

# **EXTRACTION OIL & GAS**

**Broomfield County**

**Sec 10-T1S-R68W**

**INTERCHANGE A S22-30-12N**

**ORIGINAL WELLBORE**

**Plan: PROPOSAL 1**

## **Standard Planning Report**

**23 January, 2018**



Project: Broomfield County  
Site: Sec 10-T1S-R68W  
Well: INTERCHANGE A S22-30-12N  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL 1

PROJECT DETAILS: Broomfield County  
Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone  
System Datum: Mean Sea Level



Azimuths to True North  
Magnetic North: 8.23°  
Magnetic Field  
Strength: 52081.6snT  
Dip Angle: 66.47°  
Date: 1/9/2018  
Model: IGRF2015

WELL DETAILS: INTERCHANGE A S22-30-12N

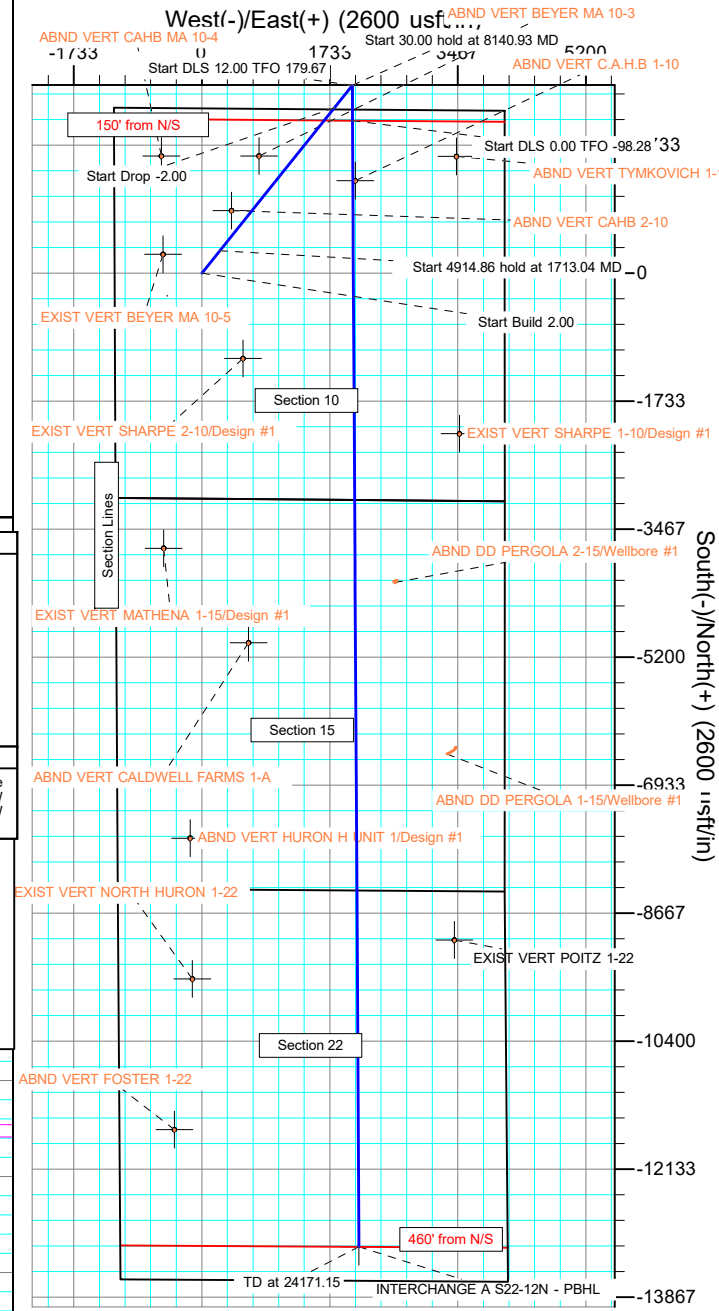
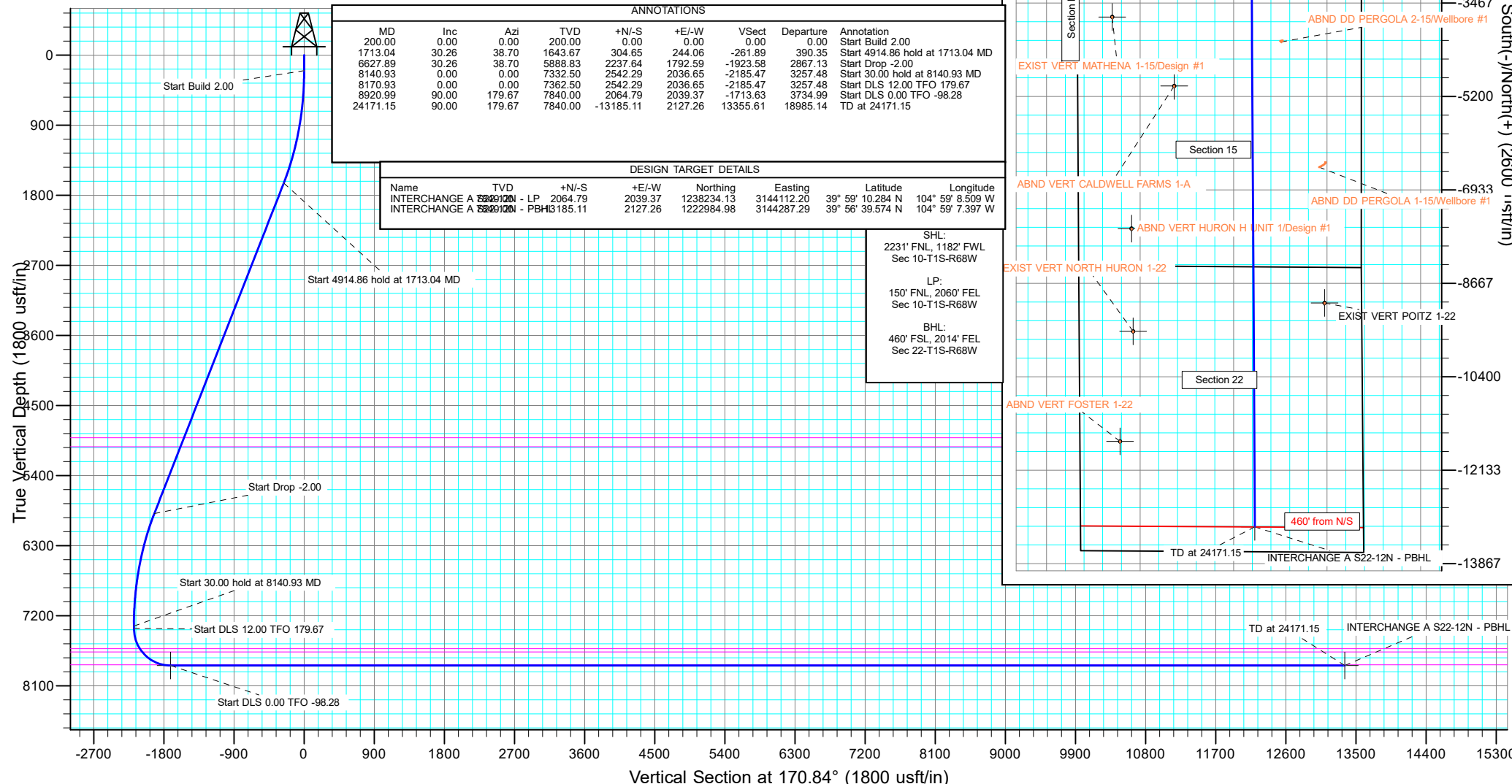
+N/-S	+E/-W	Northing	Easting	5232.00	Latitude	Longitude	Slot
0.00	0.00	1236157.71	3142084.67		39° 58' 49.879 N	104° 59' 34.710 W	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	1713.04	30.26	38.70	1643.67	304.65	244.06	2.00	38.70	-261.89	
4	6627.89	30.26	38.70	5888.83	2237.64	1792.59	0.00	0.00	-1923.58	
5	8140.93	0.00	0.00	7332.50	2542.29	2036.65	2.00	180.00	-2185.47	
6	8170.93	0.00	0.00	7362.50	2542.29	2036.65	0.00	0.00	-2185.47	
7	8920.99	90.00	179.67	7840.00	2064.79	2039.37	12.00	179.67	-1713.63	INTERCHANGE A S22-12N - LP
8	24171.15	90.00	179.67	7840.00	-13185.11	2127.26	0.00	-98.28	13355.61	INTERCHANGE A S22-12N - PBHL

FORMATION TOP DETAILS

TVDPATH	MDPATH	FORMATION
4915.00	5500.43	PARKMAN
5030.00	5633.58	SUSSEX
7624.00	8447.66	SHANNON
7664.00	8497.24	NIOBRARA
7830.00	8823.09	NIO B TARGET



## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well INTERCHANGE A S22-30-12N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5257.00usft
<b>Project:</b>	Broomfield County	<b>MD Reference:</b>	KB 25' @ 5257.00usft
<b>Site:</b>	Sec 10-T1S-R68W	<b>North Reference:</b>	True
<b>Well:</b>	INTERCHANGE A S22-30-12N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

<b>Project</b>	Broomfield County		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		Sec 10-T1S-R68W			
Site Position:		Northing:	1,238,390.57 usft	Latitude:	39° 59' 12.013 N
From:	Lat/Long	Easting:	3,140,881.15 usft	Longitude:	104° 59' 50.008 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.32 °

Well	INTERCHANGE A S22-30-12N					
Well Position	+N/-S	-2,239.65 usft	Northing:	1,236,157.71 usft	Latitude:	39° 58' 49.879 N
	+E/-W	1,190.84 usft	Easting:	3,142,084.67 usft	Longitude:	104° 59' 34.710 W
Position Uncertainty	0.00 usft		Wellhead Elevation:		Ground Level:	5,232.00 usft

<b>Wellbore</b>	ORIGINAL WELLBORE				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	1/9/2018	8.24	66.47	52,081.62230136

<b>Design</b>	PROPOSAL 1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	170.84

<b>Plan Survey Tool Program</b>	<b>Date</b>	1/23/2018		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	24,171.15	PROPOSAL 1 (ORIGINAL WELL	MWD OWSG
			OWSG MWD - Standard	

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,713.04	30.26	38.70	1,643.67	304.65	244.06	2.00	2.00	0.00	38.70	
6,627.89	30.26	38.70	5,888.83	2,237.64	1,792.59	0.00	0.00	0.00	0.00	
8,140.93	0.00	0.00	7,332.50	2,542.29	2,036.65	2.00	-2.00	0.00	180.00	
8,170.93	0.00	0.00	7,362.50	2,542.29	2,036.65	0.00	0.00	0.00	0.00	
8,920.99	90.00	179.67	7,840.00	2,064.79	2,039.37	12.00	12.00	23.95	179.67	INTERCHANGE A S2
24,171.15	90.00	179.67	7,840.00	-13,185.11	2,127.26	0.00	0.00	0.00	-98.28	INTERCHANGE A S2

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well INTERCHANGE A S22-30-12N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5257.00usft
<b>Project:</b>	Broomfield County	<b>MD Reference:</b>	KB 25' @ 5257.00usft
<b>Site:</b>	Sec 10-T1S-R68W	<b>North Reference:</b>	True
<b>Well:</b>	INTERCHANGE A S22-30-12N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
300.00	2.00	38.70	299.98	1.36	1.09	-1.17	2.00	2.00	0.00
400.00	4.00	38.70	399.84	5.45	4.36	-4.68	2.00	2.00	0.00
500.00	6.00	38.70	499.45	12.25	9.81	-10.53	2.00	2.00	0.00
600.00	8.00	38.70	598.70	21.76	17.43	-18.70	2.00	2.00	0.00
700.00	10.00	38.70	697.47	33.97	27.21	-29.20	2.00	2.00	0.00
800.00	12.00	38.70	795.62	48.86	39.14	-42.00	2.00	2.00	0.00
900.00	14.00	38.70	893.06	66.41	53.20	-57.09	2.00	2.00	0.00
1,000.00	16.00	38.70	989.64	86.61	69.39	-74.46	2.00	2.00	0.00
1,100.00	18.00	38.70	1,085.27	109.43	87.66	-94.07	2.00	2.00	0.00
1,200.00	20.00	38.70	1,179.82	134.84	108.02	-115.91	2.00	2.00	0.00
1,300.00	22.00	38.70	1,273.17	162.80	130.42	-139.95	2.00	2.00	0.00
1,400.00	24.00	38.70	1,365.21	193.30	154.85	-166.17	2.00	2.00	0.00
1,500.00	26.00	38.70	1,455.84	226.28	181.27	-194.52	2.00	2.00	0.00
1,600.00	28.00	38.70	1,544.94	261.71	209.66	-224.98	2.00	2.00	0.00
1,700.00	30.00	38.70	1,632.39	299.54	239.97	-257.50	2.00	2.00	0.00
1,713.04	30.26	38.70	1,643.67	304.65	244.06	-261.89	2.00	2.00	0.00
Start 4914.86 hold at 1713.04 MD									
1,800.00	30.26	38.70	1,718.78	338.85	271.46	-291.29	0.00	0.00	0.00
1,900.00	30.26	38.70	1,805.16	378.18	302.96	-325.10	0.00	0.00	0.00
2,000.00	30.26	38.70	1,891.53	417.51	334.47	-358.91	0.00	0.00	0.00
2,100.00	30.26	38.70	1,977.91	456.84	365.98	-392.72	0.00	0.00	0.00
2,200.00	30.26	38.70	2,064.28	496.17	397.49	-426.53	0.00	0.00	0.00
2,300.00	30.26	38.70	2,150.65	535.50	428.99	-460.34	0.00	0.00	0.00
2,400.00	30.26	38.70	2,237.03	574.83	460.50	-494.15	0.00	0.00	0.00
2,500.00	30.26	38.70	2,323.40	614.16	492.01	-527.96	0.00	0.00	0.00
2,600.00	30.26	38.70	2,409.78	653.49	523.52	-561.77	0.00	0.00	0.00
2,700.00	30.26	38.70	2,496.15	692.82	555.02	-595.58	0.00	0.00	0.00
2,800.00	30.26	38.70	2,582.52	732.15	586.53	-629.39	0.00	0.00	0.00
2,900.00	30.26	38.70	2,668.90	771.48	618.04	-663.20	0.00	0.00	0.00
3,000.00	30.26	38.70	2,755.27	810.81	649.54	-697.01	0.00	0.00	0.00
3,100.00	30.26	38.70	2,841.65	850.14	681.05	-730.82	0.00	0.00	0.00
3,200.00	30.26	38.70	2,928.02	889.47	712.56	-764.62	0.00	0.00	0.00
3,300.00	30.26	38.70	3,014.39	928.80	744.07	-798.43	0.00	0.00	0.00
3,400.00	30.26	38.70	3,100.77	968.13	775.57	-832.24	0.00	0.00	0.00
3,500.00	30.26	38.70	3,187.14	1,007.45	807.08	-866.05	0.00	0.00	0.00
3,600.00	30.26	38.70	3,273.52	1,046.78	838.59	-899.86	0.00	0.00	0.00
3,700.00	30.26	38.70	3,359.89	1,086.11	870.09	-933.67	0.00	0.00	0.00
3,800.00	30.26	38.70	3,446.27	1,125.44	901.60	-967.48	0.00	0.00	0.00
3,900.00	30.26	38.70	3,532.64	1,164.77	933.11	-1,001.29	0.00	0.00	0.00
4,000.00	30.26	38.70	3,619.01	1,204.10	964.62	-1,035.10	0.00	0.00	0.00
4,100.00	30.26	38.70	3,705.39	1,243.43	996.12	-1,068.91	0.00	0.00	0.00
4,200.00	30.26	38.70	3,791.76	1,282.76	1,027.63	-1,102.72	0.00	0.00	0.00
4,300.00	30.26	38.70	3,878.14	1,322.09	1,059.14	-1,136.53	0.00	0.00	0.00
4,400.00	30.26	38.70	3,964.51	1,361.42	1,090.65	-1,170.34	0.00	0.00	0.00
4,500.00	30.26	38.70	4,050.88	1,400.75	1,122.15	-1,204.15	0.00	0.00	0.00
4,600.00	30.26	38.70	4,137.26	1,440.08	1,153.66	-1,237.96	0.00	0.00	0.00
4,700.00	30.26	38.70	4,223.63	1,479.41	1,185.17	-1,271.77	0.00	0.00	0.00
4,800.00	30.26	38.70	4,310.01	1,518.74	1,216.67	-1,305.58	0.00	0.00	0.00
4,900.00	30.26	38.70	4,396.38	1,558.07	1,248.18	-1,339.38	0.00	0.00	0.00

# Planning Report

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<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5257.00usft
<b>Project:</b>	Broomfield County	<b>MD Reference:</b>	KB 25' @ 5257.00usft
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<b>Well:</b>	INTERCHANGE A S22-30-12N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
5,000.00	30.26	38.70	4,482.75	1,597.40	1,279.69	-1,373.19	0.00	0.00	0.00	
5,100.00	30.26	38.70	4,569.13	1,636.73	1,311.20	-1,407.00	0.00	0.00	0.00	
5,200.00	30.26	38.70	4,655.50	1,676.06	1,342.70	-1,440.81	0.00	0.00	0.00	
5,300.00	30.26	38.70	4,741.88	1,715.39	1,374.21	-1,474.62	0.00	0.00	0.00	
5,400.00	30.26	38.70	4,828.25	1,754.72	1,405.72	-1,508.43	0.00	0.00	0.00	
5,500.00	30.26	38.70	4,914.62	1,794.05	1,437.22	-1,542.24	0.00	0.00	0.00	
5,500.43	30.26	38.70	4,915.00	1,794.22	1,437.36	-1,542.39	0.00	0.00	0.00	
<b>PARKMAN</b>										
5,600.00	30.26	38.70	5,001.00	1,833.37	1,468.73	-1,576.05	0.00	0.00	0.00	
5,633.58	30.26	38.70	5,030.00	1,846.58	1,479.31	-1,587.40	0.00	0.00	0.00	
<b>SUSSEX</b>										
5,700.00	30.26	38.70	5,087.37	1,872.70	1,500.24	-1,609.86	0.00	0.00	0.00	
5,800.00	30.26	38.70	5,173.75	1,912.03	1,531.75	-1,643.67	0.00	0.00	0.00	
5,900.00	30.26	38.70	5,260.12	1,951.36	1,563.25	-1,677.48	0.00	0.00	0.00	
6,000.00	30.26	38.70	5,346.49	1,990.69	1,594.76	-1,711.29	0.00	0.00	0.00	
6,100.00	30.26	38.70	5,432.87	2,030.02	1,626.27	-1,745.10	0.00	0.00	0.00	
6,200.00	30.26	38.70	5,519.24	2,069.35	1,657.78	-1,778.91	0.00	0.00	0.00	
6,300.00	30.26	38.70	5,605.62	2,108.68	1,689.28	-1,812.72	0.00	0.00	0.00	
6,400.00	30.26	38.70	5,691.99	2,148.01	1,720.79	-1,846.53	0.00	0.00	0.00	
6,500.00	30.26	38.70	5,778.37	2,187.34	1,752.30	-1,880.34	0.00	0.00	0.00	
6,600.00	30.26	38.70	5,864.74	2,226.67	1,783.80	-1,914.15	0.00	0.00	0.00	
6,627.89	30.26	38.70	5,888.83	2,237.64	1,792.59	-1,923.58	0.00	0.00	0.00	
<b>Start Drop -2.00</b>										
6,700.00	28.82	38.70	5,951.56	2,265.38	1,814.82	-1,947.43	2.00	-2.00	0.00	
6,800.00	26.82	38.70	6,040.00	2,301.80	1,844.00	-1,978.73	2.00	-2.00	0.00	
6,900.00	24.82	38.70	6,130.02	2,335.79	1,871.22	-2,007.95	2.00	-2.00	0.00	
7,000.00	22.82	38.70	6,221.49	2,367.31	1,896.47	-2,035.04	2.00	-2.00	0.00	
7,100.00	20.82	38.70	6,314.33	2,396.31	1,919.71	-2,059.98	2.00	-2.00	0.00	
7,200.00	18.82	38.70	6,408.40	2,422.77	1,940.90	-2,082.72	2.00	-2.00	0.00	
7,300.00	16.82	38.70	6,503.60	2,446.65	1,960.04	-2,103.25	2.00	-2.00	0.00	
7,400.00	14.82	38.70	6,599.80	2,467.93	1,977.08	-2,121.54	2.00	-2.00	0.00	
7,500.00	12.82	38.70	6,696.91	2,486.57	1,992.01	-2,137.56	2.00	-2.00	0.00	
7,600.00	10.82	38.70	6,794.78	2,502.55	2,004.82	-2,151.31	2.00	-2.00	0.00	
7,700.00	8.82	38.70	6,893.31	2,515.86	2,015.48	-2,162.75	2.00	-2.00	0.00	
7,800.00	6.82	38.70	6,992.38	2,526.48	2,023.98	-2,171.87	2.00	-2.00	0.00	
7,900.00	4.82	38.70	7,091.86	2,534.39	2,030.32	-2,178.67	2.00	-2.00	0.00	
8,000.00	2.82	38.70	7,191.63	2,539.59	2,034.48	-2,183.14	2.00	-2.00	0.00	
8,100.00	0.82	38.70	7,291.57	2,542.06	2,036.47	-2,185.27	2.00	-2.00	0.00	
8,140.93	0.00	0.00	7,332.50	2,542.29	2,036.65	-2,185.47	2.00	-2.00	0.00	
<b>Start 30.00 hold at 8140.93 MD</b>										
8,170.93	0.00	0.00	7,362.50	2,542.29	2,036.65	-2,185.47	0.00	0.00	0.00	
<b>Start DLS 12.00 TFO 179.67</b>										
8,175.00	0.49	179.67	7,366.57	2,542.27	2,036.65	-2,185.45	12.00	12.00	0.00	
8,200.00	3.49	179.67	7,391.55	2,541.41	2,036.66	-2,184.59	12.00	12.00	0.00	
8,225.00	6.49	179.67	7,416.46	2,539.23	2,036.67	-2,182.44	12.00	12.00	0.00	
8,250.00	9.49	179.67	7,441.21	2,535.76	2,036.69	-2,179.01	12.00	12.00	0.00	
8,275.00	12.49	179.67	7,465.75	2,530.99	2,036.71	-2,174.30	12.00	12.00	0.00	
8,300.00	15.49	179.67	7,490.01	2,524.95	2,036.75	-2,168.33	12.00	12.00	0.00	
8,325.00	18.49	179.67	7,513.91	2,517.65	2,036.79	-2,161.12	12.00	12.00	0.00	
8,350.00	21.49	179.67	7,537.40	2,509.10	2,036.84	-2,152.67	12.00	12.00	0.00	
8,375.00	24.49	179.67	7,560.42	2,499.34	2,036.89	-2,143.03	12.00	12.00	0.00	
8,400.00	27.49	179.67	7,582.89	2,488.39	2,036.96	-2,132.21	12.00	12.00	0.00	
8,425.00	30.49	179.67	7,604.75	2,476.28	2,037.03	-2,120.24	12.00	12.00	0.00	
8,447.66	33.21	179.67	7,624.00	2,464.32	2,037.09	-2,108.42	12.00	12.00	0.00	

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well INTERCHANGE A S22-30-12N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5257.00usft
<b>Project:</b>	Broomfield County	<b>MD Reference:</b>	KB 25' @ 5257.00usft
<b>Site:</b>	Sec 10-T1S-R68W	<b>North Reference:</b>	True
<b>Well:</b>	INTERCHANGE A S22-30-12N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
<b>SHANNON</b>									
8,450.00	33.49	179.67	7,625.95	2,463.04	2,037.10	-2,107.15	12.00	12.00	0.00
8,475.00	36.49	179.67	7,646.43	2,448.70	2,037.18	-2,092.99	12.00	12.00	0.00
8,497.24	39.15	179.67	7,664.00	2,435.07	2,037.26	-2,079.51	12.00	12.00	0.00
<b>NIOBRARA</b>									
8,500.00	39.49	179.67	7,666.14	2,433.32	2,037.27	-2,077.79	12.00	12.00	0.00
8,525.00	42.49	179.67	7,685.01	2,416.92	2,037.36	-2,061.59	12.00	12.00	0.00
8,550.00	45.49	179.67	7,702.99	2,399.56	2,037.46	-2,044.43	12.00	12.00	0.00
8,575.00	48.49	179.67	7,720.04	2,381.29	2,037.57	-2,026.37	12.00	12.00	0.00
8,600.00	51.48	179.67	7,736.12	2,362.14	2,037.68	-2,007.45	12.00	12.00	0.00
8,625.00	54.48	179.67	7,751.17	2,342.18	2,037.79	-1,987.73	12.00	12.00	0.00
8,650.00	57.48	179.67	7,765.15	2,321.46	2,037.91	-1,967.26	12.00	12.00	0.00
8,675.00	60.48	179.67	7,778.03	2,300.04	2,038.03	-1,946.09	12.00	12.00	0.00
8,700.00	63.48	179.67	7,789.77	2,277.97	2,038.16	-1,924.28	12.00	12.00	0.00
8,725.00	66.48	179.67	7,800.34	2,255.32	2,038.29	-1,901.90	12.00	12.00	0.00
8,750.00	69.48	179.67	7,809.71	2,232.15	2,038.42	-1,879.00	12.00	12.00	0.00
8,775.00	72.48	179.67	7,817.86	2,208.52	2,038.55	-1,855.65	12.00	12.00	0.00
8,800.00	75.48	179.67	7,824.76	2,184.49	2,038.69	-1,831.91	12.00	12.00	0.00
8,823.09	78.25	179.67	7,830.00	2,162.01	2,038.82	-1,809.69	12.00	12.00	0.00
<b>NIO B TARGET</b>									
8,825.00	78.48	179.67	7,830.39	2,160.13	2,038.83	-1,807.84	12.00	12.00	0.00
8,850.00	81.48	179.67	7,834.73	2,135.52	2,038.97	-1,783.52	12.00	12.00	0.00
8,875.00	84.48	179.67	7,837.79	2,110.71	2,039.11	-1,759.00	12.00	12.00	0.00
8,900.00	87.48	179.67	7,839.54	2,085.77	2,039.25	-1,734.36	12.00	12.00	0.00
8,920.99	90.00	179.67	7,840.00	2,064.79	2,039.37	-1,713.63	12.00	12.00	0.00
<b>Start DLS 0.00 TFO -98.28</b>									
9,000.00	90.00	179.67	7,840.00	1,985.78	2,039.82	-1,635.56	0.00	0.00	0.00
9,100.00	90.00	179.67	7,840.00	1,885.78	2,040.39	-1,536.74	0.00	0.00	0.00
9,200.00	90.00	179.67	7,840.00	1,785.79	2,040.96	-1,437.93	0.00	0.00	0.00
9,300.00	90.00	179.67	7,840.00	1,685.79	2,041.53	-1,339.12	0.00	0.00	0.00
9,400.00	90.00	179.67	7,840.00	1,585.79	2,042.10	-1,240.31	0.00	0.00	0.00
9,500.00	90.00	179.67	7,839.99	1,485.79	2,042.67	-1,141.49	0.00	0.00	0.00
9,600.00	90.00	179.67	7,839.99	1,385.79	2,043.24	-1,042.68	0.00	0.00	0.00
9,700.00	90.00	179.67	7,839.99	1,285.79	2,043.81	-943.87	0.00	0.00	0.00
9,800.00	90.00	179.67	7,839.99	1,185.80	2,044.38	-845.06	0.00	0.00	0.00
9,900.00	90.00	179.67	7,839.99	1,085.80	2,044.95	-746.24	0.00	0.00	0.00
10,000.00	90.00	179.67	7,839.99	985.80	2,045.52	-647.43	0.00	0.00	0.00
10,100.00	90.00	179.67	7,839.99	885.80	2,046.09	-548.62	0.00	0.00	0.00
10,200.00	90.00	179.67	7,839.99	785.80	2,046.67	-449.80	0.00	0.00	0.00
10,300.00	90.00	179.67	7,839.99	685.80	2,047.24	-350.99	0.00	0.00	0.00
10,400.00	90.00	179.67	7,839.99	585.81	2,047.81	-252.18	0.00	0.00	0.00
10,500.00	90.00	179.67	7,839.99	485.81	2,048.38	-153.37	0.00	0.00	0.00
10,600.00	90.00	179.67	7,839.99	385.81	2,048.95	-54.55	0.00	0.00	0.00
10,700.00	90.00	179.67	7,839.99	285.81	2,049.52	44.26	0.00	0.00	0.00
10,800.00	90.00	179.67	7,839.98	185.81	2,050.09	143.07	0.00	0.00	0.00
10,900.00	90.00	179.67	7,839.98	85.81	2,050.66	241.89	0.00	0.00	0.00
11,000.00	90.00	179.67	7,839.98	-14.18	2,051.24	340.70	0.00	0.00	0.00
11,100.00	90.00	179.67	7,839.98	-114.18	2,051.81	439.51	0.00	0.00	0.00
11,200.00	90.00	179.67	7,839.98	-214.18	2,052.38	538.33	0.00	0.00	0.00
11,300.00	90.00	179.67	7,839.98	-314.18	2,052.95	637.14	0.00	0.00	0.00
11,400.00	90.00	179.67	7,839.98	-414.18	2,053.52	735.95	0.00	0.00	0.00
11,500.00	90.00	179.67	7,839.98	-514.18	2,054.09	834.76	0.00	0.00	0.00
11,600.00	90.00	179.67	7,839.98	-614.17	2,054.67	933.58	0.00	0.00	0.00

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well INTERCHANGE A S22-30-12N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5257.00usft
<b>Project:</b>	Broomfield County	<b>MD Reference:</b>	KB 25' @ 5257.00usft
<b>Site:</b>	Sec 10-T1S-R68W	<b>North Reference:</b>	True
<b>Well:</b>	INTERCHANGE A S22-30-12N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,700.00	90.00	179.67	7,839.98	-714.17	2,055.24	1,032.39	0.00	0.00	0.00
11,800.00	90.00	179.67	7,839.98	-814.17	2,055.81	1,131.20	0.00	0.00	0.00
11,900.00	90.00	179.67	7,839.98	-914.17	2,056.38	1,230.02	0.00	0.00	0.00
12,000.00	90.00	179.67	7,839.98	-1,014.17	2,056.95	1,328.83	0.00	0.00	0.00
12,100.00	90.00	179.67	7,839.98	-1,114.17	2,057.53	1,427.64	0.00	0.00	0.00
12,200.00	90.00	179.67	7,839.98	-1,214.17	2,058.10	1,526.46	0.00	0.00	0.00
12,300.00	90.00	179.67	7,839.98	-1,314.16	2,058.67	1,625.27	0.00	0.00	0.00
12,400.00	90.00	179.67	7,839.97	-1,414.16	2,059.25	1,724.08	0.00	0.00	0.00
12,500.00	90.00	179.67	7,839.97	-1,514.16	2,059.82	1,822.90	0.00	0.00	0.00
12,600.00	90.00	179.67	7,839.97	-1,614.16	2,060.39	1,921.71	0.00	0.00	0.00
12,700.00	90.00	179.67	7,839.97	-1,714.16	2,060.96	2,020.52	0.00	0.00	0.00
12,800.00	90.00	179.67	7,839.97	-1,814.16	2,061.54	2,119.33	0.00	0.00	0.00
12,900.00	90.00	179.67	7,839.97	-1,914.15	2,062.11	2,218.15	0.00	0.00	0.00
13,000.00	90.00	179.67	7,839.97	-2,014.15	2,062.68	2,316.96	0.00	0.00	0.00
13,100.00	90.00	179.67	7,839.97	-2,114.15	2,063.26	2,415.77	0.00	0.00	0.00
13,200.00	90.00	179.67	7,839.97	-2,214.15	2,063.83	2,514.59	0.00	0.00	0.00
13,300.00	90.00	179.67	7,839.97	-2,314.15	2,064.40	2,613.40	0.00	0.00	0.00
13,400.00	90.00	179.67	7,839.97	-2,414.15	2,064.98	2,712.21	0.00	0.00	0.00
13,500.00	90.00	179.67	7,839.97	-2,514.14	2,065.55	2,811.03	0.00	0.00	0.00
13,600.00	90.00	179.67	7,839.97	-2,614.14	2,066.12	2,909.84	0.00	0.00	0.00
13,700.00	90.00	179.67	7,839.97	-2,714.14	2,066.70	3,008.65	0.00	0.00	0.00
13,800.00	90.00	179.67	7,839.97	-2,814.14	2,067.27	3,107.47	0.00	0.00	0.00
13,900.00	90.00	179.67	7,839.97	-2,914.14	2,067.85	3,206.28	0.00	0.00	0.00
14,000.00	90.00	179.67	7,839.97	-3,014.14	2,068.42	3,305.09	0.00	0.00	0.00
14,100.00	90.00	179.67	7,839.97	-3,114.13	2,068.99	3,403.91	0.00	0.00	0.00
14,200.00	90.00	179.67	7,839.97	-3,214.13	2,069.57	3,502.72	0.00	0.00	0.00
14,300.00	90.00	179.67	7,839.97	-3,314.13	2,070.14	3,601.53	0.00	0.00	0.00
14,400.00	90.00	179.67	7,839.97	-3,414.13	2,070.72	3,700.35	0.00	0.00	0.00
14,500.00	90.00	179.67	7,839.97	-3,514.13	2,071.29	3,799.16	0.00	0.00	0.00
14,600.00	90.00	179.67	7,839.97	-3,614.13	2,071.87	3,897.97	0.00	0.00	0.00
14,700.00	90.00	179.67	7,839.97	-3,714.12	2,072.44	3,996.79	0.00	0.00	0.00
14,800.00	90.00	179.67	7,839.97	-3,814.12	2,073.02	4,095.60	0.00	0.00	0.00
14,900.00	90.00	179.67	7,839.97	-3,914.12	2,073.59	4,194.41	0.00	0.00	0.00
15,000.00	90.00	179.67	7,839.97	-4,014.12	2,074.17	4,293.23	0.00	0.00	0.00
15,100.00	90.00	179.67	7,839.97	-4,114.12	2,074.74	4,392.04	0.00	0.00	0.00
15,200.00	90.00	179.67	7,839.97	-4,214.12	2,075.32	4,490.86	0.00	0.00	0.00
15,300.00	90.00	179.67	7,839.96	-4,314.11	2,075.89	4,589.67	0.00	0.00	0.00
15,400.00	90.00	179.67	7,839.96	-4,414.11	2,076.47	4,688.48	0.00	0.00	0.00
15,500.00	90.00	179.67	7,839.96	-4,514.11	2,077.04	4,787.30	0.00	0.00	0.00
15,600.00	90.00	179.67	7,839.96	-4,614.11	2,077.62	4,886.11	0.00	0.00	0.00
15,700.00	90.00	179.67	7,839.96	-4,714.11	2,078.19	4,984.92	0.00	0.00	0.00
15,800.00	90.00	179.67	7,839.96	-4,814.11	2,078.77	5,083.74	0.00	0.00	0.00
15,900.00	90.00	179.67	7,839.96	-4,914.10	2,079.34	5,182.55	0.00	0.00	0.00
16,000.00	90.00	179.67	7,839.96	-5,014.10	2,079.92	5,281.36	0.00	0.00	0.00
16,100.00	90.00	179.67	7,839.96	-5,114.10	2,080.50	5,380.18	0.00	0.00	0.00
16,200.00	90.00	179.67	7,839.96	-5,214.10	2,081.07	5,478.99	0.00	0.00	0.00
16,300.00	90.00	179.67	7,839.96	-5,314.10	2,081.65	5,577.80	0.00	0.00	0.00
16,400.00	90.00	179.67	7,839.96	-5,414.10	2,082.22	5,676.62	0.00	0.00	0.00
16,500.00	90.00	179.67	7,839.96	-5,514.09	2,082.80	5,775.43	0.00	0.00	0.00
16,600.00	90.00	179.67	7,839.96	-5,614.09	2,083.38	5,874.25	0.00	0.00	0.00
16,700.00	90.00	179.67	7,839.96	-5,714.09	2,083.95	5,973.06	0.00	0.00	0.00
16,800.00	90.00	179.67	7,839.96	-5,814.09	2,084.53	6,071.87	0.00	0.00	0.00
16,900.00	90.00	179.67	7,839.96	-5,914.09	2,085.11	6,170.69	0.00	0.00	0.00
17,000.00	90.00	179.67	7,839.96	-6,014.09	2,085.68	6,269.50	0.00	0.00	0.00

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well INTERCHANGE A S22-30-12N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5257.00usft
<b>Project:</b>	Broomfield County	<b>MD Reference:</b>	KB 25' @ 5257.00usft
<b>Site:</b>	Sec 10-T1S-R68W	<b>North Reference:</b>	True
<b>Well:</b>	INTERCHANGE A S22-30-12N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
17,100.00	90.00	179.67	7,839.96	-6,114.08	2,086.26	6,368.31	0.00	0.00	0.00
17,200.00	90.00	179.67	7,839.96	-6,214.08	2,086.84	6,467.13	0.00	0.00	0.00
17,300.00	90.00	179.67	7,839.96	-6,314.08	2,087.41	6,565.94	0.00	0.00	0.00
17,400.00	90.00	179.67	7,839.96	-6,414.08	2,087.99	6,664.76	0.00	0.00	0.00
17,500.00	90.00	179.67	7,839.96	-6,514.08	2,088.57	6,763.57	0.00	0.00	0.00
17,600.00	90.00	179.67	7,839.96	-6,614.08	2,089.15	6,862.38	0.00	0.00	0.00
17,700.00	90.00	179.67	7,839.96	-6,714.07	2,089.72	6,961.20	0.00	0.00	0.00
17,800.00	90.00	179.67	7,839.96	-6,814.07	2,090.30	7,060.01	0.00	0.00	0.00
17,900.00	90.00	179.67	7,839.97	-6,914.07	2,090.88	7,158.83	0.00	0.00	0.00
18,000.00	90.00	179.67	7,839.97	-7,014.07	2,091.45	7,257.64	0.00	0.00	0.00
18,100.00	90.00	179.67	7,839.97	-7,114.07	2,092.03	7,356.45	0.00	0.00	0.00
18,200.00	90.00	179.67	7,839.97	-7,214.07	2,092.61	7,455.27	0.00	0.00	0.00
18,300.00	90.00	179.67	7,839.97	-7,314.06	2,093.19	7,554.08	0.00	0.00	0.00
18,400.00	90.00	179.67	7,839.97	-7,414.06	2,093.77	7,652.89	0.00	0.00	0.00
18,500.00	90.00	179.67	7,839.97	-7,514.06	2,094.34	7,751.71	0.00	0.00	0.00
18,600.00	90.00	179.67	7,839.97	-7,614.06	2,094.92	7,850.52	0.00	0.00	0.00
18,700.00	90.00	179.67	7,839.97	-7,714.06	2,095.50	7,949.34	0.00	0.00	0.00
18,800.00	90.00	179.67	7,839.97	-7,814.06	2,096.08	8,048.15	0.00	0.00	0.00
18,900.00	90.00	179.67	7,839.97	-7,914.05	2,096.66	8,146.96	0.00	0.00	0.00
19,000.00	90.00	179.67	7,839.97	-8,014.05	2,097.23	8,245.78	0.00	0.00	0.00
19,100.00	90.00	179.67	7,839.97	-8,114.05	2,097.81	8,344.59	0.00	0.00	0.00
19,200.00	90.00	179.67	7,839.97	-8,214.05	2,098.39	8,443.41	0.00	0.00	0.00
19,300.00	90.00	179.67	7,839.97	-8,314.05	2,098.97	8,542.22	0.00	0.00	0.00
19,400.00	90.00	179.67	7,839.97	-8,414.05	2,099.55	8,641.03	0.00	0.00	0.00
19,500.00	90.00	179.67	7,839.97	-8,514.04	2,100.13	8,739.85	0.00	0.00	0.00
19,600.00	90.00	179.67	7,839.97	-8,614.04	2,100.71	8,838.66	0.00	0.00	0.00
19,700.00	90.00	179.67	7,839.97	-8,714.04	2,101.29	8,937.48	0.00	0.00	0.00
19,800.00	90.00	179.67	7,839.97	-8,814.04	2,101.86	9,036.29	0.00	0.00	0.00
19,900.00	90.00	179.67	7,839.97	-8,914.04	2,102.44	9,135.11	0.00	0.00	0.00
20,000.00	90.00	179.67	7,839.97	-9,014.04	2,103.02	9,233.92	0.00	0.00	0.00
20,100.00	90.00	179.67	7,839.97	-9,114.03	2,103.60	9,332.73	0.00	0.00	0.00
20,200.00	90.00	179.67	7,839.97	-9,214.03	2,104.18	9,431.55	0.00	0.00	0.00
20,300.00	90.00	179.67	7,839.97	-9,314.03	2,104.76	9,530.36	0.00	0.00	0.00
20,400.00	90.00	179.67	7,839.97	-9,414.03	2,105.34	9,629.18	0.00	0.00	0.00
20,500.00	90.00	179.67	7,839.97	-9,514.03	2,105.92	9,727.99	0.00	0.00	0.00
20,600.00	90.00	179.67	7,839.97	-9,614.03	2,106.50	9,826.80	0.00	0.00	0.00
20,700.00	90.00	179.67	7,839.97	-9,714.02	2,107.08	9,925.62	0.00	0.00	0.00
20,800.00	90.00	179.67	7,839.98	-9,814.02	2,107.66	10,024.43	0.00	0.00	0.00
20,900.00	90.00	179.67	7,839.98	-9,914.02	2,108.24	10,123.25	0.00	0.00	0.00
21,000.00	90.00	179.67	7,839.98	-10,014.02	2,108.82	10,222.06	0.00	0.00	0.00
24,171.15	90.00	179.67	7,840.00	-13,185.11	2,127.26	13,355.61	0.00	0.00	0.00
TD at 24171.15									



## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well INTERCHANGE A S22-30-12N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5257.00usft
<b>Project:</b>	Broomfield County	<b>MD Reference:</b>	KB 25' @ 5257.00usft
<b>Site:</b>	Sec 10-T1S-R68W	<b>North Reference:</b>	True
<b>Well:</b>	INTERCHANGE A S22-30-12N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
INTERCHANGE A S22-'	0.00	0.00	7,840.00	-13,185.11	2,127.26	1,222,984.97	3,144,287.29	39° 56' 39.574 N	104° 59' 7.397 W
- plan hits target center									
- Point									
INTERCHANGE A S22-'	0.00	0.00	7,840.00	2,064.79	2,039.37	1,238,234.13	3,144,112.20	39° 59' 10.284 N	104° 59' 8.509 W
- plan hits target center									
- Point									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
5,500.43	4,915.00	PARKMAN				
5,633.58	5,030.00	SUSSEX				
8,447.66	7,624.00	SHANNON				
8,497.24	7,664.00	NIOBRARA				
8,823.09	7,830.00	NIO B TARGET				

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
200.00	200.00	0.00	0.00	Start Build 2.00
1,713.04	1,643.67	304.65	244.06	Start 4914.86 hold at 1713.04 MD
6,627.89	5,888.83	2,237.64	1,792.59	Start Drop -2.00
8,140.93	7,332.50	2,542.29	2,036.65	Start 30.00 hold at 8140.93 MD
8,170.93	7,362.50	2,542.29	2,036.65	Start DLS 12.00 TFO 179.67
8,920.99	7,840.00	2,064.79	2,039.37	Start DLS 0.00 TFO -98.28
24,171.15	7,840.00	-13,185.11	2,127.26	TD at 24171.15