 - Wellbore #1 - Design #	18,572.22	7,816.82	1,995.49	1,682.26	6.371	CC
ABND VERT HURON H UNIT 1 - Wellbore #1 - Design #	18,600.00	7,816.82	1,995.68	1,682.23	6.367	ES, SF
EXIST VERT MATHENA 1-15 - Wellbore #1 - Design #1	14,644.45	7,811.89	2,329.46	2,081.00	9.376	CC, ES
EXIST VERT MATHENA 1-15 - Wellbore #1 - Design #1	14,800.00	7,811.89	2,334.65	2,084.75	9.342	SF
Sec 22-T1S-R68W						
ABND VERT FOSTER 1-22 - Wellbore #1 - Design #1	22,518.17	7,772.74	2,231.78	1,851.46	5.868	CC, ES
ABND VERT FOSTER 1-22 - Wellbore #1 - Design #1	22,600.00	7,772.74	2,233.28	1,852.35	5.863	SF
EXIST VERT NORTH HURON 1-22 - Wellbore #1 - Desi	20,478.61	7,789.78	1,976.01	1,630.68	5.722	CC
EXIST VERT NORTH HURON 1-22 - Wellbore #1 - Desi	20,500.00	7,789.78	1,976.13	1,630.63	5.720	ES, SF
EXIST VERT POITZ 1-22 - Wellbore #1 - Design #1	19,972.97	7,754.79	1,574.91	1,238.98	4.688	CC
EXIST VERT POITZ 1-22 - Wellbore #1 - Design #1	20,000.00	7,754.79	1,575.14	1,238.48	4.679	ES
EXIST VERT POITZ 1-22 - Wellbore #1 - Design #1	20,100.00	7,754.79	1,580.03	1,241.08	4.662	SF

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-INC													Offset Well Error:	0.00 usft
Sec 10-T1S-R68W - ABND VERT BEYER MA 10-3 - Wellbore #1 - Design #1														
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	26.01	1,602.45	782.08	1,783.42					
100.00	100.00	67.00	67.00	0.13	0.79	26.01	1,602.45	782.08	1,783.12	1,782.19	0.93	1,920.807		
200.00	200.00	167.00	167.00	0.49	2.72	26.01	1,602.45	782.08	1,783.12	1,779.90	3.21	554.822		
300.00	300.00	267.00	267.00	0.85	4.87	26.01	1,602.45	782.08	1,783.12	1,777.39	5.72	311.651		
400.00	399.98	366.98	366.98	1.21	6.92	-8.89	1,602.45	782.08	1,781.39	1,773.26	8.13	219.015		
500.00	499.84	466.84	466.84	1.57	8.95	-8.93	1,602.45	782.08	1,776.22	1,765.69	10.53	168.736		
600.00	599.45	566.45	566.45	1.94	10.97	-9.01	1,602.45	782.08	1,767.61	1,754.70	12.91	136.932		
700.00	698.70	665.70	665.70	2.32	12.98	-9.11	1,602.45	782.08	1,755.57	1,740.29	15.28	114.883		
800.00	797.47	764.47	764.47	2.72	14.97	-9.24	1,602.45	782.08	1,740.13	1,722.48	17.64	98.621		
900.00	895.62	862.62	862.62	3.15	16.95	-9.40	1,602.45	782.08	1,721.29	1,701.29	20.00	86.076		
1,000.00	993.06	960.06	960.06	3.62	18.91	-9.60	1,602.45	782.08	1,699.09	1,676.75	22.34	76.062		
1,100.00	1,089.64	1,056.64	1,056.64	4.12	20.86	-9.84	1,602.45	782.08	1,673.56	1,648.89	24.67	67.848		
1,200.00	1,185.27	1,152.27	1,152.27	4.66	22.78	-10.12	1,602.45	782.08	1,644.72	1,617.75	26.98	60.963		
1,300.00	1,279.82	1,246.82	1,246.82	5.24	24.69	-10.44	1,602.45	782.08	1,612.64	1,583.36	29.28	55.084		
1,400.00	1,373.17	1,340.17	1,340.17	5.87	26.57	-10.82	1,602.45	782.08	1,577.34	1,545.79	31.55	49.988		
1,500.00	1,465.21	1,432.21	1,432.21	6.55	28.42	-11.25	1,602.45	782.08	1,538.88	1,505.07	33.81	45.512		
1,600.00	1,555.84	1,522.84	1,522.84	7.28	30.24	-11.75	1,602.45	782.08	1,497.32	1,461.27	36.05	41.534		
1,700.00	1,644.94	1,611.94	1,611.94	8.06	32.04	-12.33	1,602.45	782.08	1,452.72	1,414.46	38.26	37.965		
1,772.66	1,708.65	1,675.65	1,675.65	8.66	33.32	-12.80	1,602.45	782.08	1,418.45	1,378.59	39.86	35.586		
1,800.00	1,732.46	1,700.54	1,699.46	8.89	33.82	-12.92	1,602.45	782.08	1,405.26	1,364.78	40.48	34.715		
1,900.00	1,819.53	1,786.53	1,786.53	9.75	35.55	-13.38	1,602.45	782.08	1,357.08	1,314.44	42.64	31.827		
2,000.00	1,906.61	1,873.61	1,873.61	10.62	37.30	-13.87	1,602.45	782.08	1,308.97	1,264.14	44.83	29.198		
2,100.00	1,993.69	1,960.69	1,960.69	11.50	39.05	-14.40	1,602.45	782.08	1,260.94	1,213.90	47.03	26.810		
2,200.00	2,080.76	2,047.76	2,047.76	12.38	40.80	-14.98	1,602.45	782.08	1,213.00	1,163.75	49.25	24.632		
2,300.00	2,167.84	2,134.84	2,134.84	13.27	42.56	-15.60	1,602.45	782.08	1,165.16	1,113.69	51.47	22.638		

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