

MALLARD EXPLORATION

WELD COUNTY, COLORADO (NAD 83)

NE NW SEC. 21 T8N R60W 6th P.M.

GOLDENEYE FED 21-15HC

ORIGINAL WELLBORE

07 May, 2018

Plan: PROPOSAL #1



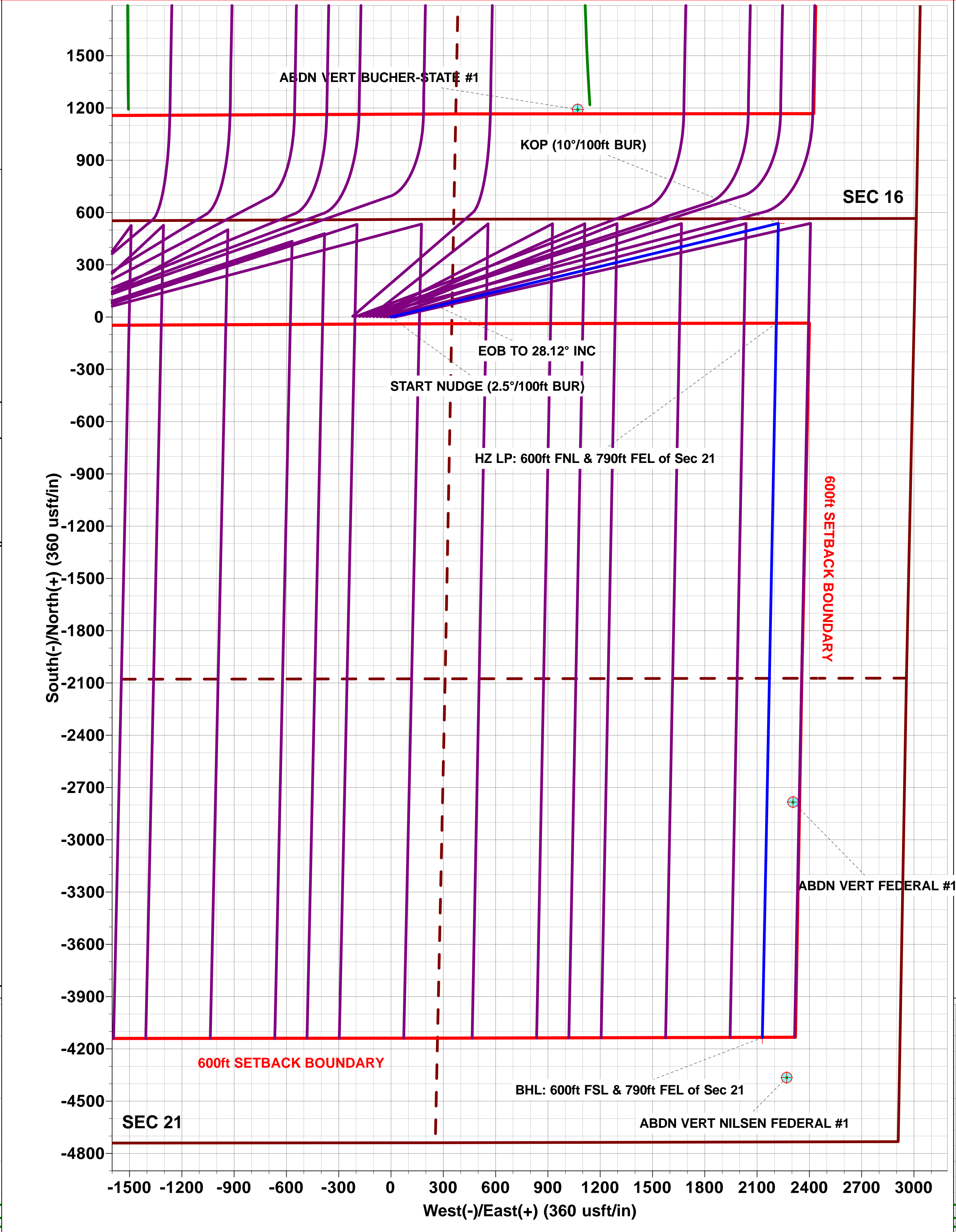
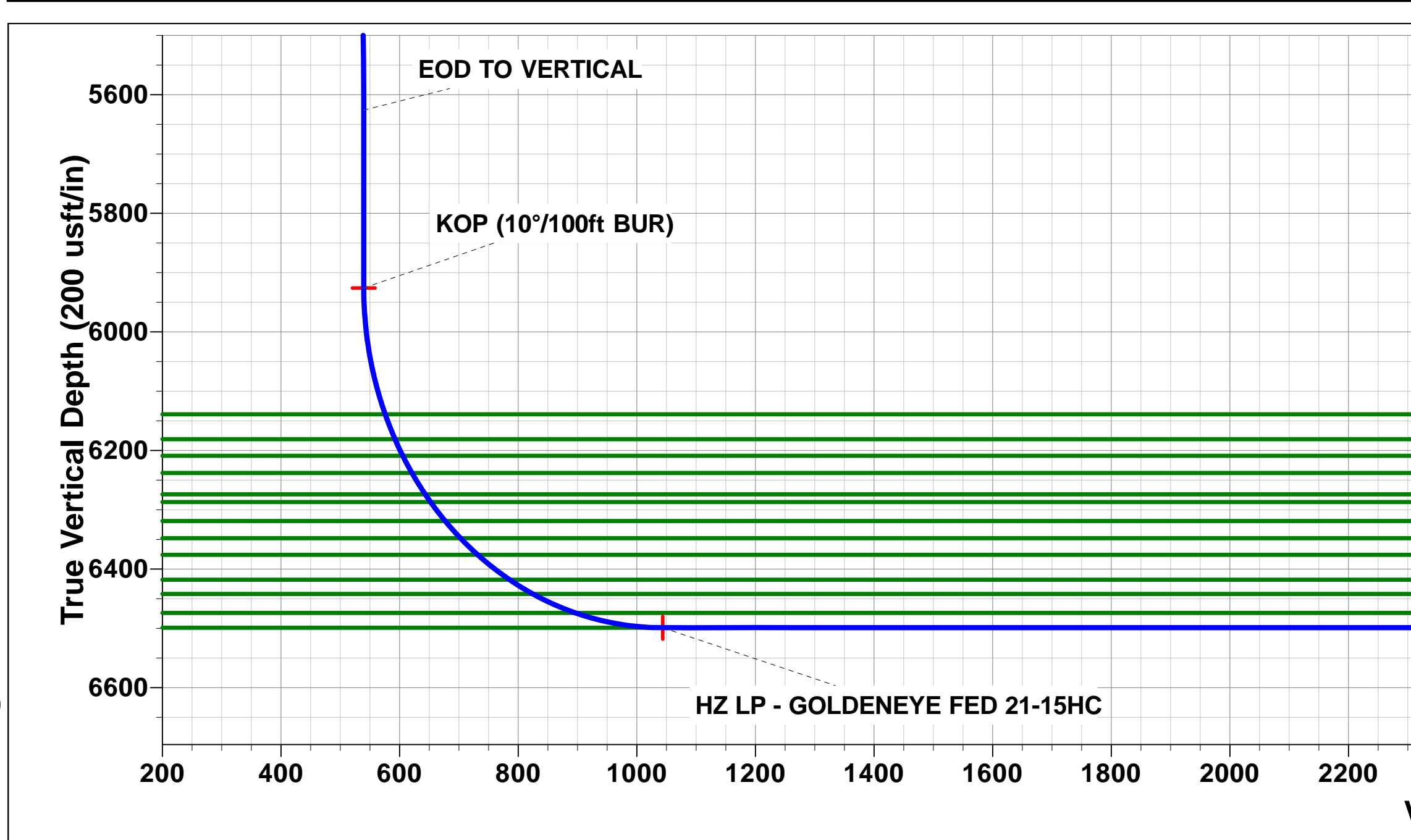
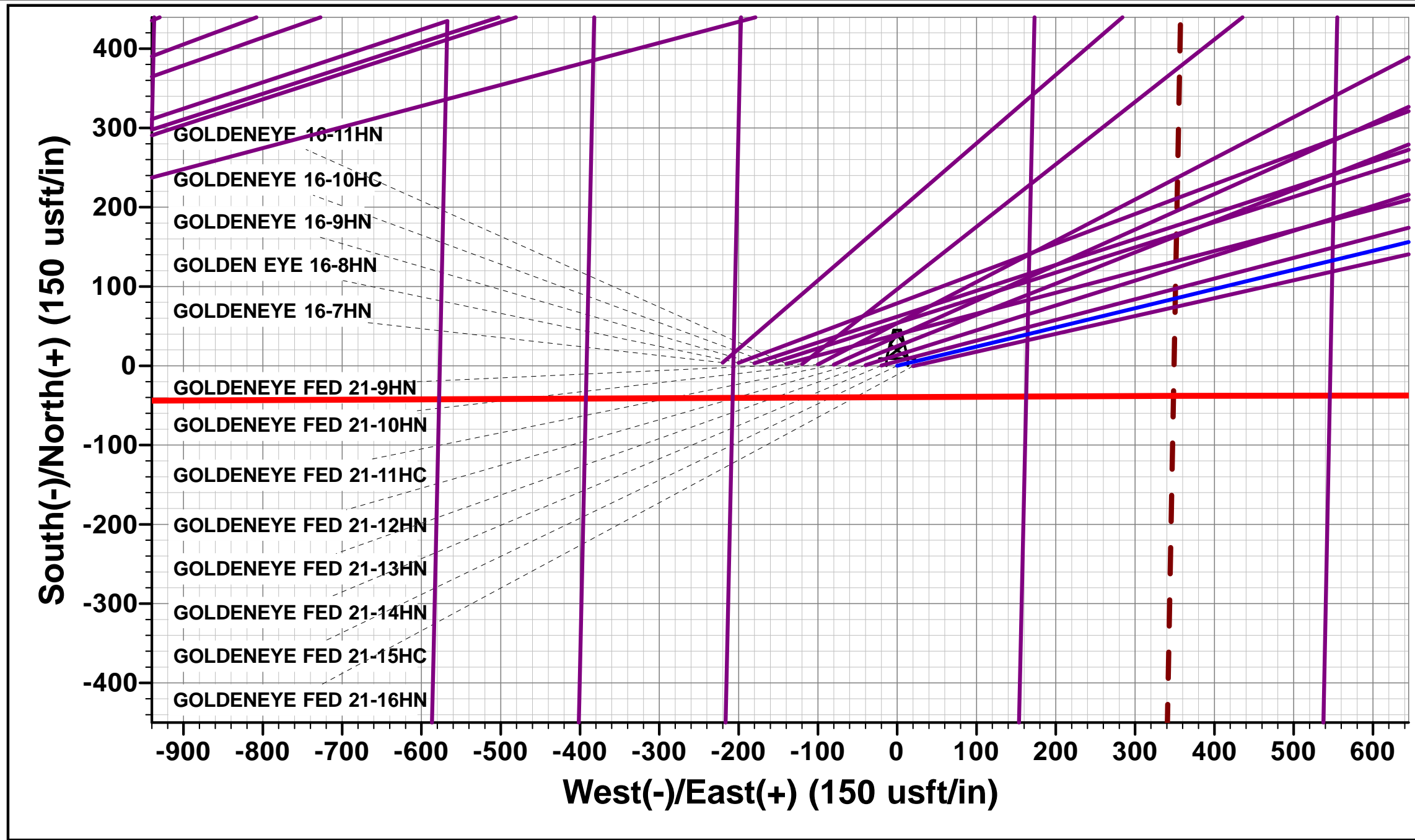
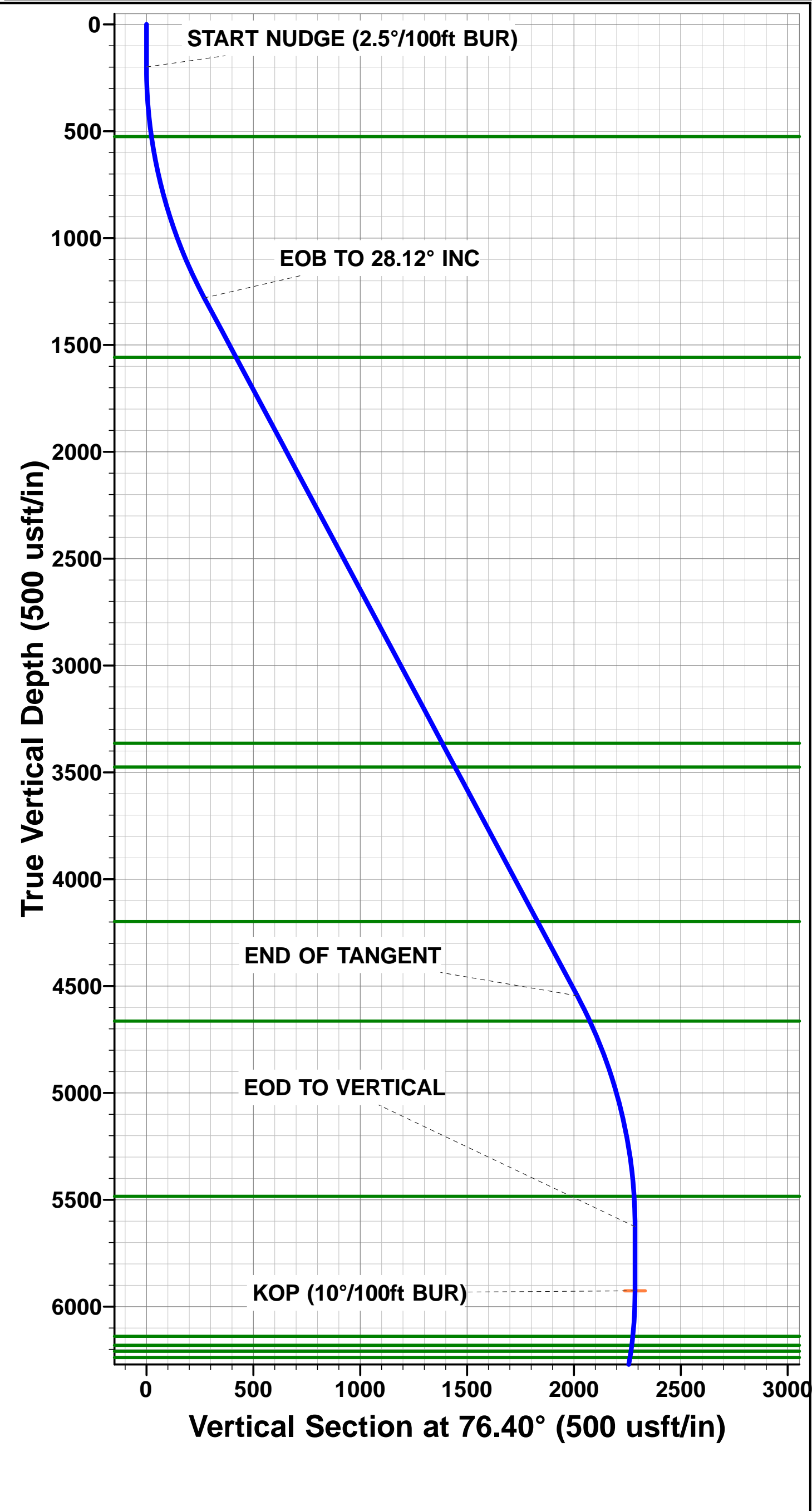


Project: WELD COUNTY, COLORADO (NAD 83)
Site: NE NW SEC. 21 T8N R60W 6th P.M.
Well: GOLDENEYE FED 21-15HC
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

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: 560ft FNL & 2292ft FWL of Sec 21		
200.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	START NUDDGE (2.5°/100ft BUR)		
1280.06	1324.66	28.12	76.40	63.61	262.87	63.85	270.46	EOB TO 28.12° INC		
4545.98	5027.55	28.12	76.40	474.01	1958.97	475.84	2015.50	END OF TANGENT		
5626.04	6152.21	0.00	0.00	537.62	2221.84	539.69	2285.96	EOD TO VERTICAL		
5926.04	6452.21	0.00	0.00	537.62	2221.84	539.69	2285.96	KOP (10°/100ft BUR)		
6499.00	7352.22	90.00	181.12	-35.23	2210.64	1043.80	2858.92	HZ LP: 600ft FNL & 790ft FEL of Sec 21		
6499.00	11452.42	90.00	181.13	-4134.64	2130.25	4651.15	6959.12	BHL: 600ft FSL & 790ft FEL of Sec 21		

PROPOSED LOCAL COORDINATES:
SHL: 560ft FNL & 2292ft FWL Sec 21
HZ LP: 600ft FNL & 790ft FEL Sec 21
BHL: 600ft FSL & 790ft FEL of Sec 21

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - GOLDENEYE FED 21-15HC	5926.04	537.62	2221.84	40.655020	-104.089694
HZ LP - GOLDENEYE FED 21-15HC	6499.00	-35.23	2210.64	40.653448	-104.089735
BHL - GOLDENEYE FED 21-15HC	6499.00	-4134.64	2130.25	40.642196	-104.090026



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well GOLDENEYE FED 21-15HC
Company:	MALLARD EXPLORATION	TVD Reference:	KB-EST @ 4951.00usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4951.00usft (Original Well Elev)
Site:	NE NW SEC. 21 T8N R60W 6th P.M.	North Reference:	True
Well:	GOLDENEYE FED 21-15HC	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. 21 T8N R60W 6th P.M.		
Site Position:		Northing:	1,484,005.35 usft
From:	Lat/Long	Easting:	3,389,097.57 usft
Position Uncertainty:	0.00 usft	Slot Radius:	1.10000ft
		Latitude:	40.653544
		Longitude:	-104.097630
		Grid Convergence:	0.91 °

Well	GOLDENEYE FED 21-15HC		
Well Position	+N-S	0.36 usft	Northing:
	+E-W	-19.98 usft	Easting:
Position Uncertainty		0.00 usft	Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	07/05/2018	7.78	67.13	52,489

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	152.74

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	-4,951.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	-4,751.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,324.66	28.12	76.40	1,280.06	-3,670.94	63.61	262.87	2.50	2.50	0.00	76.40	
5,027.55	28.12	76.40	4,545.98	-405.02	474.01	1,958.97	0.00	0.00	0.00	0.00	
6,152.21	0.00	0.00	5,626.04	675.04	537.62	2,221.84	2.50	-2.50	0.00	180.00	
6,452.21	0.00	0.00	5,926.04	975.04	537.62	2,221.84	0.00	0.00	0.00	0.00	KOP - GOLDENEYE
7,352.22	90.00	181.12	6,499.00	1,548.00	-35.23	2,210.64	10.00	10.00	-19.88	181.12	HZ LP - GOLDENEYE
11,452.42	90.00	181.13	6,499.00	1,548.00	-4,134.64	2,130.25	0.00	0.00	0.00	93.67	BHL - GOLDENEYE

Planning Report



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Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4951.00usft (Original Well Elev)
Site:	NE NW SEC. 21 T8N R60W 6th P.M.	North Reference:	True
Well:	GOLDENEYE FED 21-15HC	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: 560ft FNL & 2292ft FWL of Sec 21										
0.00	0.00	0.00	0.00	4,951.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	4,851.00	0.00	0.00	0.00	0.00	0.00	0.00
START NUDGE (2.5°/100ft BUR)										
200.00	0.00	0.00	200.00	4,751.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	2.50	76.40	299.97	4,651.03	0.51	2.12	0.51	2.50	2.50	0.00
400.00	5.00	76.40	399.75	4,551.25	2.05	8.48	2.06	2.50	2.50	0.00
500.00	7.50	76.40	499.14	4,451.86	4.61	19.06	4.63	2.50	2.50	0.00
Fox Hills Base										
526.10	8.15	76.40	525.00	4,426.00	5.45	22.51	5.47	2.50	2.50	0.00
600.00	10.00	76.40	597.97	4,353.03	8.19	33.84	8.22	2.50	2.50	0.00
700.00	12.50	76.40	696.04	4,254.96	12.78	52.80	12.83	2.50	2.50	0.00
800.00	15.00	76.40	793.17	4,157.83	18.37	75.90	18.44	2.50	2.50	0.00
900.00	17.50	76.40	889.17	4,061.83	24.95	103.10	25.04	2.50	2.50	0.00
1,000.00	20.00	76.40	983.85	3,967.15	32.51	134.34	32.63	2.50	2.50	0.00
1,100.00	22.50	76.40	1,077.05	3,873.95	41.03	169.56	41.19	2.50	2.50	0.00
1,200.00	25.00	76.40	1,168.57	3,782.43	50.50	208.70	50.70	2.50	2.50	0.00
1,300.00	27.50	76.40	1,258.25	3,692.75	60.90	251.69	61.14	2.50	2.50	0.00
EOB TO 28.12° INC										
1,324.66	28.12	76.40	1,280.06	3,670.94	63.61	262.87	63.85	2.50	2.50	0.00
1,400.00	28.12	76.40	1,346.51	3,604.49	71.96	297.38	72.23	0.00	0.00	0.00
1,500.00	28.12	76.40	1,434.71	3,516.29	83.04	343.18	83.36	0.00	0.00	0.00
1,600.00	28.12	76.40	1,522.91	3,428.09	94.12	388.99	94.49	0.00	0.00	0.00
Pierre Shale Top										
1,639.79	28.12	76.40	1,558.00	3,393.00	98.53	407.21	98.91	0.00	0.00	0.00
1,700.00	28.12	76.40	1,611.11	3,339.89	105.21	434.79	105.61	0.00	0.00	0.00
1,800.00	28.12	76.40	1,699.31	3,251.69	116.29	480.60	116.74	0.00	0.00	0.00
1,900.00	28.12	76.40	1,787.51	3,163.49	127.37	526.40	127.87	0.00	0.00	0.00
2,000.00	28.12	76.40	1,875.71	3,075.29	138.46	572.21	138.99	0.00	0.00	0.00
2,100.00	28.12	76.40	1,963.90	2,987.10	149.54	618.01	150.12	0.00	0.00	0.00
2,200.00	28.12	76.40	2,052.10	2,898.90	160.62	663.82	161.24	0.00	0.00	0.00
2,300.00	28.12	76.40	2,140.30	2,810.70	171.71	709.62	172.37	0.00	0.00	0.00
2,400.00	28.12	76.40	2,228.50	2,722.50	182.79	755.43	183.50	0.00	0.00	0.00
2,500.00	28.12	76.40	2,316.70	2,634.30	193.87	801.23	194.62	0.00	0.00	0.00
2,600.00	28.12	76.40	2,404.90	2,546.10	204.96	847.04	205.75	0.00	0.00	0.00
2,700.00	28.12	76.40	2,493.10	2,457.90	216.04	892.84	216.87	0.00	0.00	0.00
2,800.00	28.12	76.40	2,581.30	2,369.70	227.12	938.65	228.00	0.00	0.00	0.00
2,900.00	28.12	76.40	2,669.50	2,281.50	238.21	984.45	239.13	0.00	0.00	0.00
3,000.00	28.12	76.40	2,757.70	2,193.30	249.29	1,030.26	250.25	0.00	0.00	0.00
3,100.00	28.12	76.40	2,845.90	2,105.10	260.37	1,076.06	261.38	0.00	0.00	0.00
3,200.00	28.12	76.40	2,934.10	2,016.90	271.46	1,121.86	272.51	0.00	0.00	0.00
3,300.00	28.12	76.40	3,022.29	1,928.71	282.54	1,167.67	283.63	0.00	0.00	0.00
3,400.00	28.12	76.40	3,110.49	1,840.51	293.63	1,213.47	294.76	0.00	0.00	0.00
3,500.00	28.12	76.40	3,198.69	1,752.31	304.71	1,259.28	305.88	0.00	0.00	0.00
3,600.00	28.12	76.40	3,286.89	1,664.11	315.79	1,305.08	317.01	0.00	0.00	0.00
Richard Sandstone										
3,687.43	28.12	76.40	3,364.00	1,587.00	325.48	1,345.13	326.74	0.00	0.00	0.00
3,700.00	28.12	76.40	3,375.09	1,575.91	326.88	1,350.89	328.14	0.00	0.00	0.00
3,800.00	28.12	76.40	3,463.29	1,487.71	337.96	1,396.69	339.26	0.00	0.00	0.00
Parkman Sandstone										
3,813.28	28.12	76.40	3,475.00	1,476.00	339.43	1,402.78	340.74	0.00	0.00	0.00
3,900.00	28.12	76.40	3,551.49	1,399.51	349.04	1,442.50	350.39	0.00	0.00	0.00
4,000.00	28.12	76.40	3,639.69	1,311.31	360.13	1,488.30	361.51	0.00	0.00	0.00

Planning Report



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Site:	NE NW SEC. 21 T8N R60W 6th P.M.	North Reference:	True
Well:	GOLDENEYE FED 21-15HC	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)
4,100.00	28.12	76.40	3,727.89	1,223.11	371.21	1,534.11	372.64	0.00	0.00	0.00
4,200.00	28.12	76.40	3,816.09	1,134.91	382.29	1,579.91	383.77	0.00	0.00	0.00
4,300.00	28.12	76.40	3,904.29	1,046.71	393.38	1,625.72	394.89	0.00	0.00	0.00
4,400.00	28.12	76.40	3,992.48	958.52	404.46	1,671.52	406.02	0.00	0.00	0.00
4,500.00	28.12	76.40	4,080.68	870.32	415.54	1,717.33	417.15	0.00	0.00	0.00
4,600.00	28.12	76.40	4,168.88	782.12	426.63	1,763.13	428.27	0.00	0.00	0.00
Sussex Sandstone										
4,633.01	28.12	76.40	4,198.00	753.00	430.28	1,778.25	431.94	0.00	0.00	0.00
4,700.00	28.12	76.40	4,257.08	693.92	437.71	1,808.94	439.40	0.00	0.00	0.00
4,800.00	28.12	76.40	4,345.28	605.72	448.79	1,854.74	450.52	0.00	0.00	0.00
4,900.00	28.12	76.40	4,433.48	517.52	459.88	1,900.55	461.65	0.00	0.00	0.00
5,000.00	28.12	76.40	4,521.68	429.32	470.96	1,946.35	472.78	0.00	0.00	0.00
END OF TANGENT										
5,027.55	28.12	76.40	4,545.98	405.02	474.01	1,958.97	475.84	0.00	0.00	0.00
5,100.00	26.31	76.40	4,610.41	340.59	481.80	1,991.17	483.66	2.50	-2.50	0.00
Shannon Sandstone										
5,159.41	24.82	76.40	4,664.00	287.00	487.83	2,016.08	489.71	2.50	-2.50	0.00
5,200.00	23.81	76.40	4,700.99	250.01	491.76	2,032.33	493.66	2.50	-2.50	0.00
5,300.00	21.31	76.40	4,793.33	157.67	500.78	2,069.60	502.72	2.50	-2.50	0.00
5,400.00	18.81	76.40	4,887.26	63.74	508.85	2,102.93	510.81	2.50	-2.50	0.00
5,500.00	16.31	76.40	4,982.60	-31.60	515.94	2,132.25	517.93	2.50	-2.50	0.00
5,600.00	13.81	76.40	5,079.16	-128.16	522.05	2,157.49	524.06	2.50	-2.50	0.00
5,700.00	11.31	76.40	5,176.76	-225.76	527.16	2,178.62	529.20	2.50	-2.50	0.00
5,800.00	8.81	76.40	5,275.21	-324.21	531.27	2,195.59	533.32	2.50	-2.50	0.00
5,900.00	6.31	76.40	5,374.34	-423.34	534.36	2,208.37	536.42	2.50	-2.50	0.00
6,000.00	3.81	76.40	5,473.94	-522.94	536.43	2,216.93	538.50	2.50	-2.50	0.00
TeePee Buttes										
6,010.08	3.55	76.40	5,484.00	-533.00	536.58	2,217.56	538.65	2.50	-2.50	0.00
6,100.00	1.31	76.40	5,573.83	-622.83	537.48	2,221.26	539.55	2.50	-2.50	0.00
EOD TO VERTICAL										
6,152.21	0.00	0.00	5,626.04	-675.04	537.62	2,221.84	539.69	2.50	-2.50	0.00
6,200.00	0.00	0.00	5,673.83	-722.83	537.62	2,221.84	539.69	0.00	0.00	0.00
6,300.00	0.00	0.00	5,773.83	-822.83	537.62	2,221.84	539.69	0.00	0.00	0.00
6,400.00	0.00	0.00	5,873.83	-922.83	537.62	2,221.84	539.69	0.00	0.00	0.00
KOP (10°/100ft BUR)										
6,452.21	0.00	0.00	5,926.04	-975.04	537.62	2,221.84	539.69	0.00	0.00	0.00
6,500.00	4.78	181.12	5,973.77	-1,022.77	535.63	2,221.80	541.45	10.00	10.00	0.00
6,600.00	14.78	181.12	6,072.20	-1,121.20	518.67	2,221.47	556.37	10.00	10.00	0.00
Sharon Springs										
6,670.41	21.82	181.12	6,139.00	-1,188.00	496.58	2,221.04	575.81	10.00	10.00	0.00
6,700.00	24.78	181.12	6,166.18	-1,215.18	484.88	2,220.81	586.11	10.00	10.00	0.00
Niobrara Top										
6,716.44	26.42	181.12	6,181.00	-1,230.00	477.78	2,220.67	592.35	10.00	10.00	0.00
Niobrara A Chalk										
6,748.16	29.59	181.12	6,209.00	-1,258.00	462.89	2,220.38	605.46	10.00	10.00	0.00
Niobrara A Chalk Base										
6,782.10	32.99	181.12	6,238.00	-1,287.00	445.26	2,220.03	620.97	10.00	10.00	0.00
6,800.00	34.78	181.12	6,252.86	-1,301.86	435.29	2,219.84	629.75	10.00	10.00	0.00
Niobrara B1 Chalk Top										
6,826.16	37.39	181.12	6,274.00	-1,323.00	419.88	2,219.54	643.30	10.00	10.00	0.00
Niobrara B1 Chalk Base										
6,842.71	39.05	181.12	6,287.00	-1,336.00	409.65	2,219.34	652.31	10.00	10.00	0.00

Planning Report



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Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4951.00usft (Original Well Elev)
Site:	NE NW SEC. 21 T8N R60W 6th P.M.	North Reference:	True
Well:	GOLDENEYE FED 21-15HC	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)
Niobrara B2 Chalk Top										
6,885.23	43.30	181.12	6,319.00	-1,368.00	381.66	2,218.79	676.94	10.00	10.00	0.00
6,900.00	44.78	181.12	6,329.62	-1,378.62	371.40	2,218.59	685.97	10.00	10.00	0.00
Niobrara B2 Chalk Base										
6,926.52	47.43	181.12	6,348.00	-1,397.00	352.29	2,218.22	702.78	10.00	10.00	0.00
Niobrara C Chalk Top										
6,969.72	51.75	181.12	6,376.00	-1,425.00	319.41	2,217.57	731.72	10.00	10.00	0.00
7,000.00	54.78	181.12	6,394.11	-1,443.11	295.15	2,217.10	753.06	10.00	10.00	0.00
Niobrara C Chalk Base										
7,043.84	59.16	181.12	6,418.00	-1,467.00	258.41	2,216.38	785.40	10.00	10.00	0.00
Niobrara D Chalk Top										
7,094.47	64.23	181.12	6,442.00	-1,491.00	213.86	2,215.51	824.60	10.00	10.00	0.00
7,100.00	64.78	181.12	6,444.38	-1,493.38	208.87	2,215.41	828.99	10.00	10.00	0.00
Ft. Hays										
7,182.33	73.01	181.12	6,474.00	-1,523.00	132.14	2,213.91	896.52	10.00	10.00	0.00
7,200.00	74.78	181.12	6,478.90	-1,527.90	115.17	2,213.58	911.45	10.00	10.00	0.00
7,300.00	84.78	181.12	6,496.62	-1,545.62	16.90	2,211.66	997.92	10.00	10.00	0.00
HZ LP: 600ft FNL & 790ft FEL of Sec 21 - Codell (Target)										
7,352.22	90.00	181.12	6,499.00	-1,548.00	-35.23	2,210.64	1,043.80	10.00	10.00	0.00
7,400.00	90.00	181.12	6,499.00	-1,548.00	-83.01	2,209.70	1,085.84	0.00	0.00	0.00
7,500.00	90.00	181.12	6,499.00	-1,548.00	-182.99	2,207.75	1,173.82	0.00	0.00	0.00
7,600.00	90.00	181.12	6,499.00	-1,548.00	-282.97	2,205.79	1,261.81	0.00	0.00	0.00
7,700.00	90.00	181.12	6,499.00	-1,548.00	-382.95	2,203.84	1,349.79	0.00	0.00	0.00
7,800.00	90.00	181.12	6,499.00	-1,548.00	-482.93	2,201.88	1,437.77	0.00	0.00	0.00
7,900.00	90.00	181.12	6,499.00	-1,548.00	-582.91	2,199.92	1,525.75	0.00	0.00	0.00
8,000.00	90.00	181.12	6,499.00	-1,548.00	-682.89	2,197.97	1,613.73	0.00	0.00	0.00
8,100.00	90.00	181.12	6,499.00	-1,548.00	-782.87	2,196.01	1,701.72	0.00	0.00	0.00
8,200.00	90.00	181.12	6,499.00	-1,548.00	-882.85	2,194.05	1,789.70	0.00	0.00	0.00
8,300.00	90.00	181.12	6,499.00	-1,548.00	-982.84	2,192.09	1,877.68	0.00	0.00	0.00
8,400.00	90.00	181.12	6,499.00	-1,548.00	-1,082.82	2,190.14	1,965.66	0.00	0.00	0.00
8,500.00	90.00	181.12	6,499.00	-1,548.00	-1,182.80	2,188.18	2,053.64	0.00	0.00	0.00
8,600.00	90.00	181.12	6,499.00	-1,548.00	-1,282.78	2,186.22	2,141.62	0.00	0.00	0.00
8,700.00	90.00	181.12	6,499.00	-1,548.00	-1,382.76	2,184.26	2,229.60	0.00	0.00	0.00
8,800.00	90.00	181.12	6,499.00	-1,548.00	-1,482.74	2,182.30	2,317.58	0.00	0.00	0.00
8,900.00	90.00	181.12	6,499.00	-1,548.00	-1,582.72	2,180.34	2,405.56	0.00	0.00	0.00
9,000.00	90.00	181.12	6,499.00	-1,548.00	-1,682.70	2,178.38	2,493.55	0.00	0.00	0.00
9,100.00	90.00	181.12	6,499.00	-1,548.00	-1,782.68	2,176.42	2,581.53	0.00	0.00	0.00
9,200.00	90.00	181.12	6,499.00	-1,548.00	-1,882.66	2,174.46	2,669.51	0.00	0.00	0.00
9,300.00	90.00	181.12	6,499.00	-1,548.00	-1,982.64	2,172.50	2,757.49	0.00	0.00	0.00
9,400.00	90.00	181.12	6,499.00	-1,548.00	-2,082.62	2,170.54	2,845.47	0.00	0.00	0.00
9,500.00	90.00	181.12	6,499.00	-1,548.00	-2,182.61	2,168.58	2,933.45	0.00	0.00	0.00
9,600.00	90.00	181.12	6,499.00	-1,548.00	-2,282.59	2,166.62	3,021.43	0.00	0.00	0.00
9,700.00	90.00	181.12	6,499.00	-1,548.00	-2,382.57	2,164.66	3,109.41	0.00	0.00	0.00
9,800.00	90.00	181.12	6,499.00	-1,548.00	-2,482.55	2,162.70	3,197.39	0.00	0.00	0.00
9,900.00	90.00	181.12	6,499.00	-1,548.00	-2,582.53	2,160.74	3,285.36	0.00	0.00	0.00
10,000.00	90.00	181.12	6,499.00	-1,548.00	-2,682.51	2,158.77	3,373.34	0.00	0.00	0.00
10,100.00	90.00	181.12	6,499.00	-1,548.00	-2,782.49	2,156.81	3,461.32	0.00	0.00	0.00
10,200.00	90.00	181.12	6,499.00	-1,548.00	-2,882.47	2,154.85	3,549.30	0.00	0.00	0.00
10,300.00	90.00	181.12	6,499.00	-1,548.00	-2,982.45	2,152.89	3,637.28	0.00	0.00	0.00
10,400.00	90.00	181.12	6,499.00	-1,548.00	-3,082.43	2,150.92	3,725.26	0.00	0.00	0.00
10,500.00	90.00	181.13	6,499.00	-1,548.00	-3,182.41	2,148.96	3,813.24	0.00	0.00	0.00
10,600.00	90.00	181.13	6,499.00	-1,548.00	-3,282.39	2,147.00	3,901.22	0.00	0.00	0.00
10,700.00	90.00	181.13	6,499.00	-1,548.00	-3,382.37	2,145.03	3,989.20	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well GOLDENEYE FED 21-15HC
Company:	MALLARD EXPLORATION	TVD Reference:	KB-EST @ 4951.00usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4951.00usft (Original Well Elev)
Site:	NE NW SEC. 21 T8N R60W 6th P.M.	North Reference:	True
Well:	GOLDENEYE FED 21-15HC	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)
10,800.00	90.00	181.13	6,499.00	-1,548.00	-3,482.35	2,143.07	4,077.17	0.00	0.00	0.00
10,900.00	90.00	181.13	6,499.00	-1,548.00	-3,582.34	2,141.10	4,165.15	0.00	0.00	0.00
11,000.00	90.00	181.13	6,499.00	-1,548.00	-3,682.32	2,139.14	4,253.13	0.00	0.00	0.00
11,100.00	90.00	181.13	6,499.00	-1,548.00	-3,782.30	2,137.17	4,341.11	0.00	0.00	0.00
11,200.00	90.00	181.13	6,499.00	-1,548.00	-3,882.28	2,135.21	4,429.09	0.00	0.00	0.00
11,300.00	90.00	181.13	6,499.00	-1,548.00	-3,982.26	2,133.24	4,517.06	0.00	0.00	0.00
11,400.00	90.00	181.13	6,499.00	-1,548.00	-4,082.24	2,131.28	4,605.04	0.00	0.00	0.00
BHL: 600ft FSL & 790ft FEL of Sec 21										
11,452.42	90.00	181.13	6,499.00	-1,548.00	-4,134.64	2,130.25	4,651.15	0.00	0.00	0.00

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
526.10	525.00	Fox Hills Base				
1,639.79	1,558.00	Pierre Shale Top				
3,687.43	3,364.00	Richard Sandstone				
3,813.28	3,475.00	Parkman Sandstone				
4,633.01	4,198.00	Sussex Sandstone				
5,159.41	4,664.00	Shannon Sandstone				
6,010.08	5,484.00	TeePee Buttes				
6,670.41	6,139.00	Sharon Springs				
6,716.44	6,181.00	Niobrara Top				
6,748.16	6,209.00	Niobrara A Chalk				
6,782.10	6,238.00	Niobrara A Chalk Base				
6,826.16	6,274.00	Niobrara B1 Chalk Top				
6,842.71	6,287.00	Niobrara B1 Chalk Base				
6,885.23	6,319.00	Niobrara B2 Chalk Top				
6,926.52	6,348.00	Niobrara B2 Chalk Base				
6,969.72	6,376.00	Niobrara C Chalk Top				
7,043.84	6,418.00	Niobrara C Chalk Base				
7,094.47	6,442.00	Niobrara D Chalk Top				
7,182.33	6,474.00	Ft. Hays				
7,352.22	6,499.00	Codell (Target)				

Plan Annotations					
MD (usft)	TVD (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
0.00	0.00	0.00	0.00	SHL: 560ft FNL & 2292ft FWL of Sec 21	
200.00	200.00	0.00	0.00	START NUDGE (2.5°/100ft BUR)	
1,324.66	1,280.06	63.61	262.87	EOB TO 28.12° INC	
5,027.55	4,545.98	474.01	1,958.97	END OF TANGENT	
6,152.21	5,626.04	537.62	2,221.84	EOD TO VERTICAL	
6,452.21	5,926.04	537.62	2,221.84	KOP (10°/100ft BUR)	
7,352.22	6,499.00	-35.23	2,210.64	HZ LP: 600ft FNL & 790ft FEL of Sec 21	
11,452.42	6,499.00	-4,134.64	2,130.25	BHL: 600ft FSL & 790ft FEL of Sec 21	