

BISON IV OPERATING

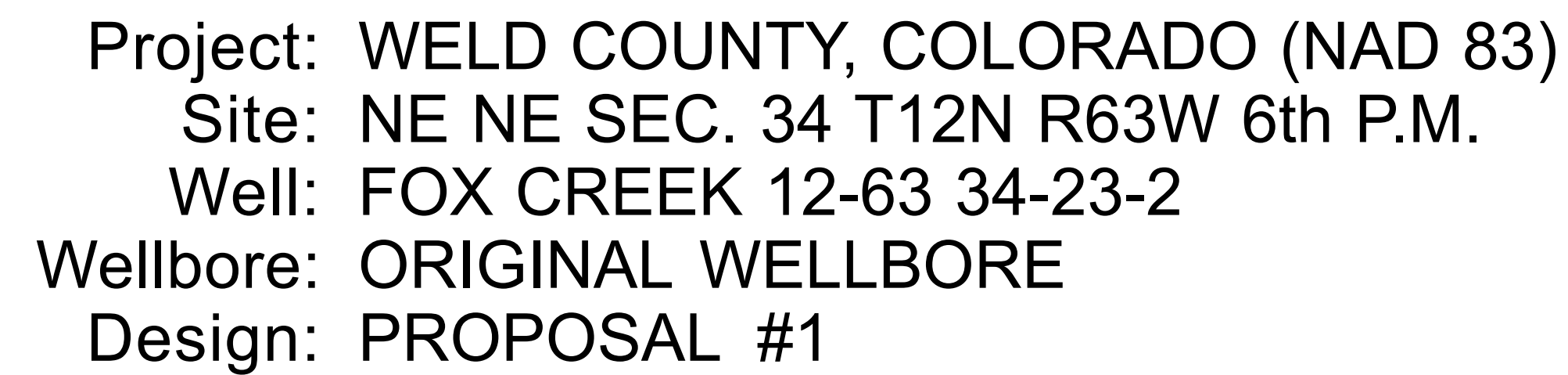
**WELD COUNTY, COLORADO (NAD 83)
NE NE SEC. 34 T12N R63W 6th P.M.
FOX CREEK 12-63 34-23-2**

ORIGINAL WELLBORE

24 August, 2024

Plan: PROPOSAL #1

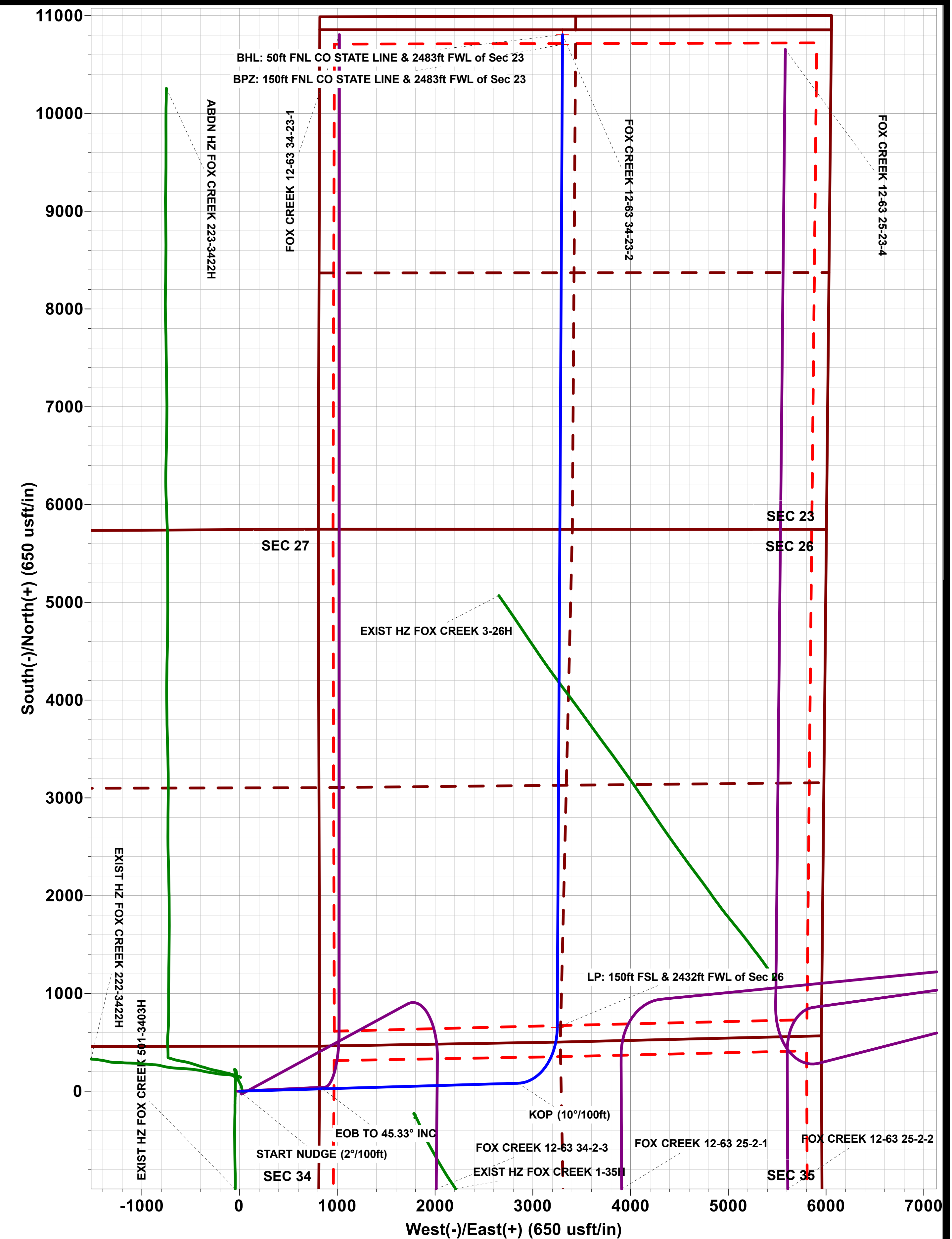
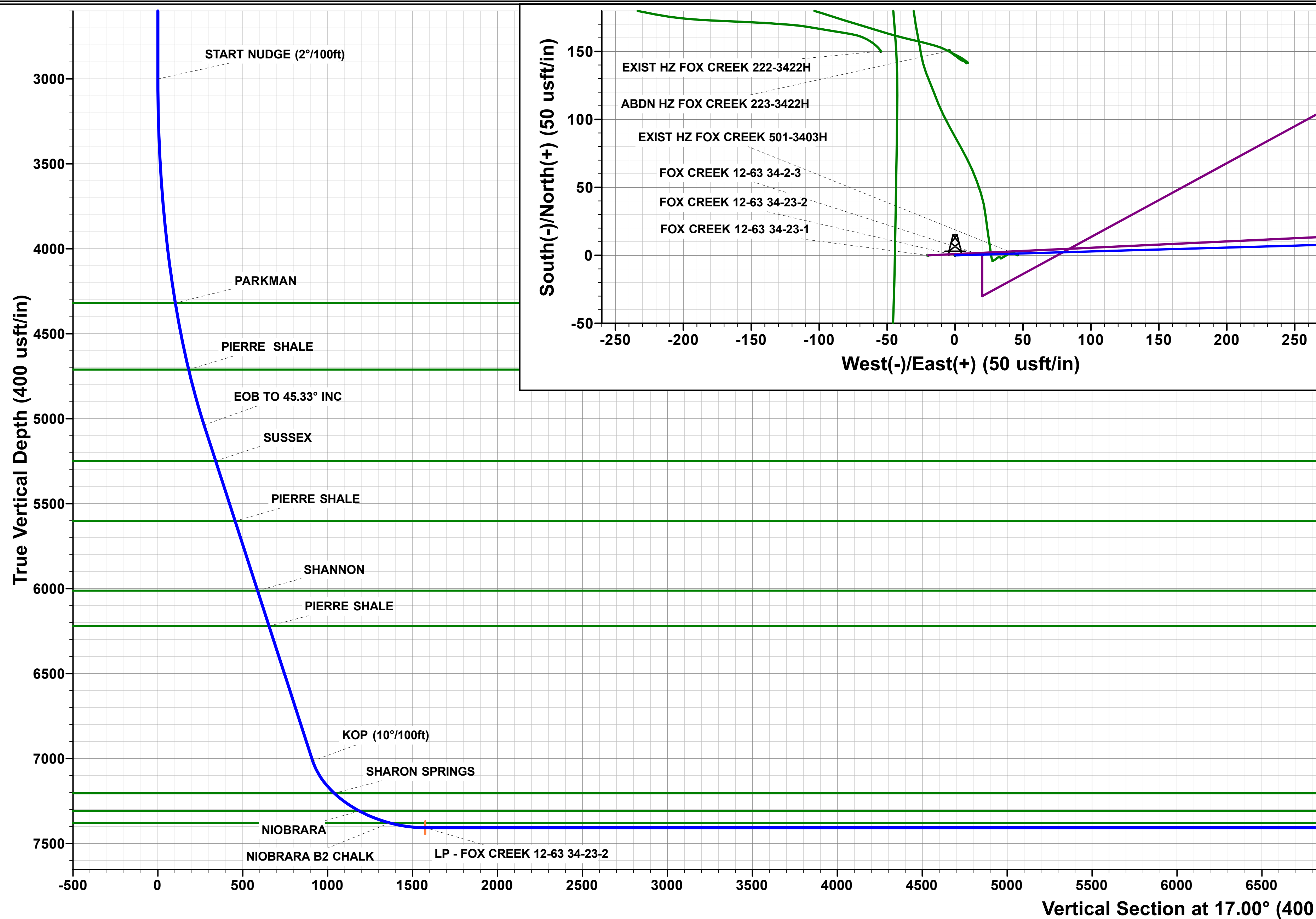




MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Dep	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL: 460ft FNL & 815ft FEL of Sec 34
3000.00	0.00	0.00	3000.00	0.00	0.00	0.00	0.00	START NUDGE (2°/100ft)
5266.73	45.33	88.36	5037.50	24.36	850.59	272.00	850.94	EOB TO 45.33° INC
8078.15	45.33	88.36	7013.84	81.61	2849.32	911.14	2850.49	KOP (10°/100ft)
8964.31	90.00	0.30	7407.00	652.28	3249.90	1574.00	3616.25	LP: 150ft FSL & 2432ft FWL of Sec 26
19017.90	90.00	0.30	7407.00	10705.72	3303.29	11203.72	13669.83	BPZ: 150ft FNL CO STATE LINE & 2483ft FWL of Sec 23
19117.88	90.00	0.30	7407.00	10805.70	3303.82	11299.49	13769.81	BHL: 50ft FNL CO STATE LINE & 2483ft FWL of Sec 23

150ft FE/WL of Sec 26/23

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
LP - FOX CREEK 12-63 34-23-2	7407.00	652.28	3249.90	40.973660	-104.400617
BPZ - FOX CREEK 12-63 34-23-2	7407.00	10705.72	3303.29	41.001252	-104.400418
BHL - FOX CREEK 12-63 34-23-2	7407.00	10805.70	3303.82	41.001527	-104.400416



BHL - FOX CREEK 12-63 34-23-2

Database:	Database 1	Local Co-ordinate Reference:	Well FOX CREEK 12-63 34-23-2
Company:	BISON IV OPERATING	TVD Reference:	KBE @ 5371.00usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KBE @ 5371.00usft
Site:	NE NE SEC. 34 T12N R63W 6th P.M.	North Reference:	True
Well:	FOX CREEK 12-63 34-23-2	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		

Site	NE NE SEC. 34 T12N R63W 6th P.M.		
Site Position:		Northing:	1,598,749.37 usft
From:	Map	Easting:	3,300,329.10 usft
Position Uncertainty:	0.00 usft	Slot Radius:	1.10 ft
		Latitude:	40.971871
		Longitude:	-104.412457
		Grid Convergence:	0.70 °

Well	FOX CREEK 12-63 34-23-2		
Well Position	+N/-S	0.00 usft	Northing: 1,598,749.62 usfi
	+E/-W	19.99 usft	Easting: 3,300,349.09 usfi
Position Uncertainty	0.00 usft	Wellhead Elevation:	usfi
		Latitude:	40.971871
		Longitude:	-104.412385
		Ground Level:	5,351.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	2024-08-24	7.38	67.02	51,944.72093414

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	17.00

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	-5,371.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,000.00	0.00	0.00	3,000.00	-2,371.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,266.73	45.33	88.36	5,037.50	-333.50	24.36	850.59	2.00	2.00	0.00	88.36	
8,078.15	45.33	88.36	7,013.84	1,642.84	81.61	2,849.32	0.00	0.00	0.00	0.00	
8,964.31	90.00	0.30	7,407.00	2,036.00	652.28	3,249.90	10.00	5.04	-9.94	-88.63	LP - FOX CREEK 1
19,017.90	90.00	0.30	7,407.00	2,036.00	10,705.72	3,303.29	0.00	0.00	0.00	0.00	BPZ - FOX CREEK
19,117.88	90.00	0.30	7,407.00	2,036.00	10,805.70	3,303.82	0.01	0.00	-0.01	-90.00	BHL - FOX CREEK

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Site:	NE NE SEC. 34 T12N R63W 6th P.M.	North Reference:	True
Well:	FOX CREEK 12-63 34-23-2	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: 460ft FNL & 815ft FEL of Sec 34										
0.00	0.00	0.00	0.00	5,371.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	5,271.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	5,171.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	5,071.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	4,971.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	4,871.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	4,771.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	4,671.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	4,571.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	4,471.00	0.00	0.00	0.00	0.00	0.00	0.00
FOX HILLS										
971.00	0.00	0.00	971.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	4,371.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	4,271.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	4,171.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	4,071.00	0.00	0.00	0.00	0.00	0.00	0.00
FOX HILLS BASE/PIERRE SHALE										
1,371.00	0.00	0.00	1,371.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	3,971.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	3,871.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	3,771.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	3,671.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	3,571.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	3,471.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	3,371.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	3,271.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	3,171.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	3,071.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	2,971.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	2,871.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	2,771.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	2,671.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	2,571.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	2,471.00	0.00	0.00	0.00	0.00	0.00	0.00
START NUDGE (2°/100ft)										
3,000.00	0.00	0.00	3,000.00	2,371.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	2.00	88.36	3,099.98	2,271.02	0.05	1.74	0.56	2.00	2.00	0.00
3,200.00	4.00	88.36	3,199.84	2,171.16	0.20	6.98	2.23	2.00	2.00	0.00
3,300.00	6.00	88.36	3,299.45	2,071.55	0.45	15.69	5.02	2.00	2.00	0.00
3,400.00	8.00	88.36	3,398.70	1,972.30	0.80	27.87	8.91	2.00	2.00	0.00
3,500.00	10.00	88.36	3,497.47	1,873.53	1.25	43.50	13.91	2.00	2.00	0.00
3,600.00	12.00	88.36	3,595.62	1,775.38	1.79	62.58	20.01	2.00	2.00	0.00
3,700.00	14.00	88.36	3,693.06	1,677.94	2.44	85.06	27.20	2.00	2.00	0.00
3,800.00	16.00	88.36	3,789.64	1,581.36	3.18	110.93	35.47	2.00	2.00	0.00
3,900.00	18.00	88.36	3,885.27	1,485.73	4.01	140.16	44.82	2.00	2.00	0.00
4,000.00	20.00	88.36	3,979.82	1,391.18	4.95	172.70	55.22	2.00	2.00	0.00
4,100.00	22.00	88.36	4,073.17	1,297.83	5.97	208.52	66.68	2.00	2.00	0.00
4,200.00	24.00	88.36	4,165.21	1,205.79	7.09	247.57	79.17	2.00	2.00	0.00
4,300.00	26.00	88.36	4,255.84	1,115.16	8.30	289.81	92.68	2.00	2.00	0.00
PARKMAN										
4,370.70	27.41	88.36	4,319.00	1,052.00	9.21	321.58	102.83	2.00	2.00	0.00
4,400.00	28.00	88.36	4,344.94	1,026.06	9.60	335.19	107.19	2.00	2.00	0.00
4,500.00	30.00	88.36	4,432.39	938.61	10.99	383.65	122.68	2.00	2.00	0.00

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Site:	NE NE SEC. 34 T12N R63W 6th P.M.	North Reference:	True
Well:	FOX CREEK 12-63 34-23-2	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	32.00	88.36	4,518.11	852.89	12.46	435.13	139.14	2.00	2.00	0.00
4,700.00	34.00	88.36	4,601.97	769.03	14.02	489.57	156.55	2.00	2.00	0.00
4,800.00	36.00	88.36	4,683.88	687.12	15.66	546.90	174.89	2.00	2.00	0.00
PIERRE SHALE										
4,833.67	36.67	88.36	4,711.00	660.00	16.23	566.84	181.26	2.00	2.00	0.00
4,900.00	38.00	88.36	4,763.74	607.26	17.39	607.06	194.12	2.00	2.00	0.00
5,000.00	40.00	88.36	4,841.45	529.55	19.19	669.96	214.24	2.00	2.00	0.00
5,100.00	42.00	88.36	4,916.92	454.08	21.07	735.53	235.21	2.00	2.00	0.00
5,200.00	44.00	88.36	4,990.05	380.95	23.02	803.70	257.00	2.00	2.00	0.00
EOB TO 45.33° INC										
5,266.73	45.33	88.36	5,037.50	333.50	24.36	850.59	272.00	2.00	2.00	0.00
5,300.00	45.33	88.36	5,060.89	310.11	25.04	874.25	279.56	0.00	0.00	0.00
5,400.00	45.33	88.36	5,131.19	239.81	27.08	945.34	302.30	0.00	0.00	0.00
5,500.00	45.33	88.36	5,201.49	169.51	29.11	1,016.43	325.03	0.00	0.00	0.00
SUSSEX										
5,567.59	45.33	88.36	5,249.00	122.00	30.49	1,064.48	340.40	0.00	0.00	0.00
5,600.00	45.33	88.36	5,271.78	99.22	31.15	1,087.53	347.76	0.00	0.00	0.00
5,700.00	45.33	88.36	5,342.08	28.92	33.18	1,158.62	370.50	0.00	0.00	0.00
5,800.00	45.33	88.36	5,412.38	-41.38	35.22	1,229.71	393.23	0.00	0.00	0.00
5,900.00	45.33	88.36	5,482.67	-111.67	37.26	1,300.80	415.97	0.00	0.00	0.00
6,000.00	45.33	88.36	5,552.97	-181.97	39.29	1,371.90	438.70	0.00	0.00	0.00
PIERRE SHALE										
6,071.17	45.33	88.36	5,603.00	-232.00	40.74	1,422.49	454.88	0.00	0.00	0.00
6,100.00	45.33	88.36	5,623.27	-252.27	41.33	1,442.99	461.43	0.00	0.00	0.00
6,200.00	45.33	88.36	5,693.56	-322.56	43.37	1,514.08	484.17	0.00	0.00	0.00
6,300.00	45.33	88.36	5,763.86	-392.86	45.40	1,585.18	506.90	0.00	0.00	0.00
6,400.00	45.33	88.36	5,834.16	-463.16	47.44	1,656.27	529.64	0.00	0.00	0.00
6,500.00	45.33	88.36	5,904.45	-533.45	49.47	1,727.36	552.37	0.00	0.00	0.00
6,600.00	45.33	88.36	5,974.75	-603.75	51.51	1,798.46	575.10	0.00	0.00	0.00
SHANNON										
6,652.99	45.33	88.36	6,012.00	-641.00	52.59	1,836.13	587.15	0.00	0.00	0.00
6,700.00	45.33	88.36	6,045.05	-674.05	53.55	1,869.55	597.84	0.00	0.00	0.00
6,800.00	45.33	88.36	6,115.34	-744.34	55.58	1,940.64	620.57	0.00	0.00	0.00
6,900.00	45.33	88.36	6,185.64	-814.64	57.62	2,011.74	643.31	0.00	0.00	0.00
PIERRE SHALE										
6,948.88	45.33	88.36	6,220.00	-849.00	58.61	2,046.48	654.42	0.00	0.00	0.00
7,000.00	45.33	88.36	6,255.94	-884.94	59.65	2,082.83	666.04	0.00	0.00	0.00
7,100.00	45.33	88.36	6,326.23	-955.23	61.69	2,153.92	688.77	0.00	0.00	0.00
7,200.00	45.33	88.36	6,396.53	-1,025.53	63.73	2,225.02	711.51	0.00	0.00	0.00
7,300.00	45.33	88.36	6,466.83	-1,095.83	65.76	2,296.11	734.24	0.00	0.00	0.00
7,400.00	45.33	88.36	6,537.12	-1,166.12	67.80	2,367.20	756.97	0.00	0.00	0.00
7,500.00	45.33	88.36	6,607.42	-1,236.42	69.84	2,438.30	779.71	0.00	0.00	0.00
7,600.00	45.33	88.36	6,677.72	-1,306.72	71.87	2,509.39	802.44	0.00	0.00	0.00
7,700.00	45.33	88.36	6,748.01	-1,377.01	73.91	2,580.48	825.18	0.00	0.00	0.00
7,800.00	45.33	88.36	6,818.31	-1,447.31	75.94	2,651.57	847.91	0.00	0.00	0.00
7,900.00	45.33	88.36	6,888.61	-1,517.61	77.98	2,722.67	870.64	0.00	0.00	0.00
8,000.00	45.33	88.36	6,958.90	-1,587.90	80.02	2,793.76	893.38	0.00	0.00	0.00
KOP (10°/100ft)										
8,078.15	45.33	88.36	7,013.84	-1,642.84	81.61	2,849.32	911.14	0.00	0.00	0.00
8,100.00	45.43	85.29	7,029.19	-1,658.19	82.47	2,864.85	916.51	10.00	0.43	-14.04
8,200.00	46.88	71.56	7,098.63	-1,727.63	96.98	2,935.14	950.94	10.00	1.45	-13.74
8,300.00	49.87	58.77	7,165.21	-1,794.21	128.42	3,002.63	1,000.74	10.00	2.99	-12.78
SHARON SPRINGS										

Database:	Database 1	Local Co-ordinate Reference:	Well FOX CREEK 12-63 34-23-2
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Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KBE @ 5371.00usft
Site:	NE NE SEC. 34 T12N R63W 6th P.M.	North Reference:	True
Well:	FOX CREEK 12-63 34-23-2	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)
8,361.76	52.37	51.52	7,204.00	-1,833.00	155.91	3,042.00	1,038.54	10.00	4.05	-11.75
8,400.00	54.13	47.28	7,226.88	-1,855.88	175.85	3,065.24	1,064.40	10.00	4.60	-11.08
8,500.00	59.37	37.08	7,281.79	-1,910.79	237.82	3,121.10	1,139.99	10.00	5.24	-10.20
NIOBRARA										
8,556.10	62.63	31.86	7,309.00	-1,938.00	278.27	3,148.82	1,186.78	10.00	5.82	-9.30
8,600.00	65.32	28.00	7,328.26	-1,957.26	312.45	3,168.48	1,225.22	10.00	6.11	-8.81
8,700.00	71.76	19.77	7,364.89	-1,993.89	397.47	3,205.97	1,317.48	10.00	6.44	-8.23
NIOBRARA B2 CHALK										
8,749.45	75.07	15.94	7,379.00	-2,008.00	442.57	3,220.48	1,364.85	10.00	6.70	-7.74
8,800.00	78.53	12.15	7,390.55	-2,019.55	490.30	3,232.41	1,413.99	10.00	6.83	-7.50
8,900.00	85.48	4.89	7,404.46	-2,033.46	588.11	3,247.00	1,511.79	10.00	6.96	-7.26
LP: 150ft FSL & 2432ft FWL of Sec 26										
8,964.31	90.00	0.30	7,407.00	-2,036.00	652.28	3,249.90	1,574.00	10.00	7.02	-7.12
9,000.00	90.00	0.30	7,407.00	-2,036.00	687.96	3,250.09	1,608.18	0.00	0.00	0.00
9,100.00	90.00	0.30	7,407.00	-2,036.00	787.96	3,250.63	1,703.97	0.00	0.00	0.00
9,200.00	90.00	0.30	7,407.00	-2,036.00	887.96	3,251.16	1,799.75	0.00	0.00	0.00
9,300.00	90.00	0.30	7,407.00	-2,036.00	987.96	3,251.69	1,895.54	0.00	0.00	0.00
9,400.00	90.00	0.30	7,407.00	-2,036.00	1,087.96	3,252.22	1,991.32	0.00	0.00	0.00
9,500.00	90.00	0.30	7,407.00	-2,036.00	1,187.96	3,252.75	2,087.10	0.00	0.00	0.00
9,600.00	90.00	0.30	7,407.00	-2,036.00	1,287.96	3,253.28	2,182.89	0.00	0.00	0.00
9,700.00	90.00	0.30	7,407.00	-2,036.00	1,387.95	3,253.81	2,278.67	0.00	0.00	0.00
9,800.00	90.00	0.30	7,407.00	-2,036.00	1,487.95	3,254.34	2,374.46	0.00	0.00	0.00
9,900.00	90.00	0.30	7,407.00	-2,036.00	1,587.95	3,254.87	2,470.24	0.00	0.00	0.00
10,000.00	90.00	0.30	7,407.00	-2,036.00	1,687.95	3,255.40	2,566.02	0.00	0.00	0.00
10,100.00	90.00	0.30	7,407.00	-2,036.00	1,787.95	3,255.94	2,661.81	0.00	0.00	0.00
10,200.00	90.00	0.30	7,407.00	-2,036.00	1,887.95	3,256.47	2,757.59	0.00	0.00	0.00
10,300.00	90.00	0.30	7,407.00	-2,036.00	1,987.95	3,257.00	2,853.38	0.00	0.00	0.00
10,400.00	90.00	0.30	7,407.00	-2,036.00	2,087.94	3,257.53	2,949.16	0.00	0.00	0.00
10,500.00	90.00	0.30	7,407.00	-2,036.00	2,187.94	3,258.06	3,044.94	0.00	0.00	0.00
10,600.00	90.00	0.30	7,407.00	-2,036.00	2,287.94	3,258.59	3,140.73	0.00	0.00	0.00
10,700.00	90.00	0.30	7,407.00	-2,036.00	2,387.94	3,259.12	3,236.51	0.00	0.00	0.00
10,800.00	90.00	0.30	7,407.00	-2,036.00	2,487.94	3,259.65	3,332.30	0.00	0.00	0.00
10,900.00	90.00	0.30	7,407.00	-2,036.00	2,587.94	3,260.18	3,428.08	0.00	0.00	0.00
11,000.00	90.00	0.30	7,407.00	-2,036.00	2,687.94	3,260.71	3,523.86	0.00	0.00	0.00
11,100.00	90.00	0.30	7,407.00	-2,036.00	2,787.93	3,261.25	3,619.65	0.00	0.00	0.00
11,200.00	90.00	0.30	7,407.00	-2,036.00	2,887.93	3,261.78	3,715.43	0.00	0.00	0.00
11,300.00	90.00	0.30	7,407.00	-2,036.00	2,987.93	3,262.31	3,811.22	0.00	0.00	0.00
11,400.00	90.00	0.30	7,407.00	-2,036.00	3,087.93	3,262.84	3,907.00	0.00	0.00	0.00
11,500.00	90.00	0.30	7,407.00	-2,036.00	3,187.93	3,263.37	4,002.78	0.00	0.00	0.00
11,600.00	90.00	0.30	7,407.00	-2,036.00	3,287.93	3,263.90	4,098.57	0.00	0.00	0.00
11,700.00	90.00	0.30	7,407.00	-2,036.00	3,387.93	3,264.43	4,194.35	0.00	0.00	0.00
11,800.00	90.00	0.30	7,407.00	-2,036.00	3,487.93	3,264.96	4,290.14	0.00	0.00	0.00
11,900.00	90.00	0.30	7,407.00	-2,036.00	3,587.92	3,265.49	4,385.92	0.00	0.00	0.00
12,000.00	90.00	0.30	7,407.00	-2,036.00	3,687.92	3,266.03	4,481.70	0.00	0.00	0.00
12,100.00	90.00	0.30	7,407.00	-2,036.00	3,787.92	3,266.56	4,577.49	0.00	0.00	0.00
12,200.00	90.00	0.30	7,407.00	-2,036.00	3,887.92	3,267.09	4,673.27	0.00	0.00	0.00
12,300.00	90.00	0.30	7,407.00	-2,036.00	3,987.92	3,267.62	4,769.05	0.00	0.00	0.00
12,400.00	90.00	0.30	7,407.00	-2,036.00	4,087.92	3,268.15	4,864.84	0.00	0.00	0.00
12,500.00	90.00	0.30	7,407.00	-2,036.00	4,187.92	3,268.68	4,960.62	0.00	0.00	0.00
12,600.00	90.00	0.30	7,407.00	-2,036.00	4,287.91	3,269.21	5,056.41	0.00	0.00	0.00
12,700.00	90.00	0.30	7,407.00	-2,036.00	4,387.91	3,269.74	5,152.19	0.00	0.00	0.00
12,800.00	90.00	0.30	7,407.00	-2,036.00	4,487.91	3,270.27	5,247.97	0.00	0.00	0.00
12,900.00	90.00	0.30	7,407.00	-2,036.00	4,587.91	3,270.80	5,343.76	0.00	0.00	0.00

Database:	Database 1	Local Co-ordinate Reference:	Well FOX CREEK 12-63 34-23-2
Company:	BISON IV OPERATING	TVD Reference:	KBE @ 5371.00usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KBE @ 5371.00usft
Site:	NE NE SEC. 34 T12N R63W 6th P.M.	North Reference:	True
Well:	FOX CREEK 12-63 34-23-2	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)
13,000.00	90.00	0.30	7,407.00	-2,036.00	4,687.91	3,271.34	5,439.54	0.00	0.00	0.00
13,100.00	90.00	0.30	7,407.00	-2,036.00	4,787.91	3,271.87	5,535.33	0.00	0.00	0.00
13,200.00	90.00	0.30	7,407.00	-2,036.00	4,887.91	3,272.40	5,631.11	0.00	0.00	0.00
13,300.00	90.00	0.30	7,407.00	-2,036.00	4,987.90	3,272.93	5,726.89	0.00	0.00	0.00
13,400.00	90.00	0.30	7,407.00	-2,036.00	5,087.90	3,273.46	5,822.68	0.00	0.00	0.00
13,500.00	90.00	0.30	7,407.00	-2,036.00	5,187.90	3,273.99	5,918.46	0.00	0.00	0.00
13,600.00	90.00	0.30	7,407.00	-2,036.00	5,287.90	3,274.52	6,014.25	0.00	0.00	0.00
13,700.00	90.00	0.30	7,407.00	-2,036.00	5,387.90	3,275.05	6,110.03	0.00	0.00	0.00
13,800.00	90.00	0.30	7,407.00	-2,036.00	5,487.90	3,275.58	6,205.81	0.00	0.00	0.00
13,900.00	90.00	0.30	7,407.00	-2,036.00	5,587.90	3,276.11	6,301.60	0.00	0.00	0.00
14,000.00	90.00	0.30	7,407.00	-2,036.00	5,687.89	3,276.65	6,397.38	0.00	0.00	0.00
14,100.00	90.00	0.30	7,407.00	-2,036.00	5,787.89	3,277.18	6,493.17	0.00	0.00	0.00
14,200.00	90.00	0.30	7,407.00	-2,036.00	5,887.89	3,277.71	6,588.95	0.00	0.00	0.00
14,300.00	90.00	0.30	7,407.00	-2,036.00	5,987.89	3,278.24	6,684.73	0.00	0.00	0.00
14,400.00	90.00	0.30	7,407.00	-2,036.00	6,087.89	3,278.77	6,780.52	0.00	0.00	0.00
14,500.00	90.00	0.30	7,407.00	-2,036.00	6,187.89	3,279.30	6,876.30	0.00	0.00	0.00
14,600.00	90.00	0.30	7,407.00	-2,036.00	6,287.89	3,279.83	6,972.09	0.00	0.00	0.00
14,700.00	90.00	0.30	7,407.00	-2,036.00	6,387.88	3,280.36	7,067.87	0.00	0.00	0.00
14,800.00	90.00	0.30	7,407.00	-2,036.00	6,487.88	3,280.89	7,163.65	0.00	0.00	0.00
14,900.00	90.00	0.30	7,407.00	-2,036.00	6,587.88	3,281.43	7,259.44	0.00	0.00	0.00
15,000.00	90.00	0.30	7,407.00	-2,036.00	6,687.88	3,281.96	7,355.22	0.00	0.00	0.00
15,100.00	90.00	0.30	7,407.00	-2,036.00	6,787.88	3,282.49	7,451.00	0.00	0.00	0.00
15,200.00	90.00	0.30	7,407.00	-2,036.00	6,887.88	3,283.02	7,546.79	0.00	0.00	0.00
15,300.00	90.00	0.30	7,407.00	-2,036.00	6,987.88	3,283.55	7,642.57	0.00	0.00	0.00
15,400.00	90.00	0.30	7,407.00	-2,036.00	7,087.87	3,284.08	7,738.36	0.00	0.00	0.00
15,500.00	90.00	0.30	7,407.00	-2,036.00	7,187.87	3,284.61	7,834.14	0.00	0.00	0.00
15,600.00	90.00	0.30	7,407.00	-2,036.00	7,287.87	3,285.14	7,929.92	0.00	0.00	0.00
15,700.00	90.00	0.30	7,407.00	-2,036.00	7,387.87	3,285.67	8,025.71	0.00	0.00	0.00
15,800.00	90.00	0.30	7,407.00	-2,036.00	7,487.87	3,286.20	8,121.49	0.00	0.00	0.00
15,900.00	90.00	0.30	7,407.00	-2,036.00	7,587.87	3,286.74	8,217.28	0.00	0.00	0.00
16,000.00	90.00	0.30	7,407.00	-2,036.00	7,687.87	3,287.27	8,313.06	0.00	0.00	0.00
16,100.00	90.00	0.30	7,407.00	-2,036.00	7,787.86	3,287.80	8,408.84	0.00	0.00	0.00
16,200.00	90.00	0.30	7,407.00	-2,036.00	7,887.86	3,288.33	8,504.63	0.00	0.00	0.00
16,300.00	90.00	0.30	7,407.00	-2,036.00	7,987.86	3,288.86	8,600.41	0.00	0.00	0.00
16,400.00	90.00	0.30	7,407.00	-2,036.00	8,087.86	3,289.39	8,696.20	0.00	0.00	0.00
16,500.00	90.00	0.30	7,407.00	-2,036.00	8,187.86	3,289.92	8,791.98	0.00	0.00	0.00
16,600.00	90.00	0.30	7,407.00	-2,036.00	8,287.86	3,290.45	8,887.76	0.00	0.00	0.00
16,700.00	90.00	0.30	7,407.00	-2,036.00	8,387.86	3,290.98	8,983.55	0.00	0.00	0.00
16,800.00	90.00	0.30	7,407.00	-2,036.00	8,487.85	3,291.52	9,079.33	0.00	0.00	0.00
16,900.00	90.00	0.30	7,407.00	-2,036.00	8,587.85	3,292.05	9,175.12	0.00	0.00	0.00
17,000.00	90.00	0.30	7,407.00	-2,036.00	8,687.85	3,292.58	9,270.90	0.00	0.00	0.00
17,100.00	90.00	0.30	7,407.00	-2,036.00	8,787.85	3,293.11	9,366.68	0.00	0.00	0.00
17,200.00	90.00	0.30	7,407.00	-2,036.00	8,887.85	3,293.64	9,462.47	0.00	0.00	0.00
17,300.00	90.00	0.30	7,407.00	-2,036.00	8,987.85	3,294.17	9,558.25	0.00	0.00	0.00
17,400.00	90.00	0.30	7,407.00	-2,036.00	9,087.85	3,294.70	9,654.04	0.00	0.00	0.00
17,500.00	90.00	0.30	7,407.00	-2,036.00	9,187.84	3,295.23	9,749.82	0.00	0.00	0.00
17,600.00	90.00	0.30	7,407.00	-2,036.00	9,287.84	3,295.76	9,845.60	0.00	0.00	0.00
17,700.00	90.00	0.30	7,407.00	-2,036.00	9,387.84	3,296.29	9,941.39	0.00	0.00	0.00
17,800.00	90.00	0.30	7,407.00	-2,036.00	9,487.84	3,296.83	10,037.17	0.00	0.00	0.00
17,900.00	90.00	0.30	7,407.00	-2,036.00	9,587.84	3,297.36	10,132.96	0.00	0.00	0.00
18,000.00	90.00	0.30	7,407.00	-2,036.00	9,687.84	3,297.89	10,228.74	0.00	0.00	0.00
18,100.00	90.00	0.30	7,407.00	-2,036.00	9,787.84	3,298.42	10,324.52	0.00	0.00	0.00
18,200.00	90.00	0.30	7,407.00	-2,036.00	9,887.83	3,298.95	10,420.31	0.00	0.00	0.00
18,300.00	90.00	0.30	7,407.00	-2,036.00	9,987.83	3,299.48	10,516.09	0.00	0.00	0.00

Database:	Database 1	Local Co-ordinate Reference:	Well FOX CREEK 12-63 34-23-2
Company:	BISON IV OPERATING	TVD Reference:	KBE @ 5371.00usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KBE @ 5371.00usft
Site:	NE NE SEC. 34 T12N R63W 6th P.M.	North Reference:	True
Well:	FOX CREEK 12-63 34-23-2	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)
18,400.00	90.00	0.30	7,407.00	-2,036.00	10,087.83	3,300.01	10,611.87	0.00	0.00	0.00
18,500.00	90.00	0.30	7,407.00	-2,036.00	10,187.83	3,300.54	10,707.66	0.00	0.00	0.00
18,600.00	90.00	0.30	7,407.00	-2,036.00	10,287.83	3,301.07	10,803.44	0.00	0.00	0.00
18,700.00	90.00	0.30	7,407.00	-2,036.00	10,387.83	3,301.60	10,899.23	0.00	0.00	0.00
18,800.00	90.00	0.30	7,407.00	-2,036.00	10,487.83	3,302.14	10,995.01	0.00	0.00	0.00
18,900.00	90.00	0.30	7,407.00	-2,036.00	10,587.82	3,302.67	11,090.79	0.00	0.00	0.00
19,000.00	90.00	0.30	7,407.00	-2,036.00	10,687.82	3,303.20	11,186.58	0.00	0.00	0.00
BPZ: 150ft FNL CO STATE LINE & 2483ft FWL of Sec 23										
19,017.90	90.00	0.30	7,407.00	-2,036.00	10,705.72	3,303.29	11,203.72	0.00	0.00	0.00
19,100.00	90.00	0.30	7,407.00	-2,036.00	10,787.82	3,303.73	11,282.36	0.01	0.00	-0.01
BHL: 50ft FNL CO STATE LINE & 2483ft FWL of Sec 23										
19,117.88	90.00	0.30	7,407.00	-2,036.00	10,805.70	3,303.82	11,299.49	0.01	0.00	-0.01

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
971.00	971.00	FOX HILLS				
1,371.00	1,371.00	FOX HILLS BASE/PIERRE SHALE				
4,370.70	4,319.00	PARKMAN				
4,833.67	4,711.00	PIERRE SHALE				
5,567.59	5,249.00	SUSSEX				
6,071.17	5,603.00	PIERRE SHALE				
6,652.99	6,012.00	SHANNON				
6,948.88	6,220.00	PIERRE SHALE				
8,361.76	7,204.00	SHARON SPRINGS				
8,556.10	7,309.00	NIOBRARA				
8,749.45	7,379.00	NIOBRARA B2 CHALK				

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.00	0.00	0.00	0.00	SHL: 460ft FNL & 815ft FEL of Sec 34
3,000.00	3,000.00	0.00	0.00	START NUDGE (2°/100ft)
5,266.73	5,037.50	24.36	850.59	EOB TO 45.33° INC
8,078.15	7,013.84	81.61	2,849.32	KOP (10°/100ft)
8,964.31	7,407.00	652.28	3,249.90	LP: 150ft FSL & 2432ft FWL of Sec 26
19,017.90	7,407.00	10,705.72	3,303.29	BPZ: 150ft FNL CO STATE LINE & 2483ft FWL of Sec 23
19,117.88	7,407.00	10,805.70	3,303.82	BHL: 50ft FNL CO STATE LINE & 2483ft FWL of Sec 23