

EXTRACTION OIL & GAS

Broomfield County

Sec 9-T1S-R68W

UNITED A S16-20-9N

ORIGINAL WELLBORE

Plan: PROPOSAL 1

Standard Planning Report

18 January, 2018



Project: Broomfield County
Site: Sec 9-T1S-R68W
Well: UNITED A S16-20-9N
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: 52084.8nT
Dip Angle: 66.47°
Date: 1/4/2018
Model: IGRF2015

WELL DETAILS: UNITED A S16-20-9N

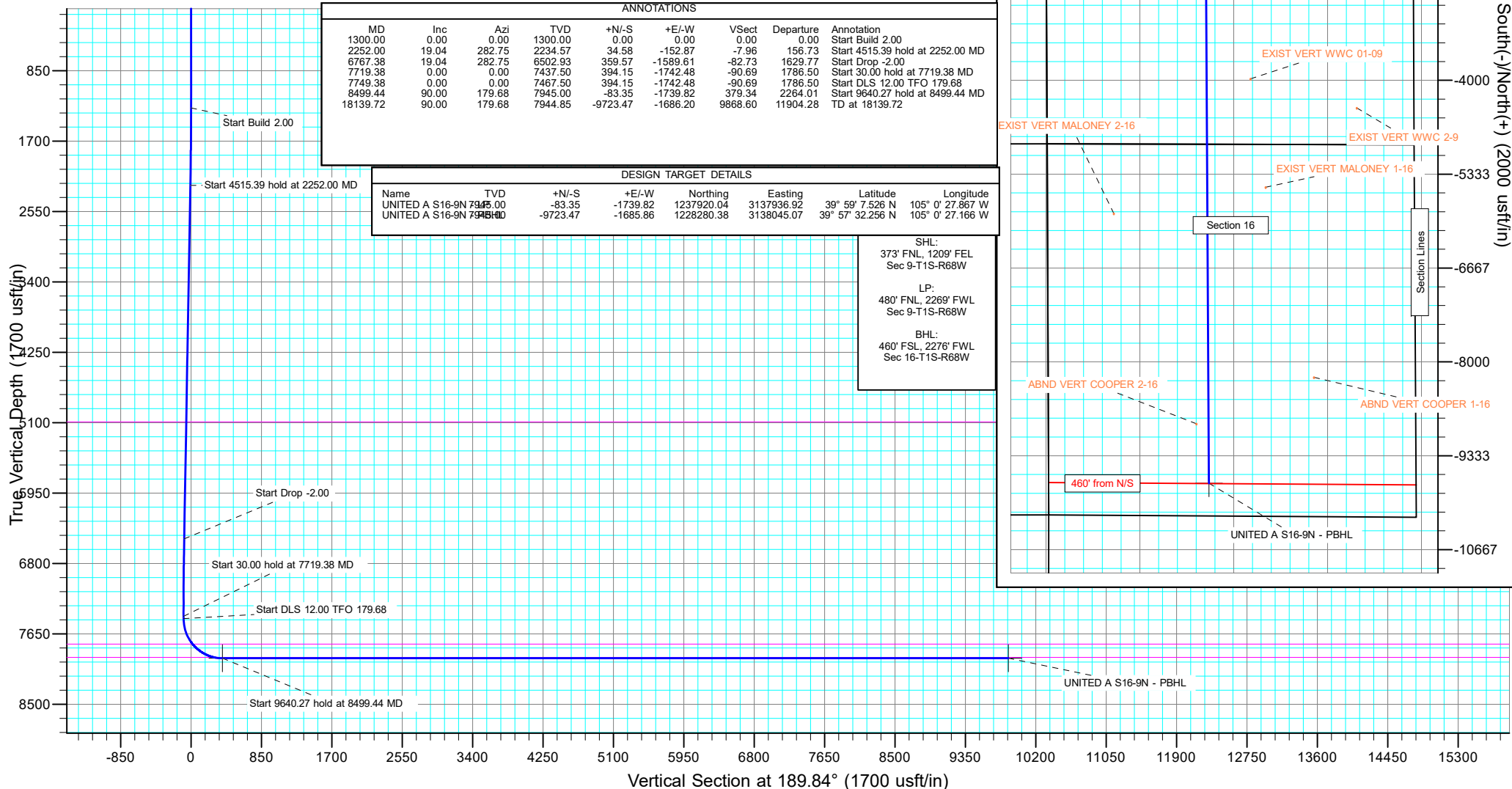
+N/-S	+E/-W	Northing	Easting	5257.00	Latitude	Longitude	Slot
0.00	0.00	1238013.17	3139676.24		39° 59' 8.351 N	105° 0' 5.515 W	

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	1300.00	0.00	0.00	1300.00	0.00	0.00	0.00	0.00	0.00	
3	2252.00	19.04	282.75	2234.57	34.58	-152.87	2.00	282.75	-7.96	
4	6767.38	19.04	282.75	6502.93	359.57	-1589.61	0.00	0.00	-82.73	
5	7719.38	0.00	0.00	7437.50	394.15	-1742.48	2.00	180.00	-90.69	
6	7749.38	0.00	0.00	7467.50	394.15	-1742.48	0.00	0.00	-90.69	
7	8499.44	90.00	179.68	7945.00	-83.35	-1739.82	12.00	179.68	379.34	UNITED A S16-9N - LP
8	18139.72	90.00	179.68	7945.00	-9723.47	-1685.86	0.00	0.00	9868.54	UNITED A S16-9N - PBHL

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5090.00	5272.68	SUSSEX
7775.00	8083.48	NIOBRARA
7935.00	8401.54	NIO B TARGET



Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well UNITED A S16-20-9N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5282.00usft
Project:	Broomfield County	MD Reference:	KB 25' @ 5282.00usft
Site:	Sec 9-T1S-R68W	North Reference:	True
Well:	UNITED A S16-20-9N	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 9-T1S-R68W			
Site Position:		Northing:	1,238,372.37 usft	Latitude:	39° 59' 12.120 N
From:	Lat/Long	Easting:	3,135,664.83 usft	Longitude:	105° 0' 57.025 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.31 °

Well	UNITED A S16-20-9N					
Well Position	+N/-S	-381.10 usft	Northing:	1,238,013.17 usft	Latitude:	39° 59' 8.351 N
	+E/-W	4,009.39 usft	Easting:	3,139,676.24 usft	Longitude:	105° 0' 5.515 W
Position Uncertainty	0.00 usft		Wellhead Elevation:		Ground Level:	5,257.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	1/4/2018	8.24	66.47	52,084.75101497

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	189.84

Plan Survey Tool Program	Date	1/18/2018		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,138.92	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	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,252.00	19.04	282.75	2,234.57	34.58	-152.87	2.00	2.00	0.00	282.75	
6,767.38	19.04	282.75	6,502.93	359.57	-1,589.61	0.00	0.00	0.00	0.00	
7,719.38	0.00	0.00	7,437.50	394.15	-1,742.48	2.00	-2.00	0.00	180.00	
7,749.38	0.00	0.00	7,467.50	394.15	-1,742.48	0.00	0.00	0.00	0.00	
8,499.44	90.00	179.68	7,945.00	-83.35	-1,739.82	12.00	12.00	23.96	179.68	UNITED A S16-9N - L
18,139.72	90.00	179.68	7,945.00	-9,723.47	-1,685.86	0.00	0.00	0.00	0.00	UNITED A S16-9N - F

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Project:	Broomfield County	MD Reference:	KB 25' @ 5282.00usft
Site:	Sec 9-T1S-R68W	North Reference:	True
Well:	UNITED A S16-20-9N	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
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,400.00	2.00	282.75	1,399.98	0.39	-1.70	-0.09	2.00	2.00	0.00
1,500.00	4.00	282.75	1,499.84	1.54	-6.81	-0.35	2.00	2.00	0.00
1,600.00	6.00	282.75	1,599.45	3.46	-15.31	-0.80	2.00	2.00	0.00
1,700.00	8.00	282.75	1,698.70	6.15	-27.19	-1.42	2.00	2.00	0.00
1,800.00	10.00	282.75	1,797.47	9.60	-42.45	-2.21	2.00	2.00	0.00
1,900.00	12.00	282.75	1,895.62	13.81	-61.06	-3.18	2.00	2.00	0.00
2,000.00	14.00	282.75	1,993.06	18.77	-83.00	-4.32	2.00	2.00	0.00
2,100.00	16.00	282.75	2,089.64	24.48	-108.24	-5.63	2.00	2.00	0.00
2,200.00	18.00	282.75	2,185.27	30.93	-136.76	-7.12	2.00	2.00	0.00
2,252.00	19.04	282.75	2,234.57	34.58	-152.87	-7.96	2.00	2.00	0.00
Start 4515.39 hold at 2252.00 MD									
2,300.00	19.04	282.75	2,279.95	38.03	-168.14	-8.75	0.00	0.00	0.00
2,400.00	19.04	282.75	2,374.48	45.23	-199.96	-10.41	0.00	0.00	0.00
2,500.00	19.04	282.75	2,469.01	52.43	-231.78	-12.06	0.00	0.00	0.00
2,600.00	19.04	282.75	2,563.54	59.63	-263.60	-13.72	0.00	0.00	0.00
2,700.00	19.04	282.75	2,658.07	66.82	-295.42	-15.37	0.00	0.00	0.00
2,800.00	19.04	282.75	2,752.59	74.02	-327.24	-17.03	0.00	0.00	0.00
2,900.00	19.04	282.75	2,847.12	81.22	-359.05	-18.69	0.00	0.00	0.00
3,000.00	19.04	282.75	2,941.65	88.42	-390.87	-20.34	0.00	0.00	0.00
3,100.00	19.04	282.75	3,036.18	95.61	-422.69	-22.00	0.00	0.00	0.00
3,200.00	19.04	282.75	3,130.71	102.81	-454.51	-23.65	0.00	0.00	0.00
3,300.00	19.04	282.75	3,225.24	110.01	-486.33	-25.31	0.00	0.00	0.00
3,400.00	19.04	282.75	3,319.77	117.21	-518.15	-26.97	0.00	0.00	0.00
3,500.00	19.04	282.75	3,414.30	124.40	-549.97	-28.62	0.00	0.00	0.00
3,600.00	19.04	282.75	3,508.83	131.60	-581.79	-30.28	0.00	0.00	0.00
3,700.00	19.04	282.75	3,603.36	138.80	-613.61	-31.93	0.00	0.00	0.00
3,800.00	19.04	282.75	3,697.89	146.00	-645.42	-33.59	0.00	0.00	0.00
3,900.00	19.04	282.75	3,792.41	153.19	-677.24	-35.25	0.00	0.00	0.00
4,000.00	19.04	282.75	3,886.94	160.39	-709.06	-36.90	0.00	0.00	0.00
4,100.00	19.04	282.75	3,981.47	167.59	-740.88	-38.56	0.00	0.00	0.00
4,200.00	19.04	282.75	4,076.00	174.79	-772.70	-40.21	0.00	0.00	0.00
4,300.00	19.04	282.75	4,170.53	181.98	-804.52	-41.87	0.00	0.00	0.00
4,400.00	19.04	282.75	4,265.06	189.18	-836.34	-43.53	0.00	0.00	0.00
4,500.00	19.04	282.75	4,359.59	196.38	-868.16	-45.18	0.00	0.00	0.00
4,600.00	19.04	282.75	4,454.12	203.57	-899.98	-46.84	0.00	0.00	0.00
4,700.00	19.04	282.75	4,548.65	210.77	-931.79	-48.49	0.00	0.00	0.00
4,800.00	19.04	282.75	4,643.18	217.97	-963.61	-50.15	0.00	0.00	0.00
4,900.00	19.04	282.75	4,737.71	225.17	-995.43	-51.81	0.00	0.00	0.00

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Project:	Broomfield County	MD Reference:	KB 25' @ 5282.00usft
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Well:	UNITED A S16-20-9N	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	19.04	282.75	4,832.24	232.36	-1,027.25	-53.46	0.00	0.00	0.00	
5,100.00	19.04	282.75	4,926.76	239.56	-1,059.07	-55.12	0.00	0.00	0.00	
5,200.00	19.04	282.75	5,021.29	246.76	-1,090.89	-56.77	0.00	0.00	0.00	
5,272.68	19.04	282.75	5,090.00	251.99	-1,114.02	-57.98	0.00	0.00	0.00	
SUSSEX										
5,300.00	19.04	282.75	5,115.82	253.96	-1,122.71	-58.43	0.00	0.00	0.00	
5,400.00	19.04	282.75	5,210.35	261.15	-1,154.53	-60.09	0.00	0.00	0.00	
5,500.00	19.04	282.75	5,304.88	268.35	-1,186.35	-61.74	0.00	0.00	0.00	
5,600.00	19.04	282.75	5,399.41	275.55	-1,218.16	-63.40	0.00	0.00	0.00	
5,700.00	19.04	282.75	5,493.94	282.75	-1,249.98	-65.05	0.00	0.00	0.00	
5,800.00	19.04	282.75	5,588.47	289.94	-1,281.80	-66.71	0.00	0.00	0.00	
5,900.00	19.04	282.75	5,683.00	297.14	-1,313.62	-68.37	0.00	0.00	0.00	
6,000.00	19.04	282.75	5,777.53	304.34	-1,345.44	-70.02	0.00	0.00	0.00	
6,100.00	19.04	282.75	5,872.06	311.54	-1,377.26	-71.68	0.00	0.00	0.00	
6,200.00	19.04	282.75	5,966.58	318.73	-1,409.08	-73.33	0.00	0.00	0.00	
6,300.00	19.04	282.75	6,061.11	325.93	-1,440.90	-74.99	0.00	0.00	0.00	
6,400.00	19.04	282.75	6,155.64	333.13	-1,472.72	-76.65	0.00	0.00	0.00	
6,500.00	19.04	282.75	6,250.17	340.33	-1,504.53	-78.30	0.00	0.00	0.00	
6,600.00	19.04	282.75	6,344.70	347.52	-1,536.35	-79.96	0.00	0.00	0.00	
6,700.00	19.04	282.75	6,439.23	354.72	-1,568.17	-81.61	0.00	0.00	0.00	
6,767.38	19.04	282.75	6,502.93	359.57	-1,589.61	-82.73	0.00	0.00	0.00	
Start Drop -2.00										
6,800.00	18.39	282.75	6,533.82	361.88	-1,599.82	-83.26	2.00	-2.00	0.00	
6,900.00	16.39	282.75	6,629.24	368.47	-1,628.97	-84.78	2.00	-2.00	0.00	
7,000.00	14.39	282.75	6,725.66	374.33	-1,654.85	-86.12	2.00	-2.00	0.00	
7,100.00	12.39	282.75	6,822.93	379.44	-1,677.43	-87.30	2.00	-2.00	0.00	
7,200.00	10.39	282.75	6,920.96	383.79	-1,696.68	-88.30	2.00	-2.00	0.00	
7,300.00	8.39	282.75	7,019.62	387.39	-1,712.59	-89.13	2.00	-2.00	0.00	
7,400.00	6.39	282.75	7,118.78	390.23	-1,725.13	-89.78	2.00	-2.00	0.00	
7,500.00	4.39	282.75	7,218.33	392.30	-1,734.29	-90.26	2.00	-2.00	0.00	
7,600.00	2.39	282.75	7,318.15	393.60	-1,740.05	-90.56	2.00	-2.00	0.00	
7,700.00	0.39	282.75	7,418.12	394.14	-1,742.42	-90.68	2.00	-2.00	0.00	
7,719.38	0.00	0.00	7,437.50	394.15	-1,742.48	-90.69	2.00	-2.00	0.00	
Start 30.00 hold at 7719.38 MD										
7,749.38	0.00	0.00	7,467.50	394.15	-1,742.48	-90.69	0.00	0.00	0.00	
Start DLS 12.00 TFO 179.68										
7,775.00	3.07	179.68	7,493.11	393.46	-1,742.48	-90.01	12.00	12.00	0.00	
7,800.00	6.07	179.68	7,518.02	391.47	-1,742.47	-88.05	12.00	12.00	0.00	
7,825.00	9.07	179.68	7,542.80	388.17	-1,742.45	-84.80	12.00	12.00	0.00	
7,850.00	12.07	179.68	7,567.38	383.59	-1,742.42	-80.29	12.00	12.00	0.00	
7,875.00	15.07	179.68	7,591.67	377.72	-1,742.39	-74.51	12.00	12.00	0.00	
7,900.00	18.07	179.68	7,615.63	370.59	-1,742.35	-67.50	12.00	12.00	0.00	
7,925.00	21.07	179.68	7,639.19	362.22	-1,742.30	-59.25	12.00	12.00	0.00	
7,950.00	24.07	179.68	7,662.27	352.62	-1,742.25	-49.81	12.00	12.00	0.00	
7,975.00	27.07	179.68	7,684.82	341.83	-1,742.19	-39.19	12.00	12.00	0.00	
8,000.00	30.07	179.68	7,706.77	329.88	-1,742.12	-27.42	12.00	12.00	0.00	
8,025.00	33.07	179.68	7,728.07	316.79	-1,742.05	-14.54	12.00	12.00	0.00	
8,050.00	36.07	179.68	7,748.65	302.61	-1,741.97	-0.57	12.00	12.00	0.00	
8,075.00	39.07	179.68	7,768.46	287.36	-1,741.89	14.43	12.00	12.00	0.00	
8,083.48	40.09	179.68	7,775.00	281.96	-1,741.86	19.75	12.00	12.00	0.00	
NIOBRARA										
8,100.00	42.07	179.68	7,787.45	271.11	-1,741.80	30.43	12.00	12.00	0.00	
8,125.00	45.07	179.68	7,805.56	253.88	-1,741.70	47.39	12.00	12.00	0.00	
8,150.00	48.07	179.68	7,822.75	235.72	-1,741.60	65.26	12.00	12.00	0.00	

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Site:	Sec 9-T1S-R68W	North Reference:	True
Well:	UNITED A S16-20-9N	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	51.07	179.68	7,838.96	216.70	-1,741.49	83.99	12.00	12.00	0.00
8,200.00	54.07	179.68	7,854.15	196.85	-1,741.38	103.53	12.00	12.00	0.00
8,225.00	57.07	179.68	7,868.28	176.23	-1,741.27	123.83	12.00	12.00	0.00
8,250.00	60.07	179.68	7,881.32	154.90	-1,741.15	144.82	12.00	12.00	0.00
8,275.00	63.07	179.68	7,893.22	132.92	-1,741.03	166.46	12.00	12.00	0.00
8,300.00	66.07	179.68	7,903.95	110.34	-1,740.90	188.68	12.00	12.00	0.00
8,325.00	69.07	179.68	7,913.49	87.24	-1,740.77	211.42	12.00	12.00	0.00
8,350.00	72.07	179.68	7,921.81	63.66	-1,740.64	234.63	12.00	12.00	0.00
8,375.00	75.07	179.68	7,928.88	39.69	-1,740.51	258.23	12.00	12.00	0.00
8,400.00	78.07	179.68	7,934.68	15.38	-1,740.37	282.16	12.00	12.00	0.00
8,401.54	78.25	179.68	7,935.00	13.87	-1,740.36	283.65	12.00	12.00	0.00
NIO B TARGET									
8,425.00	81.07	179.68	7,939.21	-9.21	-1,740.24	306.36	12.00	12.00	0.00
8,450.00	84.07	179.68	7,942.44	-33.99	-1,740.10	330.76	12.00	12.00	0.00
8,475.00	87.07	179.68	7,944.38	-58.92	-1,739.96	355.29	12.00	12.00	0.00
8,499.44	90.00	179.68	7,945.00	-83.35	-1,739.82	379.34	12.00	12.00	0.00
Start 9640.27 hold at 8499.44 MD									
8,600.00	90.00	179.68	7,945.00	-183.90	-1,739.26	478.32	0.00	0.00	0.00
8,700.00	90.00	179.68	7,945.00	-283.90	-1,738.71	576.76	0.00	0.00	0.00
8,800.00	90.00	179.68	7,945.00	-383.90	-1,738.15	675.19	0.00	0.00	0.00
8,900.00	90.00	179.68	7,944.99	-483.90	-1,737.60	773.62	0.00	0.00	0.00
9,000.00	90.00	179.68	7,944.99	-583.90	-1,737.04	872.06	0.00	0.00	0.00
9,100.00	90.00	179.68	7,944.99	-683.90	-1,736.48	970.49	0.00	0.00	0.00
9,200.00	90.00	179.68	7,944.99	-783.90	-1,735.93	1,068.92	0.00	0.00	0.00
9,300.00	90.00	179.68	7,944.99	-883.89	-1,735.37	1,167.36	0.00	0.00	0.00
9,400.00	90.00	179.68	7,944.99	-983.89	-1,734.81	1,265.79	0.00	0.00	0.00
9,500.00	90.00	179.68	7,944.98	-1,083.89	-1,734.26	1,364.22	0.00	0.00	0.00
9,600.00	90.00	179.68	7,944.98	-1,183.89	-1,733.70	1,462.66	0.00	0.00	0.00
9,700.00	90.00	179.68	7,944.98	-1,283.89	-1,733.15	1,561.09	0.00	0.00	0.00
9,800.00	90.00	179.68	7,944.98	-1,383.89	-1,732.59	1,659.52	0.00	0.00	0.00
9,900.00	90.00	179.68	7,944.98	-1,483.88	-1,732.03	1,757.96	0.00	0.00	0.00
10,000.00	90.00	179.68	7,944.98	-1,583.88	-1,731.48	1,856.39	0.00	0.00	0.00
10,100.00	90.00	179.68	7,944.98	-1,683.88	-1,730.92	1,954.82	0.00	0.00	0.00
10,200.00	90.00	179.68	7,944.97	-1,783.88	-1,730.36	2,053.26	0.00	0.00	0.00
10,300.00	90.00	179.68	7,944.97	-1,883.88	-1,729.81	2,151.69	0.00	0.00	0.00
10,400.00	90.00	179.68	7,944.97	-1,983.88	-1,729.25	2,250.12	0.00	0.00	0.00
10,500.00	90.00	179.68	7,944.97	-2,083.88	-1,728.70	2,348.56	0.00	0.00	0.00
10,600.00	90.00	179.68	7,944.97	-2,183.87	-1,728.14	2,446.99	0.00	0.00	0.00
10,700.00	90.00	179.68	7,944.97	-2,283.87	-1,727.58	2,545.43	0.00	0.00	0.00
10,800.00	90.00	179.68	7,944.96	-2,383.87	-1,727.03	2,643.86	0.00	0.00	0.00
10,900.00	90.00	179.68	7,944.96	-2,483.87	-1,726.47	2,742.29	0.00	0.00	0.00
11,000.00	90.00	179.68	7,944.96	-2,583.87	-1,725.91	2,840.73	0.00	0.00	0.00
11,100.00	90.00	179.68	7,944.96	-2,683.87	-1,725.36	2,939.16	0.00	0.00	0.00
11,200.00	90.00	179.68	7,944.96	-2,783.86	-1,724.80	3,037.59	0.00	0.00	0.00
11,300.00	90.00	179.68	7,944.96	-2,883.86	-1,724.24	3,136.03	0.00	0.00	0.00
11,400.00	90.00	179.68	7,944.96	-2,983.86	-1,723.69	3,234.46	0.00	0.00	0.00
11,500.00	90.00	179.68	7,944.95	-3,083.86	-1,723.13	3,332.89	0.00	0.00	0.00
11,600.00	90.00	179.68	7,944.95	-3,183.86	-1,722.58	3,431.33	0.00	0.00	0.00
11,700.00	90.00	179.68	7,944.95	-3,283.86	-1,722.02	3,529.76	0.00	0.00	0.00
11,800.00	90.00	179.68	7,944.95	-3,383.85	-1,721.46	3,628.19	0.00	0.00	0.00
11,900.00	90.00	179.68	7,944.95	-3,483.85	-1,720.91	3,726.63	0.00	0.00	0.00
12,000.00	90.00	179.68	7,944.95	-3,583.85	-1,720.35	3,825.06	0.00	0.00	0.00
12,100.00	90.00	179.68	7,944.94	-3,683.85	-1,719.79	3,923.49	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well UNITED A S16-20-9N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5282.00usft
Project:	Broomfield County	MD Reference:	KB 25' @ 5282.00usft
Site:	Sec 9-T1S-R68W	North Reference:	True
Well:	UNITED A S16-20-9N	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)	
12,200.00	90.00	179.68	7,944.94	-3,783.85	-1,719.24	4,021.93	0.00	0.00	0.00	
12,300.00	90.00	179.68	7,944.94	-3,883.85	-1,718.68	4,120.36	0.00	0.00	0.00	
12,400.00	90.00	179.68	7,944.94	-3,983.85	-1,718.13	4,218.79	0.00	0.00	0.00	
12,500.00	90.00	179.68	7,944.94	-4,083.84	-1,717.57	4,317.23	0.00	0.00	0.00	
12,600.00	90.00	179.68	7,944.94	-4,183.84	-1,717.01	4,415.66	0.00	0.00	0.00	
12,700.00	90.00	179.68	7,944.94	-4,283.84	-1,716.46	4,514.09	0.00	0.00	0.00	
12,800.00	90.00	179.68	7,944.93	-4,383.84	-1,715.90	4,612.53	0.00	0.00	0.00	
12,900.00	90.00	179.68	7,944.93	-4,483.84	-1,715.34	4,710.96	0.00	0.00	0.00	
13,000.00	90.00	179.68	7,944.93	-4,583.84	-1,714.79	4,809.40	0.00	0.00	0.00	
13,100.00	90.00	179.68	7,944.93	-4,683.83	-1,714.23	4,907.83	0.00	0.00	0.00	
13,200.00	90.00	179.68	7,944.93	-4,783.83	-1,713.68	5,006.26	0.00	0.00	0.00	
13,300.00	90.00	179.68	7,944.93	-4,883.83	-1,713.12	5,104.70	0.00	0.00	0.00	
13,400.00	90.00	179.68	7,944.92	-4,983.83	-1,712.56	5,203.13	0.00	0.00	0.00	
13,500.00	90.00	179.68	7,944.92	-5,083.83	-1,712.01	5,301.56	0.00	0.00	0.00	
13,600.00	90.00	179.68	7,944.92	-5,183.83	-1,711.45	5,400.00	0.00	0.00	0.00	
13,700.00	90.00	179.68	7,944.92	-5,283.83	-1,710.89	5,498.43	0.00	0.00	0.00	
13,800.00	90.00	179.68	7,944.92	-5,383.82	-1,710.34	5,596.86	0.00	0.00	0.00	
13,900.00	90.00	179.68	7,944.92	-5,483.82	-1,709.78	5,695.30	0.00	0.00	0.00	
14,000.00	90.00	179.68	7,944.92	-5,583.82	-1,709.23	5,793.73	0.00	0.00	0.00	
14,100.00	90.00	179.68	7,944.91	-5,683.82	-1,708.67	5,892.16	0.00	0.00	0.00	
14,200.00	90.00	179.68	7,944.91	-5,783.82	-1,708.11	5,990.60	0.00	0.00	0.00	
14,300.00	90.00	179.68	7,944.91	-5,883.82	-1,707.56	6,089.03	0.00	0.00	0.00	
14,400.00	90.00	179.68	7,944.91	-5,983.81	-1,707.00	6,187.46	0.00	0.00	0.00	
14,500.00	90.00	179.68	7,944.91	-6,083.81	-1,706.44	6,285.90	0.00	0.00	0.00	
14,600.00	90.00	179.68	7,944.91	-6,183.81	-1,705.89	6,384.33	0.00	0.00	0.00	
14,700.00	90.00	179.68	7,944.90	-6,283.81	-1,705.33	6,482.76	0.00	0.00	0.00	
14,800.00	90.00	179.68	7,944.90	-6,383.81	-1,704.77	6,581.20	0.00	0.00	0.00	
14,900.00	90.00	179.68	7,944.90	-6,483.81	-1,704.22	6,679.63	0.00	0.00	0.00	
15,000.00	90.00	179.68	7,944.90	-6,583.81	-1,703.66	6,778.06	0.00	0.00	0.00	
15,100.00	90.00	179.68	7,944.90	-6,683.80	-1,703.11	6,876.50	0.00	0.00	0.00	
15,200.00	90.00	179.68	7,944.90	-6,783.80	-1,702.55	6,974.93	0.00	0.00	0.00	
15,300.00	90.00	179.68	7,944.89	-6,883.80	-1,701.99	7,073.36	0.00	0.00	0.00	
15,400.00	90.00	179.68	7,944.89	-6,983.80	-1,701.44	7,171.80	0.00	0.00	0.00	
15,500.00	90.00	179.68	7,944.89	-7,083.80	-1,700.88	7,270.23	0.00	0.00	0.00	
15,600.00	90.00	179.68	7,944.89	-7,183.80	-1,700.32	7,368.67	0.00	0.00	0.00	
15,700.00	90.00	179.68	7,944.89	-7,283.79	-1,699.77	7,467.10	0.00	0.00	0.00	
15,800.00	90.00	179.68	7,944.89	-7,383.79	-1,699.21	7,565.53	0.00	0.00	0.00	
15,900.00	90.00	179.68	7,944.89	-7,483.79	-1,698.66	7,663.97	0.00	0.00	0.00	
16,000.00	90.00	179.68	7,944.88	-7,583.79	-1,698.10	7,762.40	0.00	0.00	0.00	
16,100.00	90.00	179.68	7,944.88	-7,683.79	-1,697.54	7,860.83	0.00	0.00	0.00	
16,200.00	90.00	179.68	7,944.88	-7,783.79	-1,696.99	7,959.27	0.00	0.00	0.00	
16,300.00	90.00	179.68	7,944.88	-7,883.79	-1,696.43	8,057.70	0.00	0.00	0.00	
16,400.00	90.00	179.68	7,944.88	-7,983.78	-1,695.87	8,156.13	0.00	0.00	0.00	
16,500.00	90.00	179.68	7,944.88	-8,083.78	-1,695.32	8,254.57	0.00	0.00	0.00	
16,600.00	90.00	179.68	7,944.87	-8,183.78	-1,694.76	8,353.00	0.00	0.00	0.00	
16,700.00	90.00	179.68	7,944.87	-8,283.78	-1,694.21	8,451.43	0.00	0.00	0.00	
16,800.00	90.00	179.68	7,944.87	-8,383.78	-1,693.65	8,549.87	0.00	0.00	0.00	
16,900.00	90.00	179.68	7,944.87	-8,483.78	-1,693.09	8,648.30	0.00	0.00	0.00	
17,000.00	90.00	179.68	7,944.87	-8,583.77	-1,692.54	8,746.73	0.00	0.00	0.00	
17,100.00	90.00	179.68	7,944.87	-8,683.77	-1,691.98	8,845.17	0.00	0.00	0.00	
17,200.00	90.00	179.68	7,944.87	-8,783.77	-1,691.42	8,943.60	0.00	0.00	0.00	
17,300.00	90.00	179.68	7,944.86	-8,883.77	-1,690.87	9,042.03	0.00	0.00	0.00	
17,400.00	90.00	179.68	7,944.86	-8,983.77	-1,690.31	9,140.47	0.00	0.00	0.00	
17,500.00	90.00	179.68	7,944.86	-9,083.77	-1,689.76	9,238.90	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well UNITED A S16-20-9N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5282.00usft
Project:	Broomfield County	MD Reference:	KB 25' @ 5282.00usft
Site:	Sec 9-T1S-R68W	North Reference:	True
Well:	UNITED A S16-20-9N	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)
17,600.00	90.00	179.68	7,944.86	-9,183.77	-1,689.20	9,337.33	0.00	0.00	0.00
17,700.00	90.00	179.68	7,944.86	-9,283.76	-1,688.64	9,435.77	0.00	0.00	0.00
17,800.00	90.00	179.68	7,944.86	-9,383.76	-1,688.09	9,534.20	0.00	0.00	0.00
17,900.00	90.00	179.68	7,944.85	-9,483.76	-1,687.53	9,632.64	0.00	0.00	0.00
18,000.00	90.00	179.68	7,944.85	-9,583.76	-1,686.97	9,731.07	0.00	0.00	0.00
18,100.00	90.00	179.68	7,944.85	-9,683.76	-1,686.42	9,829.50	0.00	0.00	0.00
18,139.72	90.00	179.68	7,944.85	-9,723.47	-1,686.20	9,868.60	0.00	0.00	0.00
TD at 18139.72									

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									
UNITED A S16-9N - LP	0.00	0.00	7,945.00	-83.35	-1,739.82	1,237,920.04	3,137,936.92	39° 59' 7.526 N	105° 0' 27.867 W
- plan hits target center									
- Point									
UNITED A S16-9N - PBI	0.00	0.00	7,945.00	-9,723.47	-1,685.86	1,228,280.37	3,138,045.07	39° 57' 32.256 N	105° 0' 27.166 W
- plan misses target center by 0.37usft at 18139.72usft MD (7944.85 TVD, -9723.47 N, -1686.20 E)									
- Point									

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
5,272.68	5,090.00	SUSSEX				
8,083.48	7,775.00	NIOBRARA				
8,401.54	7,935.00	NIO B TARGET				

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,300.00	1,300.00	0.00	0.00	Start Build 2.00
2,252.00	2,234.57	34.58	-152.87	Start 4515.39 hold at 2252.00 MD
6,767.38	6,502.93	359.57	-1,589.61	Start Drop -2.00
7,719.38	7,437.50	394.15	-1,742.48	Start 30.00 hold at 7719.38 MD
7,749.38	7,467.50	394.15	-1,742.48	Start DLS 12.00 TFO 179.68
8,499.44	7,945.00	-83.35	-1,739.82	Start 9640.27 hold at 8499.44 MD
18,139.72	7,944.85	-9,723.47	-1,686.20	TD at 18139.72