

BISON OIL & GAS II, LLC

WELD COUNTY, COLORADO (NAD 83)

NE NW SEC. 12 T8N R59W 6th P.M.

VANCLEAVE FED 8-59 12-1-2-3-6

ORIGINAL WELLBORE

25 July, 2018

Plan: PROPOSAL #1





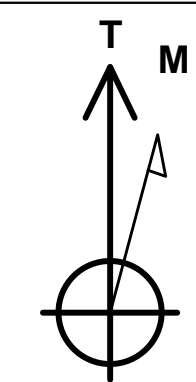
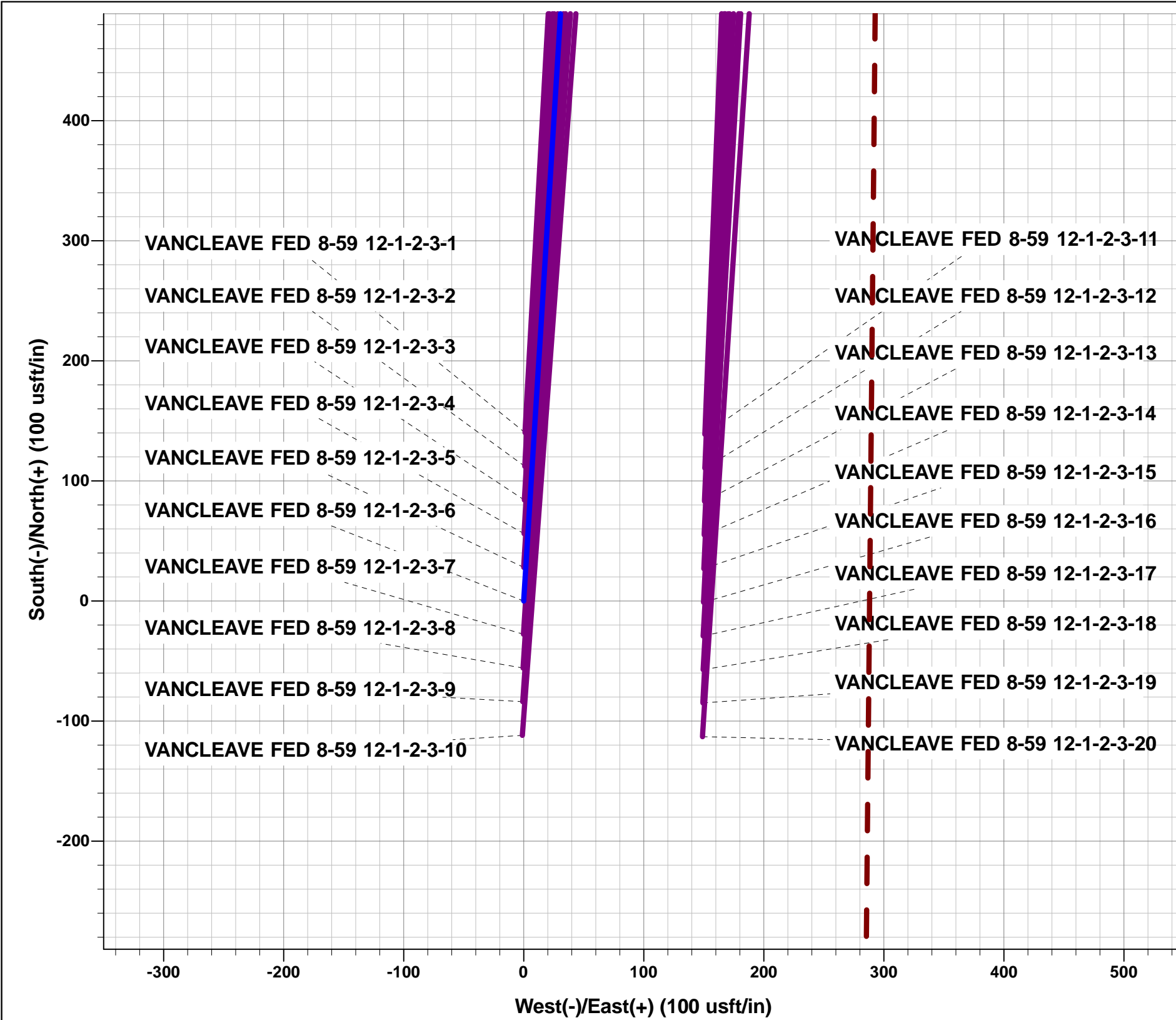
Project: WELD COUNTY, COLORADO (NAD 83)
Site: NE NW SEC. 12 T8N R59W 6th P.M.
Well: VANCLEAVE FED 8-59 12-1-2-3-6
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

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: 693ft FNL & 2360ft FWL of Sec 12
600.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	START NUDGE (6°/100ft BUR)
1386.86	1524.78	55.49	3.59	413.05	25.92	159.51	413.87	EOB TO 55.49° INC
4264.98	6604.42	55.49	3.59	4590.44	288.01	1772.75	4599.46	END OF TANGENT
5051.84	7529.20	0.00	0.00	5003.49	313.93	1932.26	5013.33	EOD TO VERTICAL
5537.84	8015.20	0.00	0.00	5003.49	313.93	1932.26	5013.33	KOP (10°/100ft BUR)
6110.80	8915.20	90.00	269.44	4997.89	-259.00	2443.58	5586.28	BPI: 1600ft FNL & 2039ft FWL of Sec 1
6110.80	18288.44	90.00	269.44	4906.50	-9631.80	10808.61	14959.53	EPI: 1600ft FNL & 2059ft FEL of Sec 3
6110.80	18311.76	90.00	268.74	4906.14	-9655.11	10829.36	14982.85	EOT TO 268.74° AZ
6110.80	18588.56	90.00	268.74	4900.07	-9931.84	11074.84	15259.64	BHL: 1600ft FNL & 2359ft FEL of Sec 3

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - VANCLEAVE FED 8-59 12-1-2-3-6	5537.84	5003.49	313.93	40.695466	-103.924012
BPI - VANCLEAVE FED 8-59 12-1-2-3-6	6110.80	4997.89	-259.00	40.695451	-103.926078
EPI - VANCLEAVE FED 8-59 12-1-2-3-6	6110.80	4906.50	-9631.80	40.695195	-103.959878
BHL - VANCLEAVE FED 8-59 12-1-2-3-6	6110.80	4900.07	-9931.84	40.695177	-103.960960



Azimuths to True North
Magnetic North: 7.66°

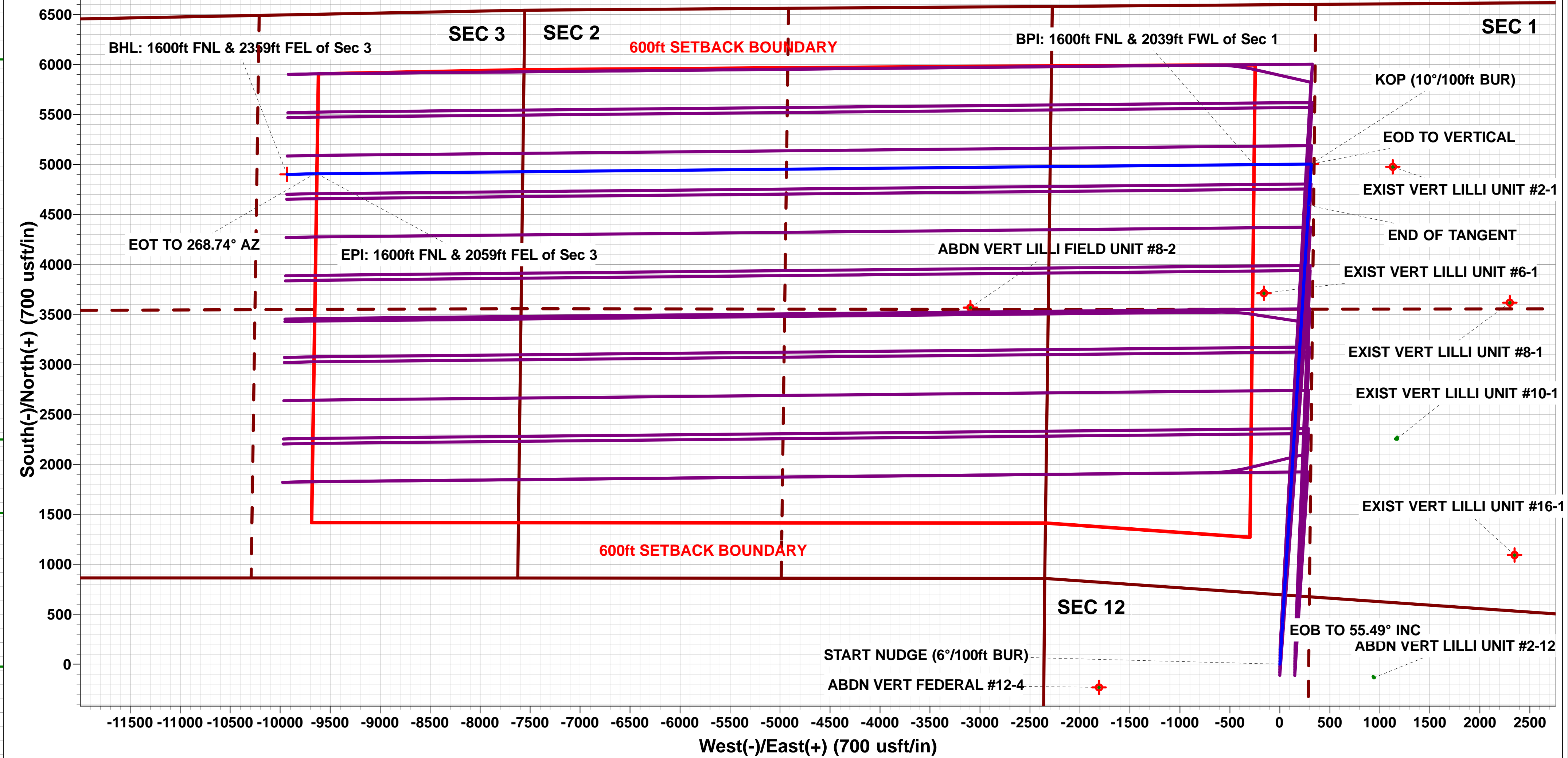
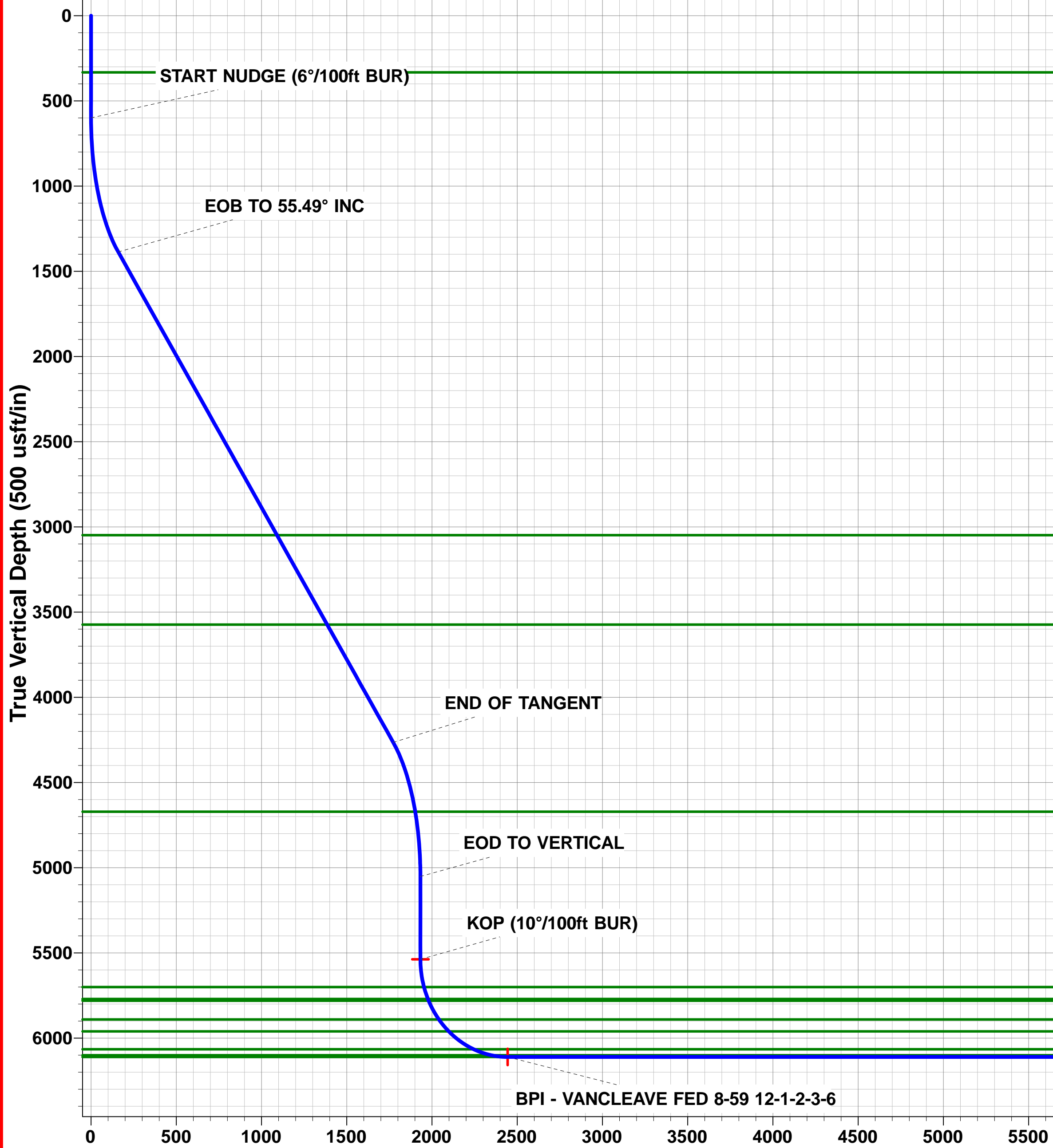
Magnetic Field
Strength: 52496.9snT
Dip Angle: 67.18°
Date: 25/07/2018
Model: IGRF2015

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
332.80	332.80	PIERRE SHALE
3048.80	4457.96	PARKMAN
3573.80	5384.54	SUSSEX
4671.80	7138.34	SHANNON
5700.80	8180.44	SHARON SPRINGS SHALE
5770.80	8255.11	NIOBRARA FORMATION
5780.80	8266.10	NIOBRARA A CHALK
5890.80	8395.47	NIOBRARA B CHALK
5960.80	8490.99	NIOBRARA C CHALK
6065.80	8686.61	FT HAYS
6100.80	8808.00	CODELL
6110.80	8915.20	CODELL LP

PROPOSED LOCAL COORDINATES:

SHL: 693ft FNL & 2360ft FWL of Sec 12
BEGIN PROD INT: 1600ft FNL & 2039ft FWL of Sec 1
END PROD INTERVAL: 1600ft FNL & 2059ft FEL of Sec 3
BHL: 1600ft FNL & 2359ft FEL of Sec 3



Vertical Section at 296.26° (500 usft/in)

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VANCLEAVE FED 8-59 12-1-2-3-6
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4795.80usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4795.80usft (Original Well Elev)
Site:	NE NW SEC. 12 T8N R59W 6th P.M.	North Reference:	True
Well:	VANCLEAVE FED 8-59 12-1-2-3-6	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

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. 12 T8N R59W 6th P.M.		
Site Position:		Northing:	1,495,217.27 usft
From:	Lat/Long	Easting:	3,436,766.52 usft
Position Uncertainty:	0.00 usft	Slot Radius:	1.10000ft
		Latitude:	40.682118
		Longitude:	-103.925140
		Grid Convergence:	1.02 °

Well	VANCLEAVE FED 8-59 12-1-2-3-6					
Well Position	+N/-S	-140.27 usft	Northing:	1,495,077.00 usft	Latitude:	40.681733
	+E/-W	-1.11 usft	Easting:	3,436,767.90 usft	Longitude:	-103.925144
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,770.80 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	25/07/2018	7.66	67.18	52,497

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	296.26

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	-4,795.80	0.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	-4,195.80	0.00	0.00	0.00	0.00	0.00	0.00	
1,524.78	55.49	3.59	1,386.86	-3,408.94	413.05	25.92	6.00	6.00	0.00	3.59	
6,604.42	55.49	3.59	4,264.98	-530.82	4,590.44	288.01	0.00	0.00	0.00	0.00	
7,529.20	0.00	0.00	5,051.84	256.04	5,003.49	313.93	6.00	-6.00	0.00	180.00	
8,015.20	0.00	0.00	5,537.84	742.04	5,003.49	313.93	0.00	0.00	0.00	0.00	KOP - VANCLEAVE
8,915.20	90.00	269.44	6,110.80	1,315.00	4,997.89	-259.00	10.00	10.00	-10.06	269.44	BPI - VANCLEAVE
18,288.44	90.00	269.44	6,110.80	1,315.00	4,906.50	-9,631.80	0.00	0.00	0.00	76.87	EPI - VANCLEAVE
18,311.76	90.00	268.74	6,110.80	1,315.00	4,906.14	-9,655.11	3.00	0.00	-3.00	-90.03	
18,588.56	90.00	268.74	6,110.80	1,315.00	4,900.07	-9,931.84	0.00	0.00	0.00	0.00	BHL - VANCLEAVE

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VANCLEAVE FED 8-59 12-1-2-3-6
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4795.80usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4795.80usft (Original Well Elev)
Site:	NE NW SEC. 12 T8N R59W 6th P.M.	North Reference:	True
Well:	VANCLEAVE FED 8-59 12-1-2-3-6	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

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: 693ft FNL & 2360ft FWL of Sec 12										
0.00	0.00	0.00	0.00	4,795.80	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	4,695.80	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	4,595.80	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	4,495.80	0.00	0.00	0.00	0.00	0.00	0.00
PIERRE SHALE (BASE OF FOX HILLS)										
332.80	0.00	0.00	332.80	4,463.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	4,395.80	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	4,295.80	0.00	0.00	0.00	0.00	0.00	0.00
START NUDGE (6°/100ft BUR)										
600.00	0.00	0.00	600.00	4,195.80	0.00	0.00	0.00	0.00	0.00	0.00
700.00	6.00	3.59	699.82	4,095.98	5.22	0.33	2.02	6.00	6.00	0.00
800.00	12.00	3.59	798.54	3,997.26	20.83	1.31	8.04	6.00	6.00	0.00
900.00	18.00	3.59	895.09	3,900.71	46.65	2.93	18.01	6.00	6.00	0.00
1,000.00	24.00	3.59	988.40	3,807.40	82.40	5.17	31.82	6.00	6.00	0.00
1,100.00	30.00	3.59	1,077.46	3,718.34	127.69	8.01	49.31	6.00	6.00	0.00
1,200.00	36.00	3.59	1,161.29	3,634.51	182.02	11.42	70.29	6.00	6.00	0.00
1,300.00	42.00	3.59	1,238.97	3,556.83	244.80	15.36	94.54	6.00	6.00	0.00
1,400.00	48.00	3.59	1,309.65	3,486.15	315.34	19.78	121.78	6.00	6.00	0.00
1,500.00	54.00	3.59	1,372.55	3,423.25	392.86	24.65	151.72	6.00	6.00	0.00
EOB TO 55.49° INC										
1,524.78	55.49	3.59	1,386.86	3,408.94	413.05	25.92	159.51	6.00	6.00	0.00
1,600.00	55.49	3.59	1,429.48	3,366.32	474.92	29.80	183.41	0.00	0.00	0.00
1,700.00	55.49	3.59	1,486.14	3,309.66	557.15	34.96	215.16	0.00	0.00	0.00
1,800.00	55.49	3.59	1,542.80	3,253.00	639.39	40.12	246.92	0.00	0.00	0.00
1,900.00	55.49	3.59	1,599.46	3,196.34	721.63	45.28	278.68	0.00	0.00	0.00
2,000.00	55.49	3.59	1,656.12	3,139.68	803.87	50.44	310.44	0.00	0.00	0.00
2,100.00	55.49	3.59	1,712.78	3,083.02	886.11	55.60	342.20	0.00	0.00	0.00
2,200.00	55.49	3.59	1,769.44	3,026.36	968.34	60.76	373.96	0.00	0.00	0.00
2,300.00	55.49	3.59	1,826.10	2,969.70	1,050.58	65.92	405.72	0.00	0.00	0.00
2,400.00	55.49	3.59	1,882.76	2,913.04	1,132.82	71.08	437.48	0.00	0.00	0.00
2,500.00	55.49	3.59	1,939.42	2,856.38	1,215.06	76.24	469.23	0.00	0.00	0.00
2,600.00	55.49	3.59	1,996.08	2,799.72	1,297.29	81.40	500.99	0.00	0.00	0.00
2,700.00	55.49	3.59	2,052.74	2,743.06	1,379.53	86.55	532.75	0.00	0.00	0.00
2,800.00	55.49	3.59	2,109.40	2,686.40	1,461.77	91.71	564.51	0.00	0.00	0.00
2,900.00	55.49	3.59	2,166.06	2,629.74	1,544.01	96.87	596.27	0.00	0.00	0.00
3,000.00	55.49	3.59	2,222.72	2,573.08	1,626.24	102.03	628.03	0.00	0.00	0.00
3,100.00	55.49	3.59	2,279.38	2,516.42	1,708.48	107.19	659.79	0.00	0.00	0.00
3,200.00	55.49	3.59	2,336.04	2,459.76	1,790.72	112.35	691.55	0.00	0.00	0.00
3,300.00	55.49	3.59	2,392.70	2,403.10	1,872.96	117.51	723.30	0.00	0.00	0.00
3,400.00	55.49	3.59	2,449.36	2,346.44	1,955.19	122.67	755.06	0.00	0.00	0.00
3,500.00	55.49	3.59	2,506.02	2,289.78	2,037.43	127.83	786.82	0.00	0.00	0.00
3,600.00	55.49	3.59	2,562.68	2,233.12	2,119.67	132.99	818.58	0.00	0.00	0.00
3,700.00	55.49	3.59	2,619.34	2,176.46	2,201.91	138.15	850.34	0.00	0.00	0.00
3,800.00	55.49	3.59	2,676.00	2,119.80	2,284.14	143.31	882.10	0.00	0.00	0.00
3,900.00	55.49	3.59	2,732.66	2,063.14	2,366.38	148.47	913.86	0.00	0.00	0.00
4,000.00	55.49	3.59	2,789.32	2,006.48	2,448.62	153.63	945.62	0.00	0.00	0.00
4,100.00	55.49	3.59	2,845.98	1,949.82	2,530.86	158.79	977.37	0.00	0.00	0.00
4,200.00	55.49	3.59	2,902.64	1,893.16	2,613.09	163.95	1,009.13	0.00	0.00	0.00
4,300.00	55.49	3.59	2,959.30	1,836.50	2,695.33	169.11	1,040.89	0.00	0.00	0.00
4,400.00	55.49	3.59	3,015.96	1,779.84	2,777.57	174.27	1,072.65	0.00	0.00	0.00
PARKMAN										
4,457.96	55.49	3.59	3,048.80	1,747.00	2,825.24	177.26	1,091.06	0.00	0.00	0.00
4,500.00	55.49	3.59	3,072.62	1,723.18	2,859.81	179.43	1,104.41	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VANCLEAVE FED 8-59 12-1-2-3-6
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4795.80usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4795.80usft (Original Well Elev)
Site:	NE NW SEC. 12 T8N R59W 6th P.M.	North Reference:	True
Well:	VANCLEAVE FED 8-59 12-1-2-3-6	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

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)
4,600.00	55.49	3.59	3,129.28	1,666.52	2,942.04	184.59	1,136.17	0.00	0.00	0.00
4,700.00	55.49	3.59	3,185.94	1,609.86	3,024.28	189.75	1,167.93	0.00	0.00	0.00
4,800.00	55.49	3.59	3,242.60	1,553.20	3,106.52	194.91	1,199.69	0.00	0.00	0.00
4,900.00	55.49	3.59	3,299.26	1,496.54	3,188.76	200.07	1,231.45	0.00	0.00	0.00
5,000.00	55.49	3.59	3,355.92	1,439.88	3,271.00	205.23	1,263.20	0.00	0.00	0.00
5,100.00	55.49	3.59	3,412.58	1,383.22	3,353.23	210.39	1,294.96	0.00	0.00	0.00
5,200.00	55.49	3.59	3,469.24	1,326.56	3,435.47	215.55	1,326.72	0.00	0.00	0.00
5,300.00	55.49	3.59	3,525.90	1,269.90	3,517.71	220.71	1,358.48	0.00	0.00	0.00
SUSSEX										
5,384.54	55.49	3.59	3,573.80	1,222.00	3,587.23	225.07	1,385.33	0.00	0.00	0.00
5,400.00	55.49	3.59	3,582.56	1,213.24	3,599.95	225.87	1,390.24	0.00	0.00	0.00
5,500.00	55.49	3.59	3,639.22	1,156.58	3,682.18	231.03	1,422.00	0.00	0.00	0.00
5,600.00	55.49	3.59	3,695.88	1,099.92	3,764.42	236.19	1,453.76	0.00	0.00	0.00
5,700.00	55.49	3.59	3,752.54	1,043.26	3,846.66	241.35	1,485.52	0.00	0.00	0.00
5,800.00	55.49	3.59	3,809.20	986.60	3,928.90	246.51	1,517.27	0.00	0.00	0.00
5,900.00	55.49	3.59	3,865.86	929.94	4,011.13	251.67	1,549.03	0.00	0.00	0.00
6,000.00	55.49	3.59	3,922.52	873.28	4,093.37	256.83	1,580.79	0.00	0.00	0.00
6,100.00	55.49	3.59	3,979.18	816.62	4,175.61	261.99	1,612.55	0.00	0.00	0.00
6,200.00	55.49	3.59	4,035.84	759.96	4,257.85	267.15	1,644.31	0.00	0.00	0.00
6,300.00	55.49	3.59	4,092.50	703.30	4,340.08	272.31	1,676.07	0.00	0.00	0.00
6,400.00	55.49	3.59	4,149.16	646.64	4,422.32	277.47	1,707.83	0.00	0.00	0.00
6,500.00	55.49	3.59	4,205.82	589.98	4,504.56	282.63	1,739.59	0.00	0.00	0.00
6,600.00	55.49	3.59	4,262.48	533.32	4,586.80	287.79	1,771.34	0.00	0.00	0.00
END OF TANGENT										
6,604.42	55.49	3.59	4,264.98	530.82	4,590.44	288.01	1,772.75	0.00	0.00	0.00
6,700.00	49.75	3.59	4,322.98	472.82	4,666.20	292.77	1,802.01	6.00	-6.00	0.00
6,800.00	43.75	3.59	4,391.47	404.33	4,738.86	297.33	1,830.07	6.00	-6.00	0.00
6,900.00	37.75	3.59	4,467.19	328.61	4,803.98	301.41	1,855.22	6.00	-6.00	0.00
7,000.00	31.75	3.59	4,549.31	246.49	4,860.85	304.98	1,877.18	6.00	-6.00	0.00
7,100.00	25.75	3.59	4,636.94	158.86	4,908.84	307.99	1,895.71	6.00	-6.00	0.00
SHANNON										
7,138.34	23.45	3.59	4,671.80	124.00	4,924.76	308.99	1,901.86	6.00	-6.00	0.00
7,200.00	19.75	3.59	4,729.12	66.68	4,947.42	310.41	1,910.61	6.00	-6.00	0.00
7,300.00	13.75	3.59	4,824.83	-29.03	4,976.17	312.22	1,921.71	6.00	-6.00	0.00
7,400.00	7.75	3.59	4,923.03	-127.23	4,994.78	313.38	1,928.90	6.00	-6.00	0.00
7,500.00	1.75	3.59	5,022.64	-226.84	5,003.04	313.90	1,932.09	6.00	-6.00	0.00
EOD TO VERTICAL										
7,529.20	0.00	0.00	5,051.84	-256.04	5,003.49	313.93	1,932.26	6.00	-6.00	0.00
7,600.00	0.00	0.00	5,122.64	-326.84	5,003.49	313.93	1,932.26	0.00	0.00	0.00
7,700.00	0.00	0.00	5,222.64	-426.84	5,003.49	313.93	1,932.26	0.00	0.00	0.00
7,800.00	0.00	0.00	5,322.64	-526.84	5,003.49	313.93	1,932.26	0.00	0.00	0.00
7,900.00	0.00	0.00	5,422.64	-626.84	5,003.49	313.93	1,932.26	0.00	0.00	0.00
8,000.00	0.00	0.00	5,522.64	-726.84	5,003.49	313.93	1,932.26	0.00	0.00	0.00
KOP (10°/100ft BUR)										
8,015.20	0.00	0.00	5,537.84	-742.04	5,003.49	313.93	1,932.26	0.00	0.00	0.00
8,100.00	8.48	269.44	5,622.33	-826.53	5,003.43	307.67	1,937.85	10.00	10.00	0.00
SHARON SPRINGS SHALE										
8,180.44	16.52	269.44	5,700.80	-905.00	5,003.26	290.27	1,953.38	10.00	10.00	0.00
8,200.00	18.48	269.44	5,719.45	-923.65	5,003.20	284.39	1,958.63	10.00	10.00	0.00
NIORRARA FORMATION										
8,255.11	23.99	269.44	5,770.80	-975.00	5,003.01	264.43	1,976.44	10.00	10.00	0.00
NIORRARA A CHALK										
8,266.10	25.09	269.44	5,780.80	-985.00	5,002.96	259.87	1,980.51	10.00	10.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VANCLEAVE FED 8-59 12-1-2-3-6
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4795.80usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4795.80usft (Original Well Elev)
Site:	NE NW SEC. 12 T8N R59W 6th P.M.	North Reference:	True
Well:	VANCLEAVE FED 8-59 12-1-2-3-6	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

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)
8,300.00	28.48	269.44	5,811.06	-1,015.26	5,002.81	244.60	1,994.14	10.00	10.00	0.00
NIORARA B CHALK										
8,395.47	38.03	269.44	5,890.80	-1,095.00	5,002.30	192.31	2,040.81	10.00	10.00	0.00
8,400.00	38.48	269.44	5,894.36	-1,098.56	5,002.27	189.50	2,043.31	10.00	10.00	0.00
NIORARA C CHALK										
8,490.99	47.58	269.44	5,960.80	-1,165.00	5,001.67	127.49	2,098.66	10.00	10.00	0.00
8,500.00	48.48	269.44	5,966.83	-1,171.03	5,001.60	120.79	2,104.64	10.00	10.00	0.00
8,600.00	58.48	269.44	6,026.26	-1,230.46	5,000.82	40.53	2,176.27	10.00	10.00	0.00
FT HAYS										
8,686.61	67.14	269.44	6,065.80	-1,270.00	5,000.06	-36.43	2,244.95	10.00	10.00	0.00
8,700.00	68.48	269.44	6,070.86	-1,275.06	4,999.94	-48.83	2,256.02	10.00	10.00	0.00
8,800.00	78.48	269.44	6,099.26	-1,303.46	4,999.01	-144.58	2,341.47	10.00	10.00	0.00
CODELL										
8,808.00	79.28	269.44	6,100.80	-1,305.00	4,998.93	-152.43	2,348.47	10.00	10.00	0.00
8,900.00	88.48	269.44	6,110.60	-1,314.80	4,998.04	-243.80	2,430.02	10.00	10.00	0.00
BPI: 1600ft FNL & 2039ft FWL of Sec 1 - CODELL LP										
8,915.20	90.00	269.44	6,110.80	-1,315.00	4,997.89	-259.00	2,443.58	10.00	10.00	0.00
9,000.00	90.00	269.44	6,110.80	-1,315.00	4,997.06	-343.79	2,519.26	0.00	0.00	0.00
9,100.00	90.00	269.44	6,110.80	-1,315.00	4,996.08	-443.79	2,608.50	0.00	0.00	0.00
9,200.00	90.00	269.44	6,110.80	-1,315.00	4,995.10	-543.79	2,697.75	0.00	0.00	0.00
9,300.00	90.00	269.44	6,110.80	-1,315.00	4,994.13	-643.78	2,786.99	0.00	0.00	0.00
9,400.00	90.00	269.44	6,110.80	-1,315.00	4,993.15	-743.78	2,876.23	0.00	0.00	0.00
9,500.00	90.00	269.44	6,110.80	-1,315.00	4,992.17	-843.77	2,965.47	0.00	0.00	0.00
9,600.00	90.00	269.44	6,110.80	-1,315.00	4,991.19	-943.77	3,054.72	0.00	0.00	0.00
9,700.00	90.00	269.44	6,110.80	-1,315.00	4,990.22	-1,043.76	3,143.96	0.00	0.00	0.00
9,800.00	90.00	269.44	6,110.81	-1,315.01	4,989.24	-1,143.76	3,233.20	0.00	0.00	0.00
9,900.00	90.00	269.44	6,110.81	-1,315.01	4,988.26	-1,243.75	3,322.45	0.00	0.00	0.00
10,000.00	90.00	269.44	6,110.81	-1,315.01	4,987.28	-1,343.75	3,411.69	0.00	0.00	0.00
10,100.00	90.00	269.44	6,110.81	-1,315.01	4,986.31	-1,443.74	3,500.93	0.00	0.00	0.00
10,200.00	90.00	269.44	6,110.81	-1,315.01	4,985.33	-1,543.74	3,590.17	0.00	0.00	0.00
10,300.00	90.00	269.44	6,110.81	-1,315.01	4,984.35	-1,643.73	3,679.42	0.00	0.00	0.00
10,400.00	90.00	269.44	6,110.81	-1,315.01	4,983.38	-1,743.73	3,768.66	0.00	0.00	0.00
10,500.00	90.00	269.44	6,110.81	-1,315.01	4,982.40	-1,843.72	3,857.90	0.00	0.00	0.00
10,600.00	90.00	269.44	6,110.81	-1,315.01	4,981.42	-1,943.72	3,947.14	0.00	0.00	0.00
10,700.00	90.00	269.44	6,110.81	-1,315.01	4,980.45	-2,043.71	4,036.39	0.00	0.00	0.00
10,800.00	90.00	269.44	6,110.81	-1,315.01	4,979.47	-2,143.71	4,125.63	0.00	0.00	0.00
10,900.00	90.00	269.44	6,110.81	-1,315.01	4,978.49	-2,243.70	4,214.87	0.00	0.00	0.00
11,000.00	90.00	269.44	6,110.81	-1,315.01	4,977.52	-2,343.70	4,304.12	0.00	0.00	0.00
11,100.00	90.00	269.44	6,110.81	-1,315.01	4,976.54	-2,443.69	4,393.36	0.00	0.00	0.00
11,200.00	90.00	269.44	6,110.81	-1,315.01	4,975.56	-2,543.69	4,482.60	0.00	0.00	0.00
11,300.00	90.00	269.44	6,110.81	-1,315.01	4,974.59	-2,643.68	4,571.85	0.00	0.00	0.00
11,400.00	90.00	269.44	6,110.81	-1,315.01	4,973.61	-2,743.68	4,661.09	0.00	0.00	0.00
11,500.00	90.00	269.44	6,110.81	-1,315.01	4,972.63	-2,843.68	4,750.33	0.00	0.00	0.00
11,600.00	90.00	269.44	6,110.81	-1,315.01	4,971.66	-2,943.67	4,839.57	0.00	0.00	0.00
11,700.00	90.00	269.44	6,110.81	-1,315.01	4,970.68	-3,043.67	4,928.82	0.00	0.00	0.00
11,800.00	90.00	269.44	6,110.81	-1,315.01	4,969.71	-3,143.66	5,018.06	0.00	0.00	0.00
11,900.00	90.00	269.44	6,110.81	-1,315.01	4,968.73	-3,243.66	5,107.30	0.00	0.00	0.00
12,000.00	90.00	269.44	6,110.81	-1,315.01	4,967.75	-3,343.65	5,196.55	0.00	0.00	0.00
12,100.00	90.00	269.44	6,110.81	-1,315.01	4,966.78	-3,443.65	5,285.79	0.00	0.00	0.00
12,200.00	90.00	269.44	6,110.81	-1,315.01	4,965.80	-3,543.64	5,375.03	0.00	0.00	0.00
12,300.00	90.00	269.44	6,110.81	-1,315.01	4,964.83	-3,643.64	5,464.28	0.00	0.00	0.00
12,400.00	90.00	269.44	6,110.81	-1,315.01	4,963.85	-3,743.63	5,553.52	0.00	0.00	0.00
12,500.00	90.00	269.44	6,110.81	-1,315.01	4,962.88	-3,843.63	5,642.76	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VANCLEAVE FED 8-59 12-1-2-3-6
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4795.80usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4795.80usft (Original Well Elev)
Site:	NE NW SEC. 12 T8N R59W 6th P.M.	North Reference:	True
Well:	VANCLEAVE FED 8-59 12-1-2-3-6	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

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)
12,600.00	90.00	269.44	6,110.81	-1,315.01	4,961.90	-3,943.62	5,732.01	0.00	0.00	0.00
12,700.00	90.00	269.44	6,110.81	-1,315.01	4,960.92	-4,043.62	5,821.25	0.00	0.00	0.00
12,800.00	90.00	269.44	6,110.82	-1,315.02	4,959.95	-4,143.61	5,910.49	0.00	0.00	0.00
12,900.00	90.00	269.44	6,110.82	-1,315.02	4,958.97	-4,243.61	5,999.74	0.00	0.00	0.00
13,000.00	90.00	269.44	6,110.82	-1,315.02	4,958.00	-4,343.60	6,088.98	0.00	0.00	0.00
13,100.00	90.00	269.44	6,110.82	-1,315.02	4,957.02	-4,443.60	6,178.22	0.00	0.00	0.00
13,200.00	90.00	269.44	6,110.82	-1,315.02	4,956.05	-4,543.59	6,267.47	0.00	0.00	0.00
13,300.00	90.00	269.44	6,110.82	-1,315.02	4,955.07	-4,643.59	6,356.71	0.00	0.00	0.00
13,400.00	90.00	269.44	6,110.82	-1,315.02	4,954.10	-4,743.58	6,445.96	0.00	0.00	0.00
13,500.00	90.00	269.44	6,110.82	-1,315.02	4,953.12	-4,843.58	6,535.20	0.00	0.00	0.00
13,600.00	90.00	269.44	6,110.82	-1,315.02	4,952.15	-4,943.58	6,624.44	0.00	0.00	0.00
13,700.00	90.00	269.44	6,110.82	-1,315.02	4,951.17	-5,043.57	6,713.69	0.00	0.00	0.00
13,800.00	90.00	269.44	6,110.82	-1,315.02	4,950.20	-5,143.57	6,802.93	0.00	0.00	0.00
13,900.00	90.00	269.44	6,110.82	-1,315.02	4,949.22	-5,243.56	6,892.17	0.00	0.00	0.00
14,000.00	90.00	269.44	6,110.82	-1,315.02	4,948.25	-5,343.56	6,981.42	0.00	0.00	0.00
14,100.00	90.00	269.44	6,110.82	-1,315.02	4,947.27	-5,443.55	7,070.66	0.00	0.00	0.00
14,200.00	90.00	269.44	6,110.82	-1,315.02	4,946.30	-5,543.55	7,159.91	0.00	0.00	0.00
14,300.00	90.00	269.44	6,110.82	-1,315.02	4,945.32	-5,643.54	7,249.15	0.00	0.00	0.00
14,400.00	90.00	269.44	6,110.82	-1,315.02	4,944.35	-5,743.54	7,338.39	0.00	0.00	0.00
14,500.00	90.00	269.44	6,110.81	-1,315.01	4,943.38	-5,843.53	7,427.64	0.00	0.00	0.00
14,600.00	90.00	269.44	6,110.81	-1,315.01	4,942.40	-5,943.53	7,516.88	0.00	0.00	0.00
14,700.00	90.00	269.44	6,110.81	-1,315.01	4,941.43	-6,043.52	7,606.12	0.00	0.00	0.00
14,800.00	90.00	269.44	6,110.81	-1,315.01	4,940.45	-6,143.52	7,695.37	0.00	0.00	0.00
14,900.00	90.00	269.44	6,110.81	-1,315.01	4,939.48	-6,243.51	7,784.61	0.00	0.00	0.00
15,000.00	90.00	269.44	6,110.81	-1,315.01	4,938.50	-6,343.51	7,873.86	0.00	0.00	0.00
15,100.00	90.00	269.44	6,110.81	-1,315.01	4,937.53	-6,443.50	7,963.10	0.00	0.00	0.00
15,200.00	90.00	269.44	6,110.81	-1,315.01	4,936.56	-6,543.50	8,052.35	0.00	0.00	0.00
15,300.00	90.00	269.44	6,110.81	-1,315.01	4,935.58	-6,643.49	8,141.59	0.00	0.00	0.00
15,400.00	90.00	269.44	6,110.81	-1,315.01	4,934.61	-6,743.49	8,230.83	0.00	0.00	0.00
15,500.00	90.00	269.44	6,110.81	-1,315.01	4,933.63	-6,843.49	8,320.08	0.00	0.00	0.00
15,600.00	90.00	269.44	6,110.81	-1,315.01	4,932.66	-6,943.48	8,409.32	0.00	0.00	0.00
15,700.00	90.00	269.44	6,110.81	-1,315.01	4,931.69	-7,043.48	8,498.57	0.00	0.00	0.00
15,800.00	90.00	269.44	6,110.81	-1,315.01	4,930.71	-7,143.47	8,587.81	0.00	0.00	0.00
15,900.00	90.00	269.44	6,110.81	-1,315.01	4,929.74	-7,243.47	8,677.05	0.00	0.00	0.00
16,000.00	90.00	269.44	6,110.81	-1,315.01	4,928.77	-7,343.46	8,766.30	0.00	0.00	0.00
16,100.00	90.00	269.44	6,110.81	-1,315.01	4,927.79	-7,443.46	8,855.54	0.00	0.00	0.00
16,200.00	90.00	269.44	6,110.81	-1,315.01	4,926.82	-7,543.45	8,944.79	0.00	0.00	0.00
16,300.00	90.00	269.44	6,110.81	-1,315.01	4,925.85	-7,643.45	9,034.03	0.00	0.00	0.00
16,400.00	90.00	269.44	6,110.81	-1,315.01	4,924.87	-7,743.44	9,123.28	0.00	0.00	0.00
16,500.00	90.00	269.44	6,110.81	-1,315.01	4,923.90	-7,843.44	9,212.52	0.00	0.00	0.00
16,600.00	90.00	269.44	6,110.81	-1,315.01	4,922.93	-7,943.43	9,301.77	0.00	0.00	0.00
16,700.00	90.00	269.44	6,110.81	-1,315.01	4,921.95	-8,043.43	9,391.01	0.00	0.00	0.00
16,800.00	90.00	269.44	6,110.81	-1,315.01	4,920.98	-8,143.42	9,480.25	0.00	0.00	0.00
16,900.00	90.00	269.44	6,110.81	-1,315.01	4,920.01	-8,243.42	9,569.50	0.00	0.00	0.00
17,000.00	90.00	269.44	6,110.81	-1,315.01	4,919.03	-8,343.41	9,658.74	0.00	0.00	0.00
17,100.00	90.00	269.44	6,110.81	-1,315.01	4,918.06	-8,443.41	9,747.99	0.00	0.00	0.00
17,200.00	90.00	269.44	6,110.81	-1,315.01	4,917.09	-8,543.40	9,837.23	0.00	0.00	0.00
17,300.00	90.00	269.44	6,110.81	-1,315.01	4,916.12	-8,643.40	9,926.48	0.00	0.00	0.00
17,400.00	90.00	269.44	6,110.81	-1,315.01	4,915.14	-8,743.40	10,015.72	0.00	0.00	0.00
17,500.00	90.00	269.44	6,110.80	-1,315.00	4,914.17	-8,843.39	10,104.97	0.00	0.00	0.00
17,600.00	90.00	269.44	6,110.80	-1,315.00	4,913.20	-8,943.39	10,194.21	0.00	0.00	0.00
17,700.00	90.00	269.44	6,110.80	-1,315.00	4,912.23	-9,043.38	10,283.46	0.00	0.00	0.00
17,800.00	90.00	269.44	6,110.80	-1,315.00	4,911.25	-9,143.38	10,372.70	0.00	0.00	0.00
17,900.00	90.00	269.44	6,110.80	-1,315.00	4,910.28	-9,243.37	10,461.95	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VANCLEAVE FED 8-59 12-1-2-3-6
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4795.80usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4795.80usft (Original Well Elev)
Site:	NE NW SEC. 12 T8N R59W 6th P.M.	North Reference:	True
Well:	VANCLEAVE FED 8-59 12-1-2-3-6	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

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)
18,000.00	90.00	269.44	6,110.80	-1,315.00	4,909.31	-9,343.37	10,551.19	0.00	0.00	0.00
18,100.00	90.00	269.44	6,110.80	-1,315.00	4,908.34	-9,443.36	10,640.44	0.00	0.00	0.00
18,200.00	90.00	269.44	6,110.80	-1,315.00	4,907.36	-9,543.36	10,729.68	0.00	0.00	0.00
EPI: 1600ft FNL & 2059ft FEL of Sec 3										
18,288.44	90.00	269.44	6,110.80	-1,315.00	4,906.50	-9,631.80	10,808.61	0.00	0.00	0.00
18,300.00	90.00	269.10	6,110.80	-1,315.00	4,906.36	-9,643.35	10,818.91	3.00	0.00	-3.00
EOT TO 268.74° AZ										
18,311.76	90.00	268.74	6,110.80	-1,315.00	4,906.14	-9,655.11	10,829.36	3.00	0.00	-3.00
18,400.00	90.00	268.74	6,110.80	-1,315.00	4,904.20	-9,743.33	10,907.61	0.00	0.00	0.00
18,500.00	90.00	268.74	6,110.80	-1,315.00	4,902.01	-9,843.30	10,996.30	0.00	0.00	0.00
BHL: 1600ft FNL & 2359ft FEL of Sec 3										
18,588.56	90.00	268.74	6,110.80	-1,315.00	4,900.07	-9,931.84	11,074.84	0.00	0.00	0.00

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
332.80	332.80	PIERRE SHALE (BASE OF FOX HI				
4,457.96	3,048.80	PARKMAN				
5,384.54	3,573.80	SUSSEX				
7,138.34	4,671.80	SHANNON				
8,180.44	5,700.80	SHARON SPRINGS SHALE				
8,255.11	5,770.80	NIOBRARA FORMATION				
8,266.10	5,780.80	NIOBRARA A CHALK				
8,395.47	5,890.80	NIOBRARA B CHALK				
8,490.99	5,960.80	NIOBRARA C CHALK				
8,686.61	6,065.80	FT HAYS				
8,808.00	6,100.80	CODELL				
8,915.20	6,110.80	CODELL LP				

Plan Annotations					
MD (usft)	TVD (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
0.00	0.00	0.00	0.00	SHL: 693ft FNL & 2360ft FWL of Sec 12	
600.00	600.00	0.00	0.00	START NUDGE (6°/100ft BUR)	
1,524.78	1,386.86	413.05	25.92	EOB TO 55.49° INC	
6,604.42	4,264.98	4,590.44	288.01	END OF TANGENT	
7,529.20	5,051.84	5,003.49	313.93	EOD TO VERTICAL	
8,015.20	5,537.84	5,003.49	313.93	KOP (10°/100ft BUR)	
8,915.20	6,110.80	4,997.89	-259.00	BPI: 1600ft FNL & 2039ft FWL of Sec 1	
18,288.44	6,110.80	4,906.50	-9,631.80	EPI: 1600ft FNL & 2059ft FEL of Sec 3	
18,311.76	6,110.80	4,906.14	-9,655.11	EOT TO 268.74° AZ	
18,588.56	6,110.80	4,900.07	-9,931.84	BHL: 1600ft FNL & 2359ft FEL of Sec 3	