

EXTRACTION OIL & GAS

Broomfield County

Sec 10-T1S-R68W

INTERCHANGE A S22-30-10C

ORIGINAL WELLBORE

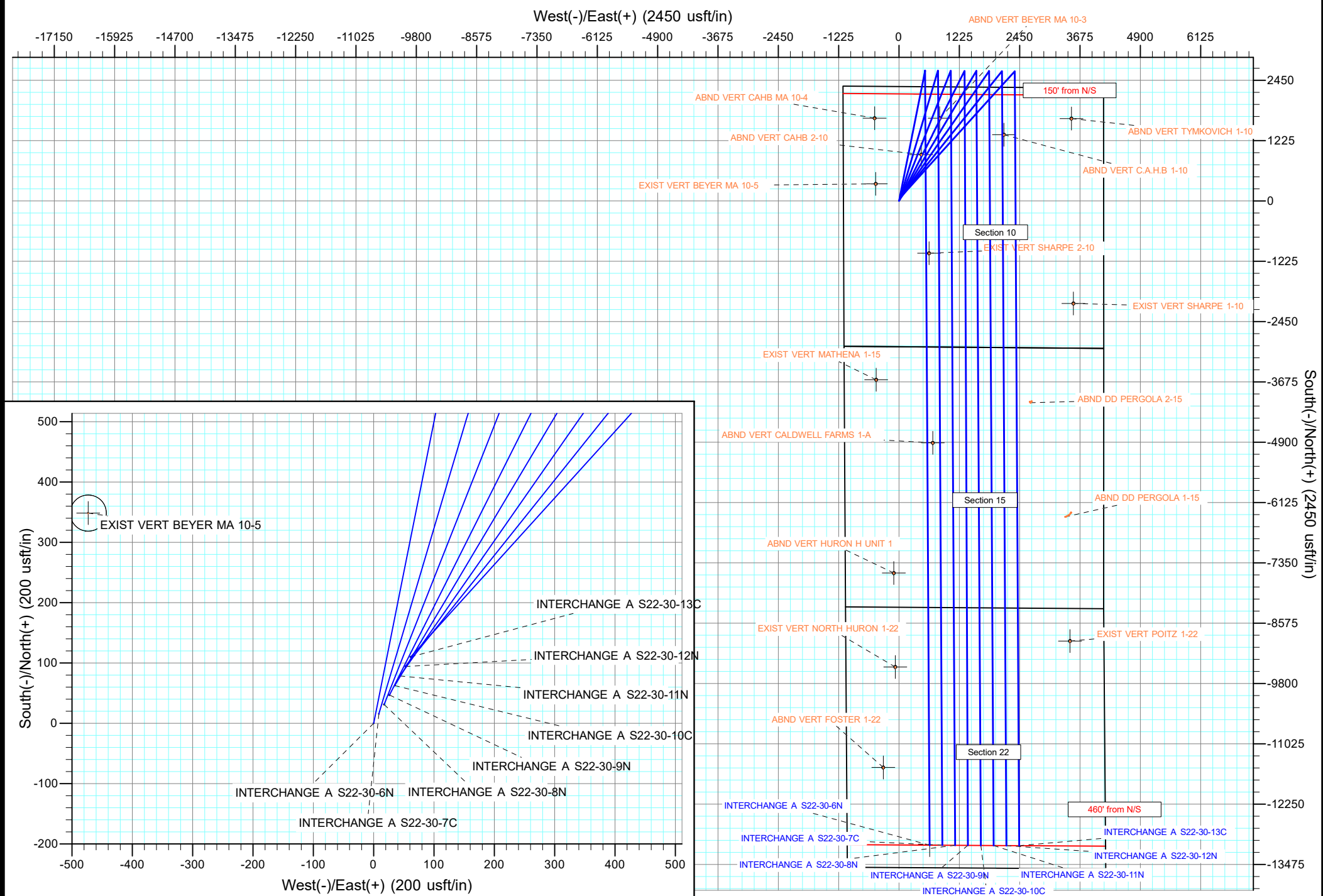
PROPOSAL 1

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 S22-30-10C
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 S22-30-10C	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	24,304.24	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	4,979.65	4,536.62	148.00	22.16	1.176	Level 2, CC
ABND VERT BEYER MA 10-3 - Wellbore #1 - Design #1	5,000.00	4,554.70	148.30	21.98	1.174	Level 2, ES, SF
ABND VERT C.A.H.B 1-10 - Wellbore #1 - Design #1	9,800.00	8,031.98	557.18	349.12	2.678	SF
ABND VERT C.A.H.B 1-10 - Wellbore #1 - Design #1	9,873.26	8,031.98	552.34	346.33	2.681	CC, ES
ABND VERT CAHB 2-10 - Wellbore #1 - Design #1	3,180.72	2,936.57	90.15	11.79	1.151	Level 2, CC
ABND VERT CAHB 2-10 - Wellbore #1 - Design #1	3,200.00	2,953.70	90.59	11.79	1.150	Level 2, ES, SF
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	3,506.85	3,246.28	1,284.64	1,197.29	14.707	CC
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	3,700.00	3,417.86	1,287.70	1,195.30	13.937	ES
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	9,600.00	8,088.99	2,072.74	1,863.99	9.929	SF
ABND VERT TYMKOVICH 1-10 - Wellbore #1 - Design #1	6,215.17	5,180.00	2,330.91	2,269.53	37.974	CC, ES
ABND VERT TYMKOVICH 1-10 - Wellbore #1 - Design #1	6,500.00	5,180.00	2,348.25	2,285.30	37.305	SF
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	400.00	390.00	583.01	574.40	67.761	CC
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	1,000.00	985.62	587.86	564.94	25.654	ES
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	11,000.00	8,106.05	2,060.38	1,851.29	9.854	SF
EXIST VERT SHARPE 1-10 - Wellbore #1 - Design #1	13,308.38	8,023.89	1,943.66	1,713.11	8.431	CC, ES
EXIST VERT SHARPE 1-10 - Wellbore #1 - Design #1	13,600.00	8,023.88	1,965.41	1,730.25	8.358	SF
EXIST VERT SHARPE 2-10 - Wellbore #1 - Design #1	12,271.52	8,055.92	981.85	763.62	4.499	CC, ES
EXIST VERT SHARPE 2-10 - Wellbore #1 - Design #1	12,300.00	8,055.92	982.26	763.80	4.496	SF
INTERCHANGE A S22-30-11N - ORIGINAL WELLBORE	300.00	300.00	18.23	16.53	10.707	CC
INTERCHANGE A S22-30-11N - ORIGINAL WELLBORE	24,304.14	24,117.53	369.84	-40.45	0.901	Level 1, ES, SF
INTERCHANGE A S22-30-12N - ORIGINAL WELLBORE	200.00	200.00	36.14	35.16	36.663	CC, ES
INTERCHANGE A S22-30-12N - ORIGINAL WELLBORE	24,304.00	24,165.01	581.87	109.60	1.232	Level 2, SF
INTERCHANGE A S22-30-13C - ORIGINAL WELLBORE	100.00	75.00	54.05	53.82	229.772	CC, ES
INTERCHANGE A S22-30-13C - ORIGINAL WELLBORE	24,304.24	24,455.04	778.18	274.54	1.545	SF
INTERCHANGE A S22-30-6N - ORIGINAL WELLBORE	400.00	400.00	71.78	69.36	29.666	CC, ES
INTERCHANGE A S22-30-6N - ORIGINAL WELLBORE	24,299.95	23,986.48	1,073.54	581.06	2.180	SF
INTERCHANGE A S22-30-7C - ORIGINAL WELLBORE	400.00	400.00	53.87	51.45	22.264	CC, ES
INTERCHANGE A S22-30-7C - ORIGINAL WELLBORE	24,299.40	24,222.75	781.34	276.06	1.546	SF
INTERCHANGE A S22-30-8N - ORIGINAL WELLBORE	400.00	400.00	35.96	33.54	14.861	CC, ES
INTERCHANGE A S22-30-8N - ORIGINAL WELLBORE	24,304.07	24,014.67	584.99	122.68	1.265	Level 3, SF
INTERCHANGE A S22-30-9N - ORIGINAL WELLBORE	400.00	400.00	17.91	15.49	7.402	CC
INTERCHANGE A S22-30-9N - ORIGINAL WELLBORE	24,299.95	24,034.96	372.31	-23.70	0.940	Level 1, ES, SF

Anticollision Report

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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 S22-30-10C	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	17,641.65	7,500.00	1,823.06	1,661.49	11.283	CC
ABND DD PERGOLA 1-15 - Wellbore #1 - Wellbore #1	17,700.00	7,500.00	1,823.99	1,661.02	11.192	ES
ABND DD PERGOLA 1-15 - Wellbore #1 - Wellbore #1	17,900.00	7,500.00	1,841.28	1,674.47	11.039	SF
ABND DD PERGOLA 2-15 - Wellbore #1 - Wellbore #1	15,317.62	7,500.00	1,191.49	1,070.87	9.878	CC, ES
ABND DD PERGOLA 2-15 - Wellbore #1 - Wellbore #1	15,500.00	7,500.00	1,205.37	1,080.54	9.656	SF
ABND VERT CALDWELL FARMS 1-A - Wellbore #1 - De	16,122.26	8,052.82	928.61	654.44	3.387	CC, ES, SF
ABND VERT HURON H UNIT 1 - Wellbore #1 - Design #	18,762.58	8,080.75	1,735.90	1,417.05	5.444	CC, ES
ABND VERT HURON H UNIT 1 - Wellbore #1 - Design #	18,800.00	8,080.75	1,736.30	1,417.16	5.440	SF
EXIST VERT MATHENA 1-15 - Wellbore #1 - Design #1	14,834.79	8,075.85	2,069.70	1,815.62	8.146	CC, ES
EXIST VERT MATHENA 1-15 - Wellbore #1 - Design #1	15,000.00	8,075.85	2,076.28	1,820.71	8.124	SF
Sec 22-T1S-R68W						
ABND VERT FOSTER 1-22 - Wellbore #1 - Design #1	22,708.52	8,036.65	1,972.37	1,586.44	5.111	CC, ES
ABND VERT FOSTER 1-22 - Wellbore #1 - Design #1	22,800.00	8,036.64	1,974.49	1,587.92	5.108	SF
EXIST VERT NORTH HURON 1-22 - Wellbore #1 - Desi	20,668.96	8,053.70	1,716.51	1,365.56	4.891	CC, ES
EXIST VERT NORTH HURON 1-22 - Wellbore #1 - Desi	20,700.00	8,053.70	1,716.79	1,365.61	4.889	SF
EXIST VERT POITZ 1-22 - Wellbore #1 - Design #1	20,163.48	8,018.71	1,834.44	1,492.89	5.371	CC
EXIST VERT POITZ 1-22 - Wellbore #1 - Design #1	20,200.00	8,018.71	1,834.80	1,492.37	5.358	ES
EXIST VERT POITZ 1-22 - Wellbore #1 - Design #1	20,300.00	8,018.71	1,839.51	1,495.00	5.340	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)	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	
0.00	0.00	0.00	0.00	0.00	0.00	26.04	1,618.48	790.77	1,801.63					
100.00	100.00	67.00	67.00	0.13	0.79	26.04	1,618.48	790.77	1,801.33	1,800.40	0.93	1,940.428		
200.00	200.00	167.00	167.00	0.49	2.72	26.04	1,618.48	790.77	1,801.33	1,798.12	3.21	560.489		
300.00	300.00	267.00	267.00	0.85	4.87	26.04	1,618.48	790.77	1,801.33	1,795.61	5.72	314.834		
400.00	400.00	367.00	367.00	1.21	6.92	26.04	1,618.48	790.77	1,801.33	1,793.20	8.13	221.451		
500.00	499.98	466.98	466.98	1.57	8.96	-4.72	1,618.48	790.77	1,799.59	1,789.07	10.53	170.975		
600.00	599.84	566.84	566.84	1.93	10.98	-4.74	1,618.48	790.77	1,794.37	1,781.47	12.91	139.004		
700.00	699.45	666.45	666.45	2.29	12.99	-4.78	1,618.48	790.77	1,785.69	1,770.40	15.28	116.827		
800.00	798.70	765.70	765.70	2.67	14.99	-4.83	1,618.48	790.77	1,773.55	1,755.89	17.65	100.467		
900.00	897.47	864.47	864.47	3.07	16.99	-4.90	1,618.48	790.77	1,757.96	1,737.95	20.01	87.847		
1,000.00	995.62	962.62	962.62	3.49	18.96	-4.99	1,618.48	790.77	1,738.95	1,716.59	22.36	77.772		
1,100.00	1,093.06	1,060.06	1,060.06	3.94	20.93	-5.10	1,618.48	790.77	1,716.54	1,691.84	24.70	69.509		
1,200.00	1,189.64	1,156.64	1,156.64	4.43	22.87	-5.22	1,618.48	790.77	1,690.75	1,663.74	27.02	62.583		
1,300.00	1,285.27	1,252.27	1,252.27	4.96	24.80	-5.37	1,618.48	790.77	1,661.63	1,632.31	29.32	56.670		
1,400.00	1,379.82	1,346.82	1,346.82	5.53	26.70	-5.54	1,618.48	790.77	1,629.21	1,597.60	31.61	51.544		
1,500.00	1,473.17	1,440.17	1,440.17	6.15	28.58	-5.75	1,618.48	790.77	1,593.52	1,559.65	33.88	47.041		
1,600.00	1,565.21	1,532.21	1,532.21	6.81	30.43	-5.98	1,618.48	790.77	1,554.63	1,518.51	36.12	43.041		
1,700.00	1,655.84	1,622.84	1,622.84	7.52	32.26	-6.24	1,618.48	790.77	1,512.56	1,474.22	38.34	39.451		
1,766.76	1,715.49	1,682.49	1,682.49	8.03	33.46	-6.44	1,618.48	790.77	1,482.75	1,442.94	39.81	37.246		
1,800.00	1,745.03	1,712.03	1,712.03	8.28	34.05	-6.51	1,618.48	790.77	1,467.56	1,427.02	40.54	36.202		
1,900.00	1,833.86	1,800.86	1,800.86	9.07	35.84	-6.72	1,618.48	790.77	1,421.88	1,379.16	42.72	33.283		
2,000.00	1,922.69	1,889.69	1,889.69	9.87	37.62	-6.94	1,618.48	790.77	1,376.22	1,331.31	44.91	30.644		
2,100.00	2,011.53	1,978.53	1,978.53	10.68	39.41	-7.18	1,618.48	790.77	1,330.58	1,283.47	47.10	28.247		
2,200.00	2,100.36	2,067.36	2,067.36	11.49	41.20	-7.44	1,618.48	790.77	1,284.95	1,235.65	49.30	26.061		
2,300.00	2,189.19	2,156.19	2,156.19	12.31	42.99	-7.71	1,618.48	790.77	1,239.35	1,187.84	51.51	24.061		

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