

# **MALLARD EXPLORATION**

**WELD COUNTY, COLORADO (NAD 83)**

**SE SW SEC. 34 T8N R60W 6th P.M.**

**GREEN TEAL FED 34-27-1HN**

**ORIGINAL WELLBORE**

**06 September, 2017**

**Plan: PROPOSAL 1**



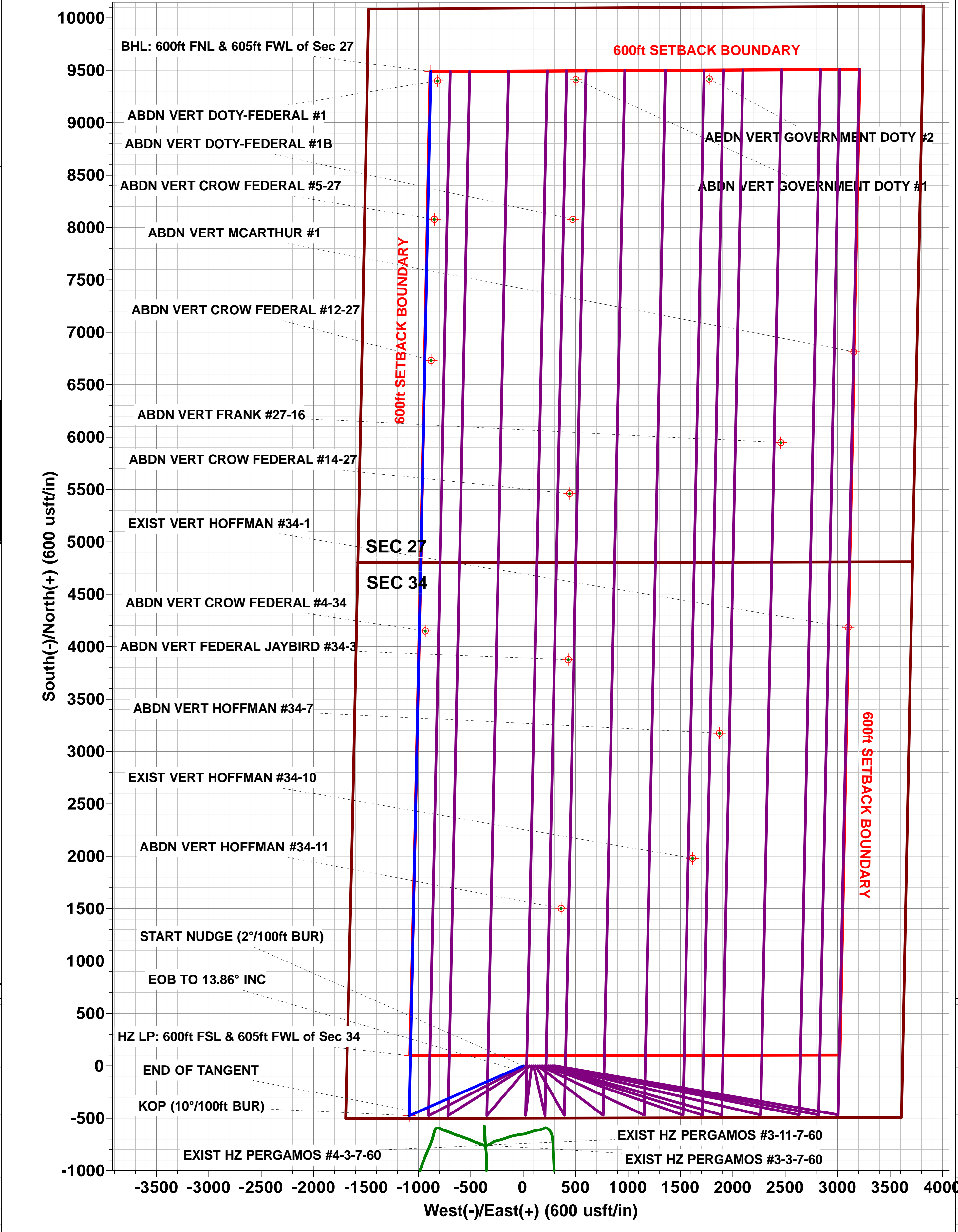
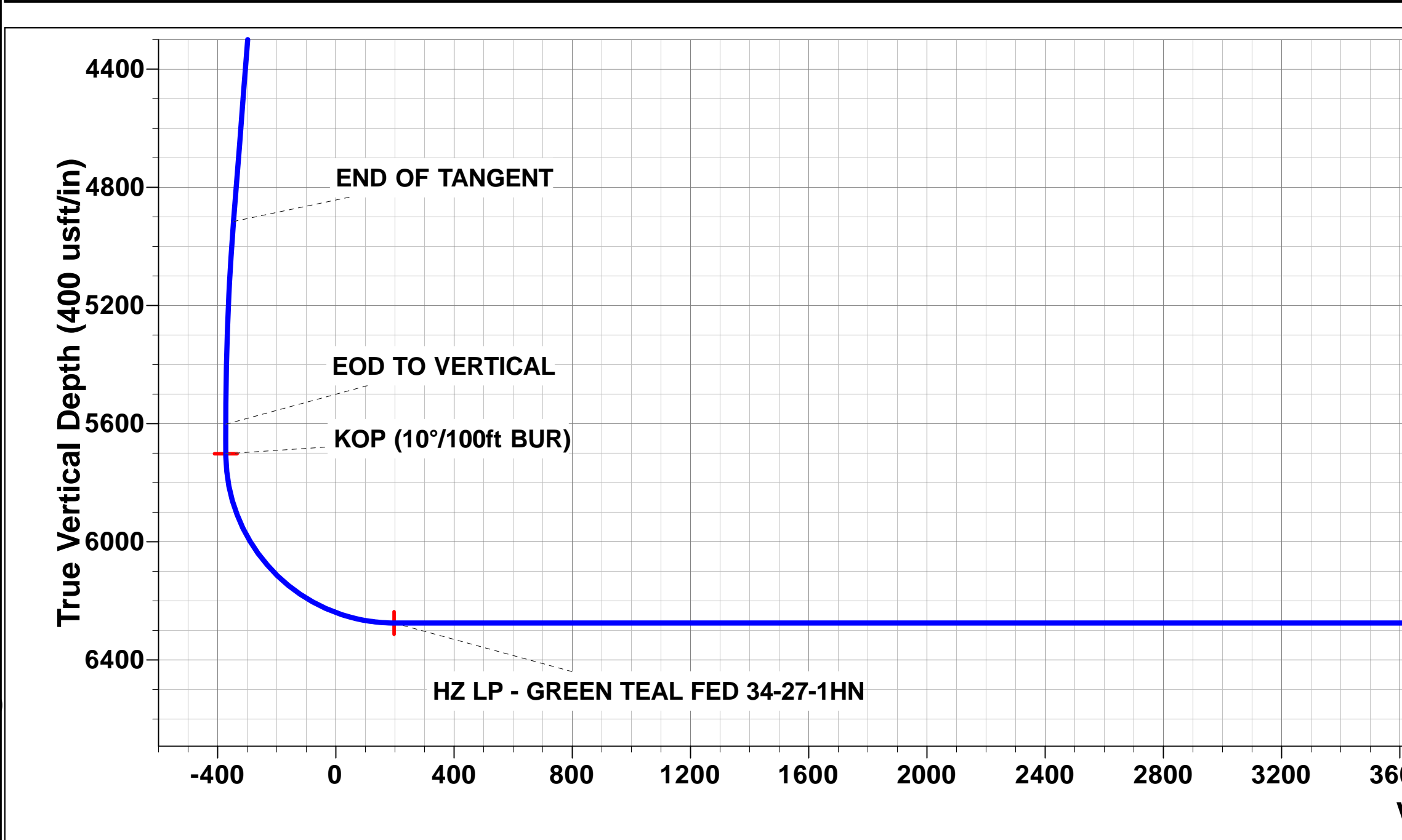
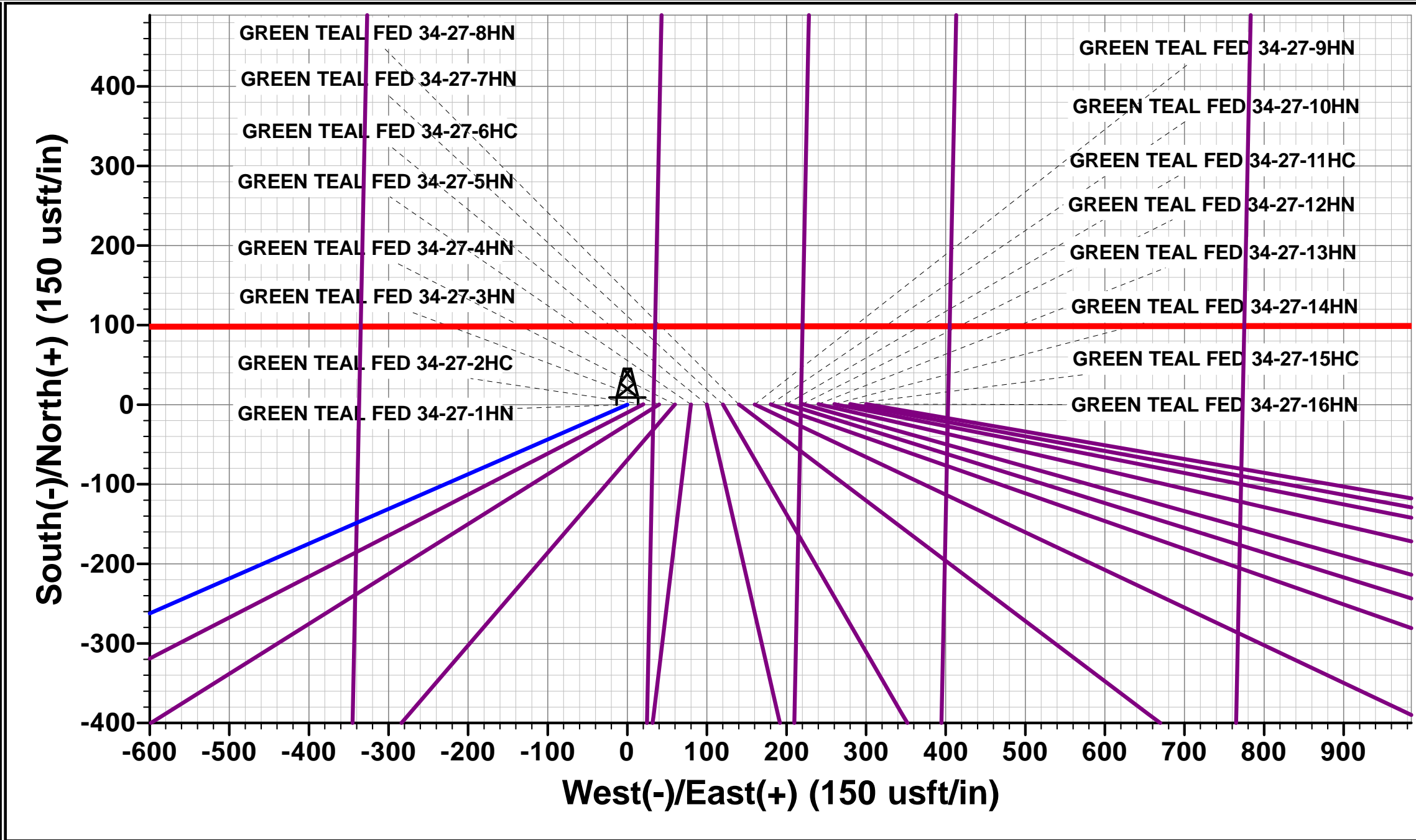
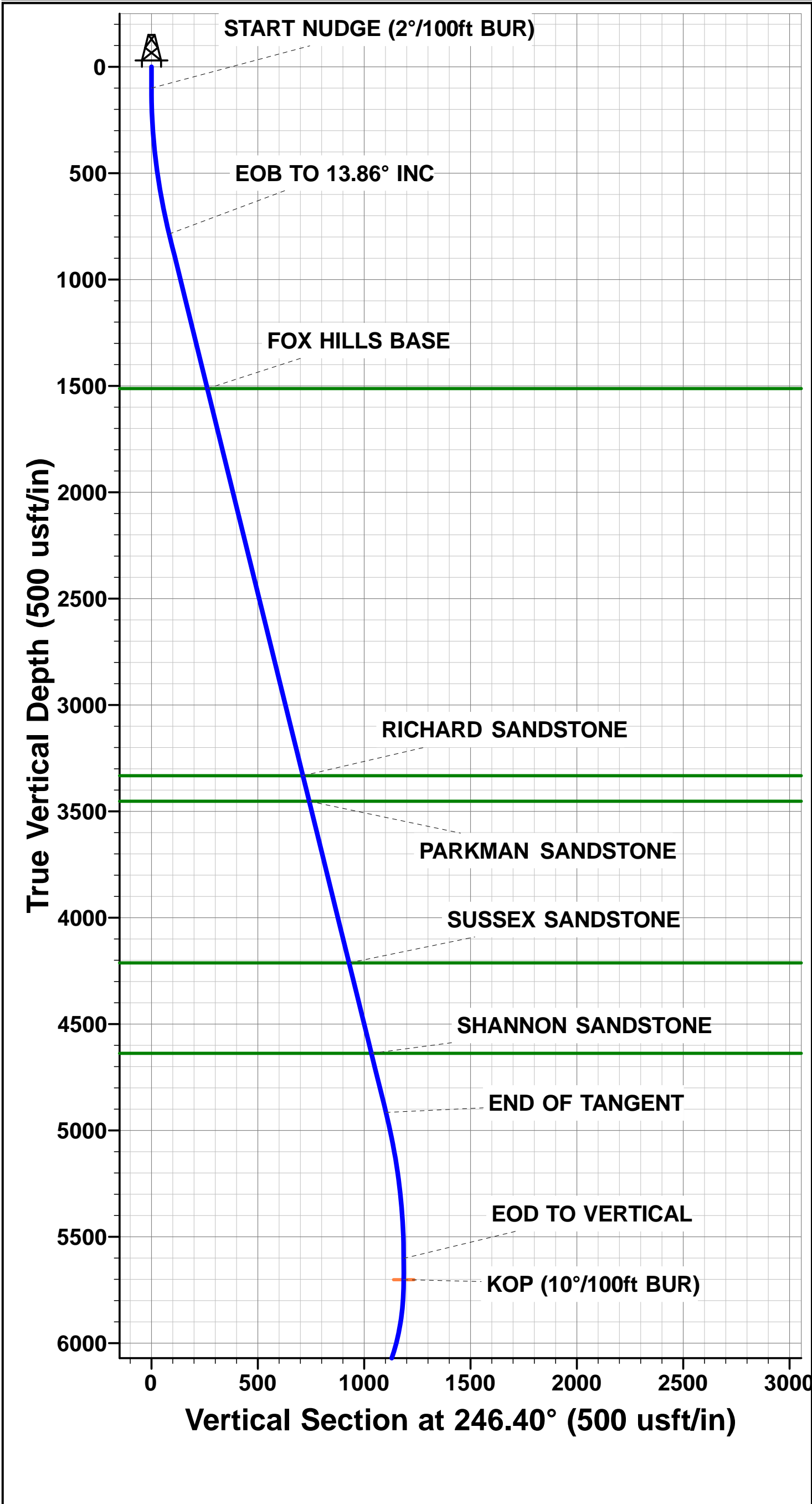


Project: WELD COUNTY, COLORADO (NAD 83)  
Site: SE SW SEC. 34 T8N R60W 6th P.M.  
Well: GREEN TEAL FED 34-27-1HN  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL 1

ANNOTATIONS										
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Dep	Annotation		
0.0	0.0	0.00	0.00	0.0	0.0	0.0	0.0	SHL: 500ft FSL & 1682ft FWL of Sec 34		
100.0	100.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)		
786.5	793.2	13.86	246.40	-33.4	-76.5	-26.2	83.5	EOB TO 13.86° INC		
4915.6	5046.3	13.86	246.40	-441.4	-1010.4	-346.1	1102.6	END OF TANGENT		
5602.1	5739.5	0.00	0.00	-474.8	-1086.9	-372.3	1186.1	EOD TO VERTICAL		
5702.1	5839.5	0.00	0.00	-474.8	-1086.9	-372.3	1186.1	KOP (10°/100ft BUR)		
6275.0	6739.5	90.00	1.19	98.0	-1075.0	197.0	1759.0	HZ LP: 600ft FSL & 605ft FWL of Sec 34		
6275.0	16131.2	90.00	1.18	9487.8	-880.6	9528.6	11150.8	BHL: 600ft FNL & 605ft FWL of Sec 27		

PROPOSED LOCAL COORDINATES:  
  
SHL: 500ft FSL & 1682ft FWL Sec 34  
HZ LP: 600ft FSL & 605ft FWL Sec 34  
BHL: 600ft FNL & 605ft FWL of Sec 27

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - GREEN TEAL FED 34-27-1HN	5702.1	-474.8	-1086.9	40.611572	-104.085822
HZ LP - GREEN TEAL FED 34-27-1HN	6275.0	98.0	-1075.0	40.613144	-104.085779
BHL - GREEN TEAL FED 34-27-1HN	6275.0	9487.8	-880.6	40.638917	-104.085080



# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GREEN TEAL FED 34-27-1HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB-EST @ 4939.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4939.0usft (Original Well Elev)
<b>Site:</b>	SE SW SEC. 34 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GREEN TEAL FED 34-27-1HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

<b>Project</b>	WELD COUNTY, COLORADO (NAD 83)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

<b>Site</b>	SE SW SEC. 34 T8N R60W 6th P.M.		
<b>Site Position:</b>		<b>Northing:</b>	1,469,260.15 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,393,696.59 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	1.10000ft
		<b>Latitude:</b>	40.612875
		<b>Longitude:</b>	-104.081907
		<b>Grid Convergence:</b>	0.92 °

<b>Well</b>	GREEN TEAL FED 34-27-1HN		
<b>Well Position</b>	<b>+N-S</b>	0.0 usft	<b>Northing:</b>
	<b>+E-W</b>	0.0 usft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.0 usft	<b>Wellhead Elevation:</b>	usft
		<b>Latitude:</b>	40.612875
		<b>Longitude:</b>	-104.081907
		<b>Ground Level:</b>	4,923.0 usft

<b>Wellbore</b>	ORIGINAL WELLBORE				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	05/09/2017	7.83	67.12	52,546

<b>Design</b>	PROPOSAL 1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N-S (usft)</b>	<b>+E-W (usft)</b>	<b>Direction (°)</b>
	6,275.0	0.0	0.0	354.70

<b>Plan Sections</b>											
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	-4,939.0	0.0	0.0	0.00	0.00	0.00	0.00	
100.0	0.00	0.00	100.0	-4,839.0	0.0	0.0	0.00	0.00	0.00	0.00	
793.2	13.86	246.40	786.5	-4,152.5	-33.4	-76.5	2.00	2.00	0.00	246.40	
5,046.3	13.86	246.40	4,915.6	-23.4	-441.4	-1,010.4	0.00	0.00	0.00	0.00	
5,739.5	0.00	0.00	5,602.1	663.1	-474.8	-1,086.9	2.00	-2.00	0.00	180.00	
5,839.5	0.00	0.00	5,702.1	763.1	-474.8	-1,086.9	0.00	0.00	0.00	0.00	KOP - GREEN TEA
6,739.5	90.00	1.19	6,275.0	1,336.0	98.0	-1,075.0	10.00	10.00	0.13	1.19	HZ LP - GREEN TE
16,131.2	90.00	1.18	6,275.0	1,336.0	9,487.8	-880.6	0.00	0.00	0.00	-164.72	BHL - GREEN TEA



# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GREEN TEAL FED 34-27-1HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB-EST @ 4939.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4939.0usft (Original Well Elev)
<b>Site:</b>	SE SW SEC. 34 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GREEN TEAL FED 34-27-1HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	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)
<b>SHL: 500ft FSL &amp; 1682ft FWL of Sec 34</b>										
0.0	0.00	0.00	0.0	4,939.00	0.0	0.0	0.0	0.00	0.00	0.00
<b>START NUDGE (2°/100ft BUR)</b>										
100.0	0.00	0.00	100.0	4,839.00	0.0	0.0	0.0	0.00	0.00	0.00
200.0	2.00	246.40	200.0	4,739.02	-0.7	-1.6	-0.5	2.00	2.00	0.00
300.0	4.00	246.40	299.8	4,639.16	-2.8	-6.4	-2.2	2.00	2.00	0.00
400.0	6.00	246.40	399.5	4,539.55	-6.3	-14.4	-4.9	2.00	2.00	0.00
500.0	8.00	246.40	498.7	4,440.30	-11.2	-25.5	-8.8	2.00	2.00	0.00
600.0	10.00	246.40	597.5	4,341.53	-17.4	-39.9	-13.7	2.00	2.00	0.00
700.0	12.00	246.40	695.6	4,243.38	-25.1	-57.4	-19.7	2.00	2.00	0.00
<b>EOB TO 13.86° INC</b>										
793.2	13.86	246.40	786.5	4,152.52	-33.4	-76.5	-26.2	2.00	2.00	0.00
800.0	13.86	246.40	793.1	4,145.94	-34.1	-78.0	-26.7	0.00	0.00	0.00
900.0	13.86	246.40	890.1	4,048.86	-43.7	-99.9	-34.2	0.00	0.00	0.00
1,000.0	13.86	246.40	987.2	3,951.77	-53.2	-121.9	-41.8	0.00	0.00	0.00
1,100.0	13.86	246.40	1,084.3	3,854.68	-62.8	-143.9	-49.3	0.00	0.00	0.00
1,200.0	13.86	246.40	1,181.4	3,757.60	-72.4	-165.8	-56.8	0.00	0.00	0.00
1,300.0	13.86	246.40	1,278.5	3,660.51	-82.0	-187.8	-64.3	0.00	0.00	0.00
1,400.0	13.86	246.40	1,375.6	3,563.42	-91.6	-209.7	-71.8	0.00	0.00	0.00
1,500.0	13.86	246.40	1,472.7	3,466.34	-101.2	-231.7	-79.4	0.00	0.00	0.00
<b>FOX HILLS BASE</b>										
1,541.5	13.86	246.40	1,513.0	3,426.00	-105.2	-240.8	-82.5	0.00	0.00	0.00
1,600.0	13.86	246.40	1,569.7	3,369.25	-110.8	-253.6	-86.9	0.00	0.00	0.00
1,700.0	13.86	246.40	1,666.8	3,272.16	-120.4	-275.6	-94.4	0.00	0.00	0.00
1,800.0	13.86	246.40	1,763.9	3,175.08	-130.0	-297.6	-101.9	0.00	0.00	0.00
1,900.0	13.86	246.40	1,861.0	3,077.99	-139.6	-319.5	-109.5	0.00	0.00	0.00
2,000.0	13.86	246.40	1,958.1	2,980.91	-149.2	-341.5	-117.0	0.00	0.00	0.00
2,100.0	13.86	246.40	2,055.2	2,883.82	-158.8	-363.4	-124.5	0.00	0.00	0.00
2,200.0	13.86	246.40	2,152.3	2,786.73	-168.4	-385.4	-132.0	0.00	0.00	0.00
2,300.0	13.86	246.40	2,249.4	2,689.65	-178.0	-407.4	-139.5	0.00	0.00	0.00
2,400.0	13.86	246.40	2,346.4	2,592.56	-187.5	-429.3	-147.1	0.00	0.00	0.00
2,500.0	13.86	246.40	2,443.5	2,495.47	-197.1	-451.3	-154.6	0.00	0.00	0.00
2,600.0	13.86	246.40	2,540.6	2,398.39	-206.7	-473.2	-162.1	0.00	0.00	0.00
2,700.0	13.86	246.40	2,637.7	2,301.30	-216.3	-495.2	-169.6	0.00	0.00	0.00
2,800.0	13.86	246.40	2,734.8	2,204.21	-225.9	-517.2	-177.2	0.00	0.00	0.00
2,900.0	13.86	246.40	2,831.9	2,107.13	-235.5	-539.1	-184.7	0.00	0.00	0.00
3,000.0	13.86	246.40	2,929.0	2,010.04	-245.1	-561.1	-192.2	0.00	0.00	0.00
3,100.0	13.86	246.40	3,026.0	1,912.95	-254.7	-583.0	-199.7	0.00	0.00	0.00
3,200.0	13.86	246.40	3,123.1	1,815.87	-264.3	-605.0	-207.2	0.00	0.00	0.00
3,300.0	13.86	246.40	3,220.2	1,718.78	-273.9	-626.9	-214.8	0.00	0.00	0.00
3,400.0	13.86	246.40	3,317.3	1,621.69	-283.5	-648.9	-222.3	0.00	0.00	0.00
<b>RICHARD SANDSTONE</b>										
3,416.2	13.86	246.40	3,333.0	1,606.00	-285.0	-652.5	-223.5	0.00	0.00	0.00
3,500.0	13.86	246.40	3,414.4	1,524.61	-293.1	-670.9	-229.8	0.00	0.00	0.00
<b>PARKMAN SANDSTONE</b>										
3,539.8	13.86	246.40	3,453.0	1,486.00	-296.9	-679.6	-232.8	0.00	0.00	0.00
3,600.0	13.86	246.40	3,511.5	1,427.52	-302.7	-692.8	-237.3	0.00	0.00	0.00
3,700.0	13.86	246.40	3,608.6	1,330.43	-312.2	-714.8	-244.8	0.00	0.00	0.00
3,800.0	13.86	246.40	3,705.7	1,233.35	-321.8	-736.7	-252.4	0.00	0.00	0.00
3,900.0	13.86	246.40	3,802.7	1,136.26	-331.4	-758.7	-259.9	0.00	0.00	0.00
4,000.0	13.86	246.40	3,899.8	1,039.18	-341.0	-780.7	-267.4	0.00	0.00	0.00
4,100.0	13.86	246.40	3,996.9	942.09	-350.6	-802.6	-274.9	0.00	0.00	0.00
4,200.0	13.86	246.40	4,094.0	845.00	-360.2	-824.6	-282.5	0.00	0.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GREEN TEAL FED 34-27-1HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB-EST @ 4939.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4939.0usft (Original Well Elev)
<b>Site:</b>	SE SW SEC. 34 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GREEN TEAL FED 34-27-1HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	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)
4,300.0	13.86	246.40	4,191.1	747.92	-369.8	-846.5	-290.0	0.00	0.00	0.00
<b>SUSSEX SANDSTONE</b>										
<b>4,322.6</b>	<b>13.86</b>	<b>246.40</b>	<b>4,213.0</b>	<b>726.00</b>	<b>-372.0</b>	<b>-851.5</b>	<b>-291.7</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
4,400.0	13.86	246.40	4,288.2	650.83	-379.4	-868.5	-297.5	0.00	0.00	0.00
4,500.0	13.86	246.40	4,385.3	553.74	-389.0	-890.5	-305.0	0.00	0.00	0.00
4,600.0	13.86	246.40	4,482.3	456.66	-398.6	-912.4	-312.5	0.00	0.00	0.00
4,700.0	13.86	246.40	4,579.4	359.57	-408.2	-934.4	-320.1	0.00	0.00	0.00
<b>SHANNON SANDSTONE</b>										
<b>4,760.3</b>	<b>13.86</b>	<b>246.40</b>	<b>4,638.0</b>	<b>301.00</b>	<b>-414.0</b>	<b>-947.6</b>	<b>-324.6</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
4,800.0	13.86	246.40	4,676.5	262.48	-417.8	-956.3	-327.6	0.00	0.00	0.00
4,900.0	13.86	246.40	4,773.6	165.40	-427.4	-978.3	-335.1	0.00	0.00	0.00
5,000.0	13.86	246.40	4,870.7	68.31	-436.9	-1,000.3	-342.6	0.00	0.00	0.00
<b>END OF TANGENT</b>										
<b>5,046.3</b>	<b>13.86</b>	<b>246.40</b>	<b>4,915.6</b>	<b>23.38</b>	<b>-441.4</b>	<b>-1,010.4</b>	<b>-346.1</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,100.0	12.79	246.40	4,967.9	-28.89	-446.3	-1,021.8	-350.0	2.00	-2.00	0.00
5,200.0	10.79	246.40	5,065.8	-126.78	-454.5	-1,040.5	-356.4	2.00	-2.00	0.00
5,300.0	8.79	246.40	5,164.3	-225.32	-461.3	-1,056.1	-361.8	2.00	-2.00	0.00
5,400.0	6.79	246.40	5,263.4	-324.39	-466.8	-1,068.5	-366.0	2.00	-2.00	0.00
5,500.0	4.79	246.40	5,362.9	-423.87	-470.8	-1,077.7	-369.2	2.00	-2.00	0.00
5,600.0	2.79	246.40	5,462.7	-523.65	-473.4	-1,083.8	-371.3	2.00	-2.00	0.00
5,700.0	0.79	246.40	5,562.6	-623.60	-474.7	-1,086.7	-372.2	2.00	-2.00	0.00
<b>EOD TO VERTICAL</b>										
<b>5,739.5</b>	<b>0.00</b>	<b>0.00</b>	<b>5,602.1</b>	<b>-663.10</b>	<b>-474.8</b>	<b>-1,086.9</b>	<b>-372.3</b>	<b>2.00</b>	<b>-2.00</b>	<b>0.00</b>
5,800.0	0.00	0.00	5,662.6	-723.60	-474.8	-1,086.9	-372.3	0.00	0.00	0.00
<b>KOP (10°/100ft BUR)</b>										
<b>5,839.5</b>	<b>0.00</b>	<b>0.00</b>	<b>5,702.1</b>	<b>-763.10</b>	<b>-474.8</b>	<b>-1,086.9</b>	<b>-372.3</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,900.0	6.05	1.19	5,762.5	-823.48	-471.6	-1,086.8	-369.1	10.00	10.00	0.00
6,000.0	16.05	1.19	5,860.5	-921.50	-452.5	-1,086.4	-350.1	10.00	10.00	0.00
6,100.0	26.05	1.19	5,953.7	-1,014.71	-416.6	-1,085.7	-314.5	10.00	10.00	0.00
6,200.0	36.05	1.19	6,039.3	-1,100.27	-365.1	-1,084.6	-263.3	10.00	10.00	0.00
<b>SHARON SPRINGS</b>										
<b>6,280.8</b>	<b>44.13</b>	<b>1.19</b>	<b>6,101.0</b>	<b>-1,162.00</b>	<b>-313.1</b>	<b>-1,083.5</b>	<b>-211.7</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,300.0	46.05	1.19	6,114.6	-1,175.59	-299.5	-1,083.3	-198.1	10.00	10.00	0.00
<b>NIOBRARA A CHALK</b>										
<b>6,388.8</b>	<b>54.93</b>	<b>1.19</b>	<b>6,171.0</b>	<b>-1,232.00</b>	<b>-231.1</b>	<b>-1,081.8</b>	<b>-130.1</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,400.0	56.06	1.19	6,177.4	-1,238.36	-221.9	-1,081.7	-120.9	10.00	10.00	0.00
<b>NIOBRARA A CHALK BASE</b>										
<b>6,441.0</b>	<b>60.15</b>	<b>1.19</b>	<b>6,199.0</b>	<b>-1,260.00</b>	<b>-187.1</b>	<b>-1,080.9</b>	<b>-86.4</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,500.0	66.06	1.19	6,225.7	-1,286.70	-134.5	-1,079.8	-34.1	10.00	10.00	0.00
<b>NIOBRARA B1 CHALK TOP</b>										
<b>6,500.7</b>	<b>66.13</b>	<b>1.19</b>	<b>6,226.0</b>	<b>-1,287.00</b>	<b>-133.8</b>	<b>-1,079.8</b>	<b>-33.4</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
<b>NIOBRARA B1 CHALK BASE</b>										
<b>6,580.1</b>	<b>74.07</b>	<b>1.19</b>	<b>6,253.0</b>	<b>-1,314.00</b>	<b>-59.2</b>	<b>-1,078.3</b>	<b>40.7</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,600.0	76.06	1.19	6,258.1	-1,319.12	-40.0	-1,077.9	59.8	10.00	10.00	0.00
6,700.0	86.06	1.19	6,273.6	-1,334.64	58.6	-1,075.8	157.8	10.00	10.00	0.00
<b>NIOBRARA B2 CHALK TOP</b>										
<b>6,739.4</b>	<b>90.00</b>	<b>1.19</b>	<b>6,275.0</b>	<b>-1,336.00</b>	<b>97.9</b>	<b>-1,075.0</b>	<b>196.9</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
<b>HZ LP: 600ft FSL &amp; 605ft FWL of Sec 34</b>										
<b>6,739.5</b>	<b>90.00</b>	<b>1.19</b>	<b>6,275.0</b>	<b>-1,336.00</b>	<b>98.0</b>	<b>-1,075.0</b>	<b>197.0</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,800.0	90.00	1.19	6,275.0	-1,335.99	158.6	-1,073.8	257.1	0.00	0.00	0.00
6,900.0	90.00	1.19	6,275.0	-1,335.99	258.5	-1,071.7	356.5	0.00	0.00	0.00
7,000.0	90.00	1.19	6,275.0	-1,335.98	358.5	-1,069.6	455.8	0.00	0.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GREEN TEAL FED 34-27-1HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB-EST @ 4939.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4939.0usft (Original Well Elev)
<b>Site:</b>	SE SW SEC. 34 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GREEN TEAL FED 34-27-1HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	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)
7,100.0	90.00	1.19	6,275.0	-1,335.97	458.5	-1,067.6	555.2	0.00	0.00	0.00
7,200.0	90.00	1.19	6,275.0	-1,335.96	558.5	-1,065.5	654.5	0.00	0.00	0.00
7,300.0	90.00	1.19	6,275.0	-1,335.95	658.4	-1,063.4	753.9	0.00	0.00	0.00
7,400.0	90.00	1.19	6,274.9	-1,335.95	758.4	-1,061.3	853.3	0.00	0.00	0.00
7,500.0	90.00	1.19	6,274.9	-1,335.94	858.4	-1,059.3	952.6	0.00	0.00	0.00
7,600.0	90.00	1.19	6,274.9	-1,335.93	958.4	-1,057.2	1,052.0	0.00	0.00	0.00
7,700.0	90.00	1.19	6,274.9	-1,335.92	1,058.4	-1,055.1	1,151.3	0.00	0.00	0.00
7,800.0	90.00	1.19	6,274.9	-1,335.92	1,158.3	-1,053.1	1,250.7	0.00	0.00	0.00
7,900.0	90.00	1.19	6,274.9	-1,335.91	1,258.3	-1,051.0	1,350.1	0.00	0.00	0.00
8,000.0	90.00	1.19	6,274.9	-1,335.90	1,358.3	-1,048.9	1,449.4	0.00	0.00	0.00
8,100.0	90.00	1.19	6,274.9	-1,335.90	1,458.3	-1,046.8	1,548.8	0.00	0.00	0.00
8,200.0	90.00	1.19	6,274.9	-1,335.89	1,558.2	-1,044.8	1,648.1	0.00	0.00	0.00
8,300.0	90.00	1.19	6,274.9	-1,335.89	1,658.2	-1,042.7	1,747.5	0.00	0.00	0.00
8,400.0	90.00	1.19	6,274.9	-1,335.88	1,758.2	-1,040.6	1,846.9	0.00	0.00	0.00
8,500.0	90.00	1.19	6,274.9	-1,335.88	1,858.2	-1,038.5	1,946.2	0.00	0.00	0.00
8,600.0	90.00	1.19	6,274.9	-1,335.87	1,958.2	-1,036.5	2,045.6	0.00	0.00	0.00
8,700.0	90.00	1.19	6,274.9	-1,335.86	2,058.1	-1,034.4	2,144.9	0.00	0.00	0.00
8,800.0	90.00	1.19	6,274.9	-1,335.86	2,158.1	-1,032.3	2,244.3	0.00	0.00	0.00
8,900.0	90.00	1.19	6,274.9	-1,335.86	2,258.1	-1,030.3	2,343.7	0.00	0.00	0.00
9,000.0	90.00	1.19	6,274.9	-1,335.85	2,358.1	-1,028.2	2,443.0	0.00	0.00	0.00
9,100.0	90.00	1.19	6,274.8	-1,335.85	2,458.1	-1,026.1	2,542.4	0.00	0.00	0.00
9,200.0	90.00	1.19	6,274.8	-1,335.84	2,558.0	-1,024.1	2,641.7	0.00	0.00	0.00
9,300.0	90.00	1.19	6,274.8	-1,335.84	2,658.0	-1,022.0	2,741.1	0.00	0.00	0.00
9,400.0	90.00	1.19	6,274.8	-1,335.83	2,758.0	-1,019.9	2,840.4	0.00	0.00	0.00
9,500.0	90.00	1.19	6,274.8	-1,335.83	2,858.0	-1,017.8	2,939.8	0.00	0.00	0.00
9,600.0	90.00	1.19	6,274.8	-1,335.83	2,957.9	-1,015.8	3,039.2	0.00	0.00	0.00
9,700.0	90.00	1.19	6,274.8	-1,335.82	3,057.9	-1,013.7	3,138.5	0.00	0.00	0.00
9,800.0	90.00	1.19	6,274.8	-1,335.82	3,157.9	-1,011.6	3,237.9	0.00	0.00	0.00
9,900.0	90.00	1.19	6,274.8	-1,335.82	3,257.9	-1,009.6	3,337.2	0.00	0.00	0.00
10,000.0	90.00	1.19	6,274.8	-1,335.81	3,357.9	-1,007.5	3,436.6	0.00	0.00	0.00
10,100.0	90.00	1.19	6,274.8	-1,335.81	3,457.8	-1,005.4	3,536.0	0.00	0.00	0.00
10,200.0	90.00	1.19	6,274.8	-1,335.81	3,557.8	-1,003.3	3,635.3	0.00	0.00	0.00
10,300.0	90.00	1.19	6,274.8	-1,335.81	3,657.8	-1,001.3	3,734.7	0.00	0.00	0.00
10,400.0	90.00	1.19	6,274.8	-1,335.81	3,757.8	-999.2	3,834.0	0.00	0.00	0.00
10,500.0	90.00	1.19	6,274.8	-1,335.80	3,857.8	-997.1	3,933.4	0.00	0.00	0.00
10,600.0	90.00	1.19	6,274.8	-1,335.80	3,957.7	-995.1	4,032.8	0.00	0.00	0.00
10,700.0	90.00	1.19	6,274.8	-1,335.80	4,057.7	-993.0	4,132.1	0.00	0.00	0.00
10,800.0	90.00	1.19	6,274.8	-1,335.80	4,157.7	-990.9	4,231.5	0.00	0.00	0.00
10,900.0	90.00	1.19	6,274.8	-1,335.80	4,257.7	-988.8	4,330.8	0.00	0.00	0.00
11,000.0	90.00	1.19	6,274.8	-1,335.80	4,357.6	-986.8	4,430.2	0.00	0.00	0.00
11,100.0	90.00	1.19	6,274.8	-1,335.80	4,457.6	-984.7	4,529.6	0.00	0.00	0.00
11,200.0	90.00	1.19	6,274.8	-1,335.80	4,557.6	-982.6	4,628.9	0.00	0.00	0.00
11,300.0	90.00	1.19	6,274.8	-1,335.80	4,657.6	-980.6	4,728.3	0.00	0.00	0.00
11,400.0	90.00	1.19	6,274.8	-1,335.80	4,757.6	-978.5	4,827.6	0.00	0.00	0.00
11,500.0	90.00	1.19	6,274.8	-1,335.80	4,857.5	-976.4	4,927.0	0.00	0.00	0.00
11,600.0	90.00	1.19	6,274.8	-1,335.80	4,957.5	-974.4	5,026.4	0.00	0.00	0.00
11,700.0	90.00	1.19	6,274.8	-1,335.80	5,057.5	-972.3	5,125.7	0.00	0.00	0.00
11,800.0	90.00	1.19	6,274.8	-1,335.80	5,157.5	-970.2	5,225.1	0.00	0.00	0.00
11,900.0	90.00	1.19	6,274.8	-1,335.80	5,257.5	-968.1	5,324.4	0.00	0.00	0.00
12,000.0	90.00	1.19	6,274.8	-1,335.80	5,357.4	-966.1	5,423.8	0.00	0.00	0.00
12,100.0	90.00	1.19	6,274.8	-1,335.80	5,457.4	-964.0	5,523.1	0.00	0.00	0.00
12,200.0	90.00	1.19	6,274.8	-1,335.80	5,557.4	-961.9	5,622.5	0.00	0.00	0.00
12,300.0	90.00	1.19	6,274.8	-1,335.80	5,657.4	-959.9	5,721.9	0.00	0.00	0.00
12,400.0	90.00	1.19	6,274.8	-1,335.80	5,757.3	-957.8	5,821.2	0.00	0.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GREEN TEAL FED 34-27-1HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB-EST @ 4939.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4939.0usft (Original Well Elev)
<b>Site:</b>	SE SW SEC. 34 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GREEN TEAL FED 34-27-1HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	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)
12,500.0	90.00	1.19	6,274.8	-1,335.81	5,857.3	-955.7	5,920.6	0.00	0.00	0.00
12,600.0	90.00	1.19	6,274.8	-1,335.81	5,957.3	-953.7	6,019.9	0.00	0.00	0.00
12,700.0	90.00	1.19	6,274.8	-1,335.81	6,057.3	-951.6	6,119.3	0.00	0.00	0.00
12,800.0	90.00	1.19	6,274.8	-1,335.81	6,157.3	-949.5	6,218.7	0.00	0.00	0.00
12,900.0	90.00	1.19	6,274.8	-1,335.82	6,257.2	-947.5	6,318.0	0.00	0.00	0.00
13,000.0	90.00	1.19	6,274.8	-1,335.82	6,357.2	-945.4	6,417.4	0.00	0.00	0.00
13,100.0	90.00	1.19	6,274.8	-1,335.82	6,457.2	-943.3	6,516.7	0.00	0.00	0.00
13,200.0	90.00	1.19	6,274.8	-1,335.82	6,557.2	-941.2	6,616.1	0.00	0.00	0.00
13,300.0	90.00	1.19	6,274.8	-1,335.83	6,657.2	-939.2	6,715.5	0.00	0.00	0.00
13,400.0	90.00	1.19	6,274.8	-1,335.83	6,757.1	-937.1	6,814.8	0.00	0.00	0.00
13,500.0	90.00	1.19	6,274.8	-1,335.84	6,857.1	-935.0	6,914.2	0.00	0.00	0.00
13,600.0	90.00	1.19	6,274.8	-1,335.84	6,957.1	-933.0	7,013.5	0.00	0.00	0.00
13,700.0	90.00	1.19	6,274.8	-1,335.84	7,057.1	-930.9	7,112.9	0.00	0.00	0.00
13,800.0	90.00	1.19	6,274.8	-1,335.85	7,157.0	-928.8	7,212.3	0.00	0.00	0.00
13,900.0	90.00	1.19	6,274.9	-1,335.85	7,257.0	-926.8	7,311.6	0.00	0.00	0.00
14,000.0	90.00	1.19	6,274.9	-1,335.86	7,357.0	-924.7	7,411.0	0.00	0.00	0.00
14,100.0	90.00	1.19	6,274.9	-1,335.86	7,457.0	-922.6	7,510.3	0.00	0.00	0.00
14,200.0	90.00	1.19	6,274.9	-1,335.87	7,557.0	-920.6	7,609.7	0.00	0.00	0.00
14,300.0	90.00	1.19	6,274.9	-1,335.87	7,656.9	-918.5	7,709.1	0.00	0.00	0.00
14,400.0	90.00	1.19	6,274.9	-1,335.88	7,756.9	-916.4	7,808.4	0.00	0.00	0.00
14,500.0	90.00	1.19	6,274.9	-1,335.88	7,856.9	-914.4	7,907.8	0.00	0.00	0.00
14,600.0	90.00	1.19	6,274.9	-1,335.89	7,956.9	-912.3	8,007.1	0.00	0.00	0.00
14,700.0	90.00	1.19	6,274.9	-1,335.89	8,056.9	-910.2	8,106.5	0.00	0.00	0.00
14,800.0	90.00	1.19	6,274.9	-1,335.90	8,156.8	-908.1	8,205.9	0.00	0.00	0.00
14,900.0	90.00	1.19	6,274.9	-1,335.91	8,256.8	-906.1	8,305.2	0.00	0.00	0.00
15,000.0	90.00	1.19	6,274.9	-1,335.91	8,356.8	-904.0	8,404.6	0.00	0.00	0.00
15,100.0	90.00	1.19	6,274.9	-1,335.92	8,456.8	-901.9	8,503.9	0.00	0.00	0.00
15,200.0	90.00	1.18	6,274.9	-1,335.93	8,556.8	-899.9	8,603.3	0.00	0.00	0.00
15,300.0	90.00	1.18	6,274.9	-1,335.93	8,656.7	-897.8	8,702.7	0.00	0.00	0.00
15,400.0	90.00	1.18	6,274.9	-1,335.94	8,756.7	-895.7	8,802.0	0.00	0.00	0.00
15,500.0	90.00	1.18	6,274.9	-1,335.95	8,856.7	-893.7	8,901.4	0.00	0.00	0.00
15,600.0	90.00	1.18	6,275.0	-1,335.96	8,956.7	-891.6	9,000.7	0.00	0.00	0.00
15,700.0	90.00	1.18	6,275.0	-1,335.96	9,056.6	-889.5	9,100.1	0.00	0.00	0.00
15,800.0	90.00	1.18	6,275.0	-1,335.97	9,156.6	-887.5	9,199.5	0.00	0.00	0.00
15,900.0	90.00	1.18	6,275.0	-1,335.98	9,256.6	-885.4	9,298.8	0.00	0.00	0.00
16,000.0	90.00	1.18	6,275.0	-1,335.99	9,356.6	-883.3	9,398.2	0.00	0.00	0.00
16,100.0	90.00	1.18	6,275.0	-1,336.00	9,456.6	-881.3	9,497.5	0.00	0.00	0.00
<b>BHL: 600ft FNL &amp; 605ft FWL of Sec 27</b>										
<b>16,131.2</b>	<b>90.00</b>	<b>1.18</b>	<b>6,275.0</b>	<b>-1,336.00</b>	<b>9,487.8</b>	<b>-880.6</b>	<b>9,528.6</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GREEN TEAL FED 34-27-1HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB-EST @ 4939.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4939.0usft (Original Well Elev)
<b>Site:</b>	SE SW SEC. 34 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GREEN TEAL FED 34-27-1HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,541.5	1,513.0	FOX HILLS BASE				
3,416.2	3,333.0	RICHARD SANDSTONE				
3,539.8	3,453.0	PARKMAN SANDSTONE				
4,322.6	4,213.0	SUSSEX SANDSTONE				
4,760.3	4,638.0	SHANNON SANDSTONE				
6,280.8	6,101.0	SHARON SPRINGS				
6,388.8	6,171.0	NIOBRARA A CHALK				
6,441.0	6,199.0	NIOBRARA A CHALK BASE				
6,500.7	6,226.0	NIOBRARA B1 CHALK TOP				
6,580.1	6,253.0	NIOBRARA B1 CHALK BASE				
6,739.4	6,275.0	NIOBRARA B2 CHALK TOP				

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.0	0.0	0.0	0.0	SHL: 500ft FSL & 1682ft FWL of Sec 34
100.0	100.0	0.0	0.0	START NUDGE (2°/100ft BUR)
793.2	786.5	-33.4	-76.5	EOB TO 13.86° INC
5,046.3	4,915.6	-441.4	-1,010.4	END OF TANGENT
5,739.5	5,602.1	-474.8	-1,086.9	EOD TO VERTICAL
5,839.5	5,702.1	-474.8	-1,086.9	KOP (10°/100ft BUR)
6,739.5	6,275.0	98.0	-1,075.0	HZ LP: 600ft FSL & 605ft FWL of Sec 34
16,131.2	6,275.0	9,487.8	-880.6	BHL: 600ft FNL & 605ft FWL of Sec 27