

EXTRACTION OIL & GAS

Broomfield County

Sec 10-T1S-R68W

INTERCHANGE B S22-30-17N

ORIGINAL WELLBORE

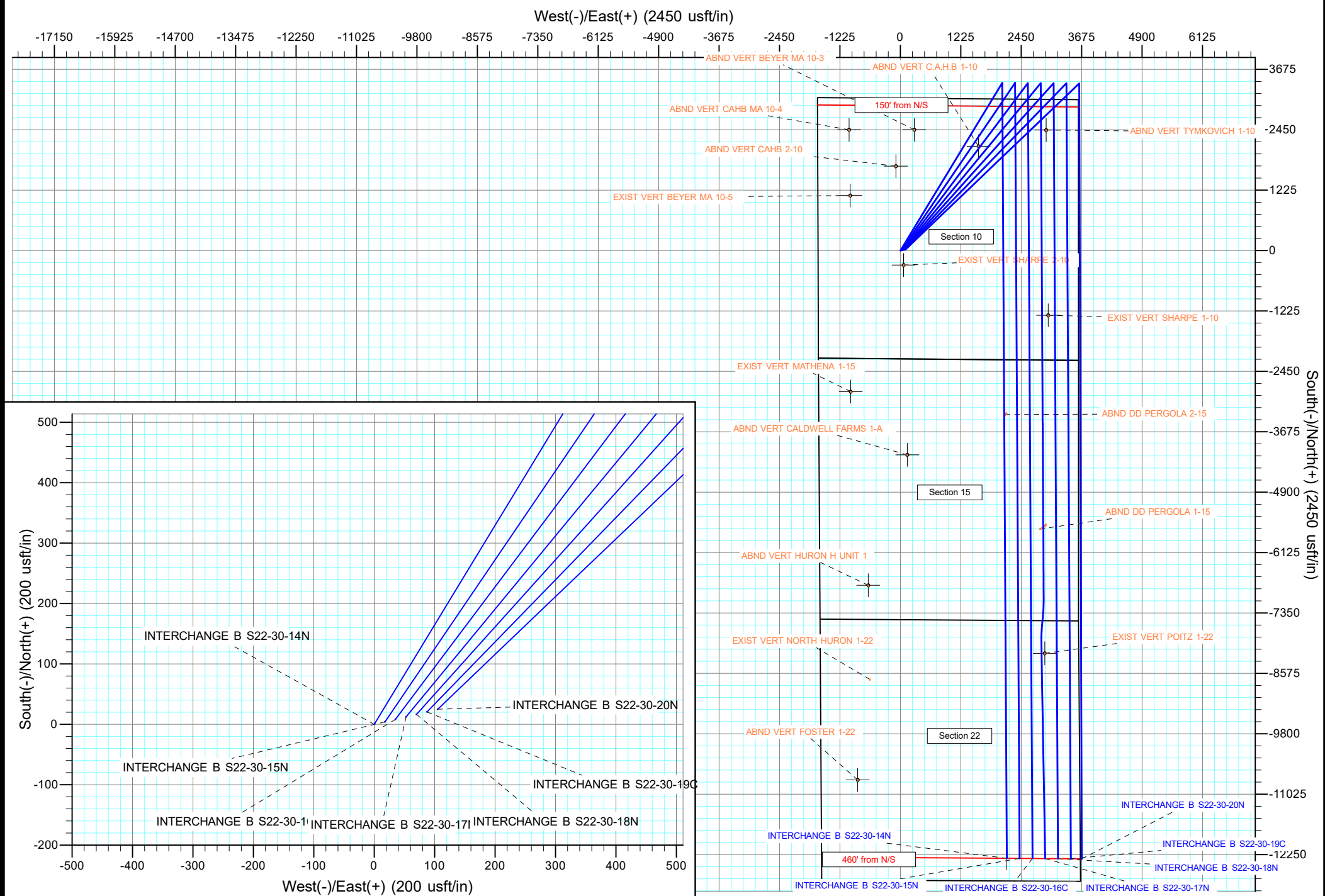
PROPOSAL 1

Anticollision Report

24 January, 2018



Project: Broomfield County
Site: Sec 10-T1S-R68W
Well: INTERCHANGE B S22-30-14N
ORIGINAL WELLBORE
PROPOSAL 1



Anticollision Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well INTERCHANGE B S22-30-17N
Project:	Broomfield County	TVD Reference:	KB 25' @ 5231.00usft
Reference Site:	Sec 10-T1S-R68W	MD Reference:	KB 25' @ 5231.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	INTERCHANGE B S22-30-17N	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	1/24/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	24,884.58	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	4,382.83	3,681.40	1,375.10	1,261.89	12.147	CC
ABND VERT BEYER MA 10-3 - Wellbore #1 - Design #1	4,500.00	3,766.71	1,377.44	1,261.05	11.835	ES
ABND VERT BEYER MA 10-3 - Wellbore #1 - Design #1	5,100.00	4,203.61	1,460.31	1,329.65	11.177	SF
ABND VERT C.A.H.B 1-10 - Wellbore #1 - Design #1	5,215.87	4,248.98	156.84	21.30	1.157	Level 2, CC, ES, SF
ABND VERT CAHB 2-10 - Wellbore #1 - Design #1	3,204.63	2,821.47	1,191.84	1,111.23	14.784	CC
ABND VERT CAHB 2-10 - Wellbore #1 - Design #1	3,300.00	2,909.08	1,193.63	1,110.07	14.284	ES
ABND VERT CAHB 2-10 - Wellbore #1 - Design #1	4,000.00	3,400.63	1,310.60	1,210.60	13.106	SF
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	3,154.57	2,805.03	2,395.19	2,315.55	30.074	CC
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	3,300.00	2,910.92	2,397.26	2,313.64	28.669	ES
ABND VERT CAHB MA 10-4 - Wellbore #1 - Design #1	10,300.00	7,850.99	3,897.32	3,677.93	17.765	SF
ABND VERT TYMKOVICH 1-10 - Wellbore #1 - Design #	6,668.62	5,180.00	713.69	627.77	8.307	CC, ES
ABND VERT TYMKOVICH 1-10 - Wellbore #1 - Design #	6,700.00	5,180.00	714.38	628.23	8.292	SF
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	1,395.96	1,407.98	1,528.69	1,495.24	45.697	CC
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	1,600.00	1,581.21	1,530.59	1,492.34	40.013	ES
EXIST VERT BEYER MA 10-5 - Wellbore #1 - Design #1	11,900.00	7,855.96	3,905.46	3,688.60	18.008	SF
EXIST VERT SHARPE 1-10 - Wellbore #1 - Design #1	13,864.94	7,785.92	124.36	-101.79	0.550	Level 1, CC, ES, SF
EXIST VERT SHARPE 2-10 - Wellbore #1 - Design #1	400.00	378.00	304.76	296.40	36.459	CC
EXIST VERT SHARPE 2-10 - Wellbore #1 - Design #1	500.00	477.98	306.06	295.32	28.477	ES
EXIST VERT SHARPE 2-10 - Wellbore #1 - Design #1	13,200.00	7,817.94	2,825.81	2,604.36	12.761	SF
INTERCHANGE B S22-30-14N - ORIGINAL WELLBORE	400.00	400.00	54.12	51.70	22.367	CC, ES
INTERCHANGE B S22-30-14N - ORIGINAL WELLBORE	24,884.58	24,687.16	777.80	289.94	1.594	SF
INTERCHANGE B S22-30-15N - ORIGINAL WELLBORE	400.00	400.00	36.02	33.60	14.886	CC
INTERCHANGE B S22-30-15N - ORIGINAL WELLBORE	24,884.58	24,745.35	518.44	30.87	1.063	Level 2, ES, SF
INTERCHANGE B S22-30-16C - ORIGINAL WELLBORE	400.00	400.00	18.10	15.68	7.482	CC
INTERCHANGE B S22-30-16C - ORIGINAL WELLBORE	24,884.58	25,009.18	369.89	-41.02	0.900	Level 1, ES, SF
INTERCHANGE B S22-30-18N - ORIGINAL WELLBORE	300.00	300.00	17.92	16.21	10.522	CC
INTERCHANGE B S22-30-18N - ORIGINAL WELLBORE	24,884.58	24,954.22	259.02	-228.85	0.531	Level 1, ES, SF
INTERCHANGE B S22-30-19C - ORIGINAL WELLBORE	200.00	200.00	35.75	34.76	36.261	CC, ES
INTERCHANGE B S22-30-19C - ORIGINAL WELLBORE	24,884.58	25,225.35	585.19	141.00	1.317	Level 3, SF
INTERCHANGE B S22-30-20N - ORIGINAL WELLBORE	100.00	100.00	53.93	53.67	200.607	CC, ES
INTERCHANGE B S22-30-20N - ORIGINAL WELLBORE	24,884.58	25,134.51	741.34	255.26	1.525	SF

Anticollision Report

Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well INTERCHANGE B S22-30-17N
Project:	Broomfield County	TVD Reference:	KB 25' @ 5231.00usft
Reference Site:	Sec 10-T1S-R68W	MD Reference:	KB 25' @ 5231.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	INTERCHANGE B S22-30-17N	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	18,198.23	7,500.00	285.13	180.22	2.718	CC
ABND DD PERGOLA 1-15 - Wellbore #1 - Wellbore #1	18,200.00	7,500.00	285.13	180.12	2.715	ES, SF
ABND DD PERGOLA 2-15 - Wellbore #1 - Wellbore #1	15,874.29	7,500.00	818.02	705.47	7.268	CC, ES
ABND DD PERGOLA 2-15 - Wellbore #1 - Wellbore #1	15,900.00	7,500.00	818.42	705.68	7.259	SF
ABND VERT CALDWELL FARMS 1-A - Wellbore #1 - De	16,679.21	7,814.87	2,747.53	2,483.15	10.392	CC
ABND VERT CALDWELL FARMS 1-A - Wellbore #1 - De	16,700.00	7,814.87	2,747.61	2,483.02	10.385	ES
ABND VERT CALDWELL FARMS 1-A - Wellbore #1 - De	16,900.00	7,814.87	2,756.38	2,490.13	10.352	SF
ABND VERT HURON H UNIT 1 - Wellbore #1 - Design #	19,319.63	7,842.83	3,554.47	3,247.54	11.581	CC, ES
ABND VERT HURON H UNIT 1 - Wellbore #1 - Design #	19,600.00	7,842.82	3,565.51	3,256.08	11.523	SF
EXIST VERT MATHENA 1-15 - Wellbore #1 - Design #1	400.00	402.00	3,063.72	3,054.87	346.232	CC
EXIST VERT MATHENA 1-15 - Wellbore #1 - Design #1	500.00	502.02	3,065.37	3,054.13	272.825	ES
EXIST VERT MATHENA 1-15 - Wellbore #1 - Design #1	15,900.00	7,837.89	3,921.84	3,670.51	15.604	SF
Sec 22-T1S-R68W						
ABND VERT FOSTER 1-22 - Wellbore #1 - Design #1	23,222.20	7,801.18	3,771.25	3,399.24	10.137	CC
ABND VERT FOSTER 1-22 - Wellbore #1 - Design #1	23,300.00	7,801.18	3,772.05	3,399.22	10.117	ES
ABND VERT FOSTER 1-22 - Wellbore #1 - Design #1	23,500.00	7,801.18	3,781.47	3,406.95	10.097	SF
EXIST VERT NORTH HURON 1-22 - Wellbore #1 - Desi	21,185.86	7,815.82	3,490.98	3,153.37	10.340	CC
EXIST VERT NORTH HURON 1-22 - Wellbore #1 - Desi	21,200.00	7,815.82	3,491.01	3,153.24	10.335	ES
EXIST VERT NORTH HURON 1-22 - Wellbore #1 - Desi	21,400.00	7,815.82	3,497.55	3,157.93	10.298	SF
EXIST VERT POITZ 1-22 - Wellbore #1 - Design #1	20,722.93	7,780.82	65.76	-263.37	0.200	Level 1, CC, ES, 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	7.00	-7.00	0.00	0.08	5.37	2,437.72	228.94	2,448.44				
100.00	100.00	107.00	93.00	0.13	1.35	5.37	2,437.72	228.94	2,448.44	2,446.96	1.48	1,654.558	
200.00	200.00	207.00	193.00	0.49	3.62	5.37	2,437.72	228.94	2,448.44	2,444.33	4.12	594.873	
300.00	300.00	307.00	293.00	0.85	5.70	5.37	2,437.72	228.94	2,448.44	2,441.89	6.55	373.786	
400.00	400.00	407.00	393.00	1.21	7.74	5.37	2,437.72	228.94	2,448.44	2,439.49	8.95	273.563	
500.00	499.98	507.02	492.98	1.57	9.77	-34.21	2,437.72	228.94	2,447.00	2,435.66	11.34	215.847	
600.00	599.84	607.16	592.84	1.93	11.79	-34.32	2,437.72	228.94	2,442.67	2,428.95	13.72	178.006	
700.00	699.45	707.55	692.45	2.29	13.82	-34.52	2,437.72	228.94	2,435.48	2,419.36	16.11	151.139	
800.00	798.70	808.30	791.70	2.67	15.85	-34.80	2,437.72	228.94	2,425.43	2,406.91	18.52	130.983	
900.00	897.47	909.53	890.47	3.07	17.89	-35.16	2,437.72	228.94	2,412.56	2,391.62	20.94	115.230	
1,000.00	995.62	988.62	988.62	3.49	19.49	-35.61	2,437.72	228.94	2,396.90	2,373.98	22.92	104.576	
1,100.00	1,093.06	1,086.06	1,086.06	3.95	21.45	-36.14	2,437.72	228.94	2,378.52	2,353.23	25.29	94.064	
1,200.00	1,189.64	1,182.64	1,182.64	4.44	23.40	-36.76	2,437.72	228.94	2,357.45	2,329.80	27.65	85.258	
1,300.00	1,285.27	1,278.27	1,278.27	4.97	25.32	-37.48	2,437.72	228.94	2,333.76	2,303.75	30.02	77.753	
1,400.00	1,379.82	1,372.82	1,372.82	5.55	27.22	-38.30	2,437.72	228.94	2,307.54	2,275.16	32.38	71.264	
1,500.00	1,473.17	1,466.17	1,466.17	6.17	29.10	-39.22	2,437.72	228.94	2,278.86	2,244.11	34.75	65.584	
1,600.00	1,565.21	1,558.21	1,558.21	6.84	30.95	-40.25	2,437.72	228.94	2,247.83	2,210.71	37.12	60.560	
1,700.00	1,655.84	1,648.84	1,648.84	7.57	32.78	-41.39	2,437.72	228.94	2,214.55	2,175.06	39.49	56.075	
1,800.00	1,744.94	1,737.94	1,737.94	8.34	34.57	-42.65	2,437.72	228.94	2,179.15	2,137.27	41.87	52.040	
1,900.00	1,832.39	1,825.39	1,825.39	9.18	36.33	-44.04	2,437.72	228.94	2,141.76	2,097.49	44.27	48.383	
2,000.00	1,918.11	1,911.11	1,911.11	10.07	38.06	-45.55	2,437.72	228.94	2,102.53	2,055.86	46.67	45.050	
2,100.00	2,001.97	2,005.03	1,994.97	11.01	39.94	-47.20	2,437.72	228.94	2,061.64	2,012.35	49.29	41.824	
2,200.00	2,083.88	2,076.88	2,076.88	12.02	41.39	-48.98	2,437.72	228.94	2,019.27	1,967.74	51.53	39.186	

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