

BISON IV OPERATING

LARIMER COUNTY, COLORADO (NAD 83)

SEC. 11 T5N R68W 6th P.M.

CE 5-68 11-10-5H

ORIGINAL WELLBORE

19 July, 2024

Plan: PROPOSAL #1

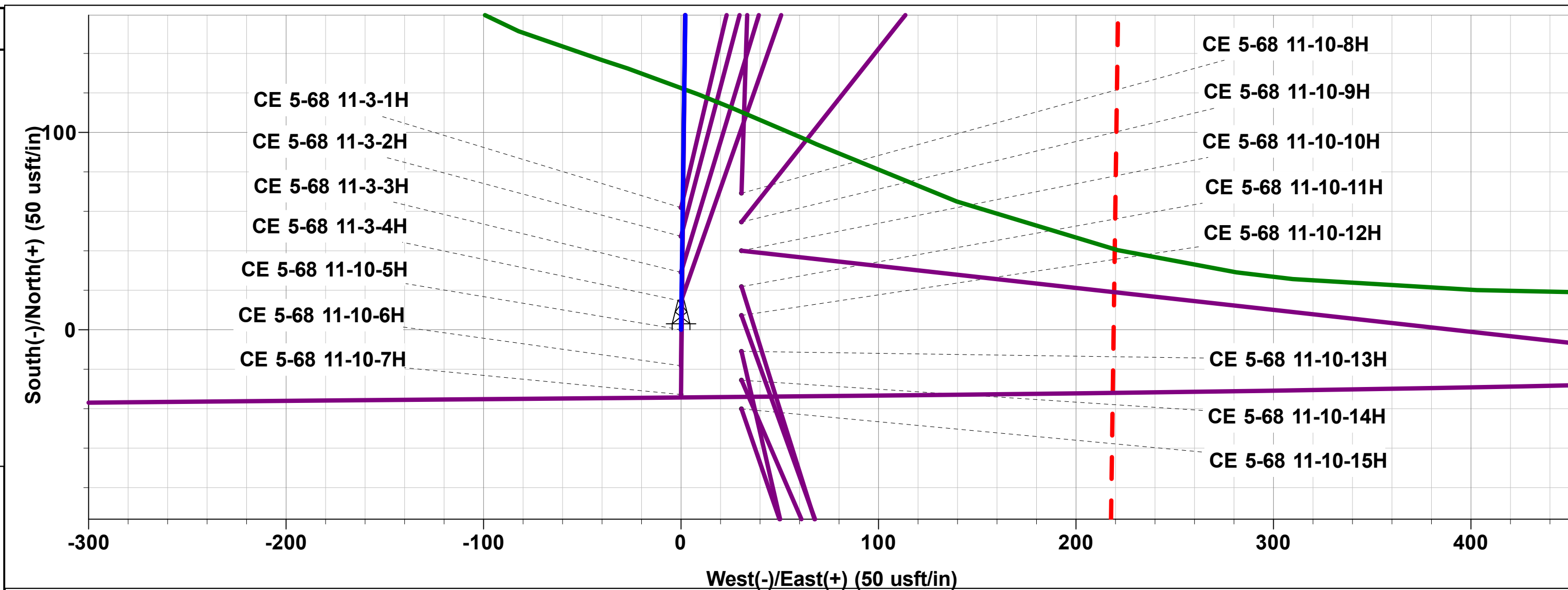




Project: LARIMER COUNTY, COLORADO (NAD 83)
 Site: SEC. 11 T5N R68W 6th P.M.
 Well: CE 5-68 11-10-5H
 Wellbore: ORIGINAL WELLBORE
 Design: PROPOSAL #1

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: 2308ft FNL & 518ft FEL of Sec 11
2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	START NUDGE (2°/100ft)
3506.72	26.13	0.77	3461.88	292.86	3.94	67.34	292.89	EOB TO 26.13° INC
7156.65	26.13	0.77	6738.65	1900.43	25.54	436.98	1900.60	KOP (10°/100ft)
8062.16	90.00	269.52	7258.00	2150.37	-549.51	1055.52	2576.16	EP *NEW*: 152ft FNL & 1100ft FEL of Sec 11
15837.79	90.00	269.52	7258.00	2085.20	-8324.87	8582.04	10351.79	BHL: 140ft FNL & 1700ft FWL of Sec 10

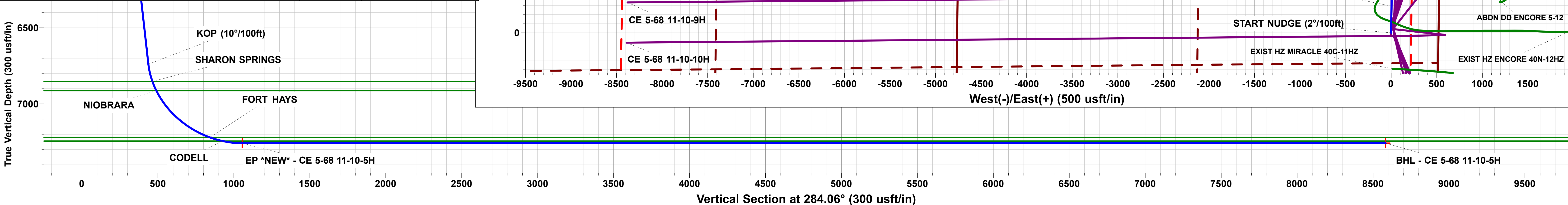
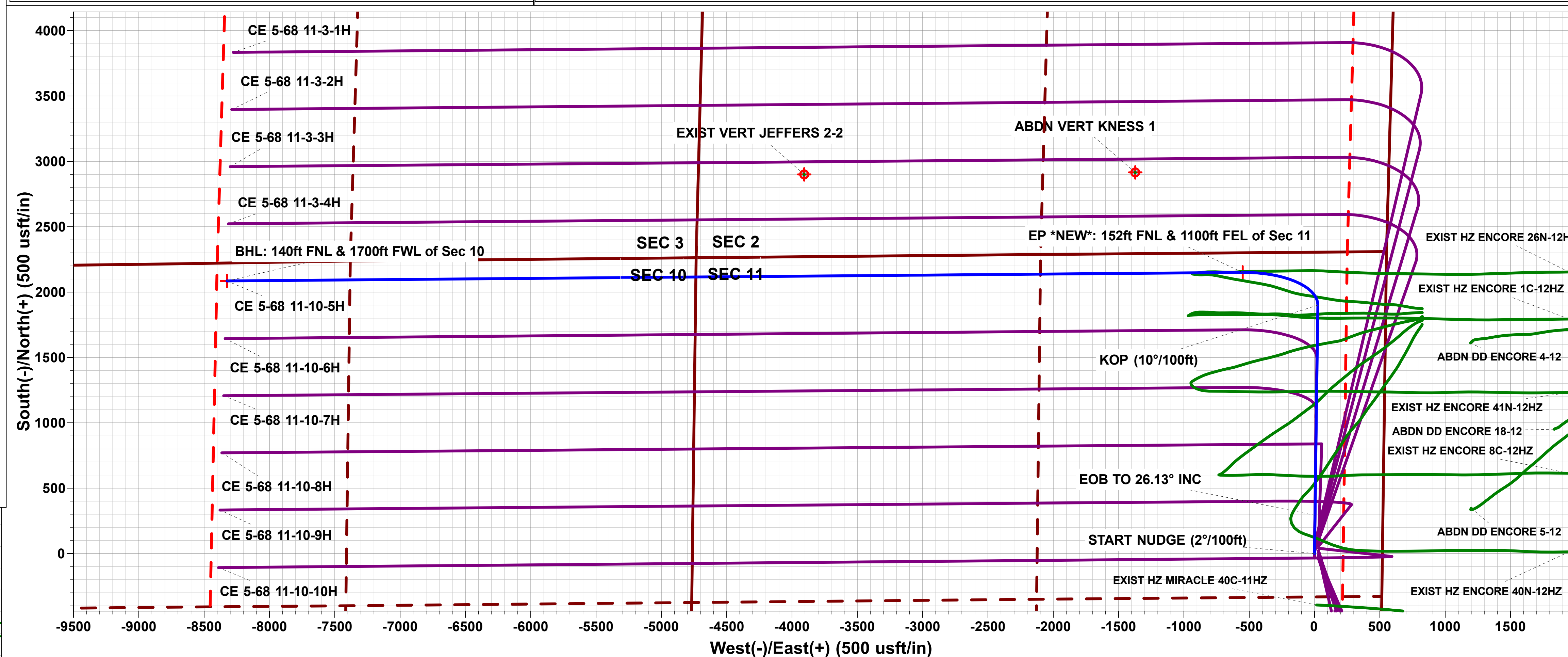
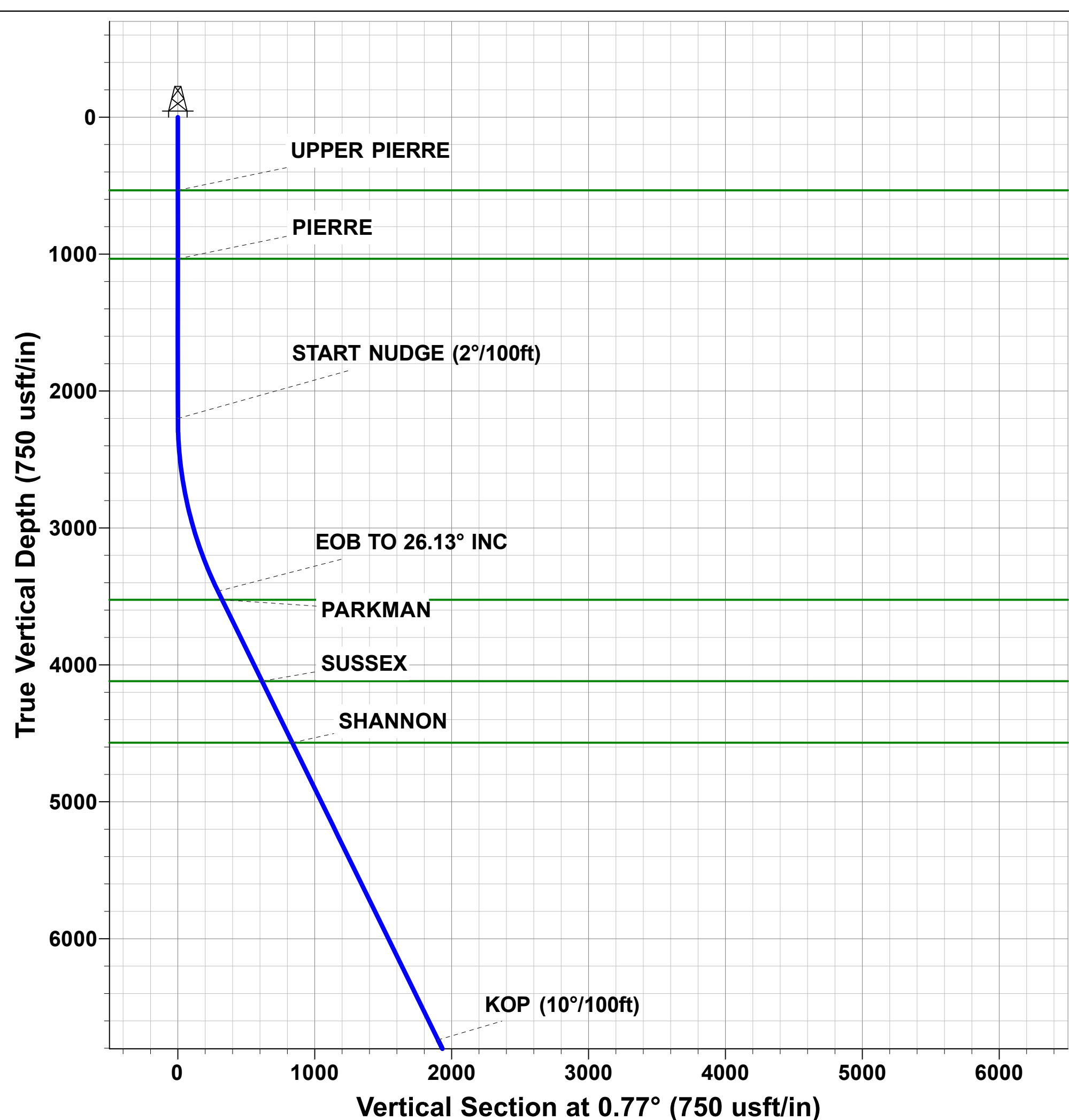


PROPOSED LOCAL COORDINATES:

SHL: 2308ft FNL & 518ft FEL of Sec 11
 EP *NEW*: 152ft FNL & 1100ft FEL of Sec 11
 BHL: 140ft FNL & 1700ft FWL of Sec 10
SETBACK BOUNDARY
 300ft FSL of Sec 11 & 300ft FNL of Sec 2
 300ft FEL of Sec 11/2 & 300ft FW 1/4 1/4 of Sec 10/3

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BHL - CE 5-68 11-10-5H	7258.00	2085.20	-8324.87	1396645.93	3140338.70	40.421100	-104.995950
EP *NEW* - CE 5-68 11-10-5H	7258.00	2150.37	-549.51	1396757.92	3148113.52	40.421283	-104.968024



Database:	Database 1	Local Co-ordinate Reference:	Well CE 5-68 11-10-5H
Company:	BISON IV OPERATING	TVD Reference:	KBE @ 5000.00usft
Project:	LARIMER COUNTY, COLORADO (NAD 83)	MD Reference:	KBE @ 5000.00usft
Site:	SEC. 11 T5N R68W 6th P.M.	North Reference:	True
Well:	CE 5-68 11-10-5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Project	LARIMER 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		

Site	SEC. 11 T5N R68W 6th P.M.				
Site Position:		Northing:	1,394,672.84 usft	Latitude:	40.415550
From:	Lat/Long	Easting:	3,148,675.60 usft	Longitude:	-104.966050
Position Uncertainty:	0.00 usft	Slot Radius:	1.10 ft	Grid Convergence:	0.35 °

Well	CE 5-68 11-10-5H					
Well Position	+N/-S	-61.94 usft	Northing:	1,394,610.90 usft	Latitude:	40.415380
	+E/-W	0.00 usft	Easting:	3,148,675.97 usft	Longitude:	-104.966050
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,980.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	2024-07-18	7.64	66.51	51,613.87290744

Design	PROPOSAL #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	284.06

Plan Sections											
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	-5,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,200.00	0.00	0.00	2,200.00	-2,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,506.72	26.13	0.77	3,461.88	-1,538.12	292.86	3.94	2.00	2.00	0.00	0.77	
7,156.65	26.13	0.77	6,738.65	1,738.65	1,900.43	25.54	0.00	0.00	0.00	0.00	
8,062.16	90.00	269.52	7,258.00	2,258.00	2,150.37	-549.51	10.00	7.05	-10.08	-91.12	EP *NEW* - CE 5-6
15,837.79	90.00	269.52	7,258.00	2,258.00	2,085.20	-8,324.87	0.00	0.00	0.00	0.00	BHL - CE 5-68 11-1

Database:	Database 1	Local Co-ordinate Reference:	Well CE 5-68 11-10-5H
Company:	BISON IV OPERATING	TVD Reference:	KBE @ 5000.00usft
Project:	LARIMER COUNTY, COLORADO (NAD 83)	MD Reference:	KBE @ 5000.00usft
Site:	SEC. 11 T5N R68W 6th P.M.	North Reference:	True
Well:	CE 5-68 11-10-5H	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: 2308ft FNL & 518ft FEL of Sec 11										
0.00	0.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
UPPER PIERRE										
534.00	0.00	0.00	534.00	4,466.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
PIERRE										
1,034.00	0.00	0.00	1,034.00	3,966.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
START NUDGE (2°/100ft)										
2,200.00	0.00	0.00	2,200.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	2.00	0.77	2,299.98	2,700.02	1.74	0.02	0.40	2.00	2.00	0.00
2,400.00	4.00	0.77	2,399.84	2,600.16	6.98	0.09	1.60	2.00	2.00	0.00
2,500.00	6.00	0.77	2,499.45	2,500.55	15.69	0.21	3.61	2.00	2.00	0.00
2,600.00	8.00	0.77	2,598.70	2,401.30	27.88	0.37	6.41	2.00	2.00	0.00
2,700.00	10.00	0.77	2,697.47	2,302.53	43.52	0.58	10.01	2.00	2.00	0.00
2,800.00	12.00	0.77	2,795.62	2,204.38	62.60	0.84	14.39	2.00	2.00	0.00
2,900.00	14.00	0.77	2,893.06	2,106.94	85.09	1.14	19.57	2.00	2.00	0.00
3,000.00	16.00	0.77	2,989.64	2,010.36	110.97	1.49	25.52	2.00	2.00	0.00
3,100.00	18.00	0.77	3,085.27	1,914.73	140.20	1.88	32.24	2.00	2.00	0.00
3,200.00	20.00	0.77	3,179.82	1,820.18	172.75	2.32	39.72	2.00	2.00	0.00
3,300.00	22.00	0.77	3,273.17	1,726.83	208.58	2.80	47.96	2.00	2.00	0.00
3,400.00	24.00	0.77	3,365.21	1,634.79	247.65	3.33	56.94	2.00	2.00	0.00
3,500.00	26.00	0.77	3,455.84	1,544.16	289.91	3.90	66.66	2.00	2.00	0.00
EOB TO 26.13° INC										
3,506.72	26.13	0.77	3,461.88	1,538.12	292.86	3.94	67.34	2.00	2.00	0.00
PARKMAN										
3,575.92	26.13	0.77	3,524.00	1,476.00	323.34	4.34	74.35	0.00	0.00	0.00
3,600.00	26.13	0.77	3,545.62	1,454.38	333.94	4.49	76.79	0.00	0.00	0.00
3,700.00	26.13	0.77	3,635.40	1,364.60	377.99	5.08	86.91	0.00	0.00	0.00
3,800.00	26.13	0.77	3,725.17	1,274.83	422.03	5.67	97.04	0.00	0.00	0.00
3,900.00	26.13	0.77	3,814.95	1,185.05	466.08	6.26	107.17	0.00	0.00	0.00
4,000.00	26.13	0.77	3,904.73	1,095.27	510.12	6.85	117.30	0.00	0.00	0.00
4,100.00	26.13	0.77	3,994.50	1,005.50	554.16	7.45	127.42	0.00	0.00	0.00
4,200.00	26.13	0.77	4,084.28	915.72	598.21	8.04	137.55	0.00	0.00	0.00

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Project:	LARIMER COUNTY, COLORADO (NAD 83)	MD Reference:	KBE @ 5000.00usft
Site:	SEC. 11 T5N R68W 6th P.M.	North Reference:	True
Well:	CE 5-68 11-10-5H	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)
SUSSEX										
4,238.88	26.13	0.77	4,119.00	881.00	615.24	8.27	141.47	0.00	0.00	0.00
4,300.00	26.13	0.77	4,174.06	825.94	642.25	8.63	147.68	0.00	0.00	0.00
4,400.00	26.13	0.77	4,263.83	736.17	686.29	9.22	157.81	0.00	0.00	0.00
4,500.00	26.13	0.77	4,353.61	646.39	730.34	9.81	167.93	0.00	0.00	0.00
4,600.00	26.13	0.77	4,443.38	556.62	774.38	10.41	178.06	0.00	0.00	0.00
4,700.00	26.13	0.77	4,533.16	466.84	818.43	11.00	188.19	0.00	0.00	0.00
SHANNON										
4,738.81	26.13	0.77	4,568.00	432.00	835.52	11.23	192.12	0.00	0.00	0.00
4,800.00	26.13	0.77	4,622.94	377.06	862.47	11.59	198.31	0.00	0.00	0.00
4,900.00	26.13	0.77	4,712.71	287.29	906.51	12.18	208.44	0.00	0.00	0.00
5,000.00	26.13	0.77	4,802.49	197.51	950.56	12.77	218.57	0.00	0.00	0.00
5,100.00	26.13	0.77	4,892.27	107.73	994.60	13.36	228.70	0.00	0.00	0.00
5,200.00	26.13	0.77	4,982.04	17.96	1,038.65	13.96	238.82	0.00	0.00	0.00
5,300.00	26.13	0.77	5,071.82	-71.82	1,082.69	14.55	248.95	0.00	0.00	0.00
5,400.00	26.13	0.77	5,161.59	-161.59	1,126.73	15.14	259.08	0.00	0.00	0.00
5,500.00	26.13	0.77	5,251.37	-251.37	1,170.78	15.73	269.21	0.00	0.00	0.00
5,600.00	26.13	0.77	5,341.15	-341.15	1,214.82	16.32	279.33	0.00	0.00	0.00
5,700.00	26.13	0.77	5,430.92	-430.92	1,258.86	16.92	289.46	0.00	0.00	0.00
5,800.00	26.13	0.77	5,520.70	-520.70	1,302.91	17.51	299.59	0.00	0.00	0.00
5,900.00	26.13	0.77	5,610.48	-610.48	1,346.95	18.10	309.72	0.00	0.00	0.00
6,000.00	26.13	0.77	5,700.25	-700.25	1,391.00	18.69	319.84	0.00	0.00	0.00
6,100.00	26.13	0.77	5,790.03	-790.03	1,435.04	19.28	329.97	0.00	0.00	0.00
6,200.00	26.13	0.77	5,879.81	-879.81	1,479.08	19.87	340.10	0.00	0.00	0.00
6,300.00	26.13	0.77	5,969.58	-969.58	1,523.13	20.47	350.22	0.00	0.00	0.00
6,400.00	26.13	0.77	6,059.36	-1,059.36	1,567.17	21.06	360.35	0.00	0.00	0.00
6,500.00	26.13	0.77	6,149.13	-1,149.13	1,611.21	21.65	370.48	0.00	0.00	0.00
6,600.00	26.13	0.77	6,238.91	-1,238.91	1,655.26	22.24	380.61	0.00	0.00	0.00
6,700.00	26.13	0.77	6,328.69	-1,328.69	1,699.30	22.83	390.73	0.00	0.00	0.00
6,800.00	26.13	0.77	6,418.46	-1,418.46	1,743.35	23.43	400.86	0.00	0.00	0.00
6,900.00	26.13	0.77	6,508.24	-1,508.24	1,787.39	24.02	410.99	0.00	0.00	0.00
7,000.00	26.13	0.77	6,598.02	-1,598.02	1,831.43	24.61	421.12	0.00	0.00	0.00
7,100.00	26.13	0.77	6,687.79	-1,687.79	1,875.48	25.20	431.24	0.00	0.00	0.00
KOP (10°/100ft)										
7,156.65	26.13	0.77	6,738.65	-1,738.65	1,900.43	25.54	436.98	0.00	0.00	0.00
7,200.00	26.38	350.98	6,777.55	-1,777.55	1,919.50	24.15	442.95	10.00	0.57	-22.59
SHARON SPRINGS										
7,283.81	28.64	333.44	6,852.00	-1,852.00	1,955.92	12.23	463.37	10.00	2.69	-20.93
7,300.00	29.31	330.40	6,866.16	-1,866.16	1,962.83	8.54	468.63	10.00	4.16	-18.77
NIORARA										
7,354.43	32.04	321.14	6,913.00	-1,913.00	1,985.68	-7.11	489.37	10.00	5.00	-17.01
7,400.00	34.76	314.50	6,951.05	-1,951.05	2,004.20	-23.97	510.22	10.00	5.98	-14.58
7,500.00	41.74	302.87	7,029.64	-2,029.64	2,042.35	-72.38	566.45	10.00	6.98	-11.62
7,600.00	49.60	294.20	7,099.53	-2,099.53	2,076.11	-135.23	635.61	10.00	7.86	-8.68
7,700.00	57.96	287.39	7,158.62	-2,158.62	2,104.46	-210.59	715.61	10.00	8.37	-6.80
7,800.00	66.63	281.75	7,205.09	-2,205.09	2,126.54	-296.20	804.01	10.00	8.67	-5.64
FORT HAYS										
7,840.55	70.20	279.69	7,220.00	-2,220.00	2,133.54	-333.24	841.64	10.00	8.81	-5.10
7,900.00	75.48	276.82	7,237.54	-2,237.54	2,141.67	-389.43	898.13	10.00	8.87	-4.83
CODELL										
7,928.18	77.99	275.51	7,244.00	-2,244.00	2,144.62	-416.69	925.29	10.00	8.92	-4.65
8,000.00	84.42	272.27	7,254.98	-2,254.98	2,149.41	-487.46	995.10	10.00	8.95	-4.51
EP *NEW*: 152ft FNL & 1100ft FEL of Sec 11										

Database:	Database 1	Local Co-ordinate Reference:	Well CE 5-68 11-10-5H
Company:	BISON IV OPERATING	TVD Reference:	KBE @ 5000.00usft
Project:	LARIMER COUNTY, COLORADO (NAD 83)	MD Reference:	KBE @ 5000.00usft
Site:	SEC. 11 T5N R68W 6th P.M.	North Reference:	True
Well:	CE 5-68 11-10-5H	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)
8,062.16	90.00	269.52	7,258.00	-2,258.00	2,150.37	-549.51	1,055.52	10.00	8.97	-4.42
8,100.00	90.00	269.52	7,258.00	-2,258.00	2,150.05	-587.35	1,092.15	0.00	0.00	0.00
8,200.00	90.00	269.52	7,258.00	-2,258.00	2,149.21	-687.35	1,188.95	0.00	0.00	0.00
8,300.00	90.00	269.52	7,258.00	-2,258.00	2,148.38	-787.34	1,285.75	0.00	0.00	0.00
8,400.00	90.00	269.52	7,258.00	-2,258.00	2,147.54	-887.34	1,382.54	0.00	0.00	0.00
8,500.00	90.00	269.52	7,258.00	-2,258.00	2,146.70	-987.34	1,479.34	0.00	0.00	0.00
8,600.00	90.00	269.52	7,258.00	-2,258.00	2,145.86	-1,087.33	1,576.13	0.00	0.00	0.00
8,700.00	90.00	269.52	7,258.00	-2,258.00	2,145.02	-1,187.33	1,672.93	0.00	0.00	0.00
8,800.00	90.00	269.52	7,258.00	-2,258.00	2,144.19	-1,287.33	1,769.73	0.00	0.00	0.00
8,900.00	90.00	269.52	7,258.00	-2,258.00	2,143.35	-1,387.32	1,866.52	0.00	0.00	0.00
9,000.00	90.00	269.52	7,258.00	-2,258.00	2,142.51	-1,487.32	1,963.32	0.00	0.00	0.00
9,100.00	90.00	269.52	7,258.00	-2,258.00	2,141.67	-1,587.32	2,060.12	0.00	0.00	0.00
9,200.00	90.00	269.52	7,258.00	-2,258.00	2,140.83	-1,687.31	2,156.91	0.00	0.00	0.00
9,300.00	90.00	269.52	7,258.00	-2,258.00	2,139.99	-1,787.31	2,253.71	0.00	0.00	0.00
9,400.00	90.00	269.52	7,258.00	-2,258.00	2,139.16	-1,887.31	2,350.50	0.00	0.00	0.00
9,500.00	90.00	269.52	7,258.00	-2,258.00	2,138.32	-1,987.30	2,447.30	0.00	0.00	0.00
9,600.00	90.00	269.52	7,258.00	-2,258.00	2,137.48	-2,087.30	2,544.10	0.00	0.00	0.00
9,700.00	90.00	269.52	7,258.00	-2,258.00	2,136.64	-2,187.29	2,640.89	0.00	0.00	0.00
9,800.00	90.00	269.52	7,258.00	-2,258.00	2,135.80	-2,287.29	2,737.69	0.00	0.00	0.00
9,900.00	90.00	269.52	7,258.00	-2,258.00	2,134.97	-2,387.29	2,834.49	0.00	0.00	0.00
10,000.00	90.00	269.52	7,258.00	-2,258.00	2,134.13	-2,487.28	2,931.28	0.00	0.00	0.00
10,100.00	90.00	269.52	7,258.00	-2,258.00	2,133.29	-2,587.28	3,028.08	0.00	0.00	0.00
10,200.00	90.00	269.52	7,258.00	-2,258.00	2,132.45	-2,687.28	3,124.87	0.00	0.00	0.00
10,300.00	90.00	269.52	7,258.00	-2,258.00	2,131.61	-2,787.27	3,221.67	0.00	0.00	0.00
10,400.00	90.00	269.52	7,258.00	-2,258.00	2,130.78	-2,887.27	3,318.47	0.00	0.00	0.00
10,500.00	90.00	269.52	7,258.00	-2,258.00	2,129.94	-2,987.27	3,415.26	0.00	0.00	0.00
10,600.00	90.00	269.52	7,258.00	-2,258.00	2,129.10	-3,087.26	3,512.06	0.00	0.00	0.00
10,700.00	90.00	269.52	7,258.00	-2,258.00	2,128.26	-3,187.26	3,608.86	0.00	0.00	0.00
10,800.00	90.00	269.52	7,258.00	-2,258.00	2,127.42	-3,287.26	3,705.65	0.00	0.00	0.00
10,900.00	90.00	269.52	7,258.00	-2,258.00	2,126.58	-3,387.25	3,802.45	0.00	0.00	0.00
11,000.00	90.00	269.52	7,258.00	-2,258.00	2,125.75	-3,487.25	3,899.24	0.00	0.00	0.00
11,100.00	90.00	269.52	7,258.00	-2,258.00	2,124.91	-3,587.25	3,996.04	0.00	0.00	0.00
11,200.00	90.00	269.52	7,258.00	-2,258.00	2,124.07	-3,687.24	4,092.84	0.00	0.00	0.00
11,300.00	90.00	269.52	7,258.00	-2,258.00	2,123.23	-3,787.24	4,189.63	0.00	0.00	0.00
11,400.00	90.00	269.52	7,258.00	-2,258.00	2,122.39	-3,887.24	4,286.43	0.00	0.00	0.00
11,500.00	90.00	269.52	7,258.00	-2,258.00	2,121.56	-3,987.23	4,383.23	0.00	0.00	0.00
11,600.00	90.00	269.52	7,258.00	-2,258.00	2,120.72	-4,087.23	4,480.02	0.00	0.00	0.00
11,700.00	90.00	269.52	7,258.00	-2,258.00	2,119.88	-4,187.22	4,576.82	0.00	0.00	0.00
11,800.00	90.00	269.52	7,258.00	-2,258.00	2,119.04	-4,287.22	4,673.61	0.00	0.00	0.00
11,900.00	90.00	269.52	7,258.00	-2,258.00	2,118.20	-4,387.22	4,770.41	0.00	0.00	0.00
12,000.00	90.00	269.52	7,258.00	-2,258.00	2,117.36	-4,487.21	4,867.21	0.00	0.00	0.00
12,100.00	90.00	269.52	7,258.00	-2,258.00	2,116.53	-4,587.21	4,964.00	0.00	0.00	0.00
12,200.00	90.00	269.52	7,258.00	-2,258.00	2,115.69	-4,687.21	5,060.80	0.00	0.00	0.00
12,300.00	90.00	269.52	7,258.00	-2,258.00	2,114.85	-4,787.20	5,157.60	0.00	0.00	0.00
12,400.00	90.00	269.52	7,258.00	-2,258.00	2,114.01	-4,887.20	5,254.39	0.00	0.00	0.00
12,500.00	90.00	269.52	7,258.00	-2,258.00	2,113.17	-4,987.20	5,351.19	0.00	0.00	0.00
12,600.00	90.00	269.52	7,258.00	-2,258.00	2,112.34	-5,087.19	5,447.99	0.00	0.00	0.00
12,700.00	90.00	269.52	7,258.00	-2,258.00	2,111.50	-5,187.19	5,544.78	0.00	0.00	0.00
12,800.00	90.00	269.52	7,258.00	-2,258.00	2,110.66	-5,287.19	5,641.58	0.00	0.00	0.00
12,900.00	90.00	269.52	7,258.00	-2,258.00	2,109.82	-5,387.18	5,738.37	0.00	0.00	0.00
13,000.00	90.00	269.52	7,258.00	-2,258.00	2,108.98	-5,487.18	5,835.17	0.00	0.00	0.00
13,100.00	90.00	269.52	7,258.00	-2,258.00	2,108.14	-5,587.18	5,931.97	0.00	0.00	0.00
13,200.00	90.00	269.52	7,258.00	-2,258.00	2,107.31	-5,687.17	6,028.76	0.00	0.00	0.00
13,300.00	90.00	269.52	7,258.00	-2,258.00	2,106.47	-5,787.17	6,125.56	0.00	0.00	0.00

Database:	Database 1	Local Co-ordinate Reference:	Well CE 5-68 11-10-5H
Company:	BISON IV OPERATING	TVD Reference:	KBE @ 5000.00usft
Project:	LARIMER COUNTY, COLORADO (NAD 83)	MD Reference:	KBE @ 5000.00usft
Site:	SEC. 11 T5N R68W 6th P.M.	North Reference:	True
Well:	CE 5-68 11-10-5H	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)
13,400.00	90.00	269.52	7,258.00	-2,258.00	2,105.63	-5,887.16	6,222.36	0.00	0.00	0.00
13,500.00	90.00	269.52	7,258.00	-2,258.00	2,104.79	-5,987.16	6,319.15	0.00	0.00	0.00
13,600.00	90.00	269.52	7,258.00	-2,258.00	2,103.95	-6,087.16	6,415.95	0.00	0.00	0.00
13,700.00	90.00	269.52	7,258.00	-2,258.00	2,103.12	-6,187.15	6,512.74	0.00	0.00	0.00
13,800.00	90.00	269.52	7,258.00	-2,258.00	2,102.28	-6,287.15	6,609.54	0.00	0.00	0.00
13,900.00	90.00	269.52	7,258.00	-2,258.00	2,101.44	-6,387.15	6,706.34	0.00	0.00	0.00
14,000.00	90.00	269.52	7,258.00	-2,258.00	2,100.60	-6,487.14	6,803.13	0.00	0.00	0.00
14,100.00	90.00	269.52	7,258.00	-2,258.00	2,099.76	-6,587.14	6,899.93	0.00	0.00	0.00
14,200.00	90.00	269.52	7,258.00	-2,258.00	2,098.92	-6,687.14	6,996.73	0.00	0.00	0.00
14,300.00	90.00	269.52	7,258.00	-2,258.00	2,098.09	-6,787.13	7,093.52	0.00	0.00	0.00
14,400.00	90.00	269.52	7,258.00	-2,258.00	2,097.25	-6,887.13	7,190.32	0.00	0.00	0.00
14,500.00	90.00	269.52	7,258.00	-2,258.00	2,096.41	-6,987.13	7,287.11	0.00	0.00	0.00
14,600.00	90.00	269.52	7,258.00	-2,258.00	2,095.57	-7,087.12	7,383.91	0.00	0.00	0.00
14,700.00	90.00	269.52	7,258.00	-2,258.00	2,094.73	-7,187.12	7,480.71	0.00	0.00	0.00
14,800.00	90.00	269.52	7,258.00	-2,258.00	2,093.90	-7,287.12	7,577.50	0.00	0.00	0.00
14,900.00	90.00	269.52	7,258.00	-2,258.00	2,093.06	-7,387.11	7,674.30	0.00	0.00	0.00
15,000.00	90.00	269.52	7,258.00	-2,258.00	2,092.22	-7,487.11	7,771.10	0.00	0.00	0.00
15,100.00	90.00	269.52	7,258.00	-2,258.00	2,091.38	-7,587.11	7,867.89	0.00	0.00	0.00
15,200.00	90.00	269.52	7,258.00	-2,258.00	2,090.54	-7,687.10	7,964.69	0.00	0.00	0.00
15,300.00	90.00	269.52	7,258.00	-2,258.00	2,089.70	-7,787.10	8,061.48	0.00	0.00	0.00
15,400.00	90.00	269.52	7,258.00	-2,258.00	2,088.87	-7,887.09	8,158.28	0.00	0.00	0.00
15,500.00	90.00	269.52	7,258.00	-2,258.00	2,088.03	-7,987.09	8,255.08	0.00	0.00	0.00
15,600.00	90.00	269.52	7,258.00	-2,258.00	2,087.19	-8,087.09	8,351.87	0.00	0.00	0.00
15,700.00	90.00	269.52	7,258.00	-2,258.00	2,086.35	-8,187.08	8,448.67	0.00	0.00	0.00
15,800.00	90.00	269.52	7,258.00	-2,258.00	2,085.51	-8,287.08	8,545.47	0.00	0.00	0.00
BHL: 140ft FNL & 1700ft FWL of Sec 10										
15,837.79	90.00	269.52	7,258.00	-2,258.00	2,085.20	-8,324.87	8,582.04	0.00	0.00	0.00

Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
534.00	534.00	UPPER PIERRE			
1,034.00	1,034.00	PIERRE			
3,575.92	3,524.00	PARKMAN			
4,238.68	4,119.00	SUSSEX			
4,738.81	4,568.00	SHANNON			
7,283.81	6,852.00	SHARON SPRINGS			
7,354.43	6,913.00	NIOBRARA			
7,840.55	7,220.00	FORT HAYS			
7,928.18	7,244.00	CODELL			

Database:	Database 1	Local Co-ordinate Reference:	Well CE 5-68 11-10-5H
Company:	BISON IV OPERATING	TVD Reference:	KBE @ 5000.00usft
Project:	LARIMER COUNTY, COLORADO (NAD 83)	MD Reference:	KBE @ 5000.00usft
Site:	SEC. 11 T5N R68W 6th P.M.	North Reference:	True
Well:	CE 5-68 11-10-5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.00	0.00	0.00	0.00	SHL: 2308ft FNL & 518ft FEL of Sec 11
2,200.00	2,200.00	0.00	0.00	START NUDGE (2°/100ft)
3,506.72	3,461.88	292.86	3.94	EOB TO 26.13° INC
7,156.65	6,738.65	1,900.43	25.54	KOP (10°/100ft)
8,062.16	7,258.00	2,150.37	-549.51	EP *NEW*: 152ft FNL & 1100ft FEL of Sec 11
15,837.79	7,258.00	2,085.20	-8,324.87	BHL: 140ft FNL & 1700ft FWL of Sec 10