

EXTRACTION OIL & GAS

Broomfield County

Sec 9-T1S-R68W

UNITED B S16-20-14N

ORIGINAL WELLBORE

Plan: PROPOSAL 1

Standard Planning Report

18 January, 2018



Project: Broomfield County
Site: Sec 9-T1S-R68W
Well: UNITED B S16-20-14N
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: 52084.4snT
Dip Angle: 66.47°
Date: 1/5/2018
Model: IGRF2015

WELL DETAILS: UNITED B S16-20-14N

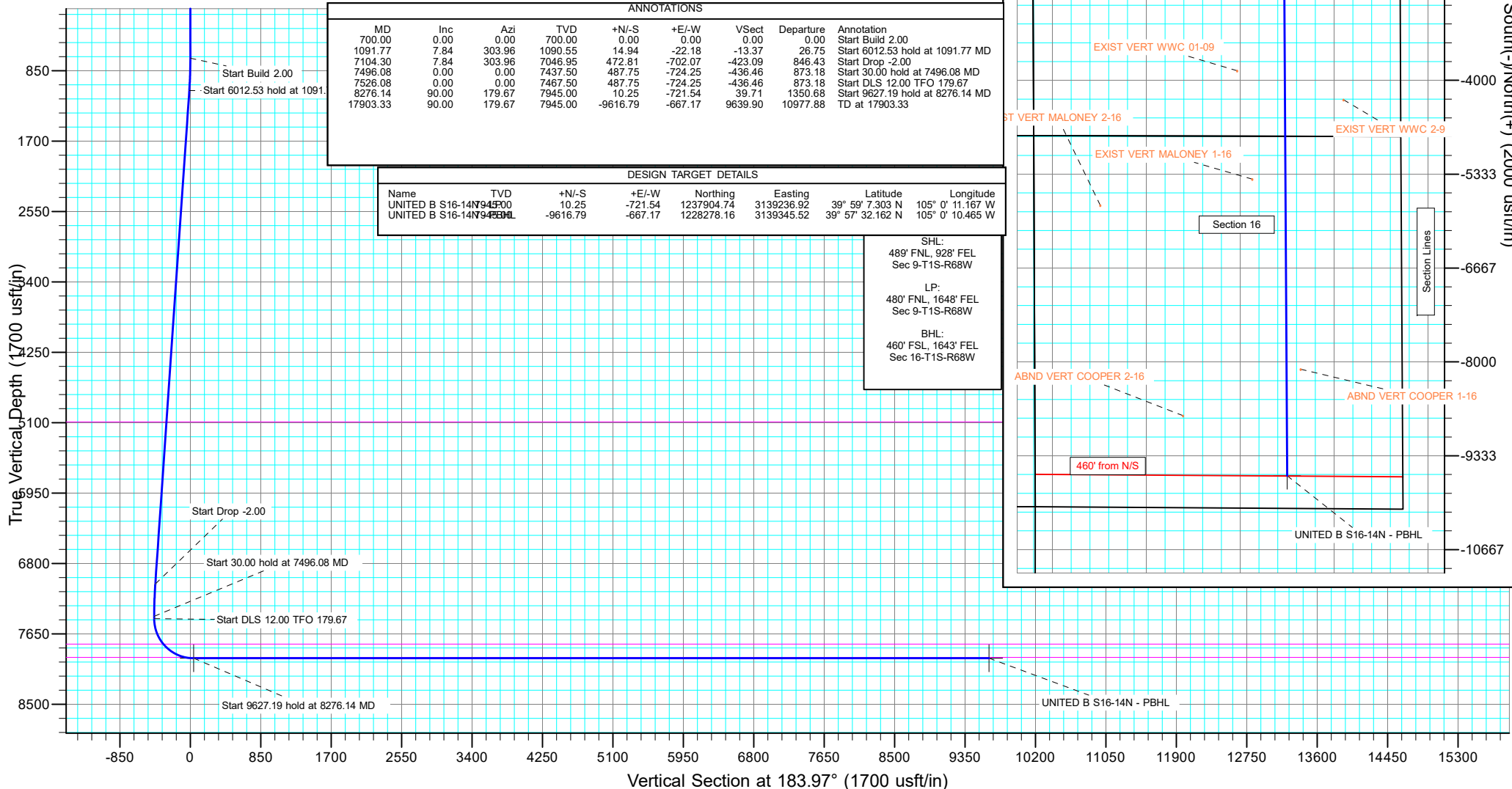
+N/-S	+E/-W	Northing	Easting	5254.00	Latitude	Longitude	Slot
+N/-S	+E/-W	1237898.55	3139958.51		39° 59' 7.202 N	105° 0' 1.897 W	

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	700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	
3	1091.77	7.84	303.96	1090.55	14.94	-22.18	2.00	303.96	-13.37	
4	7104.30	7.84	303.96	7046.95	472.81	-702.07	0.00	0.00	-423.09	
5	7496.08	0.00	0.00	7437.50	487.75	-724.25	2.00	180.00	-436.46	
6	7526.08	0.00	0.00	7467.50	487.75	-724.25	0.00	0.00	-436.46	
7	8276.14	90.00	179.67	7945.00	10.25	-721.54	12.00	179.67	39.71	UNITED B S16-14N - LP
8	17903.33	90.00	179.67	7945.00	-9616.79	-667.17	0.00	0.00	9639.90	UNITED B S16-14N - PBHL

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5090.00	5128.91	SUSSEX
7775.00	7860.18	NIOBRARA
7935.00	8178.24	NIO B TARGET



Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well UNITED B S16-20-14N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5279.00usft
Project:	Broomfield County	MD Reference:	KB 25' @ 5279.00usft
Site:	Sec 9-T1S-R68W	North Reference:	True
Well:	UNITED B S16-20-14N	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 B S16-20-14N					
Well Position	+N/-S	-497.26 usft	Northing:	1,237,898.55 usft	Latitude:	39° 59' 7.202 N
	+E/-W	4,291.03 usft	Easting:	3,139,958.51 usft	Longitude:	105° 0' 1.897 W
Position Uncertainty	0.00 usft		Wellhead Elevation:		Ground Level:	5,254.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	1/5/2018	8.24	66.47	52,084.40293769

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	183.97

Plan Survey Tool Program	Date	1/18/2018		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,903.07	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	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,091.77	7.84	303.96	1,090.55	14.94	-22.18	2.00	2.00	0.00	303.96	
7,104.30	7.84	303.96	7,046.95	472.81	-702.07	0.00	0.00	0.00	0.00	
7,496.08	0.00	0.00	7,437.50	487.75	-724.25	2.00	-2.00	0.00	180.00	
7,526.08	0.00	0.00	7,467.50	487.75	-724.25	0.00	0.00	0.00	0.00	
8,276.14	90.00	179.67	7,945.00	10.25	-721.54	12.00	12.00	23.95	179.67	UNITED B S16-14N -
17,903.33	90.00	179.67	7,945.00	-9,616.79	-667.17	0.00	0.00	0.00	0.00	UNITED B S16-14N -

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Project:	Broomfield County	MD Reference:	KB 25' @ 5279.00usft
Site:	Sec 9-T1S-R68W	North Reference:	True
Well:	UNITED B S16-20-14N	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
Start Build 2.00									
800.00	2.00	303.96	799.98	0.97	-1.45	-0.87	2.00	2.00	0.00
900.00	4.00	303.96	899.84	3.90	-5.79	-3.49	2.00	2.00	0.00
1,000.00	6.00	303.96	999.45	8.77	-13.02	-7.84	2.00	2.00	0.00
1,091.77	7.84	303.96	1,090.55	14.94	-22.18	-13.37	2.00	2.00	0.00
Start 6012.53 hold at 1091.77 MD									
1,100.00	7.84	303.96	1,098.70	15.57	-23.12	-13.93	0.00	0.00	0.00
1,200.00	7.84	303.96	1,197.77	23.18	-34.42	-20.74	0.00	0.00	0.00
1,300.00	7.84	303.96	1,296.84	30.80	-45.73	-27.56	0.00	0.00	0.00
1,400.00	7.84	303.96	1,395.90	38.41	-57.04	-34.37	0.00	0.00	0.00
1,500.00	7.84	303.96	1,494.97	46.03	-68.35	-41.19	0.00	0.00	0.00
1,600.00	7.84	303.96	1,594.04	53.64	-79.65	-48.00	0.00	0.00	0.00
1,700.00	7.84	303.96	1,693.10	61.26	-90.96	-54.82	0.00	0.00	0.00
1,800.00	7.84	303.96	1,792.17	68.87	-102.27	-61.63	0.00	0.00	0.00
1,900.00	7.84	303.96	1,891.23	76.49	-113.58	-68.45	0.00	0.00	0.00
2,000.00	7.84	303.96	1,990.30	84.10	-124.88	-75.26	0.00	0.00	0.00
2,100.00	7.84	303.96	2,089.37	91.72	-136.19	-82.07	0.00	0.00	0.00
2,200.00	7.84	303.96	2,188.43	99.33	-147.50	-88.89	0.00	0.00	0.00
2,300.00	7.84	303.96	2,287.50	106.95	-158.81	-95.70	0.00	0.00	0.00
2,400.00	7.84	303.96	2,386.57	114.57	-170.12	-102.52	0.00	0.00	0.00
2,500.00	7.84	303.96	2,485.63	122.18	-181.42	-109.33	0.00	0.00	0.00
2,600.00	7.84	303.96	2,584.70	129.80	-192.73	-116.15	0.00	0.00	0.00
2,700.00	7.84	303.96	2,683.76	137.41	-204.04	-122.96	0.00	0.00	0.00
2,800.00	7.84	303.96	2,782.83	145.03	-215.35	-129.77	0.00	0.00	0.00
2,900.00	7.84	303.96	2,881.90	152.64	-226.65	-136.59	0.00	0.00	0.00
3,000.00	7.84	303.96	2,980.96	160.26	-237.96	-143.40	0.00	0.00	0.00
3,100.00	7.84	303.96	3,080.03	167.87	-249.27	-150.22	0.00	0.00	0.00
3,200.00	7.84	303.96	3,179.10	175.49	-260.58	-157.03	0.00	0.00	0.00
3,300.00	7.84	303.96	3,278.16	183.10	-271.89	-163.85	0.00	0.00	0.00
3,400.00	7.84	303.96	3,377.23	190.72	-283.19	-170.66	0.00	0.00	0.00
3,500.00	7.84	303.96	3,476.30	198.33	-294.50	-177.48	0.00	0.00	0.00
3,600.00	7.84	303.96	3,575.36	205.95	-305.81	-184.29	0.00	0.00	0.00
3,700.00	7.84	303.96	3,674.43	213.56	-317.12	-191.10	0.00	0.00	0.00
3,800.00	7.84	303.96	3,773.49	221.18	-328.42	-197.92	0.00	0.00	0.00
3,900.00	7.84	303.96	3,872.56	228.79	-339.73	-204.73	0.00	0.00	0.00
4,000.00	7.84	303.96	3,971.63	236.41	-351.04	-211.55	0.00	0.00	0.00
4,100.00	7.84	303.96	4,070.69	244.02	-362.35	-218.36	0.00	0.00	0.00
4,200.00	7.84	303.96	4,169.76	251.64	-373.65	-225.18	0.00	0.00	0.00
4,300.00	7.84	303.96	4,268.83	259.25	-384.96	-231.99	0.00	0.00	0.00
4,400.00	7.84	303.96	4,367.89	266.87	-396.27	-238.80	0.00	0.00	0.00
4,500.00	7.84	303.96	4,466.96	274.49	-407.58	-245.62	0.00	0.00	0.00
4,600.00	7.84	303.96	4,566.03	282.10	-418.89	-252.43	0.00	0.00	0.00
4,700.00	7.84	303.96	4,665.09	289.72	-430.19	-259.25	0.00	0.00	0.00
4,800.00	7.84	303.96	4,764.16	297.33	-441.50	-266.06	0.00	0.00	0.00
4,900.00	7.84	303.96	4,863.22	304.95	-452.81	-272.88	0.00	0.00	0.00

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Well:	UNITED B S16-20-14N	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	7.84	303.96	4,962.29	312.56	-464.12	-279.69	0.00	0.00	0.00
5,100.00	7.84	303.96	5,061.36	320.18	-475.42	-286.51	0.00	0.00	0.00
5,128.91	7.84	303.96	5,090.00	322.38	-478.69	-288.48	0.00	0.00	0.00
SUSSEX									
5,200.00	7.84	303.96	5,160.42	327.79	-486.73	-293.32	0.00	0.00	0.00
5,300.00	7.84	303.96	5,259.49	335.41	-498.04	-300.13	0.00	0.00	0.00
5,400.00	7.84	303.96	5,358.56	343.02	-509.35	-306.95	0.00	0.00	0.00
5,500.00	7.84	303.96	5,457.62	350.64	-520.66	-313.76	0.00	0.00	0.00
5,600.00	7.84	303.96	5,556.69	358.25	-531.96	-320.58	0.00	0.00	0.00
5,700.00	7.84	303.96	5,655.76	365.87	-543.27	-327.39	0.00	0.00	0.00
5,800.00	7.84	303.96	5,754.82	373.48	-554.58	-334.21	0.00	0.00	0.00
5,900.00	7.84	303.96	5,853.89	381.10	-565.89	-341.02	0.00	0.00	0.00
6,000.00	7.84	303.96	5,952.95	388.71	-577.19	-347.84	0.00	0.00	0.00
6,100.00	7.84	303.96	6,052.02	396.33	-588.50	-354.65	0.00	0.00	0.00
6,200.00	7.84	303.96	6,151.09	403.94	-599.81	-361.46	0.00	0.00	0.00
6,300.00	7.84	303.96	6,250.15	411.56	-611.12	-368.28	0.00	0.00	0.00
6,400.00	7.84	303.96	6,349.22	419.18	-622.42	-375.09	0.00	0.00	0.00
6,500.00	7.84	303.96	6,448.29	426.79	-633.73	-381.91	0.00	0.00	0.00
6,600.00	7.84	303.96	6,547.35	434.41	-645.04	-388.72	0.00	0.00	0.00
6,700.00	7.84	303.96	6,646.42	442.02	-656.35	-395.54	0.00	0.00	0.00
6,800.00	7.84	303.96	6,745.49	449.64	-667.66	-402.35	0.00	0.00	0.00
6,900.00	7.84	303.96	6,844.55	457.25	-678.96	-409.16	0.00	0.00	0.00
7,000.00	7.84	303.96	6,943.62	464.87	-690.27	-415.98	0.00	0.00	0.00
7,104.30	7.84	303.96	7,046.95	472.81	-702.07	-423.09	0.00	0.00	0.00
Start Drop -2.00									
7,200.00	5.92	303.96	7,141.95	479.21	-711.57	-428.82	2.00	-2.00	0.00
7,300.00	3.92	303.96	7,241.58	484.00	-718.69	-433.10	2.00	-2.00	0.00
7,400.00	1.92	303.96	7,341.44	486.85	-722.91	-435.65	2.00	-2.00	0.00
7,496.08	0.00	0.00	7,437.50	487.75	-724.25	-436.46	2.00	-2.00	0.00
Start 30.00 hold at 7496.08 MD									
7,500.00	0.00	0.00	7,441.42	487.75	-724.25	-436.46	0.00	0.00	0.00
7,526.08	0.00	0.00	7,467.50	487.75	-724.25	-436.46	0.00	0.00	0.00
Start DLS 12.00 TFO 179.67									
7,550.00	2.87	179.67	7,491.41	487.15	-724.25	-435.86	12.00	12.00	0.00
7,575.00	5.87	179.67	7,516.34	485.25	-724.24	-433.96	12.00	12.00	0.00
7,600.00	8.87	179.67	7,541.13	482.04	-724.22	-430.76	12.00	12.00	0.00
7,625.00	11.87	179.67	7,565.72	477.54	-724.19	-426.27	12.00	12.00	0.00
7,650.00	14.87	179.67	7,590.04	471.76	-724.16	-420.51	12.00	12.00	0.00
7,675.00	17.87	179.67	7,614.02	464.71	-724.12	-413.48	12.00	12.00	0.00
7,700.00	20.87	179.67	7,637.60	456.42	-724.07	-405.22	12.00	12.00	0.00
7,725.00	23.87	179.67	7,660.72	446.91	-724.02	-395.73	12.00	12.00	0.00
7,750.00	26.87	179.67	7,683.31	436.20	-723.96	-385.05	12.00	12.00	0.00
7,775.00	29.87	179.67	7,705.30	424.32	-723.89	-373.21	12.00	12.00	0.00
7,800.00	32.87	179.67	7,726.65	411.31	-723.82	-360.23	12.00	12.00	0.00
7,825.00	35.87	179.67	7,747.28	397.20	-723.74	-346.16	12.00	12.00	0.00
7,850.00	38.87	179.67	7,767.15	382.03	-723.65	-331.03	12.00	12.00	0.00
7,860.18	40.09	179.67	7,775.00	375.56	-723.61	-324.58	12.00	12.00	0.00
NIOBRARA									
7,875.00	41.87	179.67	7,786.19	365.84	-723.56	-314.89	12.00	12.00	0.00
7,900.00	44.87	179.67	7,804.36	348.67	-723.46	-297.77	12.00	12.00	0.00
7,925.00	47.87	179.67	7,821.61	330.58	-723.36	-279.73	12.00	12.00	0.00
7,950.00	50.87	179.67	7,837.89	311.61	-723.25	-260.81	12.00	12.00	0.00
7,975.00	53.87	179.67	7,853.15	291.82	-723.14	-241.07	12.00	12.00	0.00
8,000.00	56.87	179.67	7,867.36	271.25	-723.02	-220.56	12.00	12.00	0.00

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Project:	Broomfield County	MD Reference:	KB 25' @ 5279.00usft
Site:	Sec 9-T1S-R68W	North Reference:	True
Well:	UNITED B S16-20-14N	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)
8,025.00	59.87	179.67	7,880.47	249.97	-722.90	-199.34	12.00	12.00	0.00
8,050.00	62.87	179.67	7,892.45	228.03	-722.78	-177.46	12.00	12.00	0.00
8,075.00	65.87	179.67	7,903.26	205.49	-722.65	-154.98	12.00	12.00	0.00
8,100.00	68.87	179.67	7,912.88	182.42	-722.52	-131.98	12.00	12.00	0.00
8,125.00	71.87	179.67	7,921.28	158.88	-722.38	-108.50	12.00	12.00	0.00
8,150.00	74.87	179.67	7,928.44	134.92	-722.25	-84.62	12.00	12.00	0.00
8,175.00	77.87	179.67	7,934.33	110.63	-722.11	-60.39	12.00	12.00	0.00
8,178.24	78.25	179.67	7,935.00	107.47	-722.09	-57.23	12.00	12.00	0.00
NIO B TARGET									
8,200.00	80.86	179.67	7,938.94	86.07	-721.97	-35.89	12.00	12.00	0.00
8,225.00	83.86	179.67	7,942.27	61.29	-721.83	-11.19	12.00	12.00	0.00
8,250.00	86.86	179.67	7,944.29	36.37	-721.69	13.66	12.00	12.00	0.00
8,276.14	90.00	179.67	7,945.00	10.25	-721.54	39.71	12.00	12.00	0.00
Start 9627.19 hold at 8276.14 MD									
8,300.00	90.00	179.67	7,945.00	-13.61	-721.41	63.51	0.00	0.00	0.00
8,400.00	90.00	179.67	7,945.00	-113.61	-720.84	163.23	0.00	0.00	0.00
8,500.00	90.00	179.67	7,945.00	-213.61	-720.27	262.94	0.00	0.00	0.00
8,600.00	90.00	179.67	7,944.99	-313.61	-719.70	362.66	0.00	0.00	0.00
8,700.00	90.00	179.67	7,944.99	-413.60	-719.14	462.38	0.00	0.00	0.00
8,800.00	90.00	179.67	7,944.99	-513.60	-718.57	562.10	0.00	0.00	0.00
8,900.00	90.00	179.67	7,944.99	-613.60	-718.00	661.82	0.00	0.00	0.00
9,000.00	90.00	179.67	7,944.99	-713.60	-717.43	761.54	0.00	0.00	0.00
9,100.00	90.00	179.67	7,944.99	-813.60	-716.87	861.26	0.00	0.00	0.00
9,200.00	90.00	179.67	7,944.99	-913.60	-716.30	960.98	0.00	0.00	0.00
9,300.00	90.00	179.67	7,944.98	-1,013.60	-715.73	1,060.70	0.00	0.00	0.00
9,400.00	90.00	179.67	7,944.98	-1,113.59	-715.16	1,160.42	0.00	0.00	0.00
9,500.00	90.00	179.67	7,944.98	-1,213.59	-714.60	1,260.14	0.00	0.00	0.00
9,600.00	90.00	179.67	7,944.98	-1,313.59	-714.03	1,359.86	0.00	0.00	0.00
9,700.00	90.00	179.67	7,944.98	-1,413.59	-713.46	1,459.58	0.00	0.00	0.00
9,800.00	90.00	179.67	7,944.98	-1,513.59	-712.89	1,559.30	0.00	0.00	0.00
9,900.00	90.00	179.67	7,944.97	-1,613.59	-712.33	1,659.02	0.00	0.00	0.00
10,000.00	90.00	179.67	7,944.97	-1,713.58	-711.76	1,758.74	0.00	0.00	0.00
10,100.00	90.00	179.67	7,944.97	-1,813.58	-711.19	1,858.45	0.00	0.00	0.00
10,200.00	90.00	179.67	7,944.97	-1,913.58	-710.63	1,958.17	0.00	0.00	0.00
10,300.00	90.00	179.67	7,944.97	-2,013.58	-710.06	2,057.89	0.00	0.00	0.00
10,400.00	90.00	179.67	7,944.97	-2,113.58	-709.49	2,157.61	0.00	0.00	0.00
10,500.00	90.00	179.67	7,944.96	-2,213.58	-708.92	2,257.33	0.00	0.00	0.00
10,600.00	90.00	179.67	7,944.96	-2,313.57	-708.36	2,357.05	0.00	0.00	0.00
10,700.00	90.00	179.67	7,944.96	-2,413.57	-707.79	2,456.77	0.00	0.00	0.00
10,800.00	90.00	179.67	7,944.96	-2,513.57	-707.22	2,556.49	0.00	0.00	0.00
10,900.00	90.00	179.67	7,944.96	-2,613.57	-706.65	2,656.21	0.00	0.00	0.00
11,000.00	90.00	179.67	7,944.96	-2,713.57	-706.09	2,755.93	0.00	0.00	0.00
11,100.00	90.00	179.67	7,944.95	-2,813.57	-705.52	2,855.65	0.00	0.00	0.00
11,200.00	90.00	179.67	7,944.95	-2,913.56	-704.95	2,955.37	0.00	0.00	0.00
11,300.00	90.00	179.67	7,944.95	-3,013.56	-704.38	3,055.09	0.00	0.00	0.00
11,400.00	90.00	179.67	7,944.95	-3,113.56	-703.82	3,154.81	0.00	0.00	0.00
11,500.00	90.00	179.67	7,944.95	-3,213.56	-703.25	3,254.53	0.00	0.00	0.00
11,600.00	90.00	179.67	7,944.95	-3,313.56	-702.68	3,354.24	0.00	0.00	0.00
11,700.00	90.00	179.67	7,944.95	-3,413.56	-702.11	3,453.96	0.00	0.00	0.00
11,800.00	90.00	179.67	7,944.94	-3,513.55	-701.55	3,553.68	0.00	0.00	0.00
11,900.00	90.00	179.67	7,944.94	-3,613.55	-700.98	3,653.40	0.00	0.00	0.00
12,000.00	90.00	179.67	7,944.94	-3,713.55	-700.41	3,753.12	0.00	0.00	0.00
12,100.00	90.00	179.67	7,944.94	-3,813.55	-699.85	3,852.84	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well UNITED B S16-20-14N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5279.00usft
Project:	Broomfield County	MD Reference:	KB 25' @ 5279.00usft
Site:	Sec 9-T1S-R68W	North Reference:	True
Well:	UNITED B S16-20-14N	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	179.67	7,944.94	-3,913.55	-699.28	3,952.56	0.00	0.00	0.00
12,300.00	90.00	179.67	7,944.94	-4,013.55	-698.71	4,052.28	0.00	0.00	0.00
12,400.00	90.00	179.67	7,944.93	-4,113.55	-698.14	4,152.00	0.00	0.00	0.00
12,500.00	90.00	179.67	7,944.93	-4,213.54	-697.58	4,251.72	0.00	0.00	0.00
12,600.00	90.00	179.67	7,944.93	-4,313.54	-697.01	4,351.44	0.00	0.00	0.00
12,700.00	90.00	179.67	7,944.93	-4,413.54	-696.44	4,451.16	0.00	0.00	0.00
12,800.00	90.00	179.67	7,944.93	-4,513.54	-695.87	4,550.88	0.00	0.00	0.00
12,900.00	90.00	179.67	7,944.93	-4,613.54	-695.31	4,650.60	0.00	0.00	0.00
13,000.00	90.00	179.67	7,944.92	-4,713.54	-694.74	4,750.32	0.00	0.00	0.00
13,100.00	90.00	179.67	7,944.92	-4,813.53	-694.17	4,850.03	0.00	0.00	0.00
13,200.00	90.00	179.67	7,944.92	-4,913.53	-693.60	4,949.75	0.00	0.00	0.00
13,300.00	90.00	179.67	7,944.92	-5,013.53	-693.04	5,049.47	0.00	0.00	0.00
13,400.00	90.00	179.67	7,944.92	-5,113.53	-692.47	5,149.19	0.00	0.00	0.00
13,500.00	90.00	179.67	7,944.92	-5,213.53	-691.90	5,248.91	0.00	0.00	0.00
13,600.00	90.00	179.67	7,944.91	-5,313.53	-691.33	5,348.63	0.00	0.00	0.00
13,700.00	90.00	179.67	7,944.91	-5,413.52	-690.77	5,448.35	0.00	0.00	0.00
13,800.00	90.00	179.67	7,944.91	-5,513.52	-690.20	5,548.07	0.00	0.00	0.00
13,900.00	90.00	179.67	7,944.91	-5,613.52	-689.63	5,647.79	0.00	0.00	0.00
14,000.00	90.00	179.67	7,944.91	-5,713.52	-689.07	5,747.51	0.00	0.00	0.00
14,100.00	90.00	179.67	7,944.91	-5,813.52	-688.50	5,847.23	0.00	0.00	0.00
14,200.00	90.00	179.67	7,944.90	-5,913.52	-687.93	5,946.95	0.00	0.00	0.00
14,300.00	90.00	179.67	7,944.90	-6,013.51	-687.36	6,046.67	0.00	0.00	0.00
14,400.00	90.00	179.67	7,944.90	-6,113.51	-686.80	6,146.39	0.00	0.00	0.00
14,500.00	90.00	179.67	7,944.90	-6,213.51	-686.23	6,246.11	0.00	0.00	0.00
14,600.00	90.00	179.67	7,944.90	-6,313.51	-685.66	6,345.83	0.00	0.00	0.00
14,700.00	90.00	179.67	7,944.90	-6,413.51	-685.09	6,445.54	0.00	0.00	0.00
14,800.00	90.00	179.67	7,944.90	-6,513.51	-684.53	6,545.26	0.00	0.00	0.00
14,900.00	90.00	179.67	7,944.89	-6,613.51	-683.96	6,644.98	0.00	0.00	0.00
15,000.00	90.00	179.67	7,944.89	-6,713.50	-683.39	6,744.70	0.00	0.00	0.00
15,100.00	90.00	179.67	7,944.89	-6,813.50	-682.82	6,844.42	0.00	0.00	0.00
15,200.00	90.00	179.67	7,944.89	-6,913.50	-682.26	6,944.14	0.00	0.00	0.00
15,300.00	90.00	179.67	7,944.89	-7,013.50	-681.69	7,043.86	0.00	0.00	0.00
15,400.00	90.00	179.67	7,944.89	-7,113.50	-681.12	7,143.58	0.00	0.00	0.00
15,500.00	90.00	179.67	7,944.88	-7,213.50	-680.55	7,243.30	0.00	0.00	0.00
15,600.00	90.00	179.67	7,944.88	-7,313.49	-679.99	7,343.02	0.00	0.00	0.00
15,700.00	90.00	179.67	7,944.88	-7,413.49	-679.42	7,442.74	0.00	0.00	0.00
15,800.00	90.00	179.67	7,944.88	-7,513.49	-678.85	7,542.46	0.00	0.00	0.00
15,900.00	90.00	179.67	7,944.88	-7,613.49	-678.29	7,642.18	0.00	0.00	0.00
16,000.00	90.00	179.67	7,944.88	-7,713.49	-677.72	7,741.90	0.00	0.00	0.00
16,100.00	90.00	179.67	7,944.87	-7,813.49	-677.15	7,841.62	0.00	0.00	0.00
16,200.00	90.00	179.67	7,944.87	-7,913.48	-676.58	7,941.33	0.00	0.00	0.00
16,300.00	90.00	179.67	7,944.87	-8,013.48	-676.02	8,041.05	0.00	0.00	0.00
16,400.00	90.00	179.67	7,944.87	-8,113.48	-675.45	8,140.77	0.00	0.00	0.00
16,500.00	90.00	179.67	7,944.87	-8,213.48	-674.88	8,240.49	0.00	0.00	0.00
16,600.00	90.00	179.67	7,944.87	-8,313.48	-674.31	8,340.21	0.00	0.00	0.00
16,700.00	90.00	179.67	7,944.86	-8,413.48	-673.75	8,439.93	0.00	0.00	0.00
16,800.00	90.00	179.67	7,944.86	-8,513.47	-673.18	8,539.65	0.00	0.00	0.00
16,900.00	90.00	179.67	7,944.86	-8,613.47	-672.61	8,639.37	0.00	0.00	0.00
17,000.00	90.00	179.67	7,944.86	-8,713.47	-672.04	8,739.09	0.00	0.00	0.00
17,100.00	90.00	179.67	7,944.86	-8,813.47	-671.48	8,838.81	0.00	0.00	0.00
17,200.00	90.00	179.67	7,944.86	-8,913.47	-670.91	8,938.53	0.00	0.00	0.00
17,300.00	90.00	179.67	7,944.85	-9,013.47	-670.34	9,038.25	0.00	0.00	0.00
17,400.00	90.00	179.67	7,944.85	-9,113.46	-669.77	9,137.97	0.00	0.00	0.00
17,500.00	90.00	179.67	7,944.85	-9,213.46	-669.21	9,237.69	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well UNITED B S16-20-14N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5279.00usft
Project:	Broomfield County	MD Reference:	KB 25' @ 5279.00usft
Site:	Sec 9-T1S-R68W	North Reference:	True
Well:	UNITED B S16-20-14N	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	179.67	7,944.85	-9,313.46	-668.64	9,337.41	0.00	0.00	0.00
17,700.00	90.00	179.67	7,944.85	-9,413.46	-668.07	9,437.12	0.00	0.00	0.00
17,800.00	90.00	179.67	7,944.85	-9,513.46	-667.51	9,536.84	0.00	0.00	0.00
17,903.33	90.00	179.67	7,945.00	-9,616.79	-667.17	9,639.90	0.00	0.00	0.00
TD at 17903.33									

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 B S16-14N - LF	0.00	0.00	7,945.00	10.25	-721.54	1,237,904.74	3,139,236.92	39° 59' 7.303 N	105° 0' 11.167 W
- plan hits target center									
- Point									
UNITED B S16-14N - PE	0.00	0.00	7,945.00	-9,616.79	-667.17	1,228,278.16	3,139,345.52	39° 57' 32.162 N	105° 0' 10.465 W
- plan hits target center									
- Point									

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
5,128.91	5,090.00	SUSSEX				
7,860.18	7,775.00	NIOBRARA				
8,178.24	7,935.00	NIO B TARGET				

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
700.00	700.00	0.00	0.00	Start Build 2.00
1,091.77	1,090.55	14.94	-22.18	Start 6012.53 hold at 1091.77 MD
7,104.30	7,046.95	472.81	-702.07	Start Drop -2.00
7,496.08	7,437.50	487.75	-724.25	Start 30.00 hold at 7496.08 MD
7,526.08	7,467.50	487.75	-724.25	Start DLS 12.00 TFO 179.67
8,276.14	7,945.00	10.25	-721.54	Start 9627.19 hold at 8276.14 MD
17,903.33	7,945.00	-9,616.79	-667.17	TD at 17903.33