

EXTRACTION OIL & GAS

Broomfield County

Sec 10-T1S-R68W

INTERCHANGE A S22-30-3N

ORIGINAL WELLBORE

Plan: PROPOSAL 1

Standard Planning Report

23 January, 2018



Project: Broomfield County
Site: Sec 10-T1S-R68W
Well: INTERCHANGE A S22-30-3N
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: 8.24°
Magnetic Field
Strength: 52081.6snT
Dip Angle: 66.47°
Date: 1/9/2018
Model: IGRF2015

WELL DETAILS: INTERCHANGE A S22-30-3N

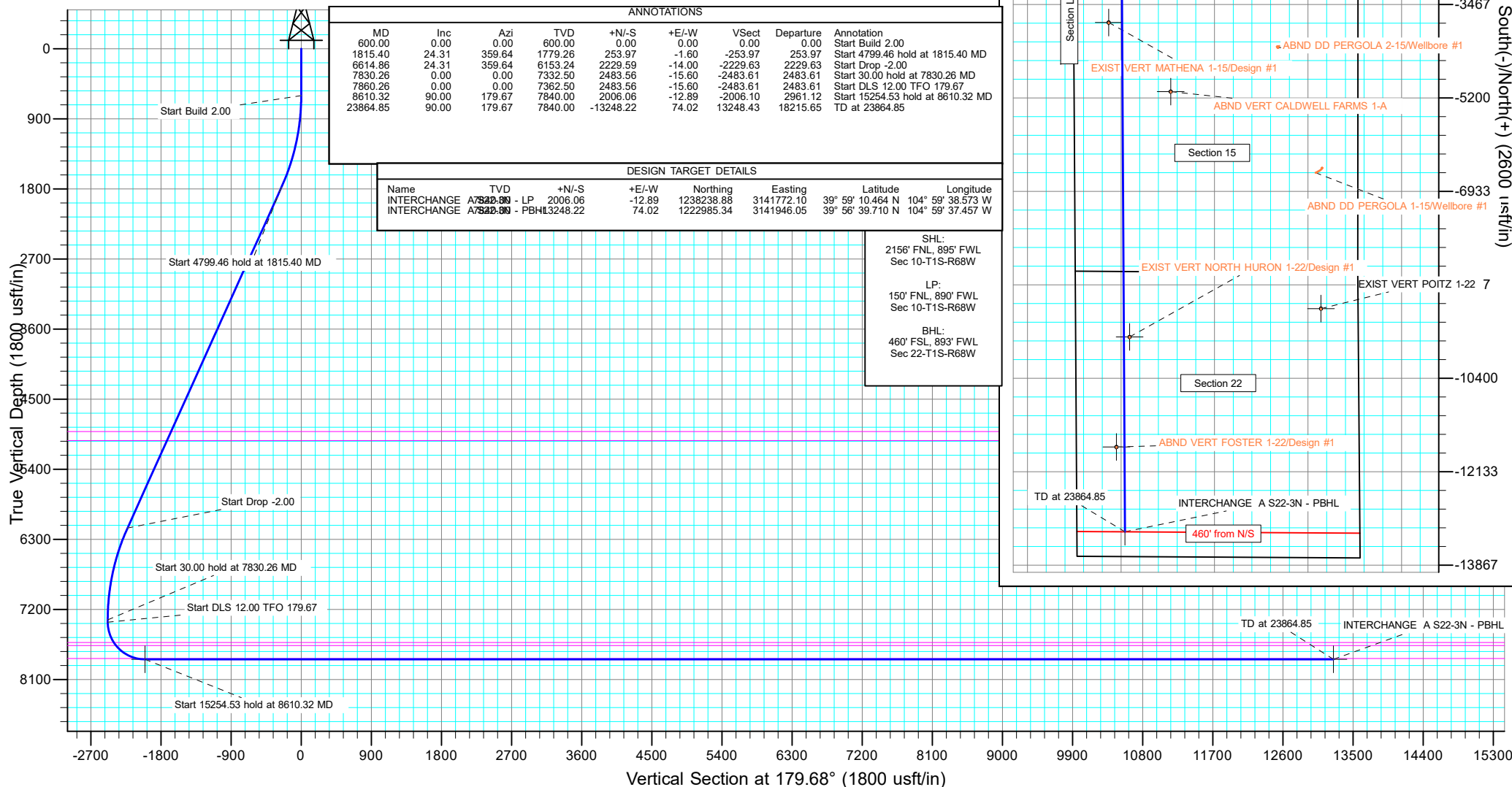
+N/-S	+E/-W	Northing	Easting	5236.00	Latitude	Longitude	Slot
0.00	0.00	1236232.93	3141796.44		39° 58' 50.639 N	104° 59' 38.407 W	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	
3	1815.40	24.31	359.64	1779.26	253.97	-1.60	2.00	359.64	-253.97	
4	6814.86	24.31	359.64	6153.24	2229.59	-14.00	0.00	0.00	-2229.63	
5	7830.26	0.00	0.00	7332.50	2483.56	-15.60	2.00	180.00	-2483.61	
6	7860.26	0.00	0.00	7362.50	2483.56	-15.60	0.00	0.00	-2483.61	
7	8610.32	90.00	179.67	7840.00	2006.06	-12.89	12.00	179.67	-2006.10	INTERCHANGE A S22-3N - LP
8	23864.85	90.00	179.67	7840.00	-13248.22	74.02	0.00	0.00	13248.43	INTERCHANGE A S22-3N - PBHL

FORMATION TOP DETAILS

TVDPATH	MDPATH	FORMATION
4915.00	5256.17	PARKMAN
5030.00	5382.36	SUSSEX
7624.00	8136.99	SHANNON
7664.00	8186.57	NIORARA
7830.00	8512.42	NIO B TARGET



Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well INTERCHANGE A S22-30-3N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5261.00usft
Project:	Broomfield County	MD Reference:	KB 25' @ 5261.00usft
Site:	Sec 10-T1S-R68W	North Reference:	True
Well:	INTERCHANGE A S22-30-3N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Project	Broomfield County		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	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 S22-30-3N					
Well Position	+N/-S	-2,162.80 usft	Northing:	1,236,232.92 usft	Latitude:	39° 58' 50.639 N
	+E/-W	903.04 usft	Easting:	3,141,796.44 usft	Longitude:	104° 59' 38.407 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,236.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	1/9/2018	8.24	66.47	52,081.59062175

Design	PROPOSAL 1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	179.68

Plan Survey Tool Program	Date	1/23/2018		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	23,864.85	PROPOSAL 1 (ORIGINAL WELL	MWD OWSG
			OWSG MWD - Standard	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,815.40	24.31	359.64	1,779.26	253.97	-1.60	2.00	2.00	0.00	359.64	
6,614.86	24.31	359.64	6,153.24	2,229.59	-14.00	0.00	0.00	0.00	0.00	
7,830.26	0.00	0.00	7,332.50	2,483.56	-15.60	2.00	-2.00	0.00	180.00	
7,860.26	0.00	0.00	7,362.50	2,483.56	-15.60	0.00	0.00	0.00	0.00	
8,610.32	90.00	179.67	7,840.00	2,006.06	-12.89	12.00	12.00	23.95	179.67	INTERCHANGE A S22-30-3N
23,864.85	90.00	179.67	7,840.00	-13,248.22	74.02	0.00	0.00	0.00	0.00	INTERCHANGE A S22-30-3N

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Project:	Broomfield County	MD Reference:	KB 25' @ 5261.00usft
Site:	Sec 10-T1S-R68W	North Reference:	True
Well:	INTERCHANGE A S22-30-3N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
700.00	2.00	359.64	699.98	1.75	-0.01	-1.75	2.00	2.00	0.00
800.00	4.00	359.64	799.84	6.98	-0.04	-6.98	2.00	2.00	0.00
900.00	6.00	359.64	899.45	15.69	-0.10	-15.69	2.00	2.00	0.00
1,000.00	8.00	359.64	998.70	27.88	-0.18	-27.88	2.00	2.00	0.00
1,100.00	10.00	359.64	1,097.47	43.52	-0.27	-43.52	2.00	2.00	0.00
1,200.00	12.00	359.64	1,195.62	62.60	-0.39	-62.60	2.00	2.00	0.00
1,300.00	14.00	359.64	1,293.06	85.09	-0.53	-85.10	2.00	2.00	0.00
1,400.00	16.00	359.64	1,389.64	110.98	-0.70	-110.98	2.00	2.00	0.00
1,500.00	18.00	359.64	1,485.27	140.21	-0.88	-140.21	2.00	2.00	0.00
1,600.00	20.00	359.64	1,579.82	172.76	-1.09	-172.77	2.00	2.00	0.00
1,700.00	22.00	359.64	1,673.17	208.60	-1.31	-208.60	2.00	2.00	0.00
1,800.00	24.00	359.64	1,765.21	247.67	-1.56	-247.67	2.00	2.00	0.00
1,815.40	24.31	359.64	1,779.26	253.97	-1.60	-253.97	2.00	2.00	0.00
Start 4799.46 hold at 1815.40 MD									
1,900.00	24.31	359.64	1,856.37	288.80	-1.81	-288.80	0.00	0.00	0.00
2,000.00	24.31	359.64	1,947.50	329.96	-2.07	-329.96	0.00	0.00	0.00
2,100.00	24.31	359.64	2,038.64	371.12	-2.33	-371.13	0.00	0.00	0.00
2,200.00	24.31	359.64	2,129.77	412.29	-2.59	-412.29	0.00	0.00	0.00
2,300.00	24.31	359.64	2,220.90	453.45	-2.85	-453.46	0.00	0.00	0.00
2,400.00	24.31	359.64	2,312.04	494.61	-3.11	-494.62	0.00	0.00	0.00
2,500.00	24.31	359.64	2,403.17	535.78	-3.37	-535.79	0.00	0.00	0.00
2,600.00	24.31	359.64	2,494.31	576.94	-3.62	-576.95	0.00	0.00	0.00
2,700.00	24.31	359.64	2,585.44	618.10	-3.88	-618.11	0.00	0.00	0.00
2,800.00	24.31	359.64	2,676.58	659.27	-4.14	-659.28	0.00	0.00	0.00
2,900.00	24.31	359.64	2,767.71	700.43	-4.40	-700.44	0.00	0.00	0.00
3,000.00	24.31	359.64	2,858.85	741.59	-4.66	-741.61	0.00	0.00	0.00
3,100.00	24.31	359.64	2,949.98	782.76	-4.92	-782.77	0.00	0.00	0.00
3,200.00	24.31	359.64	3,041.12	823.92	-5.18	-823.93	0.00	0.00	0.00
3,300.00	24.31	359.64	3,132.25	865.08	-5.43	-865.10	0.00	0.00	0.00
3,400.00	24.31	359.64	3,223.38	906.25	-5.69	-906.26	0.00	0.00	0.00
3,500.00	24.31	359.64	3,314.52	947.41	-5.95	-947.43	0.00	0.00	0.00
3,600.00	24.31	359.64	3,405.65	988.57	-6.21	-988.59	0.00	0.00	0.00
3,700.00	24.31	359.64	3,496.79	1,029.74	-6.47	-1,029.76	0.00	0.00	0.00
3,800.00	24.31	359.64	3,587.92	1,070.90	-6.73	-1,070.92	0.00	0.00	0.00
3,900.00	24.31	359.64	3,679.06	1,112.06	-6.99	-1,112.08	0.00	0.00	0.00
4,000.00	24.31	359.64	3,770.19	1,153.23	-7.24	-1,153.25	0.00	0.00	0.00
4,100.00	24.31	359.64	3,861.33	1,194.39	-7.50	-1,194.41	0.00	0.00	0.00
4,200.00	24.31	359.64	3,952.46	1,235.55	-7.76	-1,235.58	0.00	0.00	0.00
4,300.00	24.31	359.64	4,043.60	1,276.72	-8.02	-1,276.74	0.00	0.00	0.00
4,400.00	24.31	359.64	4,134.73	1,317.88	-8.28	-1,317.90	0.00	0.00	0.00
4,500.00	24.31	359.64	4,225.87	1,359.04	-8.54	-1,359.07	0.00	0.00	0.00
4,600.00	24.31	359.64	4,317.00	1,400.21	-8.80	-1,400.23	0.00	0.00	0.00
4,700.00	24.31	359.64	4,408.13	1,441.37	-9.05	-1,441.40	0.00	0.00	0.00
4,800.00	24.31	359.64	4,499.27	1,482.53	-9.31	-1,482.56	0.00	0.00	0.00
4,900.00	24.31	359.64	4,590.40	1,523.70	-9.57	-1,523.73	0.00	0.00	0.00

Planning Report

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Project:	Broomfield County	MD Reference:	KB 25' @ 5261.00usft
Site:	Sec 10-T1S-R68W	North Reference:	True
Well:	INTERCHANGE A S22-30-3N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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	24.31	359.64	4,681.54	1,564.86	-9.83	-1,564.89	0.00	0.00	0.00
5,100.00	24.31	359.64	4,772.67	1,606.02	-10.09	-1,606.05	0.00	0.00	0.00
5,200.00	24.31	359.64	4,863.81	1,647.19	-10.35	-1,647.22	0.00	0.00	0.00
5,256.17	24.31	359.64	4,915.00	1,670.31	-10.49	-1,670.34	0.00	0.00	0.00
PARKMAN									
5,300.00	24.31	359.64	4,954.94	1,688.35	-10.61	-1,688.38	0.00	0.00	0.00
5,382.36	24.31	359.64	5,030.00	1,722.25	-10.82	-1,722.28	0.00	0.00	0.00
SUSSEX									
5,400.00	24.31	359.64	5,046.08	1,729.51	-10.86	-1,729.55	0.00	0.00	0.00
5,500.00	24.31	359.64	5,137.21	1,770.68	-11.12	-1,770.71	0.00	0.00	0.00
5,600.00	24.31	359.64	5,228.35	1,811.84	-11.38	-1,811.87	0.00	0.00	0.00
5,700.00	24.31	359.64	5,319.48	1,853.00	-11.64	-1,853.04	0.00	0.00	0.00
5,800.00	24.31	359.64	5,410.61	1,894.17	-11.90	-1,894.20	0.00	0.00	0.00
5,900.00	24.31	359.64	5,501.75	1,935.33	-12.16	-1,935.37	0.00	0.00	0.00
6,000.00	24.31	359.64	5,592.88	1,976.49	-12.41	-1,976.53	0.00	0.00	0.00
6,100.00	24.31	359.64	5,684.02	2,017.66	-12.67	-2,017.69	0.00	0.00	0.00
6,200.00	24.31	359.64	5,775.15	2,058.82	-12.93	-2,058.86	0.00	0.00	0.00
6,300.00	24.31	359.64	5,866.29	2,099.98	-13.19	-2,100.02	0.00	0.00	0.00
6,400.00	24.31	359.64	5,957.42	2,141.15	-13.45	-2,141.19	0.00	0.00	0.00
6,500.00	24.31	359.64	6,048.56	2,182.31	-13.71	-2,182.35	0.00	0.00	0.00
6,600.00	24.31	359.64	6,139.69	2,223.47	-13.97	-2,223.52	0.00	0.00	0.00
6,614.86	24.31	359.64	6,153.24	2,229.59	-14.00	-2,229.63	0.00	0.00	0.00
Start Drop -2.00									
6,700.00	22.61	359.64	6,231.34	2,263.48	-14.22	-2,263.52	2.00	-2.00	0.00
6,800.00	20.61	359.64	6,324.31	2,300.30	-14.45	-2,300.34	2.00	-2.00	0.00
6,900.00	18.61	359.64	6,418.50	2,333.85	-14.66	-2,333.89	2.00	-2.00	0.00
7,000.00	16.61	359.64	6,513.81	2,364.09	-14.85	-2,364.14	2.00	-2.00	0.00
7,100.00	14.61	359.64	6,610.12	2,390.99	-15.02	-2,391.04	2.00	-2.00	0.00
7,200.00	12.61	359.64	6,707.31	2,414.51	-15.17	-2,414.56	2.00	-2.00	0.00
7,300.00	10.61	359.64	6,805.26	2,434.63	-15.29	-2,434.67	2.00	-2.00	0.00
7,400.00	8.61	359.64	6,903.86	2,451.31	-15.40	-2,451.36	2.00	-2.00	0.00
7,500.00	6.61	359.64	7,002.97	2,464.54	-15.48	-2,464.59	2.00	-2.00	0.00
7,600.00	4.61	359.64	7,102.49	2,474.31	-15.54	-2,474.36	2.00	-2.00	0.00
7,700.00	2.61	359.64	7,202.29	2,480.60	-15.58	-2,480.65	2.00	-2.00	0.00
7,800.00	0.61	359.64	7,302.24	2,483.40	-15.60	-2,483.45	2.00	-2.00	0.00
7,830.26	0.00	0.00	7,332.50	2,483.56	-15.60	-2,483.61	2.00	-2.00	0.00
Start 30.00 hold at 7830.26 MD									
7,860.26	0.00	0.00	7,362.50	2,483.56	-15.60	-2,483.61	0.00	0.00	0.00
Start DLS 12.00 TFO 179.67									
7,875.00	1.77	179.67	7,377.24	2,483.33	-15.60	-2,483.38	12.00	12.00	0.00
7,900.00	4.77	179.67	7,402.19	2,481.91	-15.59	-2,481.96	12.00	12.00	0.00
7,925.00	7.77	179.67	7,427.04	2,479.18	-15.58	-2,479.23	12.00	12.00	0.00
7,950.00	10.77	179.67	7,451.71	2,475.15	-15.55	-2,475.20	12.00	12.00	0.00
7,975.00	13.77	179.67	7,476.14	2,469.84	-15.52	-2,469.89	12.00	12.00	0.00
8,000.00	16.77	179.67	7,500.25	2,463.26	-15.48	-2,463.31	12.00	12.00	0.00
8,025.00	19.77	179.67	7,523.99	2,455.42	-15.44	-2,455.47	12.00	12.00	0.00
8,050.00	22.77	179.67	7,547.29	2,446.36	-15.39	-2,446.40	12.00	12.00	0.00
8,075.00	25.77	179.67	7,570.07	2,436.08	-15.33	-2,436.13	12.00	12.00	0.00
8,100.00	28.77	179.67	7,592.29	2,424.63	-15.27	-2,424.68	12.00	12.00	0.00
8,125.00	31.77	179.67	7,613.88	2,412.03	-15.19	-2,412.08	12.00	12.00	0.00
8,136.99	33.21	179.67	7,624.00	2,405.59	-15.16	-2,405.64	12.00	12.00	0.00
SHANNON									
8,150.00	34.77	179.67	7,634.79	2,398.32	-15.12	-2,398.37	12.00	12.00	0.00

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Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5261.00usft
Project:	Broomfield County	MD Reference:	KB 25' @ 5261.00usft
Site:	Sec 10-T1S-R68W	North Reference:	True
Well:	INTERCHANGE A S22-30-3N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)	
8,175.00	37.77	179.67	7,654.94	2,383.53	-15.03	-2,383.58	12.00	12.00	0.00	
8,186.57	39.15	179.67	7,664.00	2,376.34	-14.99	-2,376.38	12.00	12.00	0.00	
NIOBRARA										
8,200.00	40.77	179.67	7,674.29	2,367.71	-14.94	-2,367.76	12.00	12.00	0.00	
8,225.00	43.77	179.67	7,692.79	2,350.90	-14.85	-2,350.95	12.00	12.00	0.00	
8,250.00	46.77	179.67	7,710.39	2,333.14	-14.75	-2,333.19	12.00	12.00	0.00	
8,275.00	49.77	179.67	7,727.03	2,314.49	-14.64	-2,314.54	12.00	12.00	0.00	
8,300.00	52.76	179.67	7,742.67	2,294.99	-14.53	-2,295.04	12.00	12.00	0.00	
8,325.00	55.76	179.67	7,757.27	2,274.70	-14.41	-2,274.75	12.00	12.00	0.00	
8,350.00	58.76	179.67	7,770.78	2,253.67	-14.30	-2,253.72	12.00	12.00	0.00	
8,375.00	61.76	179.67	7,783.18	2,231.97	-14.17	-2,232.01	12.00	12.00	0.00	
8,400.00	64.76	179.67	7,794.43	2,209.64	-14.05	-2,209.69	12.00	12.00	0.00	
8,425.00	67.76	179.67	7,804.49	2,186.76	-13.92	-2,186.81	12.00	12.00	0.00	
8,450.00	70.76	179.67	7,813.34	2,163.39	-13.78	-2,163.43	12.00	12.00	0.00	
8,475.00	73.76	179.67	7,820.96	2,139.58	-13.65	-2,139.62	12.00	12.00	0.00	
8,500.00	76.76	179.67	7,827.31	2,115.40	-13.51	-2,115.44	12.00	12.00	0.00	
8,512.42	78.25	179.67	7,830.00	2,103.28	-13.44	-2,103.32	12.00	12.00	0.00	
NIO B TARGET										
8,525.00	79.76	179.67	7,832.40	2,090.93	-13.37	-2,090.97	12.00	12.00	0.00	
8,550.00	82.76	179.67	7,836.20	2,066.22	-13.23	-2,066.26	12.00	12.00	0.00	
8,575.00	85.76	179.67	7,838.69	2,041.35	-13.09	-2,041.39	12.00	12.00	0.00	
8,600.00	88.76	179.67	7,839.89	2,016.38	-12.95	-2,016.42	12.00	12.00	0.00	
8,610.32	90.00	179.67	7,840.00	2,006.06	-12.89	-2,006.10	12.00	12.00	0.00	
Start 15254.53 hold at 8610.32 MD										
8,700.00	90.00	179.67	7,840.00	1,916.38	-12.38	-1,916.42	0.00	0.00	0.00	
8,800.00	90.00	179.67	7,840.00	1,816.39	-11.81	-1,816.42	0.00	0.00	0.00	
8,900.00	90.00	179.67	7,840.00	1,716.39	-11.25	-1,716.42	0.00	0.00	0.00	
9,000.00	90.00	179.67	7,840.00	1,616.39	-10.68	-1,616.42	0.00	0.00	0.00	
9,100.00	90.00	179.67	7,839.99	1,516.39	-10.11	-1,516.42	0.00	0.00	0.00	
9,200.00	90.00	179.67	7,839.99	1,416.39	-9.54	-1,416.42	0.00	0.00	0.00	
9,300.00	90.00	179.67	7,839.99	1,316.39	-8.98	-1,316.42	0.00	0.00	0.00	
9,400.00	90.00	179.67	7,839.99	1,216.40	-8.41	-1,216.42	0.00	0.00	0.00	
9,500.00	90.00	179.67	7,839.99	1,116.40	-7.84	-1,116.42	0.00	0.00	0.00	
9,600.00	90.00	179.67	7,839.99	1,016.40	-7.27	-1,016.42	0.00	0.00	0.00	
9,700.00	90.00	179.67	7,839.99	916.40	-6.70	-916.42	0.00	0.00	0.00	
9,800.00	90.00	179.67	7,839.98	816.40	-6.14	-816.42	0.00	0.00	0.00	
9,900.00	90.00	179.67	7,839.98	716.40	-5.57	-716.42	0.00	0.00	0.00	
10,000.00	90.00	179.67	7,839.98	616.40	-5.00	-616.42	0.00	0.00	0.00	
10,100.00	90.00	179.67	7,839.98	516.41	-4.43	-516.42	0.00	0.00	0.00	
10,200.00	90.00	179.67	7,839.98	416.41	-3.87	-416.42	0.00	0.00	0.00	
10,300.00	90.00	179.67	7,839.98	316.41	-3.30	-316.42	0.00	0.00	0.00	
10,400.00	90.00	179.67	7,839.98	216.41	-2.73	-216.42	0.00	0.00	0.00	
10,500.00	90.00	179.67	7,839.98	116.41	-2.16	-116.42	0.00	0.00	0.00	
10,600.00	90.00	179.67	7,839.97	16.41	-1.60	-16.42	0.00	0.00	0.00	
10,700.00	90.00	179.67	7,839.97	-83.58	-1.03	83.58	0.00	0.00	0.00	
10,800.00	90.00	179.67	7,839.97	-183.58	-0.46	183.58	0.00	0.00	0.00	
10,900.00	90.00	179.67	7,839.97	-283.58	0.11	283.58	0.00	0.00	0.00	
11,000.00	90.00	179.67	7,839.97	-383.58	0.67	383.58	0.00	0.00	0.00	
11,100.00	90.00	179.67	7,839.97	-483.58	1.24	483.58	0.00	0.00	0.00	
11,200.00	90.00	179.67	7,839.97	-583.58	1.81	583.58	0.00	0.00	0.00	
11,300.00	90.00	179.67	7,839.97	-683.57	2.38	683.58	0.00	0.00	0.00	
11,400.00	90.00	179.67	7,839.96	-783.57	2.94	783.58	0.00	0.00	0.00	
11,500.00	90.00	179.67	7,839.96	-883.57	3.51	883.58	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well INTERCHANGE A S22-30-3N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5261.00usft
Project:	Broomfield County	MD Reference:	KB 25' @ 5261.00usft
Site:	Sec 10-T1S-R68W	North Reference:	True
Well:	INTERCHANGE A S22-30-3N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)	
11,600.00	90.00	179.67	7,839.96	-983.57	4.08	983.58	0.00	0.00	0.00	
11,700.00	90.00	179.67	7,839.96	-1,083.57	4.65	1,083.58	0.00	0.00	0.00	
11,800.00	90.00	179.67	7,839.96	-1,183.57	5.22	1,183.58	0.00	0.00	0.00	
11,900.00	90.00	179.67	7,839.96	-1,283.56	5.78	1,283.58	0.00	0.00	0.00	
12,000.00	90.00	179.67	7,839.96	-1,383.56	6.35	1,383.58	0.00	0.00	0.00	
12,100.00	90.00	179.67	7,839.96	-1,483.56	6.92	1,483.58	0.00	0.00	0.00	
12,200.00	90.00	179.67	7,839.95	-1,583.56	7.49	1,583.58	0.00	0.00	0.00	
12,300.00	90.00	179.67	7,839.95	-1,683.56	8.05	1,683.58	0.00	0.00	0.00	
12,400.00	90.00	179.67	7,839.95	-1,783.56	8.62	1,783.58	0.00	0.00	0.00	
12,500.00	90.00	179.67	7,839.95	-1,883.55	9.19	1,883.58	0.00	0.00	0.00	
12,600.00	90.00	179.67	7,839.95	-1,983.55	9.76	1,983.58	0.00	0.00	0.00	
12,700.00	90.00	179.67	7,839.95	-2,083.55	10.32	2,083.58	0.00	0.00	0.00	
12,800.00	90.00	179.67	7,839.95	-2,183.55	10.89	2,183.58	0.00	0.00	0.00	
12,900.00	90.00	179.67	7,839.94	-2,283.55	11.46	2,283.58	0.00	0.00	0.00	
13,000.00	90.00	179.67	7,839.94	-2,383.55	12.03	2,383.58	0.00	0.00	0.00	
13,100.00	90.00	179.67	7,839.94	-2,483.55	12.59	2,483.58	0.00	0.00	0.00	
13,200.00	90.00	179.67	7,839.94	-2,583.54	13.16	2,583.58	0.00	0.00	0.00	
13,300.00	90.00	179.67	7,839.94	-2,683.54	13.73	2,683.58	0.00	0.00	0.00	
13,400.00	90.00	179.67	7,839.94	-2,783.54	14.30	2,783.58	0.00	0.00	0.00	
13,500.00	90.00	179.67	7,839.94	-2,883.54	14.86	2,883.58	0.00	0.00	0.00	
13,600.00	90.00	179.67	7,839.94	-2,983.54	15.43	2,983.58	0.00	0.00	0.00	
13,700.00	90.00	179.67	7,839.93	-3,083.54	16.00	3,083.58	0.00	0.00	0.00	
13,800.00	90.00	179.67	7,839.93	-3,183.53	16.57	3,183.58	0.00	0.00	0.00	
13,900.00	90.00	179.67	7,839.93	-3,283.53	17.13	3,283.58	0.00	0.00	0.00	
14,000.00	90.00	179.67	7,839.93	-3,383.53	17.70	3,383.58	0.00	0.00	0.00	
14,100.00	90.00	179.67	7,839.93	-3,483.53	18.27	3,483.58	0.00	0.00	0.00	
14,200.00	90.00	179.67	7,839.93	-3,583.53	18.84	3,583.58	0.00	0.00	0.00	
14,300.00	90.00	179.67	7,839.93	-3,683.53	19.41	3,683.58	0.00	0.00	0.00	
14,400.00	90.00	179.67	7,839.93	-3,783.52	19.97	3,783.58	0.00	0.00	0.00	
14,500.00	90.00	179.67	7,839.92	-3,883.52	20.54	3,883.58	0.00	0.00	0.00	
14,600.00	90.00	179.67	7,839.92	-3,983.52	21.11	3,983.58	0.00	0.00	0.00	
14,700.00	90.00	179.67	7,839.92	-4,083.52	21.68	4,083.58	0.00	0.00	0.00	
14,800.00	90.00	179.67	7,839.92	-4,183.52	22.24	4,183.58	0.00	0.00	0.00	
14,900.00	90.00	179.67	7,839.92	-4,283.52	22.81	4,283.58	0.00	0.00	0.00	
15,000.00	90.00	179.67	7,839.92	-4,383.51	23.38	4,383.58	0.00	0.00	0.00	
15,100.00	90.00	179.67	7,839.92	-4,483.51	23.95	4,483.58	0.00	0.00	0.00	
15,200.00	90.00	179.67	7,839.92	-4,583.51	24.51	4,583.58	0.00	0.00	0.00	
15,300.00	90.00	179.67	7,839.91	-4,683.51	25.08	4,683.58	0.00	0.00	0.00	
15,400.00	90.00	179.67	7,839.91	-4,783.51	25.65	4,783.58	0.00	0.00	0.00	
15,500.00	90.00	179.67	7,839.91	-4,883.51	26.22	4,883.58	0.00	0.00	0.00	
15,600.00	90.00	179.67	7,839.91	-4,983.50	26.78	4,983.58	0.00	0.00	0.00	
15,700.00	90.00	179.67	7,839.91	-5,083.50	27.35	5,083.58	0.00	0.00	0.00	
15,800.00	90.00	179.67	7,839.91	-5,183.50	27.92	5,183.58	0.00	0.00	0.00	
15,900.00	90.00	179.67	7,839.91	-5,283.50	28.49	5,283.58	0.00	0.00	0.00	
16,000.00	90.00	179.67	7,839.90	-5,383.50	29.05	5,383.58	0.00	0.00	0.00	
16,100.00	90.00	179.67	7,839.90	-5,483.50	29.62	5,483.58	0.00	0.00	0.00	
16,200.00	90.00	179.67	7,839.90	-5,583.50	30.19	5,583.58	0.00	0.00	0.00	
16,300.00	90.00	179.67	7,839.90	-5,683.49	30.76	5,683.58	0.00	0.00	0.00	
16,400.00	90.00	179.67	7,839.90	-5,783.49	31.32	5,783.58	0.00	0.00	0.00	
16,500.00	90.00	179.67	7,839.90	-5,883.49	31.89	5,883.58	0.00	0.00	0.00	
16,600.00	90.00	179.67	7,839.90	-5,983.49	32.46	5,983.58	0.00	0.00	0.00	
16,700.00	90.00	179.67	7,839.90	-6,083.49	33.03	6,083.58	0.00	0.00	0.00	
16,800.00	90.00	179.67	7,839.89	-6,183.49	33.60	6,183.58	0.00	0.00	0.00	
16,900.00	90.00	179.67	7,839.89	-6,283.48	34.16	6,283.58	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well INTERCHANGE A S22-30-3N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5261.00usft
Project:	Broomfield County	MD Reference:	KB 25' @ 5261.00usft
Site:	Sec 10-T1S-R68W	North Reference:	True
Well:	INTERCHANGE A S22-30-3N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
17,000.00	90.00	179.67	7,839.89	-6,383.48	34.73	6,383.58	0.00	0.00	0.00
17,100.00	90.00	179.67	7,839.89	-6,483.48	35.30	6,483.58	0.00	0.00	0.00
17,200.00	90.00	179.67	7,839.89	-6,583.48	35.87	6,583.58	0.00	0.00	0.00
17,300.00	90.00	179.67	7,839.89	-6,683.48	36.43	6,683.58	0.00	0.00	0.00
17,400.00	90.00	179.67	7,839.89	-6,783.48	37.00	6,783.58	0.00	0.00	0.00
17,500.00	90.00	179.67	7,839.89	-6,883.47	37.57	6,883.58	0.00	0.00	0.00
17,600.00	90.00	179.67	7,839.88	-6,983.47	38.14	6,983.58	0.00	0.00	0.00
17,700.00	90.00	179.67	7,839.88	-7,083.47	38.70	7,083.58	0.00	0.00	0.00
17,800.00	90.00	179.67	7,839.88	-7,183.47	39.27	7,183.58	0.00	0.00	0.00
17,900.00	90.00	179.67	7,839.88	-7,283.47	39.84	7,283.58	0.00	0.00	0.00
18,000.00	90.00	179.67	7,839.88	-7,383.47	40.41	7,383.58	0.00	0.00	0.00
18,100.00	90.00	179.67	7,839.88	-7,483.46	40.97	7,483.58	0.00	0.00	0.00
18,200.00	90.00	179.67	7,839.88	-7,583.46	41.54	7,583.58	0.00	0.00	0.00
18,300.00	90.00	179.67	7,839.88	-7,683.46	42.11	7,683.58	0.00	0.00	0.00
18,400.00	90.00	179.67	7,839.87	-7,783.46	42.68	7,783.58	0.00	0.00	0.00
18,500.00	90.00	179.67	7,839.87	-7,883.46	43.24	7,883.58	0.00	0.00	0.00
18,600.00	90.00	179.67	7,839.87	-7,983.46	43.81	7,983.58	0.00	0.00	0.00
18,700.00	90.00	179.67	7,839.87	-8,083.46	44.38	8,083.58	0.00	0.00	0.00
18,800.00	90.00	179.67	7,839.87	-8,183.45	44.95	8,183.58	0.00	0.00	0.00
18,900.00	90.00	179.67	7,839.87	-8,283.45	45.51	8,283.58	0.00	0.00	0.00
19,000.00	90.00	179.67	7,839.87	-8,383.45	46.08	8,383.58	0.00	0.00	0.00
19,100.00	90.00	179.67	7,839.87	-8,483.45	46.65	8,483.58	0.00	0.00	0.00
19,200.00	90.00	179.67	7,839.86	-8,583.45	47.22	8,583.58	0.00	0.00	0.00
19,300.00	90.00	179.67	7,839.86	-8,683.45	47.79	8,683.58	0.00	0.00	0.00
19,400.00	90.00	179.67	7,839.86	-8,783.44	48.35	8,783.58	0.00	0.00	0.00
19,500.00	90.00	179.67	7,839.86	-8,883.44	48.92	8,883.58	0.00	0.00	0.00
19,600.00	90.00	179.67	7,839.86	-8,983.44	49.49	8,983.58	0.00	0.00	0.00
19,700.00	90.00	179.67	7,839.86	-9,083.44	50.06	9,083.58	0.00	0.00	0.00
19,800.00	90.00	179.67	7,839.86	-9,183.44	50.62	9,183.58	0.00	0.00	0.00
19,900.00	90.00	179.67	7,839.85	-9,283.44	51.19	9,283.58	0.00	0.00	0.00
20,000.00	90.00	179.67	7,839.85	-9,383.43	51.76	9,383.58	0.00	0.00	0.00
20,100.00	90.00	179.67	7,839.85	-9,483.43	52.33	9,483.58	0.00	0.00	0.00
20,200.00	90.00	179.67	7,839.85	-9,583.43	52.89	9,583.58	0.00	0.00	0.00
20,300.00	90.00	179.67	7,839.85	-9,683.43	53.46	9,683.58	0.00	0.00	0.00
20,400.00	90.00	179.67	7,839.85	-9,783.43	54.03	9,783.58	0.00	0.00	0.00
20,500.00	90.00	179.67	7,839.85	-9,883.43	54.60	9,883.58	0.00	0.00	0.00
20,600.00	90.00	179.67	7,839.85	-9,983.42	55.16	9,983.58	0.00	0.00	0.00
20,700.00	90.00	179.67	7,839.84	-10,083.42	55.73	10,083.58	0.00	0.00	0.00
20,800.00	90.00	179.67	7,839.84	-10,183.42	56.30	10,183.58	0.00	0.00	0.00
20,900.00	90.00	179.67	7,839.84	-10,283.42	56.87	10,283.58	0.00	0.00	0.00
21,000.00	90.00	179.67	7,839.84	-10,383.42	57.43	10,383.58	0.00	0.00	0.00
23,864.85	90.00	179.67	7,840.00	-13,248.22	74.02	13,248.43	0.00	0.00	0.00
TD at 23864.85									

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well INTERCHANGE A S22-30-3N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5261.00usft
Project:	Broomfield County	MD Reference:	KB 25' @ 5261.00usft
Site:	Sec 10-T1S-R68W	North Reference:	True
Well:	INTERCHANGE A S22-30-3N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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- - plan hits target center - Point	0.00	0.00	7,840.00	-13,248.22	74.02	1,222,985.34	3,141,946.05	39° 56' 39.710 N	104° 59' 37.457 W
INTERCHANGE A S22- - plan hits target center - Point	0.00	0.00	7,840.00	2,006.06	-12.89	1,238,238.88	3,141,772.10	39° 59' 10.464 N	104° 59' 38.573 W

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
5,256.17	4,915.00	PARKMAN				
5,382.36	5,030.00	SUSSEX				
8,136.99	7,624.00	SHANNON				
8,186.57	7,664.00	NIOBRARA				
8,512.42	7,830.00	NIO B TARGET				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(usft)	(usft)	+N/-S	+E/-W	Comment	
(usft)	(usft)	(usft)	(usft)		
600.00	600.00	0.00	0.00	Start Build 2.00	
1,815.40	1,779.26	253.97	-1.60	Start 4799.46 hold at 1815.40 MD	
6,614.86	6,153.24	2,229.59	-14.00	Start Drop -2.00	
7,830.26	7,332.50	2,483.56	-15.60	Start 30.00 hold at 7830.26 MD	
7,860.26	7,362.50	2,483.56	-15.60	Start DLS 12.00 TFO 179.67	
8,610.32	7,840.00	2,006.06	-12.89	Start 15254.53 hold at 8610.32 MD	
23,864.85	7,840.00	-13,248.22	74.02	TD at 23864.85	