

EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)

NE NW SEC. 9 T5N R65W 6th P.M.

MT FED MAPLEWOOD 8W-20-11

ORIGINAL WELLBORE

09 November, 2018

Plan: PROPOSAL #3

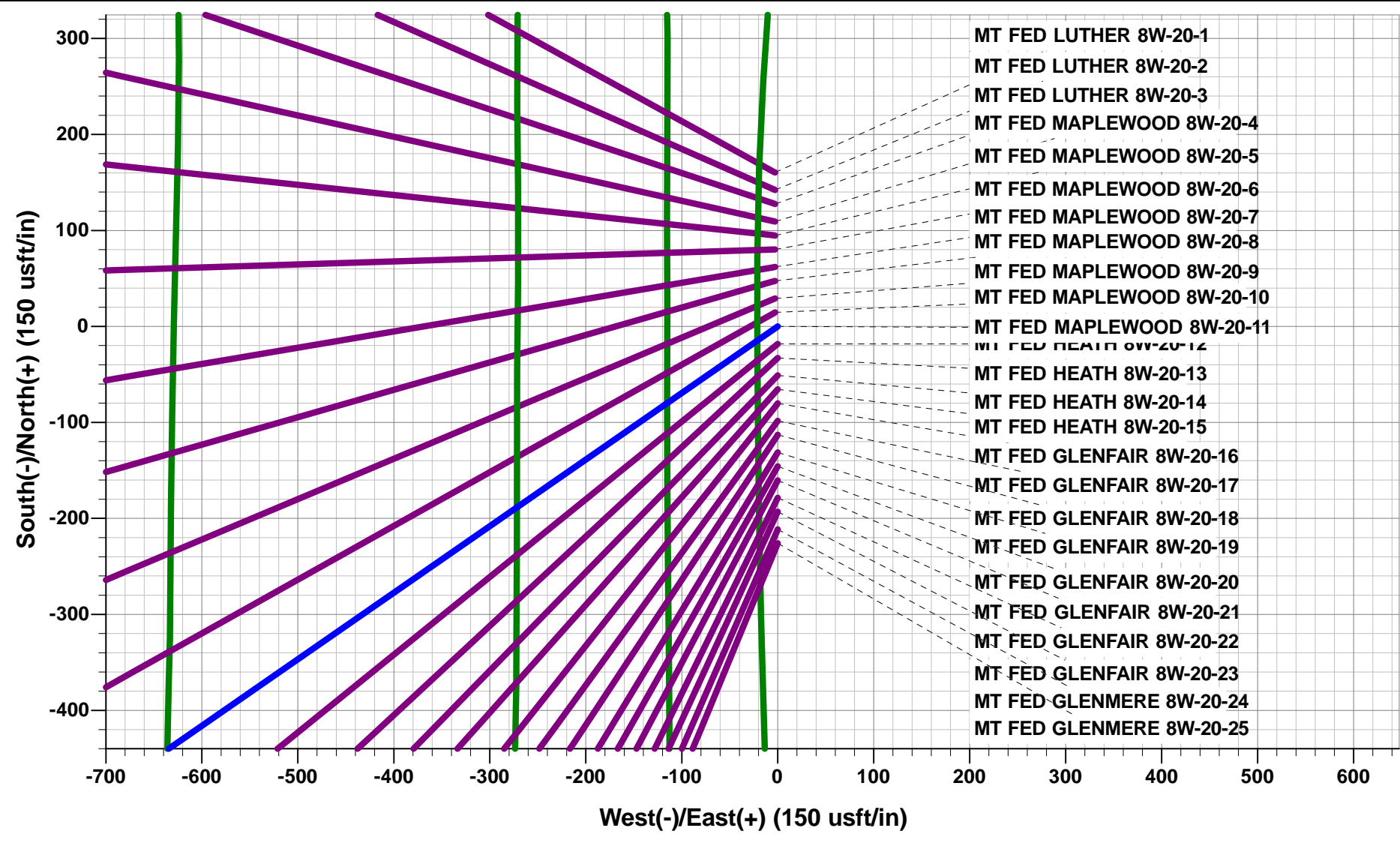




Project: WELD COUNTY, COLORADO (NAD 83)
Site: NE NW SEC. 9 T5N R65W 6th P.M.
Well: MT FED MAPLEWOOD 8W-20-11
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #3

ANNOTATIONS								
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Dep	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL: 988ft FNL & 1753ft FWL of Sec 9
1500.00	1500.00	0.00	0.00	0.00	0.00	0.00	0.00	START NUDGE - SURFACE (2"/100ft BUR)
1800.00	1800.55	6.01	235.26	-8.98	-12.94	13.44	15.75	9 5/8" SURFACE CSG
1864.64	1865.55	6.01	235.26	-12.85	-18.54	19.25	22.56	START NUDGE - MAIN (2.5"/100ft BUR)
2773.82	2828.88	30.09	235.26	-181.73	-262.04	272.10	318.89	EOB TO 30.09° INC
5142.82	5566.97	30.09	235.26	-964.14	-1390.24	1443.60	1691.84	END OF TANGENT
6292.00	6770.74	0.00	0.00	-1140.19	-1644.10	1707.20	2000.78	EOD TO VERTICAL
6322.00	6800.74	0.00	0.00	-1140.19	-1644.10	1707.20	2000.78	KOP (10°/100ft BUR)
6895.00	7700.81	90.00	272.55	-1114.68	-2216.53	2277.21	2573.78	LANDING PNT: 2161ft FNL & 460ft FEL of Sec 8
6895.00	17347.63	90.00	272.55	-685.69	-11853.81	11873.62	12220.59	BHL: 2398ft FNL & 460ft FWL of Sec 7

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - MT FED MAPLEWOOD 8W-20-11 (P3)	6322.00	-1140.19	-1644.10	40.414990	-104.677564
LP - MT FED MAPLEWOOD 8W-20-11 (P3)	6895.00	-1114.68	-2216.54	40.415060	-104.679620
BHL - MT FED MAPLEWOOD 8W-20-11 (P3)	6895.00	-685.69	-11853.81	40.416230	-104.714230



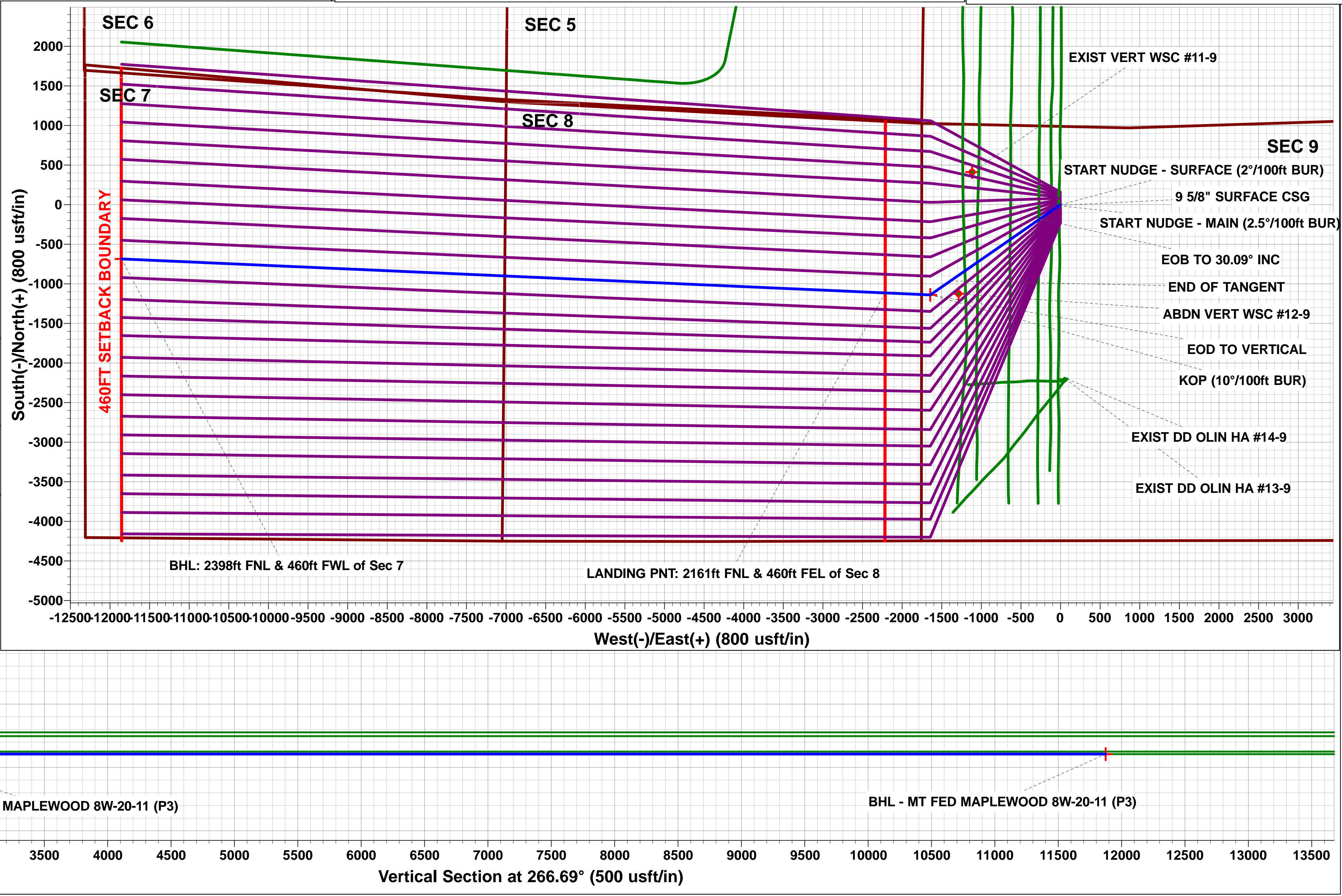
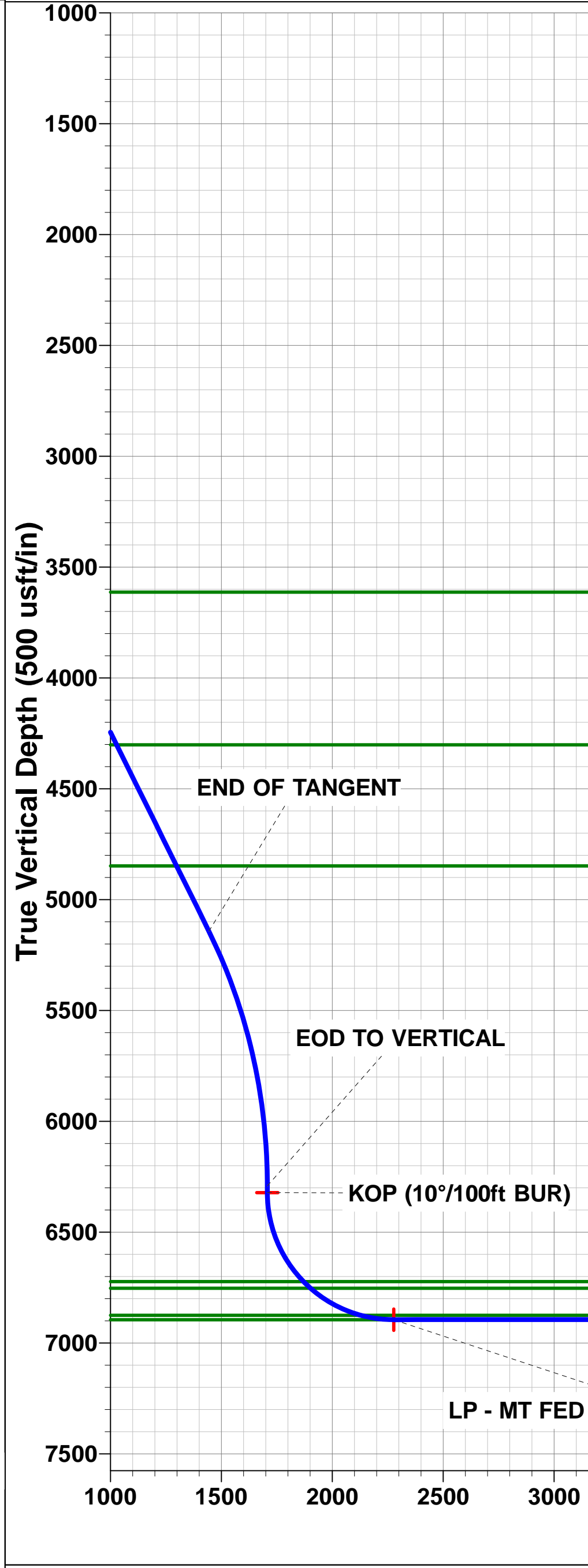
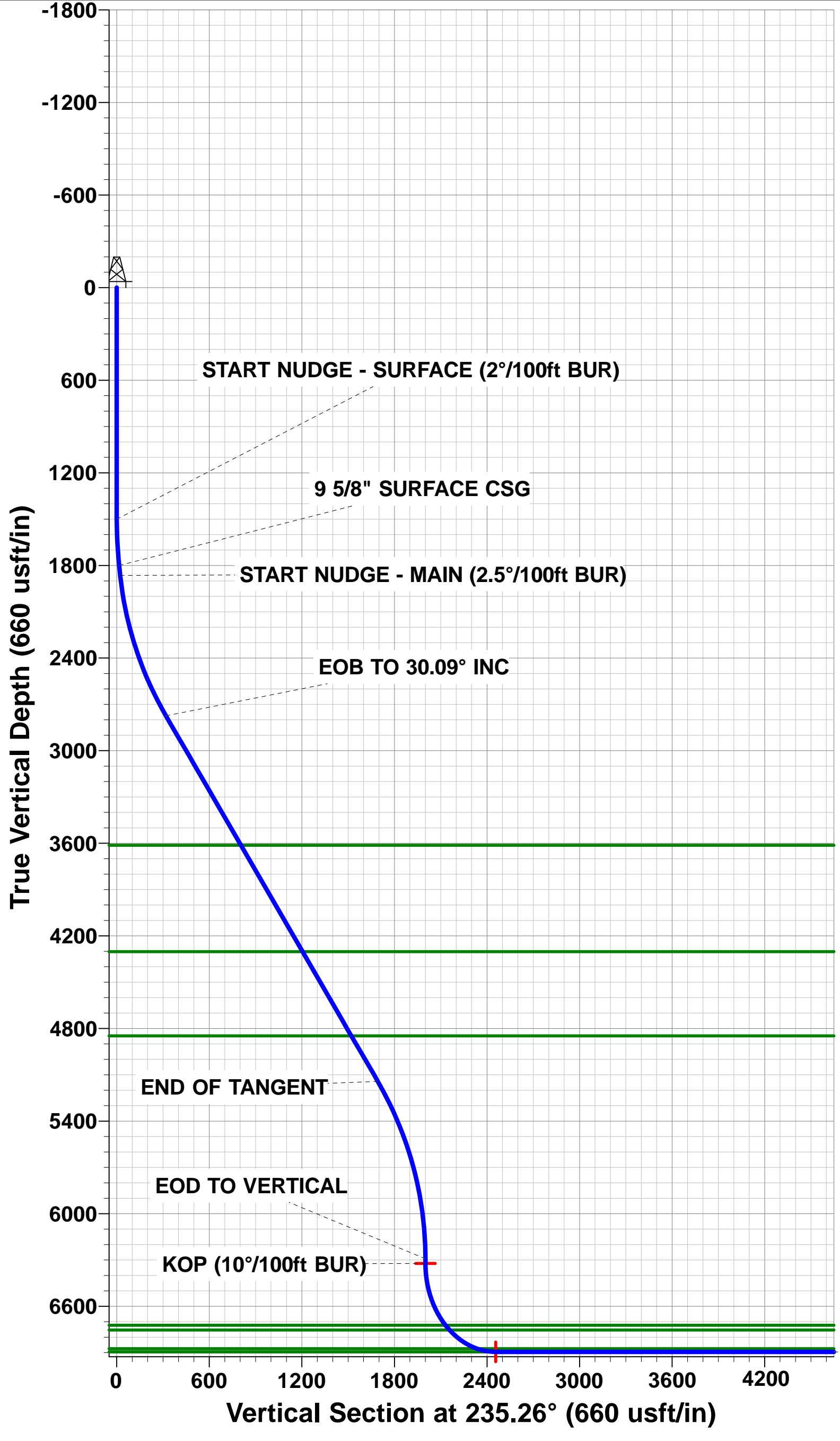
FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3613.00	3798.80	PARKMAN
4302.00	4595.15	SUSSEX
4848.00	5226.22	SHANNON
6723.00	7244.90	SHARON SPRINGS
6753.00	7288.57	NIOBRARA
6875.00	7548.97	NIO B
6895.00	7700.81	NIO B TGT

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M

Azimuths to True North
Magnetic North: 8.02°

Magnetic Field
Strength: 52253.8nT
Dip Angle: 66.85°
Date: 08/11/2018
Model: IGRF2015



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well MT FED MAPLEWOOD 8W-20-11
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4651.00usft (SAV 802)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4651.00usft (SAV 802)
Site:	NE NW SEC. 9 T5N R65W 6th P.M.	North Reference:	True
Well:	MT FED MAPLEWOOD 8W-20-11	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #3		

Project	WELD COUNTY, COLORADO (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	NE NW SEC. 9 T5N R65W 6th P.M.		
Site Position:		Northing:	1,396,398.95 usft
From:	Lat/Long	Easting:	3,230,631.97 usft
Position Uncertainty:	0.00 usft	Slot Radius:	1.10000ft
		Latitude:	40.418560
		Longitude:	-104.671670
		Grid Convergence:	0.54 °

Well	MT FED MAPLEWOOD 8W-20-11		
Well Position	+N/-S	-160.31 usft	Northing: 1,396,238.68 usfi
	+E/-W	2.78 usft	Easting: 3,230,636.25 usfi
Position Uncertainty	0.00 usft	Wellhead Elevation:	usfi
		Latitude:	40.418120
		Longitude:	-104.671660
		Ground Level:	4,635.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	08/11/2018	8.02	66.85	52,254

Design	PROPOSAL #3			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	6,895.00	0.00	0.00	266.69

Plan Sections											
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100usf)	Turn Rate (°/100usf)	TFO (°)	Target
0.00	0.00	0.00	0.00	-4,651.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,500.00	0.00	0.00	1,500.00	-3,151.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,800.55	6.01	235.26	1,800.00	-2,851.00	-8.98	-12.94	2.00	2.00	0.00	235.26	
1,865.55	6.01	235.26	1,864.64	-2,786.36	-12.85	-18.54	0.00	0.00	0.00	0.00	
2,828.88	30.09	235.26	2,773.82	-1,877.18	-181.73	-262.05	2.50	2.50	0.00	0.00	
5,566.97	30.09	235.26	5,142.82	491.82	-964.14	-1,390.24	0.00	0.00	0.00	0.00	
6,770.74	0.00	0.00	6,292.00	1,641.00	-1,140.19	-1,644.10	2.50	-2.50	0.00	180.00	
6,800.74	0.00	0.00	6,322.00	1,671.00	-1,140.19	-1,644.10	0.00	0.00	0.00	0.00	KOP - MT FED MAI
7,700.81	90.00	272.55	6,895.00	2,244.00	-1,114.68	-2,216.54	10.00	10.00	-9.72	272.55	LP - MT FED MAPL
17,347.63	90.00	272.55	6,895.00	2,244.00	-685.69	-11,853.81	0.00	0.00	0.00	-98.18	BHL - MT FED MAF

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Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4651.00usft (SAV 802)
Site:	NE NW SEC. 9 T5N R65W 6th P.M.	North Reference:	True
Well:	MT FED MAPLEWOOD 8W-20-11	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #3		

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
SHL: 988ft FNL & 1753ft FWL of Sec 9										
0.00	0.00	0.00	0.00	4,651.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	4,551.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	4,451.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	4,351.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	4,251.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	4,151.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	4,051.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	3,951.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	3,851.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	3,751.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	3,651.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	3,551.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	3,451.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	3,351.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	3,251.00	0.00	0.00	0.00	0.00	0.00	0.00
START NUDGE - SURFACE (2°/100ft BUR)										
1,500.00	0.00	0.00	1,500.00	3,151.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	2.00	235.26	1,599.98	3,051.02	-0.99	-1.43	1.49	2.00	2.00	0.00
1,700.00	4.00	235.26	1,699.84	2,951.16	-3.98	-5.73	5.95	2.00	2.00	0.00
1,800.00	6.00	235.26	1,799.45	2,851.55	-8.94	-12.90	13.39	2.00	2.00	0.00
9 5/8" SURFACE CSG										
1,800.55	6.01	235.26	1,800.00	2,851.00	-8.98	-12.94	13.44	2.00	2.00	0.00
START NUDGE - MAIN (2.5°/100ft BUR)										
1,865.55	6.01	235.26	1,864.64	2,786.36	-12.85	-18.54	19.25	0.00	0.00	0.00
1,900.00	6.87	235.26	1,898.87	2,752.13	-15.06	-21.71	22.55	2.50	2.50	0.00
2,000.00	9.37	235.26	1,997.86	2,653.14	-23.11	-33.32	34.60	2.50	2.50	0.00
2,100.00	11.87	235.26	2,096.14	2,554.86	-33.61	-48.47	50.33	2.50	2.50	0.00
2,200.00	14.37	235.26	2,193.52	2,457.48	-46.55	-67.12	69.70	2.50	2.50	0.00
2,300.00	16.87	235.26	2,289.82	2,361.18	-61.89	-89.25	92.67	2.50	2.50	0.00
2,400.00	19.37	235.26	2,384.85	2,266.15	-79.62	-114.81	119.21	2.50	2.50	0.00
2,500.00	21.87	235.26	2,478.44	2,172.56	-99.69	-143.75	149.26	2.50	2.50	0.00
2,600.00	24.37	235.26	2,570.40	2,080.60	-122.06	-176.01	182.77	2.50	2.50	0.00
2,700.00	26.87	235.26	2,660.56	1,990.44	-146.71	-211.54	219.66	2.50	2.50	0.00
2,800.00	29.37	235.26	2,748.74	1,902.26	-173.57	-250.27	259.88	2.50	2.50	0.00
EOB TO 30.09° INC										
2,828.88	30.09	235.26	2,773.82	1,877.18	-181.73	-262.04	272.10	2.50	2.50	0.00
2,900.00	30.09	235.26	2,835.35	1,815.65	-202.05	-291.35	302.53	0.00	0.00	0.00
3,000.00	30.09	235.26	2,921.87	1,729.13	-230.63	-332.55	345.31	0.00	0.00	0.00
3,100.00	30.09	235.26	3,008.39	1,642.61	-259.20	-373.76	388.10	0.00	0.00	0.00
3,200.00	30.09	235.26	3,094.91	1,556.09	-287.78	-414.96	430.88	0.00	0.00	0.00
3,300.00	30.09	235.26	3,181.43	1,469.57	-316.35	-456.16	473.67	0.00	0.00	0.00
3,400.00	30.09	235.26	3,267.95	1,383.05	-344.93	-497.37	516.46	0.00	0.00	0.00
3,500.00	30.09	235.26	3,354.48	1,296.52	-373.50	-538.57	559.24	0.00	0.00	0.00
3,600.00	30.09	235.26	3,441.00	1,210.00	-402.08	-579.77	602.03	0.00	0.00	0.00
3,700.00	30.09	235.26	3,527.52	1,123.48	-430.65	-620.98	644.81	0.00	0.00	0.00
PARKMAN										
3,798.80	30.09	235.26	3,613.00	1,038.00	-458.88	-661.69	687.08	0.00	0.00	0.00
3,800.00	30.09	235.26	3,614.04	1,036.96	-459.23	-662.18	687.60	0.00	0.00	0.00
3,900.00	30.09	235.26	3,700.56	950.44	-487.80	-703.38	730.38	0.00	0.00	0.00
4,000.00	30.09	235.26	3,787.08	863.92	-516.38	-744.59	773.17	0.00	0.00	0.00
4,100.00	30.09	235.26	3,873.60	777.40	-544.95	-785.79	815.95	0.00	0.00	0.00
4,200.00	30.09	235.26	3,960.12	690.88	-573.53	-827.00	858.74	0.00	0.00	0.00

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Site:	NE NW SEC. 9 T5N R65W 6th P.M.	North Reference:	True
Well:	MT FED MAPLEWOOD 8W-20-11	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #3		

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,300.00	30.09	235.26	4,046.64	604.36	-602.10	-868.20	901.52	0.00	0.00	0.00
4,400.00	30.09	235.26	4,133.16	517.84	-630.68	-909.40	944.31	0.00	0.00	0.00
4,500.00	30.09	235.26	4,219.68	431.32	-659.25	-950.61	987.09	0.00	0.00	0.00
SUSSEX										
4,595.15	30.09	235.26	4,302.00	349.00	-686.44	-989.81	1,027.80	0.00	0.00	0.00
4,600.00	30.09	235.26	4,306.20	344.80	-687.83	-991.81	1,029.88	0.00	0.00	0.00
4,700.00	30.09	235.26	4,392.72	258.28	-716.40	-1,033.01	1,072.66	0.00	0.00	0.00
4,800.00	30.09	235.26	4,479.24	171.76	-744.98	-1,074.22	1,115.45	0.00	0.00	0.00
4,900.00	30.09	235.26	4,565.76	85.24	-773.55	-1,115.42	1,158.23	0.00	0.00	0.00
5,000.00	30.09	235.26	4,652.28	-1.28	-802.13	-1,156.63	1,201.02	0.00	0.00	0.00
5,100.00	30.09	235.26	4,738.80	-87.80	-830.70	-1,197.83	1,243.80	0.00	0.00	0.00
5,200.00	30.09	235.26	4,825.32	-174.32	-859.28	-1,239.03	1,286.59	0.00	0.00	0.00
SHANNON										
5,226.22	30.09	235.26	4,848.00	-197.00	-866.77	-1,249.84	1,297.80	0.00	0.00	0.00
5,300.00	30.09	235.26	4,911.84	-260.84	-887.85	-1,280.24	1,329.37	0.00	0.00	0.00
5,400.00	30.09	235.26	4,998.36	-347.36	-916.43	-1,321.44	1,372.16	0.00	0.00	0.00
5,500.00	30.09	235.26	5,084.88	-433.88	-945.00	-1,362.64	1,414.94	0.00	0.00	0.00
END OF TANGENT										
5,566.97	30.09	235.26	5,142.82	-491.82	-964.14	-1,390.24	1,443.60	0.00	0.00	0.00
5,600.00	29.27	235.26	5,171.52	-520.52	-973.46	-1,403.68	1,457.55	2.50	-2.50	0.00
5,700.00	26.77	235.26	5,259.79	-608.79	-1,000.23	-1,442.28	1,497.63	2.50	-2.50	0.00
5,800.00	24.27	235.26	5,350.03	-699.03	-1,024.77	-1,477.67	1,534.39	2.50	-2.50	0.00
5,900.00	21.77	235.26	5,442.06	-791.06	-1,047.06	-1,509.80	1,567.75	2.50	-2.50	0.00
6,000.00	19.27	235.26	5,535.70	-884.70	-1,067.03	-1,538.60	1,597.66	2.50	-2.50	0.00
6,100.00	16.77	235.26	5,630.79	-979.79	-1,084.66	-1,564.02	1,624.05	2.50	-2.50	0.00
6,200.00	14.27	235.26	5,727.14	-1,076.14	-1,099.90	-1,586.00	1,646.87	2.50	-2.50	0.00
6,300.00	11.77	235.26	5,824.56	-1,173.56	-1,112.74	-1,604.51	1,666.09	2.50	-2.50	0.00
6,400.00	9.27	235.26	5,922.87	-1,271.87	-1,123.14	-1,619.51	1,681.67	2.50	-2.50	0.00
6,500.00	6.77	235.26	6,021.89	-1,370.89	-1,131.09	-1,630.97	1,693.57	2.50	-2.50	0.00
6,600.00	4.27	235.26	6,121.42	-1,470.42	-1,136.57	-1,638.88	1,701.78	2.50	-2.50	0.00
6,700.00	1.77	235.26	6,221.27	-1,570.27	-1,139.57	-1,643.20	1,706.27	2.50	-2.50	0.00
EOD TO VERTICAL										
6,770.74	0.00	0.00	6,292.00	-1,641.00	-1,140.19	-1,644.10	1,707.20	2.50	-2.50	176.34
6,800.00	0.00	0.00	6,321.26	-1,670.26	-1,140.19	-1,644.10	1,707.20	0.00	0.00	0.00
KOP (10°/100ft BUR)										
6,800.74	0.00	0.00	6,322.00	-1,671.00	-1,140.19	-1,644.10	1,707.20	0.00	0.00	0.00
6,900.00	9.93	272.55	6,420.76	-1,769.76	-1,139.81	-1,652.67	1,715.73	10.00	10.00	0.00
7,000.00	19.92	272.55	6,517.27	-1,866.27	-1,138.66	-1,678.36	1,741.32	10.00	10.00	0.00
7,100.00	29.92	272.55	6,607.84	-1,956.84	-1,136.79	-1,720.41	1,783.19	10.00	10.00	0.00
7,200.00	39.92	272.55	6,689.73	-2,038.73	-1,134.25	-1,777.53	1,840.06	10.00	10.00	0.00
SHARON SPRINGS										
7,244.90	44.41	272.55	6,723.00	-2,072.00	-1,132.90	-1,807.64	1,870.04	10.00	10.00	0.00
NIOBRARA										
7,288.57	48.78	272.55	6,753.00	-2,102.00	-1,131.49	-1,839.32	1,901.60	10.00	10.00	0.00
7,300.00	49.92	272.55	6,760.44	-2,109.44	-1,131.11	-1,847.98	1,910.22	10.00	10.00	0.00
7,400.00	59.92	272.55	6,817.84	-2,166.84	-1,127.47	-1,929.64	1,991.53	10.00	10.00	0.00
7,500.00	69.92	272.55	6,860.17	-2,209.17	-1,123.44	-2,020.00	2,081.51	10.00	10.00	0.00
NIO B										
7,548.97	74.82	272.55	6,875.00	-2,224.00	-1,121.36	-2,066.61	2,127.92	10.00	10.00	0.00
7,600.00	79.92	272.55	6,886.16	-2,235.16	-1,119.15	-2,116.34	2,177.44	10.00	10.00	0.00
7,700.00	89.92	272.55	6,895.00	-2,244.00	-1,114.72	-2,215.72	2,276.40	10.00	10.00	0.00
LANDING PNT: 2161ft FNL & 460ft FEL of Sec 8 - NIO B TGT										
7,700.81	90.00	272.55	6,895.00	-2,244.00	-1,114.68	-2,216.54	2,277.21	10.00	10.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well MT FED MAPLEWOOD 8W-20-11
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4651.00usft (SAV 802)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4651.00usft (SAV 802)
Site:	NE NW SEC. 9 T5N R65W 6th P.M.	North Reference:	True
Well:	MT FED MAPLEWOOD 8W-20-11	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #3		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,800.00	90.00	272.55	6,895.00	-2,244.00	-1,110.26	-2,315.63	2,375.88	0.00	0.00	0.00
7,900.00	90.00	272.55	6,895.00	-2,244.00	-1,105.81	-2,415.53	2,475.35	0.00	0.00	0.00
8,000.00	90.00	272.55	6,895.00	-2,244.00	-1,101.36	-2,515.43	2,574.83	0.00	0.00	0.00
8,100.00	90.00	272.55	6,895.00	-2,244.00	-1,096.91	-2,615.33	2,674.31	0.00	0.00	0.00
8,200.00	90.00	272.55	6,895.00	-2,244.00	-1,092.46	-2,715.23	2,773.79	0.00	0.00	0.00
8,300.00	90.00	272.55	6,895.00	-2,244.00	-1,088.00	-2,815.13	2,873.26	0.00	0.00	0.00
8,400.00	90.00	272.55	6,895.00	-2,244.00	-1,083.55	-2,915.03	2,972.74	0.00	0.00	0.00
8,500.00	90.00	272.55	6,894.99	-2,243.99	-1,079.10	-3,014.93	3,072.22	0.00	0.00	0.00
8,600.00	90.00	272.55	6,894.99	-2,243.99	-1,074.65	-3,114.83	3,171.69	0.00	0.00	0.00
8,700.00	90.00	272.55	6,894.99	-2,243.99	-1,070.20	-3,214.73	3,271.17	0.00	0.00	0.00
8,800.00	90.00	272.55	6,894.99	-2,243.99	-1,065.75	-3,314.63	3,370.65	0.00	0.00	0.00
8,900.00	90.00	272.55	6,894.99	-2,243.99	-1,061.30	-3,414.53	3,470.13	0.00	0.00	0.00
9,000.00	90.00	272.55	6,894.99	-2,243.99	-1,056.85	-3,514.44	3,569.60	0.00	0.00	0.00
9,100.00	90.00	272.55	6,894.99	-2,243.99	-1,052.40	-3,614.34	3,669.08	0.00	0.00	0.00
9,200.00	90.00	272.55	6,894.99	-2,243.99	-1,047.94	-3,714.24	3,768.56	0.00	0.00	0.00
9,300.00	90.00	272.55	6,894.99	-2,243.99	-1,043.49	-3,814.14	3,868.03	0.00	0.00	0.00
9,400.00	90.00	272.55	6,894.99	-2,243.99	-1,039.04	-3,914.04	3,967.51	0.00	0.00	0.00
9,500.00	90.00	272.55	6,894.99	-2,243.99	-1,034.59	-4,013.94	4,066.99	0.00	0.00	0.00
9,600.00	90.00	272.55	6,894.99	-2,243.99	-1,030.14	-4,113.84	4,166.47	0.00	0.00	0.00
9,700.00	90.00	272.55	6,894.99	-2,243.99	-1,025.69	-4,213.74	4,265.94	0.00	0.00	0.00
9,800.00	90.00	272.55	6,894.99	-2,243.99	-1,021.24	-4,313.64	4,365.42	0.00	0.00	0.00
9,900.00	90.00	272.55	6,894.99	-2,243.99	-1,016.79	-4,413.54	4,464.90	0.00	0.00	0.00
10,000.00	90.00	272.55	6,894.99	-2,243.99	-1,012.34	-4,513.44	4,564.37	0.00	0.00	0.00
10,100.00	90.00	272.55	6,894.99	-2,243.99	-1,007.89	-4,613.35	4,663.85	0.00	0.00	0.00
10,200.00	90.00	272.55	6,894.99	-2,243.99	-1,003.44	-4,713.25	4,763.33	0.00	0.00	0.00
10,300.00	90.00	272.55	6,894.99	-2,243.99	-998.99	-4,813.15	4,862.81	0.00	0.00	0.00
10,400.00	90.00	272.55	6,894.99	-2,243.99	-994.54	-4,913.05	4,962.28	0.00	0.00	0.00
10,500.00	90.00	272.55	6,894.98	-2,243.98	-990.10	-5,012.95	5,061.76	0.00	0.00	0.00
10,600.00	90.00	272.55	6,894.98	-2,243.98	-985.65	-5,112.85	5,161.24	0.00	0.00	0.00
10,700.00	90.00	272.55	6,894.98	-2,243.98	-981.20	-5,212.75	5,260.72	0.00	0.00	0.00
10,800.00	90.00	272.55	6,894.98	-2,243.98	-976.75	-5,312.65	5,360.19	0.00	0.00	0.00
10,900.00	90.00	272.55	6,894.98	-2,243.98	-972.30	-5,412.55	5,459.67	0.00	0.00	0.00
11,000.00	90.00	272.55	6,894.98	-2,243.98	-967.85	-5,512.45	5,559.15	0.00	0.00	0.00
11,100.00	90.00	272.55	6,894.98	-2,243.98	-963.40	-5,612.36	5,658.62	0.00	0.00	0.00
11,200.00	90.00	272.55	6,894.98	-2,243.98	-958.95	-5,712.26	5,758.10	0.00	0.00	0.00
11,300.00	90.00	272.55	6,894.98	-2,243.98	-954.51	-5,812.16	5,857.58	0.00	0.00	0.00
11,400.00	90.00	272.55	6,894.98	-2,243.98	-950.06	-5,912.06	5,957.06	0.00	0.00	0.00
11,500.00	90.00	272.55	6,894.98	-2,243.98	-945.61	-6,011.96	6,056.53	0.00	0.00	0.00
11,600.00	90.00	272.55	6,894.98	-2,243.98	-941.16	-6,111.86	6,156.01	0.00	0.00	0.00
11,700.00	90.00	272.55	6,894.98	-2,243.98	-936.71	-6,211.76	6,255.49	0.00	0.00	0.00
11,800.00	90.00	272.55	6,894.98	-2,243.98	-932.27	-6,311.66	6,354.97	0.00	0.00	0.00
11,900.00	90.00	272.55	6,894.98	-2,243.98	-927.82	-6,411.56	6,454.44	0.00	0.00	0.00
12,000.00	90.00	272.55	6,894.98	-2,243.98	-923.37	-6,511.46	6,553.92	0.00	0.00	0.00
12,100.00	90.00	272.55	6,894.98	-2,243.98	-918.92	-6,611.37	6,653.40	0.00	0.00	0.00
12,200.00	90.00	272.55	6,894.98	-2,243.98	-914.48	-6,711.27	6,752.88	0.00	0.00	0.00
12,300.00	90.00	272.55	6,894.98	-2,243.98	-910.03	-6,811.17	6,852.35	0.00	0.00	0.00
12,400.00	90.00	272.55	6,894.98	-2,243.98	-905.58	-6,911.07	6,951.83	0.00	0.00	0.00
12,500.00	90.00	272.55	6,894.98	-2,243.98	-901.13	-7,010.97	7,051.31	0.00	0.00	0.00
12,600.00	90.00	272.55	6,894.98	-2,243.98	-896.69	-7,110.87	7,150.79	0.00	0.00	0.00
12,700.00	90.00	272.55	6,894.98	-2,243.98	-892.24	-7,210.77	7,250.26	0.00	0.00	0.00
12,800.00	90.00	272.55	6,894.98	-2,243.98	-887.79	-7,310.67	7,349.74	0.00	0.00	0.00
12,900.00	90.00	272.55	6,894.98	-2,243.98	-883.35	-7,410.57	7,449.22	0.00	0.00	0.00
13,000.00	90.00	272.55	6,894.98	-2,243.98	-878.90	-7,510.48	7,548.70	0.00	0.00	0.00
13,100.00	90.00	272.55	6,894.98	-2,243.98	-874.45	-7,610.38	7,648.17	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well MT FED MAPLEWOOD 8W-20-11
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4651.00usft (SAV 802)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4651.00usft (SAV 802)
Site:	NE NW SEC. 9 T5N R65W 6th P.M.	North Reference:	True
Well:	MT FED MAPLEWOOD 8W-20-11	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #3		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,200.00	90.00	272.55	6,894.98	-2,243.98	-870.01	-7,710.28	7,747.65	0.00	0.00	0.00
13,300.00	90.00	272.55	6,894.98	-2,243.98	-865.56	-7,810.18	7,847.13	0.00	0.00	0.00
13,400.00	90.00	272.55	6,894.98	-2,243.98	-861.12	-7,910.08	7,946.61	0.00	0.00	0.00
13,500.00	90.00	272.55	6,894.98	-2,243.98	-856.67	-8,009.98	8,046.09	0.00	0.00	0.00
13,600.00	90.00	272.55	6,894.98	-2,243.98	-852.22	-8,109.88	8,145.56	0.00	0.00	0.00
13,700.00	90.00	272.55	6,894.98	-2,243.98	-847.78	-8,209.78	8,245.04	0.00	0.00	0.00
13,800.00	90.00	272.55	6,894.98	-2,243.98	-843.33	-8,309.68	8,344.52	0.00	0.00	0.00
13,900.00	90.00	272.55	6,894.98	-2,243.98	-838.89	-8,409.59	8,444.00	0.00	0.00	0.00
14,000.00	90.00	272.55	6,894.98	-2,243.98	-834.44	-8,509.49	8,543.47	0.00	0.00	0.00
14,100.00	90.00	272.55	6,894.98	-2,243.98	-830.00	-8,609.39	8,642.95	0.00	0.00	0.00
14,200.00	90.00	272.55	6,894.98	-2,243.98	-825.55	-8,709.29	8,742.43	0.00	0.00	0.00
14,300.00	90.00	272.55	6,894.98	-2,243.98	-821.11	-8,809.19	8,841.91	0.00	0.00	0.00
14,400.00	90.00	272.55	6,894.98	-2,243.98	-816.66	-8,909.09	8,941.38	0.00	0.00	0.00
14,500.00	90.00	272.55	6,894.98	-2,243.98	-812.22	-9,008.99	9,040.86	0.00	0.00	0.00
14,600.00	90.00	272.55	6,894.99	-2,243.99	-807.77	-9,108.89	9,140.34	0.00	0.00	0.00
14,700.00	90.00	272.55	6,894.99	-2,243.99	-803.33	-9,208.79	9,239.82	0.00	0.00	0.00
14,800.00	90.00	272.55	6,894.99	-2,243.99	-798.88	-9,308.70	9,339.30	0.00	0.00	0.00
14,900.00	90.00	272.55	6,894.99	-2,243.99	-794.44	-9,408.60	9,438.77	0.00	0.00	0.00
15,000.00	90.00	272.55	6,894.99	-2,243.99	-789.99	-9,508.50	9,538.25	0.00	0.00	0.00
15,100.00	90.00	272.55	6,894.99	-2,243.99	-785.55	-9,608.40	9,637.73	0.00	0.00	0.00
15,200.00	90.00	272.55	6,894.99	-2,243.99	-781.10	-9,708.30	9,737.21	0.00	0.00	0.00
15,300.00	90.00	272.55	6,894.99	-2,243.99	-776.66	-9,808.20	9,836.68	0.00	0.00	0.00
15,400.00	90.00	272.55	6,894.99	-2,243.99	-772.22	-9,908.10	9,936.16	0.00	0.00	0.00
15,500.00	90.00	272.55	6,894.99	-2,243.99	-767.77	-10,008.00	10,035.64	0.00	0.00	0.00
15,600.00	90.00	272.55	6,894.99	-2,243.99	-763.33	-10,107.91	10,135.12	0.00	0.00	0.00
15,700.00	90.00	272.55	6,894.99	-2,243.99	-758.89	-10,207.81	10,234.60	0.00	0.00	0.00
15,800.00	90.00	272.55	6,894.99	-2,243.99	-754.44	-10,307.71	10,334.07	0.00	0.00	0.00
15,900.00	90.00	272.55	6,894.99	-2,243.99	-750.00	-10,407.61	10,433.55	0.00	0.00	0.00
16,000.00	90.00	272.55	6,894.99	-2,243.99	-745.56	-10,507.51	10,533.03	0.00	0.00	0.00
16,100.00	90.00	272.55	6,894.99	-2,243.99	-741.11	-10,607.41	10,632.51	0.00	0.00	0.00
16,200.00	90.00	272.55	6,894.99	-2,243.99	-736.67	-10,707.31	10,731.99	0.00	0.00	0.00
16,300.00	90.00	272.55	6,894.99	-2,243.99	-732.23	-10,807.21	10,831.46	0.00	0.00	0.00
16,400.00	90.00	272.55	6,894.99	-2,243.99	-727.78	-10,907.12	10,930.94	0.00	0.00	0.00
16,500.00	90.00	272.55	6,894.99	-2,243.99	-723.34	-11,007.02	11,030.42	0.00	0.00	0.00
16,600.00	90.00	272.55	6,894.99	-2,243.99	-718.90	-11,106.92	11,129.90	0.00	0.00	0.00
16,700.00	90.00	272.55	6,895.00	-2,244.00	-714.46	-11,206.82	11,229.38	0.00	0.00	0.00
16,800.00	90.00	272.55	6,895.00	-2,244.00	-710.01	-11,306.72	11,328.85	0.00	0.00	0.00
16,900.00	90.00	272.55	6,895.00	-2,244.00	-705.57	-11,406.62	11,428.33	0.00	0.00	0.00
17,000.00	90.00	272.55	6,895.00	-2,244.00	-701.13	-11,506.52	11,527.81	0.00	0.00	0.00
17,100.00	90.00	272.55	6,895.00	-2,244.00	-696.69	-11,606.42	11,627.29	0.00	0.00	0.00
17,200.00	90.00	272.55	6,895.00	-2,244.00	-692.25	-11,706.33	11,726.77	0.00	0.00	0.00
17,300.00	90.00	272.55	6,895.00	-2,244.00	-687.80	-11,806.23	11,826.24	0.00	0.00	0.00
BHL: 2398ft FNL & 460ft FWL of Sec 7										
17,347.63	90.00	272.55	6,895.00	-2,244.00	-685.69	-11,853.81	11,873.62	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well MT FED MAPLEWOOD 8W-20-11
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4651.00usft (SAV 802)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4651.00usft (SAV 802)
Site:	NE NW SEC. 9 T5N R65W 6th P.M.	North Reference:	True
Well:	MT FED MAPLEWOOD 8W-20-11	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #3		

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,798.80	3,613.00	PARKMAN				
4,595.15	4,302.00	SUSSEX				
5,226.22	4,848.00	SHANNON				
7,244.90	6,723.00	SHARON SPRINGS				
7,288.57	6,753.00	NIOBRARA				
7,548.97	6,875.00	NIO B				
7,700.81	6,895.00	NIO B TGT				

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.00	0.00	0.00	0.00	SHL: 988ft FNL & 1753ft FWL of Sec 9
1,500.00	1,500.00	0.00	0.00	START NUDGE - SURFACE (2°/100ft BUR)
1,800.55	1,800.00	-8.98	-12.94	9 5/8" SURFACE CSG
1,865.55	1,864.64	-12.85	-18.54	START NUDGE - MAIN (2.5°/100ft BUR)
2,828.88	2,773.82	-181.73	-262.04	EOB TO 30.09° INC
5,566.97	5,142.82	-964.14	-1,390.24	END OF TANGENT
6,770.74	6,292.00	-1,140.19	-1,644.10	EOD TO VERTICAL
6,800.74	6,322.00	-1,140.19	-1,644.10	KOP (10°/100ft BUR)
7,700.81	6,895.00	-1,114.68	-2,216.53	LANDING PNT: 2161ft FNL & 460ft FEL of Sec 8
17,347.63	6,895.00	-685.69	-11,853.81	BHL: 2398ft FNL & 460ft FWL of Sec 7