

EXTRACTION OIL & GAS

Broomfield County

Sec 10-T1S-R68W

INTERCHANGE B N35-20-8C

ORIGINAL WELLBORE

Plan: PROPOSAL 1

Standard Planning Report

05 December, 2017



Project: Broomfield County
Site: Sec 10-T1S-R68W
Well: INTERCHANGE B N35-20-8C
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: 8.25°
Magnetic Field
Strength: 52094.0snT
Dip Angle: 66.47°
Date: 11/28/2017
Model: IGRF2015

WELL DETAILS: INTERCHANGE B N35-20-8C

	+N/-S	+E/-W	Northing	Easting	5236.00	Latitude	Longitude	Slot
	0.00	0.00	1235605.75	3142580.22		39° 58' 44.396 N	104° 59' 28.385 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	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
3	1839.01	30.78	45.69	1766.05	281.87	288.79	2.00	45.69	329.73	
4	6807.85	30.78	45.69	6034.95	2057.98	2108.46	0.00	0.00	2407.44	
5	8346.86	0.00	0.00	7501.00	2339.85	2397.25	2.00	180.00	2737.17	
6	8376.86	0.00	0.00	7531.00	2339.85	2397.25	0.00	0.00	2737.17	
7	9276.94	90.00	359.66	8104.00	2912.85	2393.81	10.00	359.66	3299.97	INTERCHANGE B N35 8C - LP
8	18978.46	90.00	359.66	8104.00	12614.19	2335.45	0.00	0.00	12828.57	INTERCHANGE B N35 8C - PBHL

FORMATION TOP DETAILS

TVDPth	MDPath	Formation
4915.00	5504.27	PARKMAN
5030.00	5638.12	SUSSEX
7624.00	8470.28	SHANNON
7664.00	8511.09	NIOBRARA
7830.00	8691.43	NIO B TARGET
8083.00	9121.32	FORT HAYS
8104.00	9276.92	CODELL

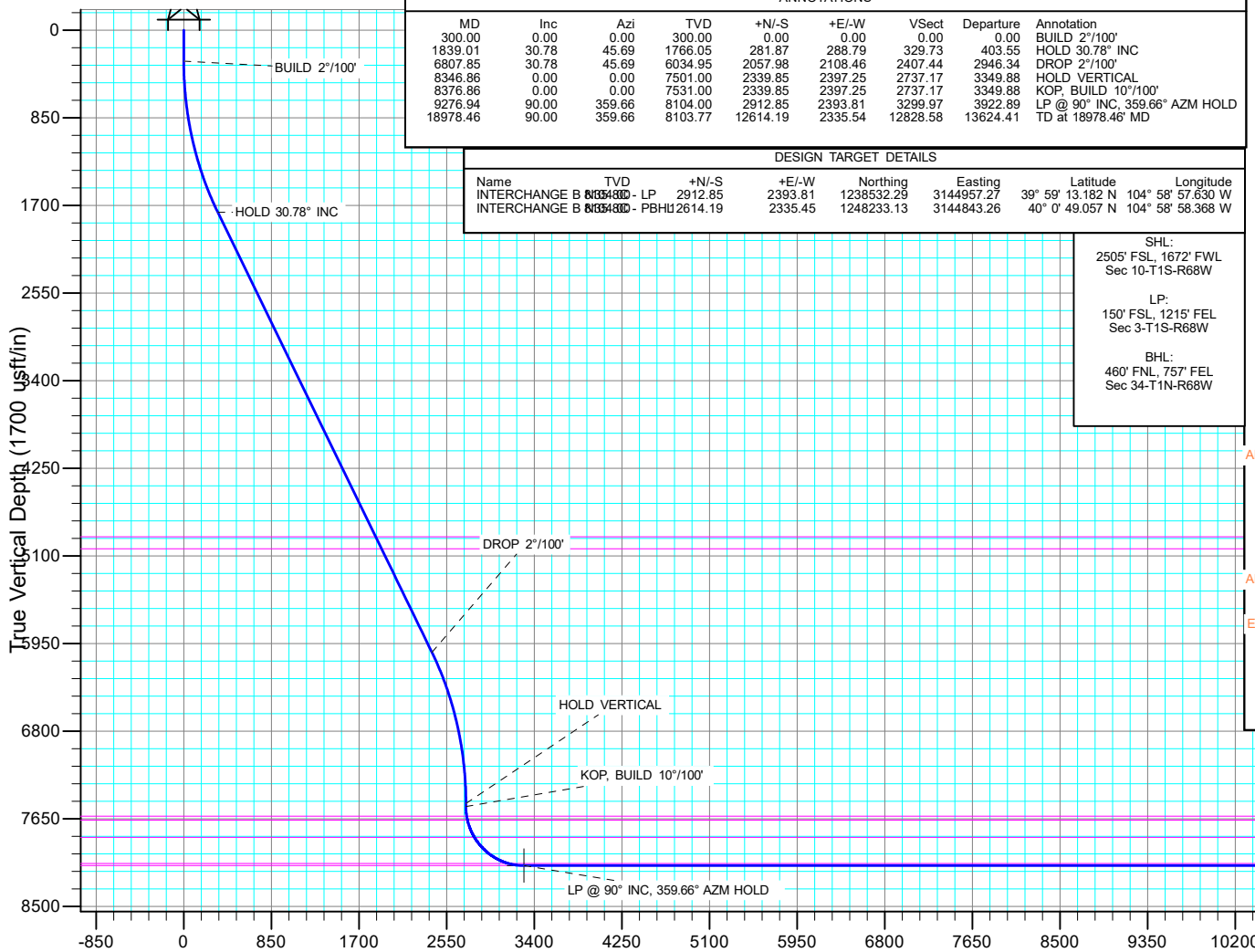
ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	BUILD 2°/100'
1839.01	30.78	45.69	1766.05	281.87	288.79	329.73	403.55	HOLD 30.78° INC
6807.85	30.78	45.69	6034.95	2057.98	2108.46	2407.44	2946.34	DROP 2°/100'
8346.86	0.00	0.00	7501.00	2339.85	2397.25	2737.17	3349.88	HOLD VERTICAL
8376.86	0.00	0.00	7531.00	2339.85	2397.25	2737.17	3349.88	KOP, BUILD 10°/100'
9276.94	90.00	359.66	8104.00	2912.85	2393.81	3299.97	3922.89	LP @ 90° INC, 359.66° AZM HOLD
18978.46	90.00	359.66	8103.77	12614.19	2335.54	12828.58	13624.41	TD at 18978.46' MD

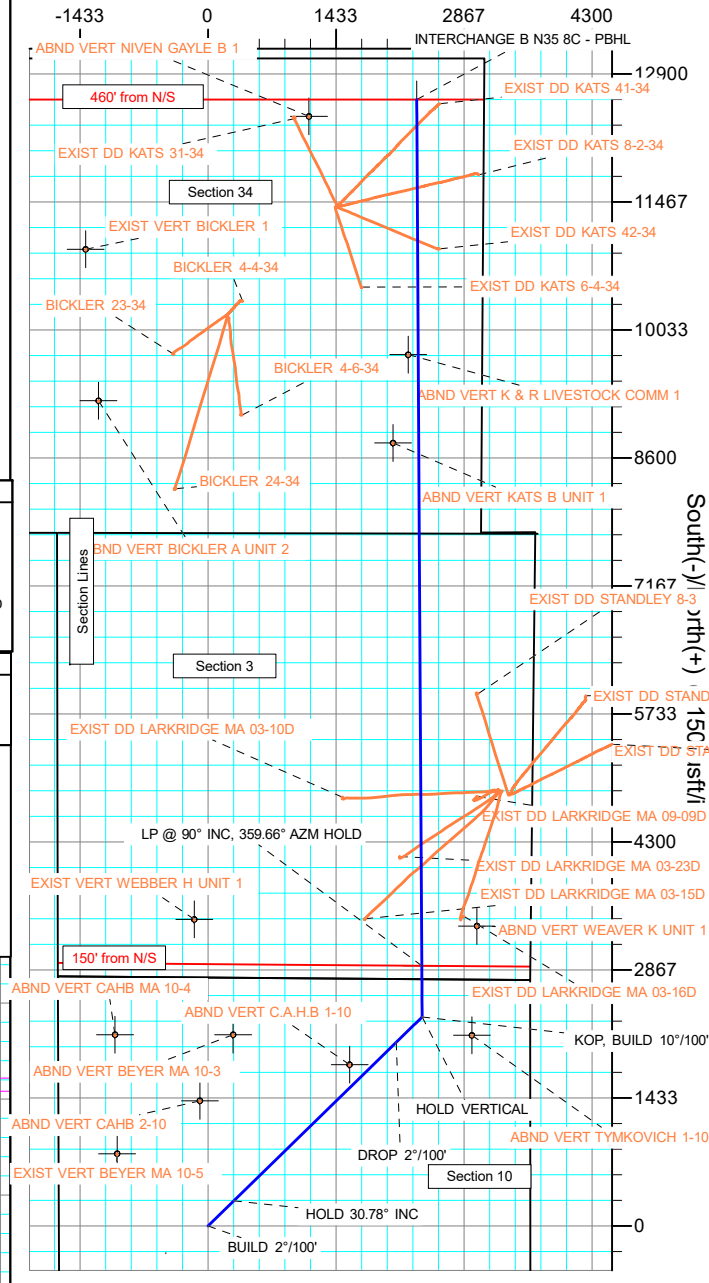
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
INTERCHANGE B N35 8C - LP	2912.85	2393.81	1238532.29	3144957.27	39° 59' 13.182 N	104° 58' 57.630 W	
INTERCHANGE B N35 8C - PBHL	2614.19	2335.45	1248233.13	3144843.26	40° 0' 49.057 N	104° 58' 58.368 W	

SHL:
2505' FSL, 1672' FWL
Sec 10-T1S-R68W
LP:
150' FSL, 1215' FEL
Sec 3-T1S-R68W
BHL:
460' FNL, 757' FEL
Sec 34-T1N-R68W



West(-)/East(+) (2150 usft/in)



Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well INTERCHANGE B N35-20-8C
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 B N35-20-8C	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 B N35-20-8C					
Well Position	+N/-S	-2,794.41 usft	Northing:	1,235,605.75 usft	Latitude:	39° 58' 44.396 N
	+E/-W	1,683.25 usft	Easting:	3,142,580.22 usft	Longitude:	104° 59' 28.385 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	11/28/2017	8.25	66.47	52,094.04093439

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	10.49

Plan Survey Tool Program	Date	12/5/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,978.31	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	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,839.01	30.78	45.69	1,766.05	281.87	288.79	2.00	2.00	0.00	45.69	
6,807.85	30.78	45.69	6,034.95	2,057.98	2,108.46	0.00	0.00	0.00	0.00	
8,346.86	0.00	0.00	7,501.00	2,339.85	2,397.25	2.00	-2.00	0.00	180.00	
8,376.86	0.00	0.00	7,531.00	2,339.85	2,397.25	0.00	0.00	0.00	0.00	
9,276.94	90.00	359.66	8,104.00	2,912.85	2,393.81	10.00	10.00	-0.04	359.66	INTERCHANGE B N35-20-8C
18,978.46	90.00	359.66	8,104.00	12,614.19	2,335.45	0.00	0.00	0.00	0.00	INTERCHANGE B N35-20-8C

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well INTERCHANGE B N35-20-8C
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 B N35-20-8C	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
BUILD 2°/100'									
400.00	2.00	45.69	399.98	1.22	1.25	1.43	2.00	2.00	0.00
500.00	4.00	45.69	499.84	4.87	4.99	5.70	2.00	2.00	0.00
600.00	6.00	45.69	599.45	10.96	11.23	12.82	2.00	2.00	0.00
700.00	8.00	45.69	698.70	19.47	19.95	22.78	2.00	2.00	0.00
800.00	10.00	45.69	797.47	30.40	31.15	35.56	2.00	2.00	0.00
900.00	12.00	45.69	895.62	43.73	44.80	51.15	2.00	2.00	0.00
1,000.00	14.00	45.69	993.06	59.44	60.90	69.53	2.00	2.00	0.00
1,100.00	16.00	45.69	1,089.64	77.52	79.42	90.68	2.00	2.00	0.00
1,200.00	18.00	45.69	1,185.27	97.94	100.34	114.57	2.00	2.00	0.00
1,300.00	20.00	45.69	1,279.82	120.68	123.64	141.17	2.00	2.00	0.00
1,400.00	22.00	45.69	1,373.17	145.71	149.28	170.45	2.00	2.00	0.00
1,500.00	24.00	45.69	1,465.21	173.00	177.24	202.37	2.00	2.00	0.00
1,600.00	26.00	45.69	1,555.84	202.52	207.48	236.90	2.00	2.00	0.00
1,700.00	28.00	45.69	1,644.94	234.22	239.97	274.00	2.00	2.00	0.00
1,800.00	30.00	45.69	1,732.39	268.09	274.66	313.61	2.00	2.00	0.00
1,839.01	30.78	45.69	1,766.05	281.87	288.79	329.73	2.00	2.00	0.00
HOLD 30.78° INC									
1,900.00	30.78	45.69	1,818.44	303.67	311.12	355.24	0.00	0.00	0.00
2,000.00	30.78	45.69	1,904.36	339.42	347.74	397.05	0.00	0.00	0.00
2,100.00	30.78	45.69	1,990.27	375.16	384.36	438.87	0.00	0.00	0.00
2,200.00	30.78	45.69	2,076.18	410.91	420.99	480.68	0.00	0.00	0.00
2,300.00	30.78	45.69	2,162.10	446.65	457.61	522.50	0.00	0.00	0.00
2,400.00	30.78	45.69	2,248.01	482.40	494.23	564.31	0.00	0.00	0.00
2,500.00	30.78	45.69	2,333.92	518.14	530.85	606.12	0.00	0.00	0.00
2,600.00	30.78	45.69	2,419.84	553.89	567.47	647.94	0.00	0.00	0.00
2,700.00	30.78	45.69	2,505.75	589.63	604.10	689.75	0.00	0.00	0.00
2,800.00	30.78	45.69	2,591.67	625.38	640.72	731.57	0.00	0.00	0.00
2,900.00	30.78	45.69	2,677.58	661.12	677.34	773.38	0.00	0.00	0.00
3,000.00	30.78	45.69	2,763.49	696.87	713.96	815.20	0.00	0.00	0.00
3,100.00	30.78	45.69	2,849.41	732.61	750.58	857.01	0.00	0.00	0.00
3,200.00	30.78	45.69	2,935.32	768.36	787.20	898.83	0.00	0.00	0.00
3,300.00	30.78	45.69	3,021.23	804.10	823.83	940.64	0.00	0.00	0.00
3,400.00	30.78	45.69	3,107.15	839.85	860.45	982.46	0.00	0.00	0.00
3,500.00	30.78	45.69	3,193.06	875.59	897.07	1,024.27	0.00	0.00	0.00
3,600.00	30.78	45.69	3,278.97	911.33	933.69	1,066.09	0.00	0.00	0.00
3,700.00	30.78	45.69	3,364.89	947.08	970.31	1,107.90	0.00	0.00	0.00
3,800.00	30.78	45.69	3,450.80	982.82	1,006.93	1,149.71	0.00	0.00	0.00
3,900.00	30.78	45.69	3,536.71	1,018.57	1,043.56	1,191.53	0.00	0.00	0.00
4,000.00	30.78	45.69	3,622.63	1,054.31	1,080.18	1,233.34	0.00	0.00	0.00
4,100.00	30.78	45.69	3,708.54	1,090.06	1,116.80	1,275.16	0.00	0.00	0.00
4,200.00	30.78	45.69	3,794.46	1,125.80	1,153.42	1,316.97	0.00	0.00	0.00
4,300.00	30.78	45.69	3,880.37	1,161.55	1,190.04	1,358.79	0.00	0.00	0.00
4,400.00	30.78	45.69	3,966.28	1,197.29	1,226.67	1,400.60	0.00	0.00	0.00
4,500.00	30.78	45.69	4,052.20	1,233.04	1,263.29	1,442.42	0.00	0.00	0.00
4,600.00	30.78	45.69	4,138.11	1,268.78	1,299.91	1,484.23	0.00	0.00	0.00
4,700.00	30.78	45.69	4,224.02	1,304.53	1,336.53	1,526.05	0.00	0.00	0.00
4,800.00	30.78	45.69	4,309.94	1,340.27	1,373.15	1,567.86	0.00	0.00	0.00
4,900.00	30.78	45.69	4,395.85	1,376.02	1,409.77	1,609.68	0.00	0.00	0.00

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Well:	INTERCHANGE B N35-20-8C	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	30.78	45.69	4,481.76	1,411.76	1,446.40	1,651.49	0.00	0.00	0.00
5,100.00	30.78	45.69	4,567.68	1,447.51	1,483.02	1,693.30	0.00	0.00	0.00
5,200.00	30.78	45.69	4,653.59	1,483.25	1,519.64	1,735.12	0.00	0.00	0.00
5,300.00	30.78	45.69	4,739.50	1,519.00	1,556.26	1,776.93	0.00	0.00	0.00
5,400.00	30.78	45.69	4,825.42	1,554.74	1,592.88	1,818.75	0.00	0.00	0.00
5,500.00	30.78	45.69	4,911.33	1,590.49	1,629.51	1,860.56	0.00	0.00	0.00
5,504.27	30.78	45.69	4,915.00	1,592.01	1,631.07	1,862.35	0.00	0.00	0.00
PARKMAN									
5,600.00	30.78	45.69	4,997.25	1,626.23	1,666.13	1,902.38	0.00	0.00	0.00
5,638.12	30.78	45.69	5,030.00	1,639.86	1,680.09	1,918.32	0.00	0.00	0.00
SUSSEX									
5,700.00	30.78	45.69	5,083.16	1,661.98	1,702.75	1,944.19	0.00	0.00	0.00
5,800.00	30.78	45.69	5,169.07	1,697.72	1,739.37	1,986.01	0.00	0.00	0.00
5,900.00	30.78	45.69	5,254.99	1,733.47	1,775.99	2,027.82	0.00	0.00	0.00
6,000.00	30.78	45.69	5,340.90	1,769.21	1,812.61	2,069.64	0.00	0.00	0.00
6,100.00	30.78	45.69	5,426.81	1,804.96	1,849.24	2,111.45	0.00	0.00	0.00
6,200.00	30.78	45.69	5,512.73	1,840.70	1,885.86	2,153.27	0.00	0.00	0.00
6,300.00	30.78	45.69	5,598.64	1,876.45	1,922.48	2,195.08	0.00	0.00	0.00
6,400.00	30.78	45.69	5,684.55	1,912.19	1,959.10	2,236.89	0.00	0.00	0.00
6,500.00	30.78	45.69	5,770.47	1,947.94	1,995.72	2,278.71	0.00	0.00	0.00
6,600.00	30.78	45.69	5,856.38	1,983.68	2,032.35	2,320.52	0.00	0.00	0.00
6,700.00	30.78	45.69	5,942.30	2,019.43	2,068.97	2,362.34	0.00	0.00	0.00
6,807.85	30.78	45.69	6,034.95	2,057.98	2,108.46	2,407.44	0.00	0.00	0.00
DROP 2°/100'									
6,900.00	28.94	45.69	6,114.87	2,090.02	2,141.29	2,444.92	2.00	-2.00	0.00
7,000.00	26.94	45.69	6,203.21	2,122.75	2,174.82	2,483.20	2.00	-2.00	0.00
7,100.00	24.94	45.69	6,293.13	2,153.29	2,206.12	2,518.94	2.00	-2.00	0.00
7,200.00	22.94	45.69	6,384.53	2,181.63	2,235.15	2,552.09	2.00	-2.00	0.00
7,300.00	20.94	45.69	6,477.28	2,207.73	2,261.89	2,582.61	2.00	-2.00	0.00
7,400.00	18.94	45.69	6,571.28	2,231.54	2,286.29	2,610.47	2.00	-2.00	0.00
7,500.00	16.94	45.69	6,666.42	2,253.05	2,308.32	2,635.64	2.00	-2.00	0.00
7,600.00	14.94	45.69	6,762.57	2,272.23	2,327.97	2,658.07	2.00	-2.00	0.00
7,700.00	12.94	45.69	6,859.62	2,289.06	2,345.21	2,677.75	2.00	-2.00	0.00
7,800.00	10.94	45.69	6,957.45	2,303.50	2,360.01	2,694.65	2.00	-2.00	0.00
7,900.00	8.94	45.69	7,055.95	2,315.56	2,372.36	2,708.75	2.00	-2.00	0.00
8,000.00	6.94	45.69	7,154.98	2,325.20	2,382.24	2,720.03	2.00	-2.00	0.00
8,100.00	4.94	45.69	7,254.44	2,332.43	2,389.64	2,728.49	2.00	-2.00	0.00
8,200.00	2.94	45.69	7,354.20	2,337.22	2,394.56	2,734.10	2.00	-2.00	0.00
8,300.00	0.94	45.69	7,454.14	2,339.58	2,396.98	2,736.86	2.00	-2.00	0.00
8,346.86	0.00	0.00	7,501.00	2,339.85	2,397.25	2,737.17	2.00	-2.00	0.00
HOLD VERTICAL									
8,376.86	0.00	0.00	7,531.00	2,339.85	2,397.25	2,737.17	0.00	0.00	0.00
KOP, BUILD 10°/100'									
8,400.00	2.31	359.66	7,554.13	2,340.32	2,397.25	2,737.63	10.00	10.00	0.00
8,450.00	7.31	359.66	7,603.94	2,344.51	2,397.22	2,741.75	10.00	10.00	0.00
8,470.28	9.34	359.66	7,624.00	2,347.45	2,397.20	2,744.63	10.00	10.00	0.00
SHANNON									
8,500.00	12.31	359.66	7,653.19	2,353.03	2,397.17	2,750.12	10.00	10.00	0.00
8,511.09	13.42	359.66	7,664.00	2,355.50	2,397.16	2,752.54	10.00	10.00	0.00
NIORARA									
8,550.00	17.31	359.66	7,701.51	2,365.81	2,397.09	2,762.67	10.00	10.00	0.00
8,600.00	22.31	359.66	7,748.54	2,382.75	2,396.99	2,779.31	10.00	10.00	0.00
8,650.00	27.31	359.66	7,793.91	2,403.72	2,396.87	2,799.91	10.00	10.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well INTERCHANGE B N35-20-8C
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 B N35-20-8C	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)	
8,691.43	31.45	359.66	7,830.00	2,424.05	2,396.74	2,819.87	10.00	10.00	0.00	
NIO B TARGET										
8,700.00	32.31	359.66	7,837.28	2,428.57	2,396.72	2,824.31	10.00	10.00	0.00	
8,750.00	37.31	359.66	7,878.32	2,457.11	2,396.55	2,852.34	10.00	10.00	0.00	
8,800.00	42.31	359.66	7,916.71	2,489.11	2,396.35	2,883.77	10.00	10.00	0.00	
8,850.00	47.31	359.66	7,952.18	2,524.34	2,396.14	2,918.37	10.00	10.00	0.00	
8,900.00	52.31	359.66	7,984.43	2,562.52	2,395.91	2,955.87	10.00	10.00	0.00	
8,950.00	57.31	359.66	8,013.24	2,603.37	2,395.67	2,996.00	10.00	10.00	0.00	
9,000.00	62.31	359.66	8,038.37	2,646.57	2,395.41	3,038.43	10.00	10.00	0.00	
9,050.00	67.31	359.66	8,059.65	2,691.80	2,395.14	3,082.85	10.00	10.00	0.00	
9,100.00	72.31	359.66	8,076.90	2,738.71	2,394.85	3,128.93	10.00	10.00	0.00	
9,121.32	74.44	359.66	8,083.00	2,759.14	2,394.73	3,148.99	10.00	10.00	0.00	
FORT HAYS										
9,150.00	77.31	359.66	8,090.00	2,786.95	2,394.56	3,176.31	10.00	10.00	0.00	
9,200.00	82.31	359.66	8,098.84	2,836.14	2,394.27	3,224.63	10.00	10.00	0.00	
9,250.00	87.31	359.66	8,103.37	2,885.92	2,393.97	3,273.52	10.00	10.00	0.00	
9,276.92	90.00	359.66	8,104.00	2,912.83	2,393.81	3,299.95	10.00	10.00	0.00	
CODELL										
9,276.94	90.00	359.66	8,104.00	2,912.85	2,393.81	3,299.97	10.00	10.00	0.00	
LP @ 90° INC, 359.66° AZM HOLD										
9,300.00	90.00	359.66	8,104.00	2,935.91	2,393.67	3,322.62	0.00	0.00	0.00	
9,400.00	90.00	359.66	8,104.00	3,035.91	2,393.07	3,420.84	0.00	0.00	0.00	
9,500.00	90.00	359.66	8,104.00	3,135.91	2,392.47	3,519.05	0.00	0.00	0.00	
9,600.00	90.00	359.66	8,103.99	3,235.90	2,391.87	3,617.27	0.00	0.00	0.00	
9,700.00	90.00	359.66	8,103.99	3,335.90	2,391.27	3,715.49	0.00	0.00	0.00	
9,800.00	90.00	359.66	8,103.99	3,435.90	2,390.67	3,813.71	0.00	0.00	0.00	
9,900.00	90.00	359.66	8,103.99	3,535.90	2,390.07	3,911.92	0.00	0.00	0.00	
10,000.00	90.00	359.66	8,103.98	3,635.90	2,389.47	4,010.14	0.00	0.00	0.00	
10,100.00	90.00	359.66	8,103.98	3,735.90	2,388.87	4,108.36	0.00	0.00	0.00	
10,200.00	90.00	359.66	8,103.98	3,835.89	2,388.26	4,206.58	0.00	0.00	0.00	
10,300.00	90.00	359.66	8,103.98	3,935.89	2,387.66	4,304.80	0.00	0.00	0.00	
10,400.00	90.00	359.66	8,103.97	4,035.89	2,387.06	4,403.01	0.00	0.00	0.00	
10,500.00	90.00	359.66	8,103.97	4,135.89	2,386.46	4,501.23	0.00	0.00	0.00	
10,600.00	90.00	359.66	8,103.97	4,235.89	2,385.86	4,599.45	0.00	0.00	0.00	
10,700.00	90.00	359.66	8,103.97	4,335.88	2,385.26	4,697.67	0.00	0.00	0.00	
10,800.00	90.00	359.66	8,103.96	4,435.88	2,384.66	4,795.88	0.00	0.00	0.00	
10,900.00	90.00	359.66	8,103.96	4,535.88	2,384.06	4,894.10	0.00	0.00	0.00	
11,000.00	90.00	359.66	8,103.96	4,635.88	2,383.46	4,992.32	0.00	0.00	0.00	
11,100.00	90.00	359.66	8,103.96	4,735.88	2,382.86	5,090.54	0.00	0.00	0.00	
11,200.00	90.00	359.66	8,103.96	4,835.88	2,382.26	5,188.76	0.00	0.00	0.00	
11,300.00	90.00	359.66	8,103.95	4,935.87	2,381.66	5,286.97	0.00	0.00	0.00	
11,400.00	90.00	359.66	8,103.95	5,035.87	2,381.06	5,385.19	0.00	0.00	0.00	
11,500.00	90.00	359.66	8,103.95	5,135.87	2,380.46	5,483.41	0.00	0.00	0.00	
11,600.00	90.00	359.66	8,103.95	5,235.87	2,379.86	5,581.63	0.00	0.00	0.00	
11,700.00	90.00	359.66	8,103.94	5,335.87	2,379.26	5,679.84	0.00	0.00	0.00	
11,800.00	90.00	359.66	8,103.94	5,435.86	2,378.66	5,778.06	0.00	0.00	0.00	
11,900.00	90.00	359.66	8,103.94	5,535.86	2,378.05	5,876.28	0.00	0.00	0.00	
12,000.00	90.00	359.66	8,103.94	5,635.86	2,377.45	5,974.50	0.00	0.00	0.00	
12,100.00	90.00	359.66	8,103.93	5,735.86	2,376.85	6,072.72	0.00	0.00	0.00	
12,200.00	90.00	359.66	8,103.93	5,835.86	2,376.25	6,170.93	0.00	0.00	0.00	
12,300.00	90.00	359.66	8,103.93	5,935.86	2,375.65	6,269.15	0.00	0.00	0.00	
12,400.00	90.00	359.66	8,103.93	6,035.85	2,375.05	6,367.37	0.00	0.00	0.00	
12,500.00	90.00	359.66	8,103.93	6,135.85	2,374.45	6,465.59	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well INTERCHANGE B N35-20-8C
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 B N35-20-8C	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)
12,600.00	90.00	359.66	8,103.92	6,235.85	2,373.85	6,563.81	0.00	0.00	0.00
12,700.00	90.00	359.66	8,103.92	6,335.85	2,373.25	6,662.02	0.00	0.00	0.00
12,800.00	90.00	359.66	8,103.92	6,435.85	2,372.65	6,760.24	0.00	0.00	0.00
12,900.00	90.00	359.66	8,103.92	6,535.84	2,372.05	6,858.46	0.00	0.00	0.00
13,000.00	90.00	359.66	8,103.91	6,635.84	2,371.45	6,956.68	0.00	0.00	0.00
13,100.00	90.00	359.66	8,103.91	6,735.84	2,370.85	7,054.89	0.00	0.00	0.00
13,200.00	90.00	359.66	8,103.91	6,835.84	2,370.25	7,153.11	0.00	0.00	0.00
13,300.00	90.00	359.66	8,103.91	6,935.84	2,369.65	7,251.33	0.00	0.00	0.00
13,400.00	90.00	359.66	8,103.90	7,035.84	2,369.05	7,349.55	0.00	0.00	0.00
13,500.00	90.00	359.66	8,103.90	7,135.83	2,368.45	7,447.77	0.00	0.00	0.00
13,600.00	90.00	359.66	8,103.90	7,235.83	2,367.84	7,545.98	0.00	0.00	0.00
13,700.00	90.00	359.66	8,103.90	7,335.83	2,367.24	7,644.20	0.00	0.00	0.00
13,800.00	90.00	359.66	8,103.90	7,435.83	2,366.64	7,742.42	0.00	0.00	0.00
13,900.00	90.00	359.66	8,103.89	7,535.83	2,366.04	7,840.64	0.00	0.00	0.00
14,000.00	90.00	359.66	8,103.89	7,635.82	2,365.44	7,938.85	0.00	0.00	0.00
14,100.00	90.00	359.66	8,103.89	7,735.82	2,364.84	8,037.07	0.00	0.00	0.00
14,200.00	90.00	359.66	8,103.89	7,835.82	2,364.24	8,135.29	0.00	0.00	0.00
14,300.00	90.00	359.66	8,103.88	7,935.82	2,363.64	8,233.51	0.00	0.00	0.00
14,400.00	90.00	359.66	8,103.88	8,035.82	2,363.04	8,331.73	0.00	0.00	0.00
14,500.00	90.00	359.66	8,103.88	8,135.82	2,362.44	8,429.94	0.00	0.00	0.00
14,600.00	90.00	359.66	8,103.88	8,235.81	2,361.84	8,528.16	0.00	0.00	0.00
14,700.00	90.00	359.66	8,103.87	8,335.81	2,361.24	8,626.38	0.00	0.00	0.00
14,800.00	90.00	359.66	8,103.87	8,435.81	2,360.64	8,724.60	0.00	0.00	0.00
14,900.00	90.00	359.66	8,103.87	8,535.81	2,360.04	8,822.81	0.00	0.00	0.00
15,000.00	90.00	359.66	8,103.87	8,635.81	2,359.44	8,921.03	0.00	0.00	0.00
15,100.00	90.00	359.66	8,103.86	8,735.80	2,358.84	9,019.25	0.00	0.00	0.00
15,200.00	90.00	359.66	8,103.86	8,835.80	2,358.24	9,117.47	0.00	0.00	0.00
15,300.00	90.00	359.66	8,103.86	8,935.80	2,357.63	9,215.69	0.00	0.00	0.00
15,400.00	90.00	359.66	8,103.86	9,035.80	2,357.03	9,313.90	0.00	0.00	0.00
15,500.00	90.00	359.66	8,103.86	9,135.80	2,356.43	9,412.12	0.00	0.00	0.00
15,600.00	90.00	359.66	8,103.85	9,235.80	2,355.83	9,510.34	0.00	0.00	0.00
15,700.00	90.00	359.66	8,103.85	9,335.79	2,355.23	9,608.56	0.00	0.00	0.00
15,800.00	90.00	359.66	8,103.85	9,435.79	2,354.63	9,706.77	0.00	0.00	0.00
15,900.00	90.00	359.66	8,103.85	9,535.79	2,354.03	9,804.99	0.00	0.00	0.00
16,000.00	90.00	359.66	8,103.84	9,635.79	2,353.43	9,903.21	0.00	0.00	0.00
16,100.00	90.00	359.66	8,103.84	9,735.79	2,352.83	10,001.43	0.00	0.00	0.00
16,200.00	90.00	359.66	8,103.84	9,835.79	2,352.23	10,099.65	0.00	0.00	0.00
16,300.00	90.00	359.66	8,103.84	9,935.78	2,351.63	10,197.86	0.00	0.00	0.00
16,400.00	90.00	359.66	8,103.83	10,035.78	2,351.03	10,296.08	0.00	0.00	0.00
16,500.00	90.00	359.66	8,103.83	10,135.78	2,350.43	10,394.30	0.00	0.00	0.00
16,600.00	90.00	359.66	8,103.83	10,235.78	2,349.83	10,492.52	0.00	0.00	0.00
16,700.00	90.00	359.66	8,103.83	10,335.78	2,349.23	10,590.73	0.00	0.00	0.00
16,800.00	90.00	359.66	8,103.83	10,435.77	2,348.63	10,688.95	0.00	0.00	0.00
16,900.00	90.00	359.66	8,103.82	10,535.77	2,348.03	10,787.17	0.00	0.00	0.00
17,000.00	90.00	359.66	8,103.82	10,635.77	2,347.42	10,885.39	0.00	0.00	0.00
17,100.00	90.00	359.66	8,103.82	10,735.77	2,346.82	10,983.61	0.00	0.00	0.00
17,200.00	90.00	359.66	8,103.82	10,835.77	2,346.22	11,081.82	0.00	0.00	0.00
17,300.00	90.00	359.66	8,103.81	10,935.77	2,345.62	11,180.04	0.00	0.00	0.00
17,400.00	90.00	359.66	8,103.81	11,035.76	2,345.02	11,278.26	0.00	0.00	0.00
17,500.00	90.00	359.66	8,103.81	11,135.76	2,344.42	11,376.48	0.00	0.00	0.00
17,600.00	90.00	359.66	8,103.81	11,235.76	2,343.82	11,474.70	0.00	0.00	0.00
17,700.00	90.00	359.66	8,103.80	11,335.76	2,343.22	11,572.91	0.00	0.00	0.00
17,800.00	90.00	359.66	8,103.80	11,435.76	2,342.62	11,671.13	0.00	0.00	0.00
17,900.00	90.00	359.66	8,103.80	11,535.75	2,342.02	11,769.35	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well INTERCHANGE B N35-20-8C
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 B N35-20-8C	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)	
18,000.00	90.00	359.66	8,103.80	11,635.75	2,341.42	11,867.57	0.00	0.00	0.00	
18,100.00	90.00	359.66	8,103.80	11,735.75	2,340.82	11,965.78	0.00	0.00	0.00	
18,200.00	90.00	359.66	8,103.79	11,835.75	2,340.22	12,064.00	0.00	0.00	0.00	
18,300.00	90.00	359.66	8,103.79	11,935.75	2,339.62	12,162.22	0.00	0.00	0.00	
18,400.00	90.00	359.66	8,103.79	12,035.75	2,339.02	12,260.44	0.00	0.00	0.00	
18,500.00	90.00	359.66	8,103.79	12,135.74	2,338.42	12,358.66	0.00	0.00	0.00	
18,600.00	90.00	359.66	8,103.78	12,235.74	2,337.81	12,456.87	0.00	0.00	0.00	
18,700.00	90.00	359.66	8,103.78	12,335.74	2,337.21	12,555.09	0.00	0.00	0.00	
18,800.00	90.00	359.66	8,103.78	12,435.74	2,336.61	12,653.31	0.00	0.00	0.00	
18,900.00	90.00	359.66	8,103.78	12,535.74	2,336.01	12,751.53	0.00	0.00	0.00	
18,978.46	90.00	359.66	8,104.00	12,614.19	2,335.45	12,828.57	0.00	0.00	0.00	
TD at 18978.46' MD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
INTERCHANGE B N35 1	0.00	0.00	8,104.00	12,614.19	2,335.45	1,248,233.13	3,144,843.26	40° 0' 49.057 N	104° 58' 58.368 W	
- plan hits target center										
- Point										
INTERCHANGE B N35 1	0.00	0.00	8,104.00	2,912.85	2,393.81	1,238,532.29	3,144,957.27	39° 59' 13.182 N	104° 58' 57.630 W	
- plan hits target center										
- Point										

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
5,504.27	4,915.00	PARKMAN				
5,638.12	5,030.00	SUSSEX				
8,470.28	7,624.00	SHANNON				
8,511.09	7,664.00	NIOBRARA				
8,691.43	7,830.00	NIO B TARGET				
9,121.32	8,083.00	FORT HAYS				
9,276.92	8,104.00	CODELL				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
300.00	300.00	0.00	0.00	BUILD 2°/100'	
1,839.01	1,766.05	281.87	288.79	HOLD 30.78° INC	
6,807.85	6,034.95	2,057.98	2,108.46	DROP 2°/100'	
8,346.86	7,501.00	2,339.85	2,397.25	HOLD VERTICAL	
8,376.86	7,531.00	2,339.85	2,397.25	KOP, BUILD 10°/100'	
9,276.94	8,104.00	2,912.85	2,393.81	LP @ 90° INC, 359.66° AZM HOLD	
18,978.46	8,104.00	12,614.19	2,335.45	TD at 18978.46' MD	