



BISON OIL & GAS II, LLC

WELD COUNTY, COLORADO (NAD 83)

NW SW SEC. 16 T8N R59W 6th P.M.

BIG MOUNTAIN VIPER FED 8-59 16-17-18-1

ORIGINAL WELLBORE

03 March, 2020

Plan: PROPOSAL #2



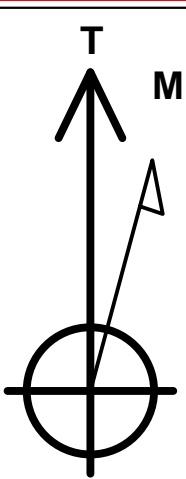
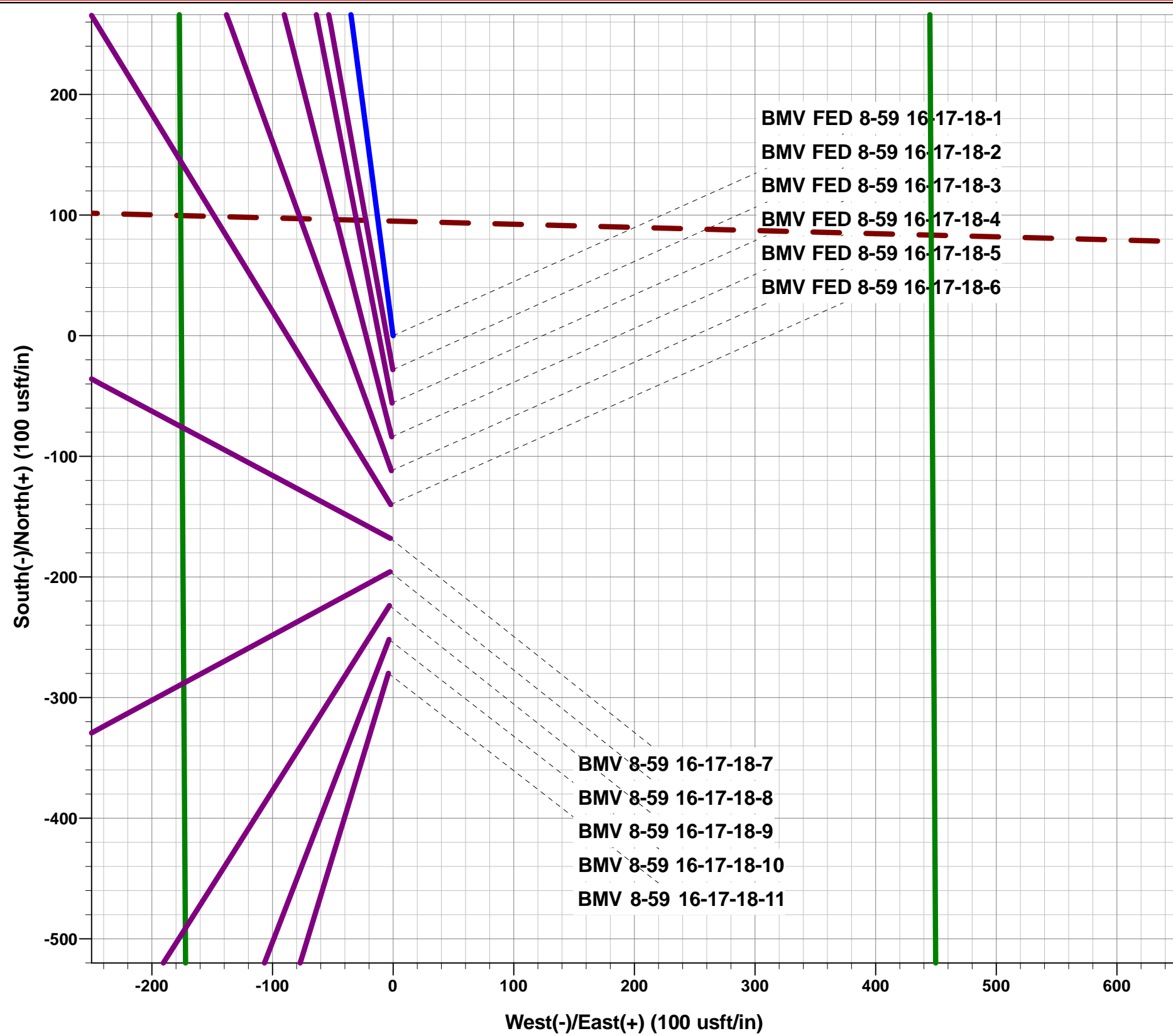
Project: WELD COUNTY, COLORADO (NAD 83)
Site: NW SW SEC. 16 T8N R59W 6th P.M.
Well: BIG MOUNTAIN VIPER FED 8-59 16-17-18-1
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #2

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Dep	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL: 2551ft FSL & 635ft FWL of Sec 16
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	START NUDGE (3°/100ft BUR)
1116.95	30.51	352.53	1069.57	262.17	-34.35	108.78	264.41	EOB TO 30.51° INC
5079.09	30.51	352.53	4483.17	2256.56	-295.68	936.32	2275.85	END OF TANGENT
6096.04	0.00	0.00	5452.74	2518.73	-330.03	1045.10	2540.26	EOD TO VERTICAL
6196.04	0.00	0.00	5552.74	2518.73	-330.03	1045.10	2540.26	KOP (10°/100ft BUR)
6775.97	57.99	270.39	6038.60	2520.56	-599.31	1303.37	2809.83	ENTER COC 28082
7096.03	90.00	270.39	6125.70	2522.63	-902.97	1594.63	3113.21	BPI: 350ft FNL & 300ft FEL of Sec 17
12088.48	90.00	270.39	6125.72	2556.45	-5895.31	6382.96	8105.66	ENTER COC 79098
14645.38	90.00	270.38	6125.70	2573.62	-8452.15	8835.27	10662.56	EPI: 350ft FNL & 2557ft FEL of Sec 18
14703.36	90.00	270.38	6125.70	2574.00	-8510.12	8890.88	10720.54	BHL: 350ft FNL & 2615ft FEL of Sec 18

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - BMV FED 8-59 16-17-18-1	5552.74	2518.73	-330.03	40.668719	-103.990006
BPI - BMV FED 8-59 16-17-18-1	6125.70	2522.63	-902.97	40.668730	-103.992071
EPI - BMV FED 8-59 16-17-18-1	6125.70	2573.62	-8452.15	40.668866	-104.019284
BHL - BMV FED 8-59 16-17-18-1	6125.70	2574.00	-8510.12	40.668867	-104.019493



Azimuths to True North
Magnetic North: 7.59°

Magnetic Field
Strength: 52303.6nT
Dip Angle: 67.03°
Date: 2020-03-03
Model: IGRF2020

FORMATION TOP DETAILS

TVDPPath	MDPath	Formation
410.70	412.09	PIERRE SHALE (BFH)
3340.70	3753.03	PARKMAN
3845.70	4339.18	SUSSEX
5095.70	5736.88	SHANNON
5870.70	6533.11	SHARON SPRINGS SHALE
5990.70	6694.56	NIOBRARA FORMATION
5995.70	6702.38	NIOBRARA A CHALK
6095.70	6909.81	NIOBRARA B CHALK
6125.70	7096.03	NIOBRARA B LP

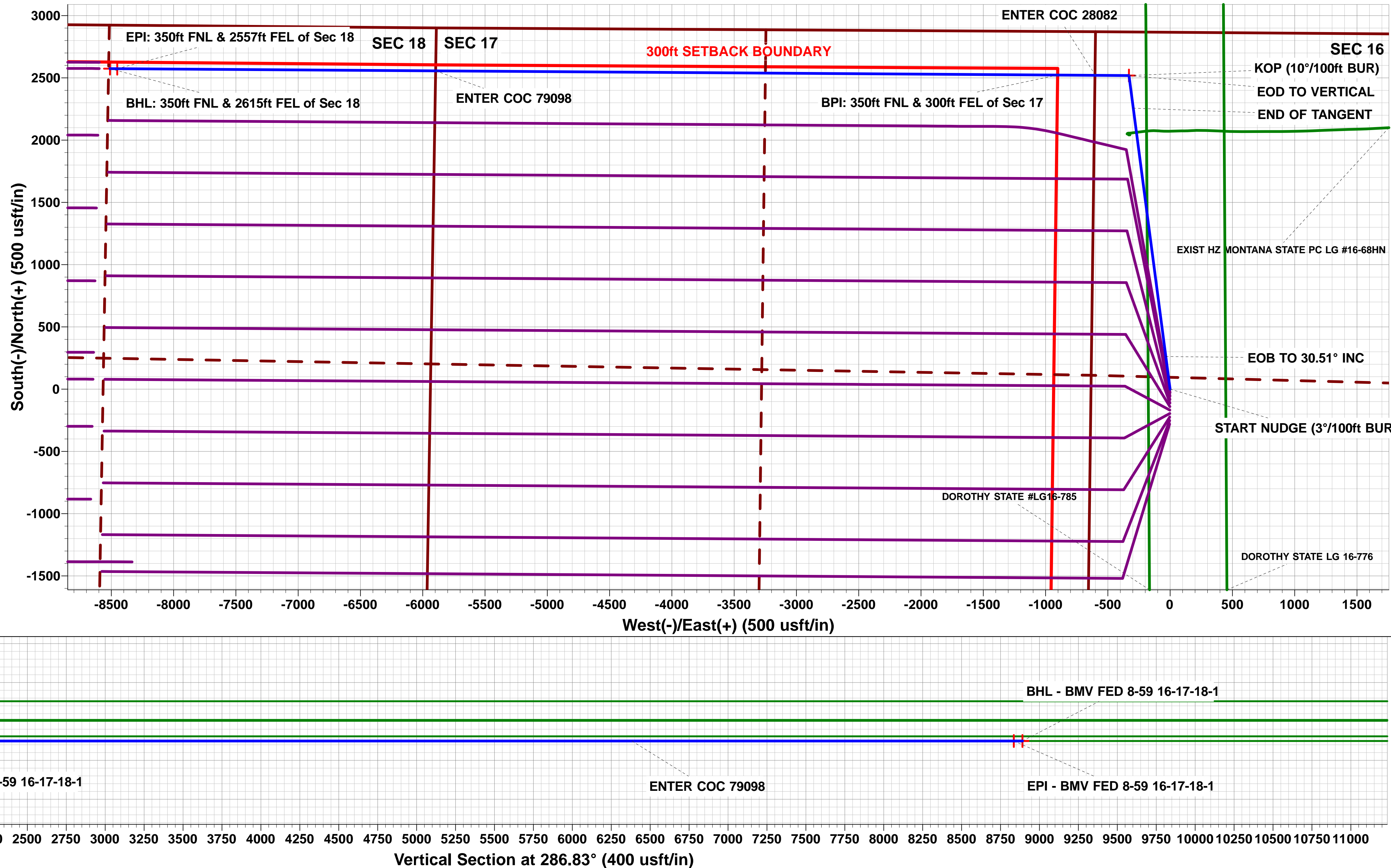
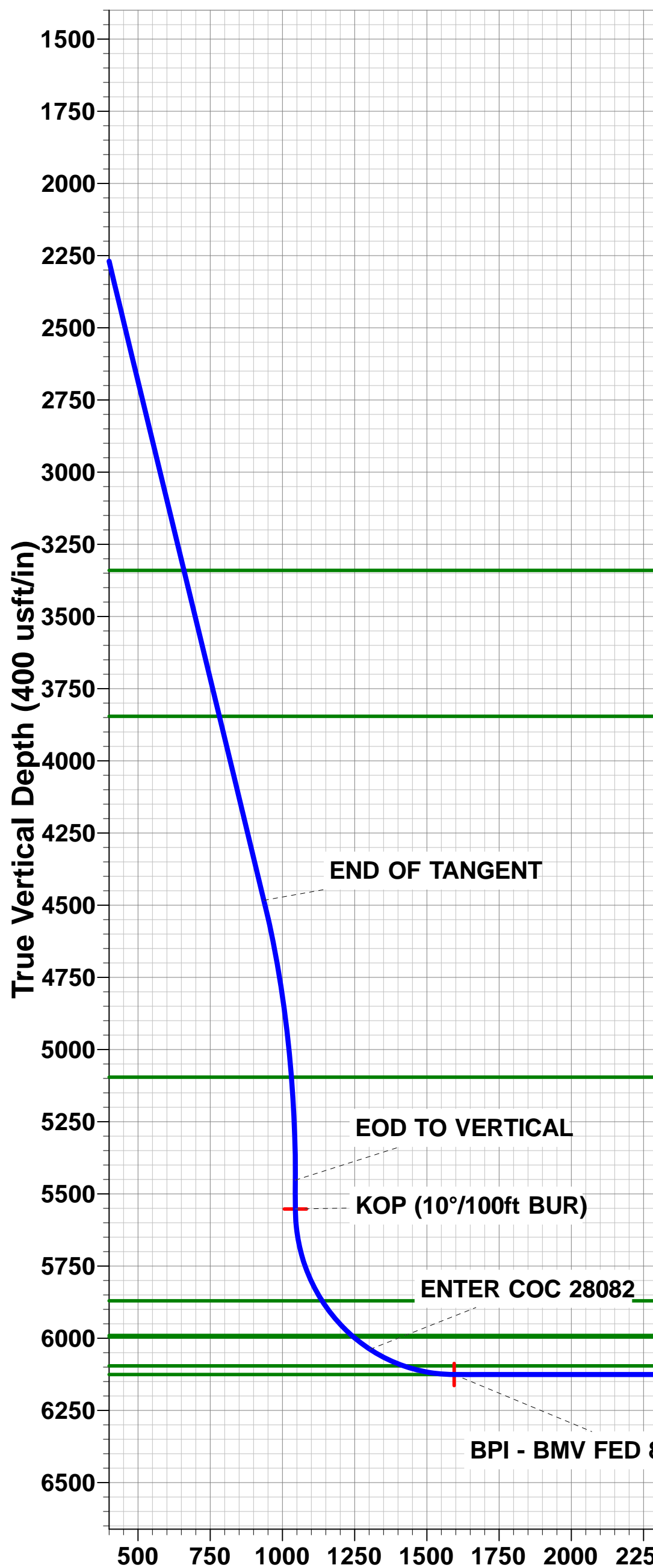
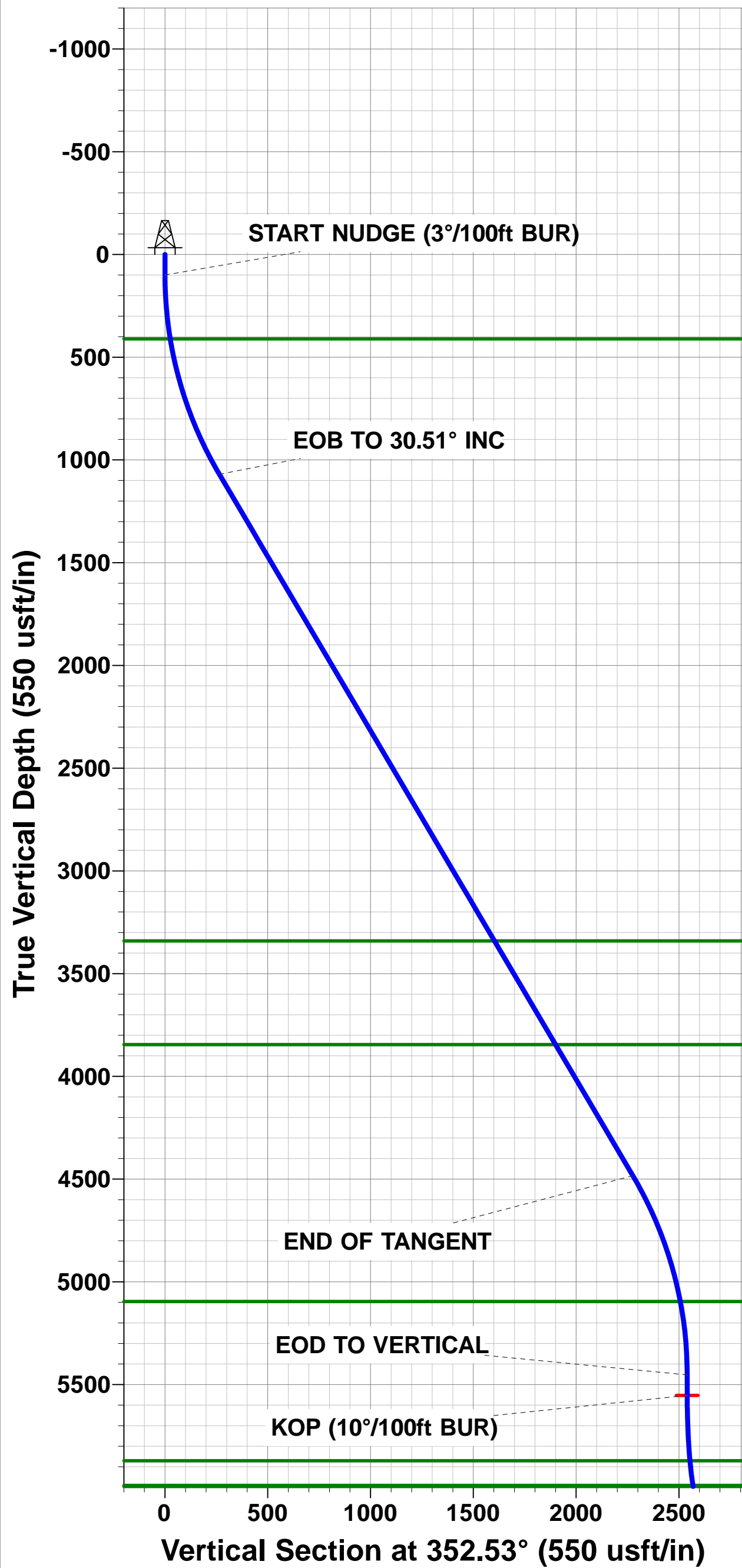
PROPOSED LOCAL COORDINATES:

SHL: 2551ft FSL & 635ft FWL of Sec 16

BEGIN PROD INT: 350ft FNL & 300ft FEL of Sec 17

END PROD INTERVAL: 350ft FNL & 2557ft FEL of Sec 18

BHL: 350ft FNL & 2615ft FEL of Sec 18



Planning Report

Database:	EDM 5000.15.1	Local Co-ordinate Reference:	Well BIG MOUNTAIN VIPER FED 8-59 16-17-18-1
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB 25' @ 4900.70usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB 25' @ 4900.70usft
Site:	NW SW SEC. 16 T8N R59W 6th P.M.	North Reference:	True
Well:	BIG MOUNTAIN VIPER FED 8-59 16-17-18-1	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

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	NW SW SEC. 16 T8N R59W 6th P.M.		
Site Position:		Northing:	1,487,370.83 usft
From:	Lat/Long	Easting:	3,419,160.21 usft
Position Uncertainty:	0.00 usft	Slot Radius:	1.10000ft
		Latitude:	40.661425
		Longitude:	-103.989093
		Grid Convergence:	0.98 °

Well	BIG MOUNTAIN VIPER FED 8-59 16-17-18-1		
Well Position	+N/-S	138.80 usft	Northing:
	+E/-W	76.85 usft	Easting:
Position Uncertainty		0.00 usft	Wellhead Elevation:
			usft
			Latitude:
			Longitude:
			Ground Level:

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	2020-03-03	7.59	67.03	52,303.59920477

Design	PROPOSAL #2			
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	286.83

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	-4,900.70	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	-4,800.70	0.00	0.00	0.00	0.00	0.00	0.00	
1,116.95	30.51	352.53	1,069.57	-3,831.13	262.17	-34.35	3.00	3.00	0.00	352.53	
5,079.09	30.51	352.53	4,483.17	-417.53	2,256.56	-295.68	0.00	0.00	0.00	0.00	
6,096.04	0.00	0.00	5,452.74	552.04	2,518.73	-330.03	3.00	-3.00	0.00	180.00	
6,196.04	0.00	0.00	5,552.74	652.04	2,518.73	-330.03	0.00	0.00	0.00	0.00	KOP - BMV FED 8-
7,096.03	90.00	270.39	6,125.70	1,225.00	2,522.63	-902.97	10.00	10.00	-9.96	270.39	BPI - BMV FED 8-5
14,645.38	90.00	270.38	6,125.70	1,225.00	2,573.62	-8,452.15	0.00	0.00	0.00	-79.71	EPI - BMV FED 8-5
14,703.36	90.00	270.38	6,125.70	1,225.00	2,574.00	-8,510.12	0.01	0.00	-0.01	-99.60	BHL - BMV FED 8-1

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Site:	NW SW SEC. 16 T8N R59W 6th P.M.	North Reference:	True
Well:	BIG MOUNTAIN VIPER FED 8-59 16-17-18-1	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

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: 2551ft FSL & 635ft FWL of Sec 16										
0.00	0.00	0.00	0.00	4,900.70	0.00	0.00	0.00	0.00	0.00	0.00
START NUDGE (3°/100ft BUR)										
100.00	0.00	0.00	100.00	4,800.70	0.00	0.00	0.00	0.00	0.00	0.00
200.00	3.00	352.53	199.95	4,700.75	2.60	-0.34	1.08	3.00	3.00	0.00
300.00	6.00	352.53	299.63	4,601.07	10.37	-1.36	4.30	3.00	3.00	0.00
400.00	9.00	352.53	398.77	4,501.93	23.31	-3.05	9.67	3.00	3.00	0.00
PIERRE SHALE (BFH)										
412.09	9.36	352.53	410.70	4,490.00	25.23	-3.31	10.47	3.00	3.00	0.00
500.00	12.00	352.53	497.08	4,403.62	41.38	-5.42	17.17	3.00	3.00	0.00
600.00	15.00	352.53	594.31	4,306.39	64.53	-8.45	26.77	3.00	3.00	0.00
700.00	18.00	352.53	690.18	4,210.52	92.68	-12.14	38.46	3.00	3.00	0.00
800.00	21.00	352.53	784.43	4,116.27	125.78	-16.48	52.19	3.00	3.00	0.00
900.00	24.00	352.53	876.81	4,023.89	163.72	-21.45	67.93	3.00	3.00	0.00
1,000.00	27.00	352.53	967.06	3,933.64	206.40	-27.04	85.64	3.00	3.00	0.00
1,100.00	30.00	352.53	1,054.93	3,845.77	253.70	-33.24	105.27	3.00	3.00	0.00
EOB TO 30.51° INC										
1,116.95	30.51	352.53	1,069.57	3,831.13	262.17	-34.35	108.78	3.00	3.00	0.00
1,200.00	30.51	352.53	1,141.12	3,759.58	303.98	-39.83	126.13	0.00	0.00	0.00
1,300.00	30.51	352.53	1,227.28	3,673.42	354.31	-46.43	147.01	0.00	0.00	0.00
1,400.00	30.51	352.53	1,313.43	3,587.27	404.65	-53.02	167.90	0.00	0.00	0.00
1,500.00	30.51	352.53	1,399.59	3,501.11	454.98	-59.62	188.79	0.00	0.00	0.00
1,600.00	30.51	352.53	1,485.75	3,414.95	505.32	-66.21	209.67	0.00	0.00	0.00
1,700.00	30.51	352.53	1,571.90	3,328.80	555.66	-72.81	230.56	0.00	0.00	0.00
1,800.00	30.51	352.53	1,658.06	3,242.64	605.99	-79.40	251.44	0.00	0.00	0.00
1,900.00	30.51	352.53	1,744.21	3,156.49	656.33	-86.00	272.33	0.00	0.00	0.00
2,000.00	30.51	352.53	1,830.37	3,070.33	706.66	-92.60	293.22	0.00	0.00	0.00
2,100.00	30.51	352.53	1,916.52	2,984.18	757.00	-99.19	314.10	0.00	0.00	0.00
2,200.00	30.51	352.53	2,002.68	2,898.02	807.34	-105.79	334.99	0.00	0.00	0.00
2,300.00	30.51	352.53	2,088.83	2,811.87	857.67	-112.38	355.87	0.00	0.00	0.00
2,400.00	30.51	352.53	2,174.99	2,725.71	908.01	-118.98	376.76	0.00	0.00	0.00
2,500.00	30.51	352.53	2,261.14	2,639.56	958.35	-125.57	397.65	0.00	0.00	0.00
2,600.00	30.51	352.53	2,347.30	2,553.40	1,008.68	-132.17	418.53	0.00	0.00	0.00
2,700.00	30.51	352.53	2,433.46	2,467.24	1,059.02	-138.76	439.42	0.00	0.00	0.00
2,800.00	30.51	352.53	2,519.61	2,381.09	1,109.35	-145.36	460.30	0.00	0.00	0.00
2,900.00	30.51	352.53	2,605.77	2,294.93	1,159.69	-151.96	481.19	0.00	0.00	0.00
3,000.00	30.51	352.53	2,691.92	2,208.78	1,210.03	-158.55	502.08	0.00	0.00	0.00
3,100.00	30.51	352.53	2,778.08	2,122.62	1,260.36	-165.15	522.96	0.00	0.00	0.00
3,200.00	30.51	352.53	2,864.23	2,036.47	1,310.70	-171.74	543.85	0.00	0.00	0.00
3,300.00	30.51	352.53	2,950.39	1,950.31	1,361.03	-178.34	564.73	0.00	0.00	0.00
3,400.00	30.51	352.53	3,036.54	1,864.16	1,411.37	-184.93	585.62	0.00	0.00	0.00
3,500.00	30.51	352.53	3,122.70	1,778.00	1,461.71	-191.53	606.51	0.00	0.00	0.00
3,600.00	30.51	352.53	3,208.86	1,691.84	1,512.04	-198.13	627.39	0.00	0.00	0.00
3,700.00	30.51	352.53	3,295.01	1,605.69	1,562.38	-204.72	648.28	0.00	0.00	0.00
PARKMAN										
3,753.03	30.51	352.53	3,340.70	1,560.00	1,589.07	-208.22	659.36	0.00	0.00	0.00
3,800.00	30.51	352.53	3,381.17	1,519.53	1,612.72	-211.32	669.16	0.00	0.00	0.00
3,900.00	30.51	352.53	3,467.32	1,433.38	1,663.05	-217.91	690.05	0.00	0.00	0.00
4,000.00	30.51	352.53	3,553.48	1,347.22	1,713.39	-224.51	710.94	0.00	0.00	0.00
4,100.00	30.51	352.53	3,639.63	1,261.07	1,763.72	-231.10	731.82	0.00	0.00	0.00
4,200.00	30.51	352.53	3,725.79	1,174.91	1,814.06	-237.70	752.71	0.00	0.00	0.00
4,300.00	30.51	352.53	3,811.94	1,088.76	1,864.40	-244.29	773.59	0.00	0.00	0.00

Planning Report

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Well:	BIG MOUNTAIN VIPER FED 8-59 16-17-18-1	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

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)
SUSSEX										
4,339.18	30.51	352.53	3,845.70	1,055.00	1,884.12	-246.88	781.78	0.00	0.00	0.00
4,400.00	30.51	352.53	3,898.10	1,002.60	1,914.73	-250.89	794.48	0.00	0.00	0.00
4,500.00	30.51	352.53	3,984.25	916.45	1,965.07	-257.49	815.37	0.00	0.00	0.00
4,600.00	30.51	352.53	4,070.41	830.29	2,015.40	-264.08	836.25	0.00	0.00	0.00
4,700.00	30.51	352.53	4,156.57	744.13	2,065.74	-270.68	857.14	0.00	0.00	0.00
4,800.00	30.51	352.53	4,242.72	657.98	2,116.08	-277.27	878.02	0.00	0.00	0.00
4,900.00	30.51	352.53	4,328.88	571.82	2,166.41	-283.87	898.91	0.00	0.00	0.00
5,000.00	30.51	352.53	4,415.03	485.67	2,216.75	-290.46	919.80	0.00	0.00	0.00
END OF TANGENT										
5,079.09	30.51	352.53	4,483.17	417.53	2,256.56	-295.68	936.32	0.00	0.00	0.00
5,100.00	29.88	352.53	4,501.25	399.45	2,266.99	-297.05	940.64	3.00	-3.00	0.00
5,200.00	26.88	352.53	4,589.22	311.48	2,314.11	-303.22	960.20	3.00	-3.00	0.00
5,300.00	23.88	352.53	4,679.55	221.15	2,356.61	-308.79	977.83	3.00	-3.00	0.00
5,400.00	20.88	352.53	4,772.01	128.69	2,394.36	-313.74	993.49	3.00	-3.00	0.00
5,500.00	17.88	352.53	4,866.33	34.37	2,427.26	-318.05	1,007.14	3.00	-3.00	0.00
5,600.00	14.88	352.53	4,962.26	-61.56	2,455.22	-321.71	1,018.74	3.00	-3.00	0.00
5,700.00	11.88	352.53	5,059.54	-158.84	2,478.16	-324.72	1,028.26	3.00	-3.00	0.00
SHANNON										
5,736.88	10.77	352.53	5,095.70	-195.00	2,485.34	-325.66	1,031.25	3.00	-3.00	0.00
5,800.00	8.88	352.53	5,157.89	-257.19	2,496.03	-327.06	1,035.68	3.00	-3.00	0.00
5,900.00	5.88	352.53	5,257.05	-356.35	2,508.76	-328.73	1,040.96	3.00	-3.00	0.00
6,000.00	2.88	352.53	5,356.74	-456.04	2,516.34	-329.72	1,044.10	3.00	-3.00	0.00
EOD TO VERTICAL										
6,096.04	0.00	0.00	5,452.74	-552.04	2,518.73	-330.03	1,045.10	3.00	-3.00	0.00
6,100.00	0.00	0.00	5,456.70	-556.00	2,518.73	-330.03	1,045.10	0.00	0.00	0.00
KOP (10°/100ft BUR)										
6,196.04	0.00	0.00	5,552.74	-652.04	2,518.73	-330.03	1,045.10	0.00	0.00	0.00
6,200.00	0.40	270.39	5,556.70	-656.00	2,518.73	-330.05	1,045.11	10.01	10.01	0.00
6,300.00	10.40	270.39	5,656.13	-755.43	2,518.79	-339.44	1,054.12	10.00	10.00	0.00
6,400.00	20.40	270.39	5,752.42	-851.72	2,518.97	-365.95	1,079.55	10.00	10.00	0.00
6,500.00	30.40	270.39	5,842.65	-941.95	2,519.27	-408.79	1,120.63	10.00	10.00	0.00
SHARON SPRINGS SHALE										
6,533.11	33.71	270.39	5,870.70	-970.00	2,519.39	-426.35	1,137.48	10.00	10.00	0.00
6,600.00	40.40	270.39	5,924.06	-1,023.36	2,519.66	-466.63	1,176.12	10.00	10.00	0.00
NIOBRARA FORMATION										
6,694.56	49.85	270.39	5,990.70	-1,090.00	2,520.12	-533.56	1,240.31	10.00	10.00	0.00
6,700.00	50.40	270.39	5,994.19	-1,093.49	2,520.15	-537.74	1,244.32	10.00	10.00	0.00
NIOBRARA A CHALK										
6,702.38	50.63	270.39	5,995.70	-1,095.00	2,520.16	-539.57	1,246.08	10.00	10.00	0.00
ENTER COC 28082										
6,775.97	57.99	270.39	6,038.60	-1,137.90	2,520.56	-599.31	1,303.37	10.00	10.00	0.00
6,800.00	60.40	270.39	6,050.91	-1,150.21	2,520.71	-619.94	1,323.17	10.00	10.00	0.00
6,900.00	70.40	270.39	6,092.49	-1,191.79	2,521.32	-710.75	1,410.26	10.00	10.00	0.00
NIOBRARA B CHALK										
6,909.81	71.38	270.39	6,095.70	-1,195.00	2,521.39	-720.01	1,419.15	10.00	10.00	0.00
7,000.00	80.40	270.39	6,117.67	-1,216.97	2,521.98	-807.39	1,502.96	10.00	10.00	0.00
BPI: 350ft FNL & 300ft FEL of Sec 17 - NIOBRARA B LP										
7,096.03	90.00	270.39	6,125.70	-1,225.00	2,522.63	-902.97	1,594.63	10.00	10.00	0.00
7,100.00	90.00	270.39	6,125.70	-1,225.00	2,522.66	-906.94	1,598.44	0.00	0.00	0.00
7,200.00	90.00	270.39	6,125.70	-1,225.00	2,523.34	-1,006.94	1,694.35	0.00	0.00	0.00
7,300.00	90.00	270.39	6,125.70	-1,225.00	2,524.02	-1,106.94	1,790.26	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.15.1	Local Co-ordinate Reference:	Well BIG MOUNTAIN VIPER FED 8-59 16-17-18-1
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB 25' @ 4900.70usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB 25' @ 4900.70usft
Site:	NW SW SEC. 16 T8N R59W 6th P.M.	North Reference:	True
Well:	BIG MOUNTAIN VIPER FED 8-59 16-17-18-1	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

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)
7,400.00	90.00	270.39	6,125.70	-1,225.00	2,524.70	-1,206.93	1,886.17	0.00	0.00	0.00
7,500.00	90.00	270.39	6,125.70	-1,225.00	2,525.39	-1,306.93	1,982.09	0.00	0.00	0.00
7,600.00	90.00	270.39	6,125.71	-1,225.01	2,526.07	-1,406.93	2,078.00	0.00	0.00	0.00
7,700.00	90.00	270.39	6,125.71	-1,225.01	2,526.75	-1,506.93	2,173.91	0.00	0.00	0.00
7,800.00	90.00	270.39	6,125.71	-1,225.01	2,527.43	-1,606.92	2,269.82	0.00	0.00	0.00
7,900.00	90.00	270.39	6,125.71	-1,225.01	2,528.11	-1,706.92	2,365.74	0.00	0.00	0.00
8,000.00	90.00	270.39	6,125.71	-1,225.01	2,528.79	-1,806.92	2,461.65	0.00	0.00	0.00
8,100.00	90.00	270.39	6,125.71	-1,225.01	2,529.47	-1,906.92	2,557.56	0.00	0.00	0.00
8,200.00	90.00	270.39	6,125.71	-1,225.01	2,530.15	-2,006.91	2,653.47	0.00	0.00	0.00
8,300.00	90.00	270.39	6,125.71	-1,225.01	2,530.83	-2,106.91	2,749.38	0.00	0.00	0.00
8,400.00	90.00	270.39	6,125.71	-1,225.01	2,531.51	-2,206.91	2,845.30	0.00	0.00	0.00
8,500.00	90.00	270.39	6,125.71	-1,225.01	2,532.18	-2,306.91	2,941.21	0.00	0.00	0.00
8,600.00	90.00	270.39	6,125.71	-1,225.01	2,532.86	-2,406.91	3,037.12	0.00	0.00	0.00
8,700.00	90.00	270.39	6,125.71	-1,225.01	2,533.54	-2,506.90	3,133.03	0.00	0.00	0.00
8,800.00	90.00	270.39	6,125.71	-1,225.01	2,534.22	-2,606.90	3,228.94	0.00	0.00	0.00
8,900.00	90.00	270.39	6,125.72	-1,225.02	2,534.90	-2,706.90	3,324.86	0.00	0.00	0.00
9,000.00	90.00	270.39	6,125.72	-1,225.02	2,535.58	-2,806.90	3,420.77	0.00	0.00	0.00
9,100.00	90.00	270.39	6,125.72	-1,225.02	2,536.26	-2,906.89	3,516.68	0.00	0.00	0.00
9,200.00	90.00	270.39	6,125.72	-1,225.02	2,536.93	-3,006.89	3,612.59	0.00	0.00	0.00
9,300.00	90.00	270.39	6,125.72	-1,225.02	2,537.61	-3,106.89	3,708.50	0.00	0.00	0.00
9,400.00	90.00	270.39	6,125.72	-1,225.02	2,538.29	-3,206.89	3,804.41	0.00	0.00	0.00
9,500.00	90.00	270.39	6,125.72	-1,225.02	2,538.97	-3,306.88	3,900.32	0.00	0.00	0.00
9,600.00	90.00	270.39	6,125.72	-1,225.02	2,539.65	-3,406.88	3,996.24	0.00	0.00	0.00
9,700.00	90.00	270.39	6,125.72	-1,225.02	2,540.32	-3,506.88	4,092.15	0.00	0.00	0.00
9,800.00	90.00	270.39	6,125.72	-1,225.02	2,541.00	-3,606.88	4,188.06	0.00	0.00	0.00
9,900.00	90.00	270.39	6,125.72	-1,225.02	2,541.68	-3,706.88	4,283.97	0.00	0.00	0.00
10,000.00	90.00	270.39	6,125.72	-1,225.02	2,542.35	-3,806.87	4,379.88	0.00	0.00	0.00
10,100.00	90.00	270.39	6,125.72	-1,225.02	2,543.03	-3,906.87	4,475.79	0.00	0.00	0.00
10,200.00	90.00	270.39	6,125.72	-1,225.02	2,543.71	-4,006.87	4,571.70	0.00	0.00	0.00
10,300.00	90.00	270.39	6,125.72	-1,225.02	2,544.38	-4,106.87	4,667.61	0.00	0.00	0.00
10,400.00	90.00	270.39	6,125.72	-1,225.02	2,545.06	-4,206.86	4,763.53	0.00	0.00	0.00
10,500.00	90.00	270.39	6,125.72	-1,225.02	2,545.74	-4,306.86	4,859.44	0.00	0.00	0.00
10,600.00	90.00	270.39	6,125.72	-1,225.02	2,546.41	-4,406.86	4,955.35	0.00	0.00	0.00
10,700.00	90.00	270.39	6,125.72	-1,225.02	2,547.09	-4,506.86	5,051.26	0.00	0.00	0.00
10,800.00	90.00	270.39	6,125.72	-1,225.02	2,547.76	-4,606.85	5,147.17	0.00	0.00	0.00
10,900.00	90.00	270.39	6,125.72	-1,225.02	2,548.44	-4,706.85	5,243.08	0.00	0.00	0.00
11,000.00	90.00	270.39	6,125.72	-1,225.02	2,549.11	-4,806.85	5,338.99	0.00	0.00	0.00
11,100.00	90.00	270.39	6,125.72	-1,225.02	2,549.79	-4,906.85	5,434.90	0.00	0.00	0.00
11,200.00	90.00	270.39	6,125.72	-1,225.02	2,550.46	-5,006.85	5,530.81	0.00	0.00	0.00
11,300.00	90.00	270.39	6,125.72	-1,225.02	2,551.14	-5,106.84	5,626.72	0.00	0.00	0.00
11,400.00	90.00	270.39	6,125.72	-1,225.02	2,551.81	-5,206.84	5,722.63	0.00	0.00	0.00
11,500.00	90.00	270.39	6,125.72	-1,225.02	2,552.49	-5,306.84	5,818.54	0.00	0.00	0.00
11,600.00	90.00	270.39	6,125.72	-1,225.02	2,553.16	-5,406.84	5,914.45	0.00	0.00	0.00
11,700.00	90.00	270.39	6,125.72	-1,225.02	2,553.83	-5,506.83	6,010.37	0.00	0.00	0.00
11,800.00	90.00	270.39	6,125.72	-1,225.02	2,554.51	-5,606.83	6,106.28	0.00	0.00	0.00
11,900.00	90.00	270.39	6,125.72	-1,225.02	2,555.18	-5,706.83	6,202.19	0.00	0.00	0.00
12,000.00	90.00	270.39	6,125.72	-1,225.02	2,555.86	-5,806.83	6,298.10	0.00	0.00	0.00
ENTER COC 79098										
12,088.48	90.00	270.39	6,125.72	-1,225.02	2,556.45	-5,895.31	6,382.96	0.00	0.00	0.00
12,100.00	90.00	270.39	6,125.72	-1,225.02	2,556.53	-5,906.83	6,394.01	0.00	0.00	0.00
12,200.00	90.00	270.39	6,125.72	-1,225.02	2,557.20	-6,006.82	6,489.92	0.00	0.00	0.00
12,300.00	90.00	270.39	6,125.72	-1,225.02	2,557.88	-6,106.82	6,585.83	0.00	0.00	0.00
12,400.00	90.00	270.39	6,125.72	-1,225.02	2,558.55	-6,206.82	6,681.74	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.15.1	Local Co-ordinate Reference:	Well BIG MOUNTAIN VIPER FED 8-59 16-17-18-1
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB 25' @ 4900.70usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB 25' @ 4900.70usft
Site:	NW SW SEC. 16 T8N R59W 6th P.M.	North Reference:	True
Well:	BIG MOUNTAIN VIPER FED 8-59 16-17-18-1	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

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)
12,500.00	90.00	270.39	6,125.72	-1,225.02	2,559.22	-6,306.82	6,777.65	0.00	0.00	0.00
12,600.00	90.00	270.39	6,125.72	-1,225.02	2,559.89	-6,406.81	6,873.56	0.00	0.00	0.00
12,700.00	90.00	270.39	6,125.72	-1,225.02	2,560.57	-6,506.81	6,969.47	0.00	0.00	0.00
12,800.00	90.00	270.39	6,125.72	-1,225.02	2,561.24	-6,606.81	7,065.38	0.00	0.00	0.00
12,900.00	90.00	270.39	6,125.71	-1,225.01	2,561.91	-6,706.81	7,161.29	0.00	0.00	0.00
13,000.00	90.00	270.38	6,125.71	-1,225.01	2,562.58	-6,806.80	7,257.20	0.00	0.00	0.00
13,100.00	90.00	270.38	6,125.71	-1,225.01	2,563.26	-6,906.80	7,353.11	0.00	0.00	0.00
13,200.00	90.00	270.38	6,125.71	-1,225.01	2,563.93	-7,006.80	7,449.02	0.00	0.00	0.00
13,300.00	90.00	270.38	6,125.71	-1,225.01	2,564.60	-7,106.80	7,544.93	0.00	0.00	0.00
13,400.00	90.00	270.38	6,125.71	-1,225.01	2,565.27	-7,206.80	7,640.84	0.00	0.00	0.00
13,500.00	90.00	270.38	6,125.71	-1,225.01	2,565.94	-7,306.79	7,736.75	0.00	0.00	0.00
13,600.00	90.00	270.38	6,125.71	-1,225.01	2,566.61	-7,406.79	7,832.66	0.00	0.00	0.00
13,700.00	90.00	270.38	6,125.71	-1,225.01	2,567.28	-7,506.79	7,928.57	0.00	0.00	0.00
13,800.00	90.00	270.38	6,125.71	-1,225.01	2,567.95	-7,606.79	8,024.47	0.00	0.00	0.00
13,900.00	90.00	270.38	6,125.71	-1,225.01	2,568.62	-7,706.78	8,120.38	0.00	0.00	0.00
14,000.00	90.00	270.38	6,125.71	-1,225.01	2,569.30	-7,806.78	8,216.29	0.00	0.00	0.00
14,100.00	90.00	270.38	6,125.71	-1,225.01	2,569.97	-7,906.78	8,312.20	0.00	0.00	0.00
14,200.00	90.00	270.38	6,125.70	-1,225.00	2,570.64	-8,006.78	8,408.11	0.00	0.00	0.00
14,300.00	90.00	270.38	6,125.70	-1,225.00	2,571.31	-8,106.78	8,504.02	0.00	0.00	0.00
14,400.00	90.00	270.38	6,125.70	-1,225.00	2,571.98	-8,206.77	8,599.93	0.00	0.00	0.00
14,500.00	90.00	270.38	6,125.70	-1,225.00	2,572.64	-8,306.77	8,695.84	0.00	0.00	0.00
14,600.00	90.00	270.38	6,125.70	-1,225.00	2,573.31	-8,406.77	8,791.75	0.00	0.00	0.00
EPI: 350ft FNL & 2557ft FEL of Sec 18										
14,645.38	90.00	270.38	6,125.70	-1,225.00	2,573.62	-8,452.15	8,835.27	0.00	0.00	0.00
14,700.00	90.00	270.38	6,125.70	-1,225.00	2,573.98	-8,506.77	8,887.66	0.01	0.00	-0.01
BHL: 350ft FNL & 2615ft FEL of Sec 18										
14,703.36	90.00	270.38	6,125.70	-1,225.00	2,574.00	-8,510.12	8,890.88	0.01	0.00	-0.01

Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
412.09	410.70	PIERRE SHALE (BFH)			
3,753.03	3,340.70	PARKMAN			
4,339.18	3,845.70	SUSSEX			
5,736.88	5,095.70	SHANNON			
6,533.11	5,870.70	SHARON SPRINGS SHALE			
6,694.56	5,990.70	NIOBRARA FORMATION			
6,702.38	5,995.70	NIOBRARA A CHALK			
6,909.81	6,095.70	NIOBRARA B CHALK			
7,096.03	6,125.70	NIOBRARA B LP			

Planning Report

Database:	EDM 5000.15.1	Local Co-ordinate Reference:	Well BIG MOUNTAIN VIPER FED 8-59 16-17-18-1
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB 25' @ 4900.70usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB 25' @ 4900.70usft
Site:	NW SW SEC. 16 T8N R59W 6th P.M.	North Reference:	True
Well:	BIG MOUNTAIN VIPER FED 8-59 16-17-18-1	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.00	0.00	0.00	0.00	SHL: 2551ft FSL & 635ft FWL of Sec 16
100.00	100.00	0.00	0.00	START NUDGE (3°/100ft BUR)
1,116.95	1,069.57	262.17	-34.35	EOB TO 30.51° INC
5,079.09	4,483.17	2,256.56	-295.68	END OF TANGENT
6,096.04	5,452.74	2,518.73	-330.03	EOD TO VERTICAL
6,196.04	5,552.74	2,518.73	-330.03	KOP (10°/100ft BUR)
6,775.97	6,038.60	2,520.56	-599.31	ENTER COC 28082
7,096.03	6,125.70	2,522.63	-902.97	BPI: 350ft FNL & 300ft FEL of Sec 17
12,088.48	6,125.72	2,556.45	-5,895.31	ENTER COC 79098
14,645.38	6,125.70	2,573.62	-8,452.15	EPI: 350ft FNL & 2557ft FEL of Sec 18
14,703.36	6,125.70	2,574.00	-8,510.12	BHL: 350ft FNL & 2615ft FEL of Sec 18