

MALLARD EXPLORATION

WELD COUNTY, COLORADO (NAD 83)

SE SW SEC. 35 T8N R60W 6th P.M.

CINNAMON TEAL FED 35-8HN

ORIGINAL WELLBORE

18 September, 2017

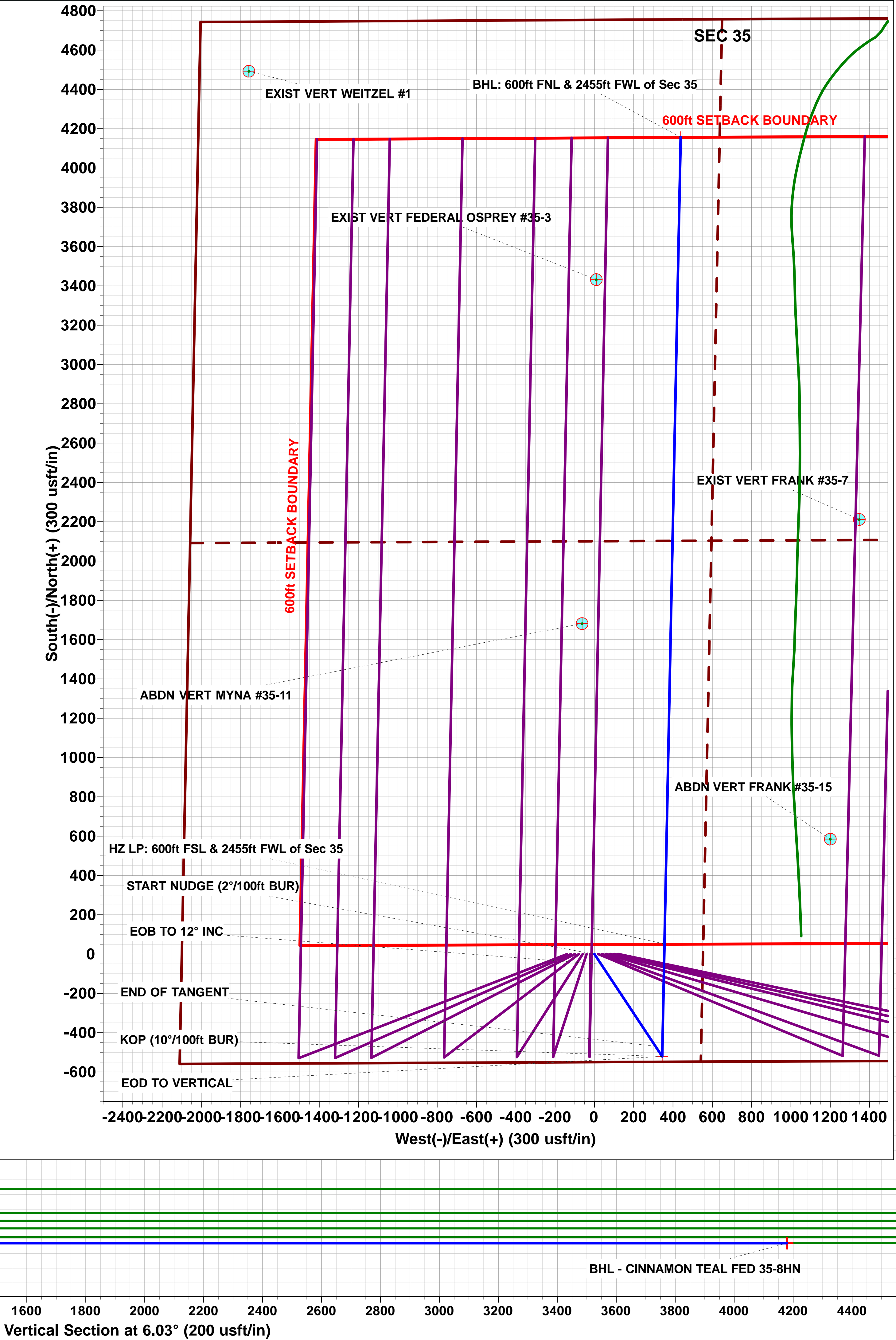
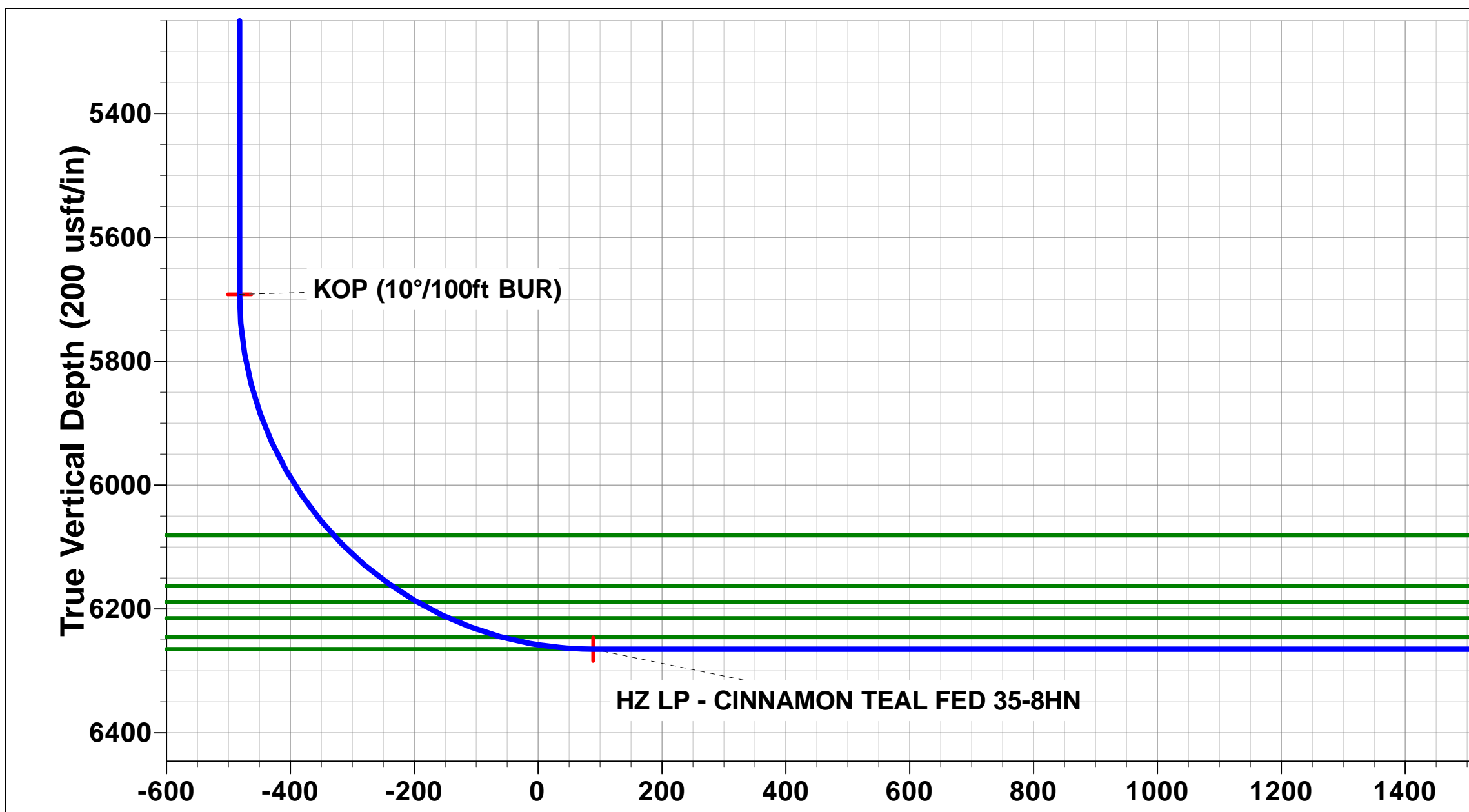
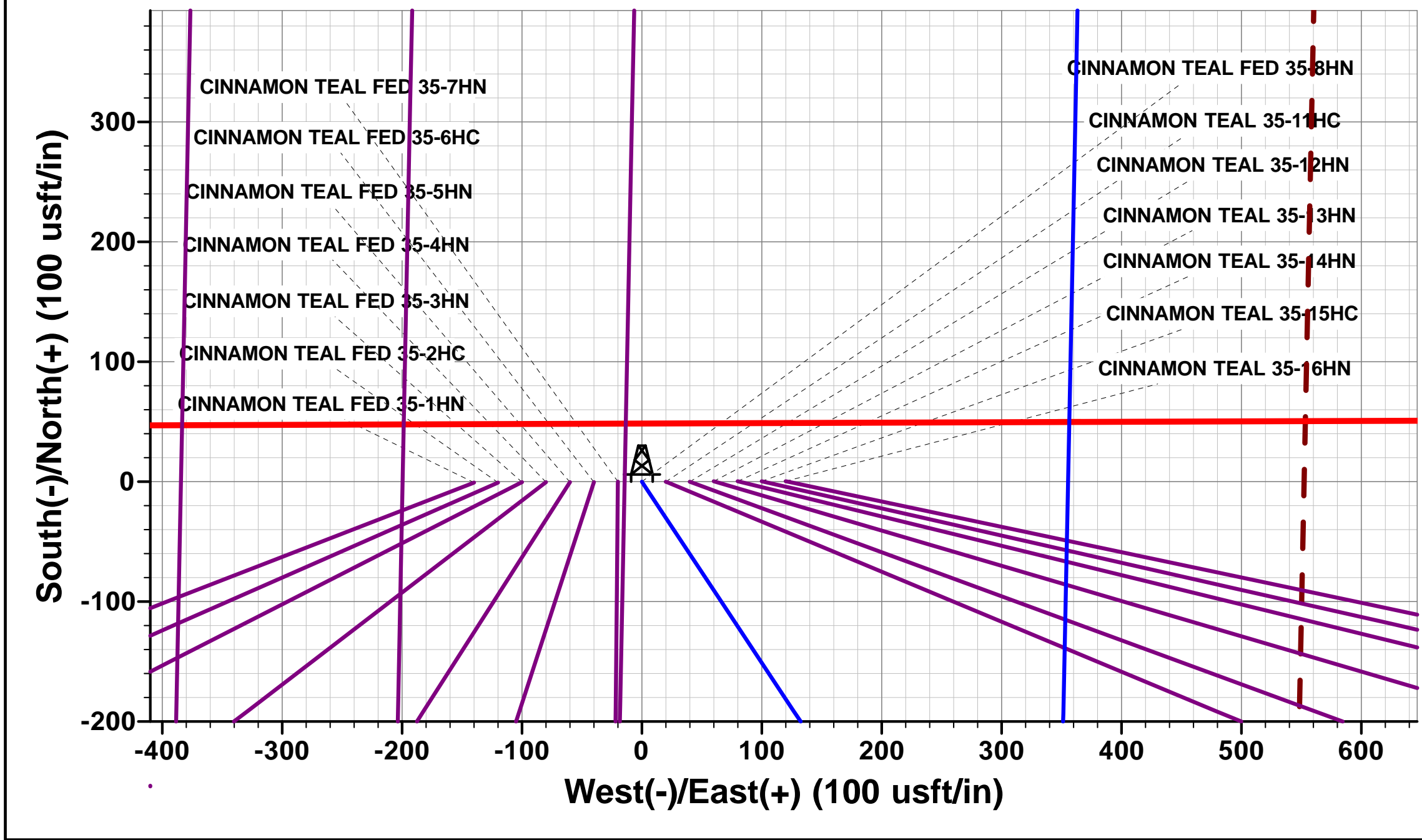
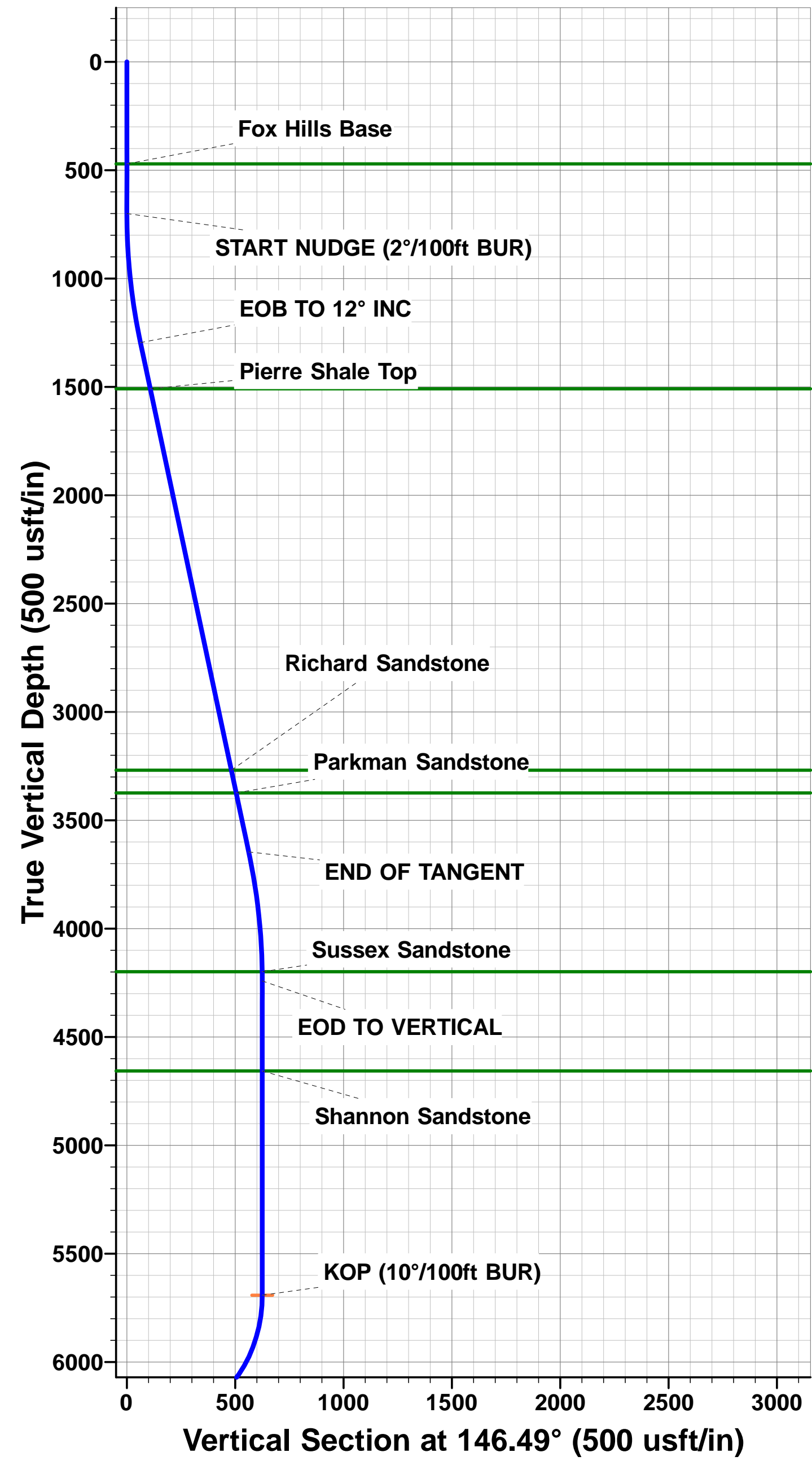
Plan: PROPOSAL #1





Project: WELD COUNTY, COLORADO (NAD 83)
Site: SE SW SEC. 35 T8N R60W 6th P.M.
Well: CINNAMON TEAL FED 35-8HN
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

ANNOTATIONS									PROPOSED LOCAL COORDINATES: SHL: 550ft FSL & 2100ft FWL Sec 35 HZ LP: 600ft FSL & 2455ft FWL Sec 35 BHL: 600ft FNL & 2455ft FWL of Sec 35
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Dep	Annotation	
0.0	0.0	0.00	0.00	0.0	0.0	0.0	0.0	SHL: 550ft FSL & 2100ft FWL of Sec 35	
700.0	700.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)	
1295.6	1300.0	12.00	146.49	-52.2	34.6	-48.3	62.6	EOB TO 12° INC	
3646.4	3703.3	12.00	146.49	-468.8	310.4	-433.6	562.3	END OF TANGENT	
4242.0	4303.3	0.00	0.00	-521.0	345.0	-481.9	624.9	EOD TO VERTICAL	
5692.1	5753.4	0.00	0.00	-521.0	345.0	-481.9	624.9	KOP (10°/100ft BUR)	
6265.0	6653.3	90.00	1.15	51.8	356.5	88.9	1197.7	HZ LP: 600ft FSL & 2455ft FWL of Sec 35	
6265.0	10758.6	90.00	1.15	4156.2	438.9	4179.4	5303.1	BHL: 600ft FNL & 2455ft FWL of Sec 35	
WELLBORE TARGET DETAILS (LAT/LONG)									
Name				TVD	+N/-S	+E/-W	Latitude	Longitude	
KOP - CINNAMON TEAL FED 35-8HN				5692.1	-521.0	345.0	40.611630	-104.060062	
HZ LP - CINNAMON TEAL FED 35-8HN				6265.0	51.8	356.5	40.613202	-104.060021	
BHL - CINNAMON TEAL FED 35-8HN				6265.0	4156.2	438.9	40.624468	-104.059724	



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well CINNAMON TEAL FED 35-8HN
Company:	MALLARD EXPLORATION	TVD Reference:	KB-EST @ 4940.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4940.0usft (Original Well Elev)
Site:	SE SW SEC. 35 T8N R60W 6th P.M.	North Reference:	True
Well:	CINNAMON TEAL FED 35-8HN	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	SE SW SEC. 35 T8N R60W 6th P.M.		
Site Position:		Northing:	1,469,416.68 usft
From:	Lat/Long	Easting:	3,399,274.71 usft
Position Uncertainty:	0.0 usft	Slot Radius:	1.10000ft
		Latitude:	40.613058
		Longitude:	-104.061809
		Grid Convergence:	0.93 °

Well	CINNAMON TEAL FED 35-8HN		
Well Position	+N-S	0.7 usft	Northing:
	+E-W	139.9 usft	Easting:
Position Uncertainty		0.0 usft	Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	18/09/2017	7.82	67.12	52,544

Design	PROPOSAL #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)
	6,265.0	0.0	0.0	6.03

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
0.0	0.00	0.00	0.0	-4,940.0	0.0	0.0	0.00	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	-4,240.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,300.0	12.00	146.49	1,295.6	-3,644.4	-52.2	34.6	2.00	2.00	0.00	146.49	
3,703.3	12.00	146.49	3,646.4	-1,293.6	-468.8	310.4	0.00	0.00	0.00	0.00	
4,303.3	0.00	0.00	4,242.0	-698.0	-521.0	345.0	2.00	-2.00	0.00	180.00	
5,753.4	0.00	0.00	5,692.1	752.1	-521.0	345.0	0.00	0.00	0.00	0.00	KOP - CINNAMON
6,653.3	90.00	1.15	6,265.0	1,325.0	51.8	356.5	10.00	10.00	0.13	1.15	HZ LP - CINNAMOI
10,758.6	90.00	1.15	6,265.0	1,325.0	4,156.2	438.9	0.00	0.00	0.00	11.29	BHL - CINNAMON

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well CINNAMON TEAL FED 35-8HN
Company:	MALLARD EXPLORATION	TVD Reference:	KB-EST @ 4940.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4940.0usft (Original Well Elev)
Site:	SE SW SEC. 35 T8N R60W 6th P.M.	North Reference:	True
Well:	CINNAMON TEAL FED 35-8HN	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: 550ft FSL & 2100ft FWL of Sec 35										
0.0	0.00	0.00	0.0	4,940.00	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	4,840.00	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	4,740.00	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	4,640.00	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	4,540.00	0.0	0.0	0.0	0.00	0.00	0.00
Fox Hills Base										
471.0	0.00	0.00	471.0	4,469.00	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	4,440.00	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	4,340.00	0.0	0.0	0.0	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
700.0	0.00	0.00	700.0	4,240.00	0.0	0.0	0.0	0.00	0.00	0.00
800.0	2.00	146.49	800.0	4,140.02	-1.5	1.0	-1.3	2.00	2.00	0.00
900.0	4.00	146.49	899.8	4,040.16	-5.8	3.9	-5.4	2.00	2.00	0.00
1,000.0	6.00	146.49	999.5	3,940.55	-13.1	8.7	-12.1	2.00	2.00	0.00
1,100.0	8.00	146.49	1,098.7	3,841.30	-23.2	15.4	-21.5	2.00	2.00	0.00
1,200.0	10.00	146.49	1,197.5	3,742.53	-36.3	24.0	-33.6	2.00	2.00	0.00
EOB TO 12° INC										
1,300.0	12.00	146.49	1,295.6	3,644.38	-52.2	34.6	-48.3	2.00	2.00	0.00
1,400.0	12.00	146.49	1,393.4	3,546.56	-69.5	46.0	-64.3	0.00	0.00	0.00
1,500.0	12.00	146.49	1,491.3	3,448.75	-86.9	57.5	-80.3	0.00	0.00	0.00
Pierre Shale Top										
1,518.1	12.00	146.49	1,509.0	3,431.00	-90.0	59.6	-83.3	0.00	0.00	0.00
1,600.0	12.00	146.49	1,589.1	3,350.93	-104.2	69.0	-96.4	0.00	0.00	0.00
1,700.0	12.00	146.49	1,686.9	3,253.12	-121.5	80.5	-112.4	0.00	0.00	0.00
1,800.0	12.00	146.49	1,784.7	3,155.30	-138.9	92.0	-128.4	0.00	0.00	0.00
1,900.0	12.00	146.49	1,882.5	3,057.49	-156.2	103.4	-144.5	0.00	0.00	0.00
2,000.0	12.00	146.49	1,980.3	2,959.67	-173.5	114.9	-160.5	0.00	0.00	0.00
2,100.0	12.00	146.49	2,078.1	2,861.86	-190.9	126.4	-176.5	0.00	0.00	0.00
2,200.0	12.00	146.49	2,176.0	2,764.04	-208.2	137.9	-192.6	0.00	0.00	0.00
2,300.0	12.00	146.49	2,273.8	2,666.23	-225.5	149.4	-208.6	0.00	0.00	0.00
2,400.0	12.00	146.49	2,371.6	2,568.41	-242.9	160.8	-224.6	0.00	0.00	0.00
2,500.0	12.00	146.49	2,469.4	2,470.60	-260.2	172.3	-240.7	0.00	0.00	0.00
2,600.0	12.00	146.49	2,567.2	2,372.78	-277.6	183.8	-256.7	0.00	0.00	0.00
2,700.0	12.00	146.49	2,665.0	2,274.97	-294.9	195.3	-272.8	0.00	0.00	0.00
2,800.0	12.00	146.49	2,762.8	2,177.16	-312.2	206.7	-288.8	0.00	0.00	0.00
2,900.0	12.00	146.49	2,860.7	2,079.34	-329.6	218.2	-304.8	0.00	0.00	0.00
3,000.0	12.00	146.49	2,958.5	1,981.53	-346.9	229.7	-320.9	0.00	0.00	0.00
3,100.0	12.00	146.49	3,056.3	1,883.71	-364.2	241.2	-336.9	0.00	0.00	0.00
3,200.0	12.00	146.49	3,154.1	1,785.90	-381.6	252.7	-352.9	0.00	0.00	0.00
3,300.0	12.00	146.49	3,251.9	1,688.08	-398.9	264.1	-369.0	0.00	0.00	0.00
Richard Sandstone										
3,317.5	12.00	146.49	3,269.0	1,671.00	-401.9	266.1	-371.8	0.00	0.00	0.00
3,400.0	12.00	146.49	3,349.7	1,590.27	-416.2	275.6	-385.0	0.00	0.00	0.00
Parkman Sandstone										
3,424.8	12.00	146.49	3,374.0	1,566.00	-420.5	278.5	-389.0	0.00	0.00	0.00
3,500.0	12.00	146.49	3,447.5	1,492.45	-433.6	287.1	-401.0	0.00	0.00	0.00
3,600.0	12.00	146.49	3,545.4	1,394.64	-450.9	298.6	-417.1	0.00	0.00	0.00
3,700.0	12.00	146.49	3,643.2	1,296.82	-468.2	310.1	-433.1	0.00	0.00	0.00
END OF TANGENT										
3,703.3	12.00	146.49	3,646.4	1,293.62	-468.8	310.4	-433.6	0.00	0.00	0.00
3,800.0	10.07	146.49	3,741.3	1,198.69	-484.2	320.7	-447.9	2.00	-2.00	0.00
3,900.0	8.07	146.49	3,840.1	1,099.94	-497.4	329.4	-460.0	2.00	-2.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well CINNAMON TEAL FED 35-8HN
Company:	MALLARD EXPLORATION	TVD Reference:	KB-EST @ 4940.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4940.0usft (Original Well Elev)
Site:	SE SW SEC. 35 T8N R60W 6th P.M.	North Reference:	True
Well:	CINNAMON TEAL FED 35-8HN	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)
4,000.0	6.07	146.49	3,939.3	1,000.70	-507.6	336.1	-469.5	2.00	-2.00	0.00
4,100.0	4.07	146.49	4,038.9	901.10	-515.0	341.0	-476.3	2.00	-2.00	0.00
4,200.0	2.07	146.49	4,138.8	801.25	-519.4	344.0	-480.5	2.00	-2.00	0.00
Sussex Sandstone										
4,260.3	0.86	146.49	4,199.0	741.00	-520.7	344.8	-481.6	2.00	-2.00	0.00
4,300.0	0.07	146.49	4,238.7	701.27	-521.0	345.0	-481.9	2.00	-2.00	0.00
EOD TO VERTICAL										
4,303.3	0.00	0.00	4,242.0	698.00	-521.0	345.0	-481.9	2.00	-2.00	0.00
4,400.0	0.00	0.00	4,338.7	601.27	-521.0	345.0	-481.9	0.00	0.00	0.00
4,500.0	0.00	0.00	4,438.7	501.27	-521.0	345.0	-481.9	0.00	0.00	0.00
4,600.0	0.00	0.00	4,538.7	401.27	-521.0	345.0	-481.9	0.00	0.00	0.00
4,700.0	0.00	0.00	4,638.7	301.27	-521.0	345.0	-481.9	0.00	0.00	0.00
Shannon Sandstone										
4,718.3	0.00	0.00	4,657.0	283.00	-521.0	345.0	-481.9	0.00	0.00	0.00
4,800.0	0.00	0.00	4,738.7	201.27	-521.0	345.0	-481.9	0.00	0.00	0.00
4,900.0	0.00	0.00	4,838.7	101.27	-521.0	345.0	-481.9	0.00	0.00	0.00
5,000.0	0.00	0.00	4,938.7	1.27	-521.0	345.0	-481.9	0.00	0.00	0.00
5,100.0	0.00	0.00	5,038.7	-98.73	-521.0	345.0	-481.9	0.00	0.00	0.00
5,200.0	0.00	0.00	5,138.7	-198.73	-521.0	345.0	-481.9	0.00	0.00	0.00
5,300.0	0.00	0.00	5,238.7	-298.73	-521.0	345.0	-481.9	0.00	0.00	0.00
5,400.0	0.00	0.00	5,338.7	-398.73	-521.0	345.0	-481.9	0.00	0.00	0.00
5,500.0	0.00	0.00	5,438.7	-498.73	-521.0	345.0	-481.9	0.00	0.00	0.00
5,600.0	0.00	0.00	5,538.7	-598.73	-521.0	345.0	-481.9	0.00	0.00	0.00
5,700.0	0.00	0.00	5,638.7	-698.73	-521.0	345.0	-481.9	0.00	0.00	0.00
KOP (10°/100ft BUR)										
5,753.4	0.00	0.00	5,692.1	-752.10	-521.0	345.0	-481.9	0.00	0.00	0.00
5,800.0	4.66	1.15	5,738.7	-798.68	-519.1	345.0	-480.0	10.00	10.00	0.00
5,900.0	14.66	1.15	5,837.1	-897.13	-502.3	345.4	-463.3	10.00	10.00	0.00
6,000.0	24.67	1.15	5,931.2	-991.18	-468.7	346.0	-429.8	10.00	10.00	0.00
6,100.0	34.67	1.15	6,018.0	-1,077.96	-419.3	347.0	-380.6	10.00	10.00	0.00
Sharon Springs										
6,180.8	42.75	1.15	6,081.0	-1,141.00	-368.8	348.1	-330.2	10.00	10.00	0.00
6,200.0	44.67	1.15	6,094.8	-1,154.84	-355.6	348.3	-317.0	10.00	10.00	0.00
6,300.0	54.67	1.15	6,159.5	-1,219.48	-279.5	349.8	-241.2	10.00	10.00	0.00
Niobrara A Chalk										
6,306.1	55.28	1.15	6,163.0	-1,223.00	-274.4	349.9	-236.2	10.00	10.00	0.00
Niobrara A Chalk Base										
6,354.8	60.15	1.15	6,189.0	-1,249.00	-233.3	350.8	-195.2	10.00	10.00	0.00
6,400.0	64.67	1.15	6,209.9	-1,269.92	-193.3	351.6	-155.3	10.00	10.00	0.00
Niobrara B1 Chalk Top										
6,412.2	65.88	1.15	6,215.0	-1,275.00	-182.2	351.8	-144.3	10.00	10.00	0.00
6,500.0	74.67	1.15	6,244.6	-1,304.62	-99.6	353.5	-62.0	10.00	10.00	0.00
Niobrara B1 Chalk Base										
6,501.5	74.82	1.15	6,245.0	-1,305.00	-98.2	353.5	-60.6	10.00	10.00	0.00
6,600.0	84.67	1.15	6,262.5	-1,322.52	-1.4	355.4	35.9	10.00	10.00	0.00
HZ LP: 600ft FSL & 2455ft FWL of Sec 35 - Niobrara B2 Chalk Top (Target)										
6,653.3	90.00	1.15	6,265.0	-1,325.00	51.8	356.5	88.9	10.00	10.00	0.00
6,700.0	90.00	1.15	6,265.0	-1,325.00	98.5	357.4	135.5	0.00	0.00	0.00
6,800.0	90.00	1.15	6,265.0	-1,325.01	198.5	359.4	235.1	0.00	0.00	0.00
6,900.0	90.00	1.15	6,265.0	-1,325.01	298.5	361.4	334.8	0.00	0.00	0.00
7,000.0	90.00	1.15	6,265.0	-1,325.02	398.4	363.4	434.4	0.00	0.00	0.00
7,100.0	90.00	1.15	6,265.0	-1,325.02	498.4	365.5	534.0	0.00	0.00	0.00
7,200.0	90.00	1.15	6,265.0	-1,325.02	598.4	367.5	633.7	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well CINNAMON TEAL FED 35-8HN
Company:	MALLARD EXPLORATION	TVD Reference:	KB-EST @ 4940.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4940.0usft (Original Well Elev)
Site:	SE SW SEC. 35 T8N R60W 6th P.M.	North Reference:	True
Well:	CINNAMON TEAL FED 35-8HN	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)
7,300.0	90.00	1.15	6,265.0	-1,325.03	698.4	369.5	733.3	0.00	0.00	0.00
7,400.0	90.00	1.15	6,265.0	-1,325.03	798.4	371.5	832.9	0.00	0.00	0.00
7,500.0	90.00	1.15	6,265.0	-1,325.03	898.3	373.5	932.6	0.00	0.00	0.00
7,600.0	90.00	1.15	6,265.0	-1,325.04	998.3	375.5	1,032.2	0.00	0.00	0.00
7,700.0	90.00	1.15	6,265.0	-1,325.04	1,098.3	377.5	1,131.9	0.00	0.00	0.00
7,800.0	90.00	1.15	6,265.0	-1,325.04	1,198.3	379.5	1,231.5	0.00	0.00	0.00
7,900.0	90.00	1.15	6,265.0	-1,325.04	1,298.3	381.5	1,331.1	0.00	0.00	0.00
8,000.0	90.00	1.15	6,265.0	-1,325.04	1,398.2	383.5	1,430.8	0.00	0.00	0.00
8,100.0	90.00	1.15	6,265.0	-1,325.05	1,498.2	385.5	1,530.4	0.00	0.00	0.00
8,200.0	90.00	1.15	6,265.0	-1,325.05	1,598.2	387.5	1,630.1	0.00	0.00	0.00
8,300.0	90.00	1.15	6,265.0	-1,325.05	1,698.2	389.5	1,729.7	0.00	0.00	0.00
8,400.0	90.00	1.15	6,265.0	-1,325.05	1,798.2	391.5	1,829.3	0.00	0.00	0.00
8,500.0	90.00	1.15	6,265.0	-1,325.05	1,898.1	393.5	1,929.0	0.00	0.00	0.00
8,600.0	90.00	1.15	6,265.0	-1,325.05	1,998.1	395.5	2,028.6	0.00	0.00	0.00
8,700.0	90.00	1.15	6,265.1	-1,325.05	2,098.1	397.6	2,128.2	0.00	0.00	0.00
8,800.0	90.00	1.15	6,265.0	-1,325.05	2,198.1	399.6	2,227.9	0.00	0.00	0.00
8,900.0	90.00	1.15	6,265.0	-1,325.05	2,298.1	401.6	2,327.5	0.00	0.00	0.00
9,000.0	90.00	1.15	6,265.0	-1,325.05	2,398.0	403.6	2,427.2	0.00	0.00	0.00
9,100.0	90.00	1.15	6,265.0	-1,325.05	2,498.0	405.6	2,526.8	0.00	0.00	0.00
9,200.0	90.00	1.15	6,265.0	-1,325.05	2,598.0	407.6	2,626.4	0.00	0.00	0.00
9,300.0	90.00	1.15	6,265.0	-1,325.05	2,698.0	409.6	2,726.1	0.00	0.00	0.00
9,400.0	90.00	1.15	6,265.0	-1,325.04	2,798.0	411.6	2,825.7	0.00	0.00	0.00
9,500.0	90.00	1.15	6,265.0	-1,325.04	2,897.9	413.6	2,925.3	0.00	0.00	0.00
9,600.0	90.00	1.15	6,265.0	-1,325.04	2,997.9	415.6	3,025.0	0.00	0.00	0.00
9,700.0	90.00	1.15	6,265.0	-1,325.04	3,097.9	417.6	3,124.6	0.00	0.00	0.00
9,800.0	90.00	1.15	6,265.0	-1,325.04	3,197.9	419.6	3,224.3	0.00	0.00	0.00
9,900.0	90.00	1.15	6,265.0	-1,325.03	3,297.9	421.6	3,323.9	0.00	0.00	0.00
10,000.0	90.00	1.15	6,265.0	-1,325.03	3,397.8	423.6	3,423.5	0.00	0.00	0.00
10,100.0	90.00	1.15	6,265.0	-1,325.03	3,497.8	425.7	3,523.2	0.00	0.00	0.00
10,200.0	90.00	1.15	6,265.0	-1,325.02	3,597.8	427.7	3,622.8	0.00	0.00	0.00
10,300.0	90.00	1.15	6,265.0	-1,325.02	3,697.8	429.7	3,722.4	0.00	0.00	0.00
10,400.0	90.00	1.15	6,265.0	-1,325.02	3,797.8	431.7	3,822.1	0.00	0.00	0.00
10,500.0	90.00	1.15	6,265.0	-1,325.01	3,897.7	433.7	3,921.7	0.00	0.00	0.00
10,600.0	90.00	1.15	6,265.0	-1,325.01	3,997.7	435.7	4,021.4	0.00	0.00	0.00
10,700.0	90.00	1.15	6,265.0	-1,325.00	4,097.7	437.7	4,121.0	0.00	0.00	0.00
BHL: 600ft FNL & 2455ft FWL of Sec 35										
10,758.6	90.00	1.15	6,265.0	-1,325.00	4,156.2	438.9	4,179.4	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well CINNAMON TEAL FED 35-8HN
Company:	MALLARD EXPLORATION	TVD Reference:	KB-EST @ 4940.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4940.0usft (Original Well Elev)
Site:	SE SW SEC. 35 T8N R60W 6th P.M.	North Reference:	True
Well:	CINNAMON TEAL FED 35-8HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Formations					
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
471.0	471.0	Fox Hills Base			
1,518.1	1,509.0	Pierre Shale Top			
3,317.5	3,269.0	Richard Sandstone			
3,424.8	3,374.0	Parkman Sandstone			
4,260.3	4,199.0	Sussex Sandstone			
4,718.3	4,657.0	Shannon Sandstone			
6,180.8	6,081.0	Sharon Springs			
6,306.1	6,163.0	Niobrara A Chalk			
6,354.8	6,189.0	Niobrara A Chalk Base			
6,412.2	6,215.0	Niobrara B1 Chalk Top			
6,501.5	6,245.0	Niobrara B1 Chalk Base			
6,653.3	6,265.0	Niobrara B2 Chalk Top (Target)			

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.0	0.0	0.0	0.0	SHL: 550ft FSL & 2100ft FWL of Sec 35
700.0	700.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,300.0	1,295.6	-52.2	34.6	EOB TO 12° INC
3,703.3	3,646.4	-468.8	310.4	END OF TANGENT
4,303.3	4,242.0	-521.0	345.0	EOD TO VERTICAL
5,753.4	5,692.1	-521.0	345.0	KOP (10°/100ft BUR)
6,653.3	6,265.0	51.8	356.5	HZ LP: 600ft FSL & 2455ft FWL of Sec 35
10,758.6	6,265.0	4,156.2	438.9	BHL: 600ft FNL & 2455ft FWL of Sec 35