



# **MORNING GUN EXPLORATION**

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

**SW SW SEC. 11 T7N R59W 6th P.M.**

**CASTOR 7-59 11-2-12**

**ORIGINAL WELLBORE**

**03 January, 2019**

**Plan: PROPOSAL #2**



WELD COUNTY, COLORADO (NAD 83)  
SW SW SEC. 11 T7N R59W 6th P.M.  
CASTOR 7-59 11-2-12  
ORIGINAL WELLBORE  
PROPOSAL #2

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: 460ft FSL & 704ft FWL of Sec 11	
100.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	START NUDGE (6"/100ft BUR)	
711.31	763.40	39.80	97.09	-27.32	219.62	58.51	221.32	EOB TO 39.8° INC	
4943.73	6272.66	39.80	97.09	-462.60	3719.50	990.88	3748.15	END OF TANGENT	
5555.04	6936.06	0.00	0.00	-489.92	3939.12	1049.39	3969.47	EOD TO VERTICAL	
5655.04	7036.06	0.00	0.00	-489.92	3939.12	1049.39	3969.47	KOP (10"/100ft BUR)	
6228.00	7936.07	90.00	0.48	83.03	3943.96	1580.88	4542.44	BPI: 600ft FSL & 614ft FEL of Sec 11	
6228.00	17310.48	90.00	0.48	9457.10	4023.26	10276.71	13916.85	EPI: 600ft FNL & 747ft FEL of Sec 2	
6228.00	17312.62	90.00	0.42	9459.24	4023.27	10278.69	13918.99	EOT TO 0.42° AZ	
6228.00	17610.69	90.00	0.41	9757.31	4025.43	10555.05	14217.06	BHL: 300ft FNL & 751ft FEL of Sec 2	

PROPOSED LOCAL COORDINATES:

SHL: 460ft FSL & 704ft FWL Sec 11

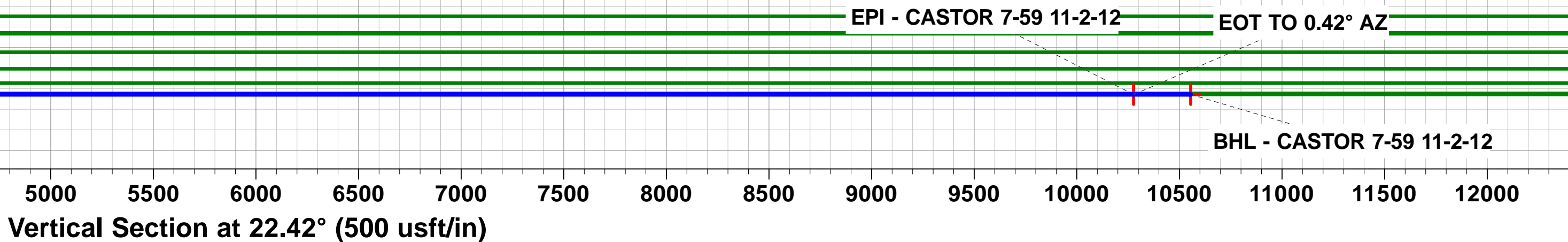
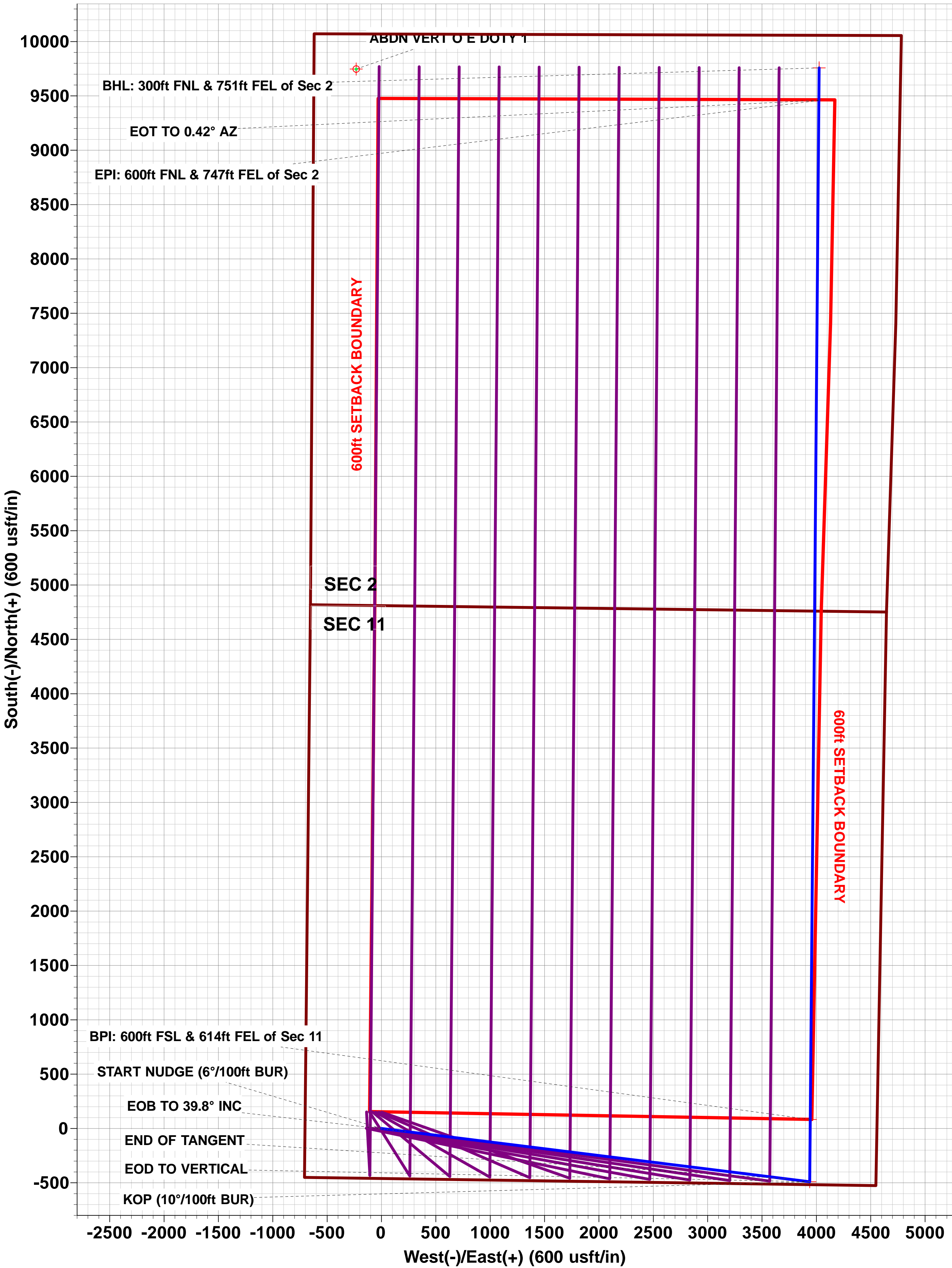
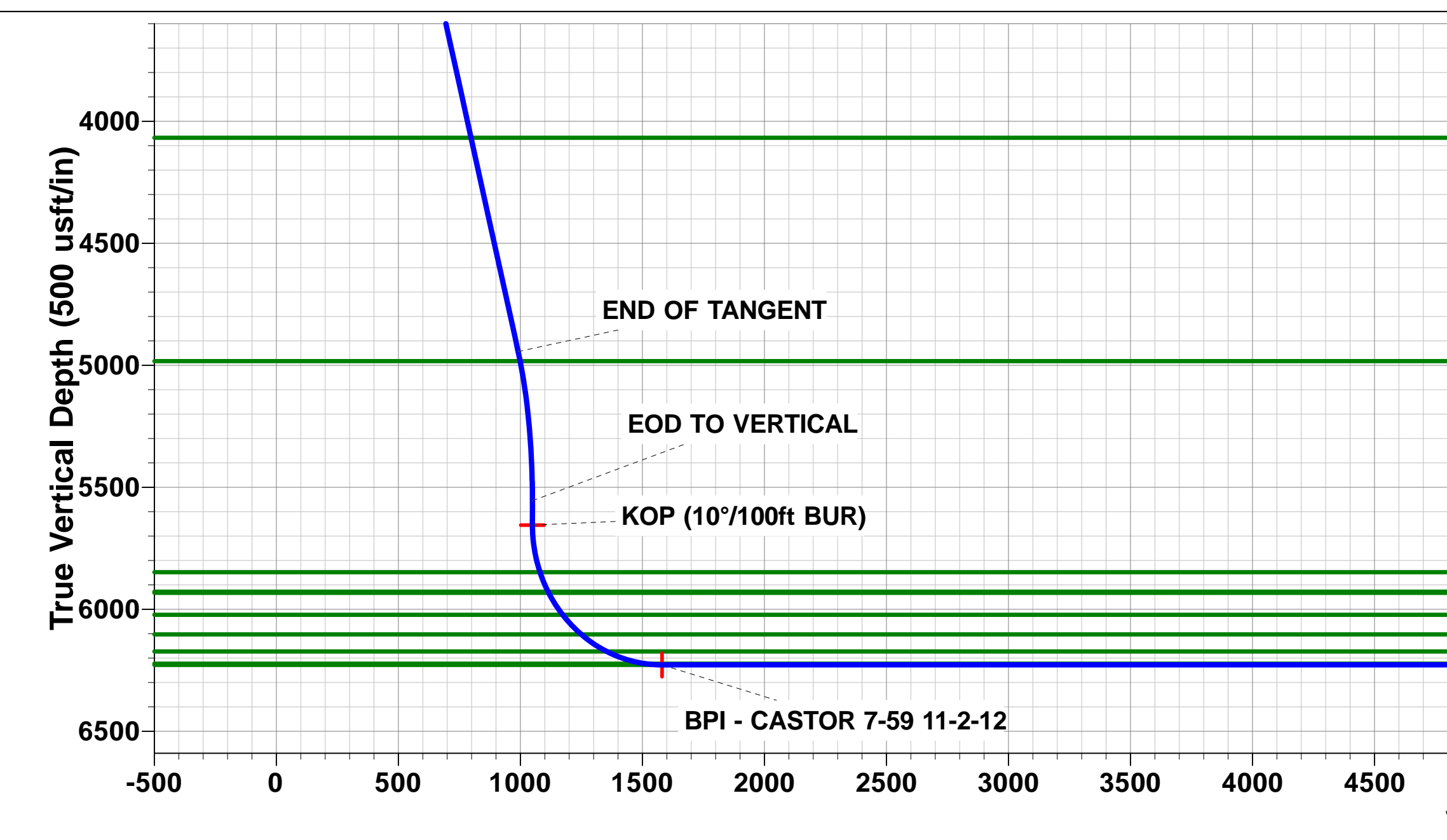
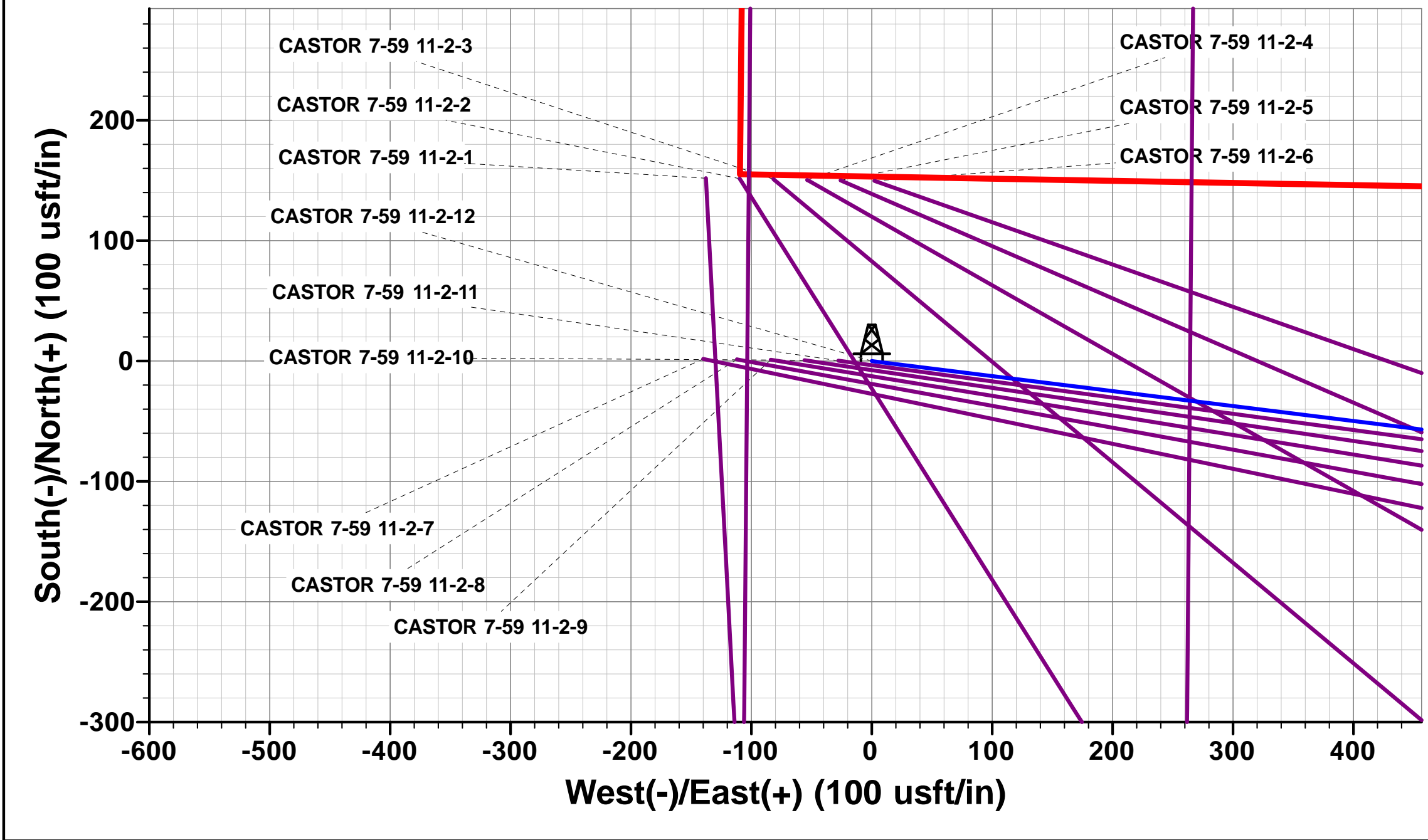
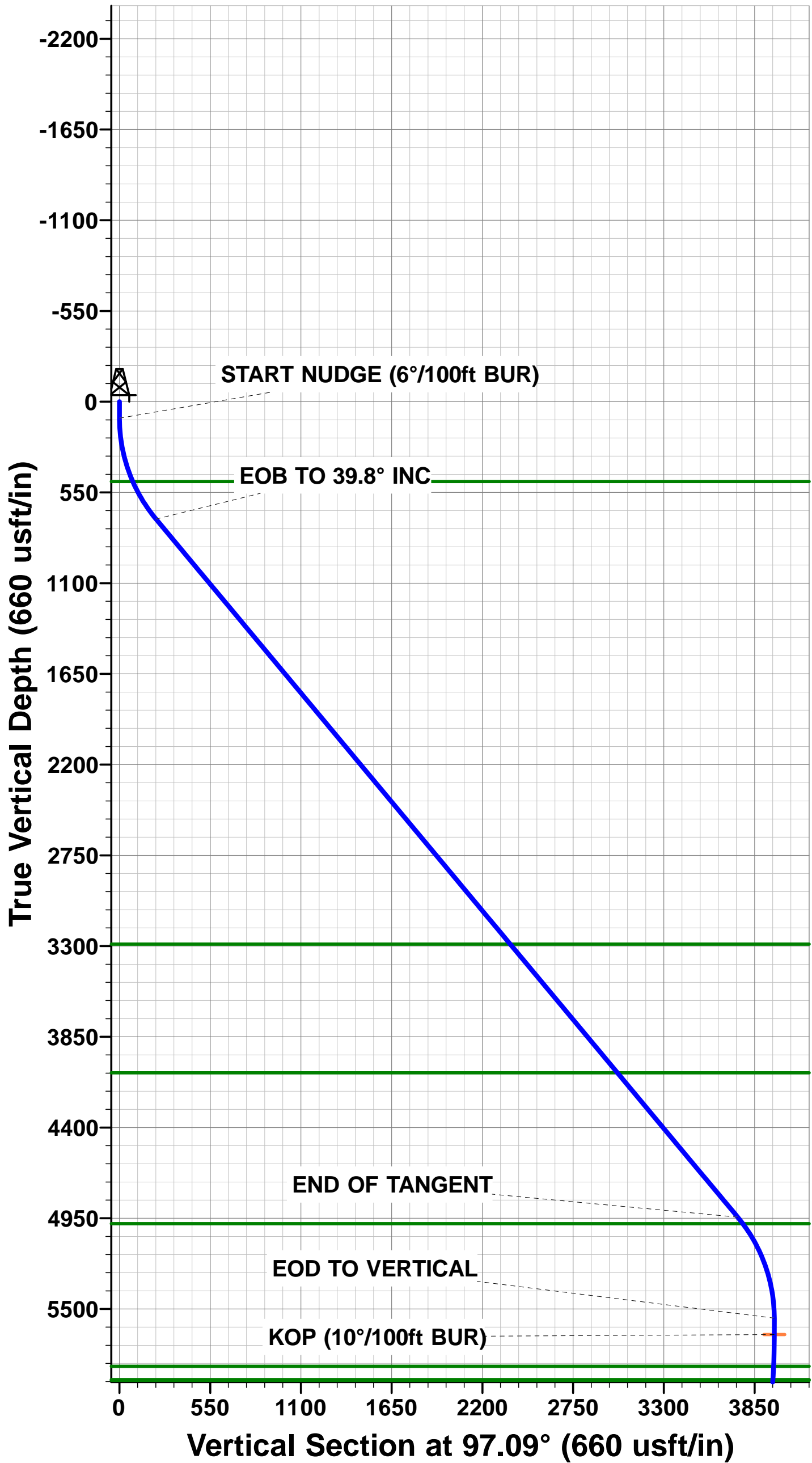
BPI: 600ft FSL & 614ft FEL Sec 11

EPI: 600ft FNL & 747ft FEL Sec 2

BHL: 300ft FNL & 751ft FEL of Sec 2

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - CASTOR 7-59 11-2-12	5655.04	-489.92	3939.12	40.582061	-103.937494
BPI - CASTOR 7-59 11-2-12	6228.00	83.03	3943.96	40.583634	-103.937476
EPI - CASTOR 7-59 11-2-12	6228.00	9457.10	4023.26	40.609364	-103.937185
BHL - CASTOR 7-59 11-2-12	6228.00	9757.31	4025.43	40.610188	-103.937177



# Planning Report

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CASTOR 7-59 11-2-12
<b>Company:</b>	MORNING GUN EXPLORATION	<b>TVD Reference:</b>	KB-EST @ 4973.00usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4973.00usft
<b>Site:</b>	SW SW SEC. 11 T7N R59W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	CASTOR 7-59 11-2-12	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

<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>	SW SW SEC. 11 T7N R59W 6th P.M.		
<b>Site Position:</b>		<b>Northing:</b>	1,459,188.61 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,432,602.73 usft
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	1.10000ft
		<b>Latitude:</b>	40.583442
		<b>Longitude:</b>	-103.942432
		<b>Grid Convergence:</b>	1.01 °

<b>Well</b>	CASTOR 7-59 11-2-12		
<b>Well Position</b>	<b>+N/-S</b>	-12.63 usft	<b>Northing:</b>
	<b>+E/-W</b>	-2,567.37 usft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.00 usft		<b>Wellhead Elevation:</b>
			<b>Latitude:</b>
			<b>Longitude:</b>
			<b>Ground Level:</b>

<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	10/09/2018	7.65	67.09	52,428

<b>Design</b>	PROPOSAL #2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	22.42

<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
0.00	0.00	0.00	0.00	-4,973.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	-4,873.00	0.00	0.00	0.00	0.00	0.00	0.00	
763.40	39.80	97.09	711.31	-4,261.69	-27.32	219.63	6.00	6.00	0.00	97.09	
6,272.66	39.80	97.09	4,943.73	-29.27	-462.60	3,719.49	0.00	0.00	0.00	0.00	
6,936.06	0.00	0.00	5,555.04	582.04	-489.92	3,939.12	6.00	-6.00	0.00	180.00	
7,036.06	0.00	0.00	5,655.04	682.04	-489.92	3,939.12	0.00	0.00	0.00	0.00	KOP - CASTOR 7-59
7,936.07	90.00	0.48	6,228.00	1,255.00	83.03	3,943.96	10.00	10.00	0.05	0.48	BPI - CASTOR 7-59
17,310.48	90.00	0.48	6,228.00	1,255.00	9,457.10	4,023.26	0.00	0.00	0.00	0.00	EPI - CASTOR 7-59
17,312.62	90.00	0.42	6,228.00	1,255.00	9,459.24	4,023.27	3.00	0.00	-3.00	-90.00	
17,610.69	90.00	0.41	6,228.00	1,255.00	9,757.31	4,025.43	0.00	0.00	0.00	-92.89	BHL - CASTOR 7-59

# Planning Report

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CASTOR 7-59 11-2-12
<b>Company:</b>	MORNING GUN EXPLORATION	<b>TVD Reference:</b>	KB-EST @ 4973.00usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4973.00usft
<b>Site:</b>	SW SW SEC. 11 T7N R59W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	CASTOR 7-59 11-2-12	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

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: 460ft FSL &amp; 704ft FWL of Sec 11</b>										
0.00	0.00	0.00	0.00	4,973.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>START NUDGE (6°/100ft BUR)</b>										
100.00	0.00	0.00	100.00	4,873.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	6.00	97.09	199.82	4,773.18	-0.65	5.19	1.38	6.00	6.00	0.00
300.00	12.00	97.09	298.54	4,674.46	-2.58	20.71	5.52	6.00	6.00	0.00
400.00	18.00	97.09	395.09	4,577.91	-5.77	46.38	12.36	6.00	6.00	0.00
<b>PIERRE SHALE (BASE OF FOX HILLS)</b>										
495.18	23.71	97.09	484.00	4,489.00	-9.95	79.99	21.31	6.00	6.00	0.00
500.00	24.00	97.09	488.40	4,484.60	-10.19	81.93	21.83	6.00	6.00	0.00
600.00	30.00	97.09	577.46	4,395.54	-15.79	126.96	33.82	6.00	6.00	0.00
700.00	36.00	97.09	661.29	4,311.71	-22.51	180.98	48.21	6.00	6.00	0.00
<b>EOB TO 39.8° INC</b>										
763.40	39.80	97.09	711.31	4,261.69	-27.32	219.62	58.51	6.00	6.00	0.00
800.00	39.80	97.09	739.43	4,233.57	-30.21	242.87	64.70	0.00	0.00	0.00
900.00	39.80	97.09	816.25	4,156.75	-38.11	306.40	81.63	0.00	0.00	0.00
1,000.00	39.80	97.09	893.08	4,079.92	-46.01	369.93	98.55	0.00	0.00	0.00
1,100.00	39.80	97.09	969.90	4,003.10	-53.91	433.46	115.47	0.00	0.00	0.00
1,200.00	39.80	97.09	1,046.72	3,926.28	-61.81	496.98	132.40	0.00	0.00	0.00
1,300.00	39.80	97.09	1,123.55	3,849.45	-69.71	560.51	149.32	0.00	0.00	0.00
1,400.00	39.80	97.09	1,200.37	3,772.63	-77.61	624.04	166.24	0.00	0.00	0.00
1,500.00	39.80	97.09	1,277.19	3,695.81	-85.51	687.56	183.17	0.00	0.00	0.00
1,600.00	39.80	97.09	1,354.02	3,618.98	-93.41	751.09	200.09	0.00	0.00	0.00
1,700.00	39.80	97.09	1,430.84	3,542.16	-101.32	814.62	217.02	0.00	0.00	0.00
1,800.00	39.80	97.09	1,507.67	3,465.33	-109.22	878.15	233.94	0.00	0.00	0.00
1,900.00	39.80	97.09	1,584.49	3,388.51	-117.12	941.67	250.86	0.00	0.00	0.00
2,000.00	39.80	97.09	1,661.31	3,311.69	-125.02	1,005.20	267.79	0.00	0.00	0.00
2,100.00	39.80	97.09	1,738.14	3,234.86	-132.92	1,068.73	284.71	0.00	0.00	0.00
2,200.00	39.80	97.09	1,814.96	3,158.04	-140.82	1,132.25	301.64	0.00	0.00	0.00
2,300.00	39.80	97.09	1,891.78	3,081.22	-148.72	1,195.78	318.56	0.00	0.00	0.00
2,400.00	39.80	97.09	1,968.61	3,004.39	-156.62	1,259.31	335.48	0.00	0.00	0.00
2,500.00	39.80	97.09	2,045.43	2,927.57	-164.52	1,322.83	352.41	0.00	0.00	0.00
2,600.00	39.80	97.09	2,122.26	2,850.74	-172.43	1,386.36	369.33	0.00	0.00	0.00
2,700.00	39.80	97.09	2,199.08	2,773.92	-180.33	1,449.89	386.25	0.00	0.00	0.00
2,800.00	39.80	97.09	2,275.90	2,697.10	-188.23	1,513.42	403.18	0.00	0.00	0.00
2,900.00	39.80	97.09	2,352.73	2,620.27	-196.13	1,576.94	420.10	0.00	0.00	0.00
3,000.00	39.80	97.09	2,429.55	2,543.45	-204.03	1,640.47	437.03	0.00	0.00	0.00
3,100.00	39.80	97.09	2,506.37	2,466.63	-211.93	1,704.00	453.95	0.00	0.00	0.00
3,200.00	39.80	97.09	2,583.20	2,389.80	-219.83	1,767.52	470.87	0.00	0.00	0.00
3,300.00	39.80	97.09	2,660.02	2,312.98	-227.73	1,831.05	487.80	0.00	0.00	0.00
3,400.00	39.80	97.09	2,736.85	2,236.15	-235.63	1,894.58	504.72	0.00	0.00	0.00
3,500.00	39.80	97.09	2,813.67	2,159.33	-243.53	1,958.11	521.64	0.00	0.00	0.00
3,600.00	39.80	97.09	2,890.49	2,082.51	-251.44	2,021.63	538.57	0.00	0.00	0.00
3,700.00	39.80	97.09	2,967.32	2,005.68	-259.34	2,085.16	555.49	0.00	0.00	0.00
3,800.00	39.80	97.09	3,044.14	1,928.86	-267.24	2,148.69	572.42	0.00	0.00	0.00
3,900.00	39.80	97.09	3,120.96	1,852.04	-275.14	2,212.21	589.34	0.00	0.00	0.00
4,000.00	39.80	97.09	3,197.79	1,775.21	-283.04	2,275.74	606.26	0.00	0.00	0.00
4,100.00	39.80	97.09	3,274.61	1,698.39	-290.94	2,339.27	623.19	0.00	0.00	0.00
<b>PARKMAN</b>										
4,117.43	39.80	97.09	3,288.00	1,685.00	-292.32	2,350.34	626.14	0.00	0.00	0.00
4,200.00	39.80	97.09	3,351.43	1,621.57	-298.84	2,402.80	640.11	0.00	0.00	0.00
4,300.00	39.80	97.09	3,428.26	1,544.74	-306.74	2,466.32	657.03	0.00	0.00	0.00
4,400.00	39.80	97.09	3,505.08	1,467.92	-314.64	2,529.85	673.96	0.00	0.00	0.00
4,500.00	39.80	97.09	3,581.91	1,391.09	-322.54	2,593.38	690.88	0.00	0.00	0.00



# Planning Report

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CASTOR 7-59 11-2-12
<b>Company:</b>	MORNING GUN EXPLORATION	<b>TVD Reference:</b>	KB-EST @ 4973.00usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4973.00usft
<b>Site:</b>	SW SW SEC. 11 T7N R59W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	CASTOR 7-59 11-2-12	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

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	39.80	97.09	3,658.73	1,314.27	-330.45	2,656.90	707.81	0.00	0.00	0.00
4,700.00	39.80	97.09	3,735.55	1,237.45	-338.35	2,720.43	724.73	0.00	0.00	0.00
4,800.00	39.80	97.09	3,812.38	1,160.62	-346.25	2,783.96	741.65	0.00	0.00	0.00
4,900.00	39.80	97.09	3,889.20	1,083.80	-354.15	2,847.48	758.58	0.00	0.00	0.00
5,000.00	39.80	97.09	3,966.02	1,006.98	-362.05	2,911.01	775.50	0.00	0.00	0.00
5,100.00	39.80	97.09	4,042.85	930.15	-369.95	2,974.54	792.42	0.00	0.00	0.00
<b>SUSSEX</b>										
<b>5,132.74</b>	<b>39.80</b>	<b>97.09</b>	<b>4,068.00</b>	<b>905.00</b>	<b>-372.54</b>	<b>2,995.34</b>	<b>797.97</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,200.00	39.80	97.09	4,119.67	853.33	-377.85	3,038.07	809.35	0.00	0.00	0.00
5,300.00	39.80	97.09	4,196.50	776.50	-385.75	3,101.59	826.27	0.00	0.00	0.00
5,400.00	39.80	97.09	4,273.32	699.68	-393.65	3,165.12	843.20	0.00	0.00	0.00
5,500.00	39.80	97.09	4,350.14	622.86	-401.55	3,228.65	860.12	0.00	0.00	0.00
5,600.00	39.80	97.09	4,426.97	546.03	-409.46	3,292.17	877.04	0.00	0.00	0.00
5,700.00	39.80	97.09	4,503.79	469.21	-417.36	3,355.70	893.97	0.00	0.00	0.00
5,800.00	39.80	97.09	4,580.61	392.39	-425.26	3,419.23	910.89	0.00	0.00	0.00
5,900.00	39.80	97.09	4,657.44	315.56	-433.16	3,482.76	927.81	0.00	0.00	0.00
6,000.00	39.80	97.09	4,734.26	238.74	-441.06	3,546.28	944.74	0.00	0.00	0.00
6,100.00	39.80	97.09	4,811.09	161.91	-448.96	3,609.81	961.66	0.00	0.00	0.00
6,200.00	39.80	97.09	4,887.91	85.09	-456.86	3,673.34	978.59	0.00	0.00	0.00
<b>END OF TANGENT</b>										
<b>6,272.66</b>	<b>39.80</b>	<b>97.09</b>	<b>4,943.73</b>	<b>29.27</b>	<b>-462.60</b>	<b>3,719.50</b>	<b>990.88</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
6,300.00	38.16	97.09	4,964.98	8.02	-464.72	3,736.56	995.43	6.00	-6.00	0.00
<b>SHANNON</b>										
<b>6,322.71</b>	<b>36.80</b>	<b>97.09</b>	<b>4,983.00</b>	<b>-10.00</b>	<b>-466.43</b>	<b>3,750.28</b>	<b>999.08</b>	<b>6.00</b>	<b>-6.00</b>	<b>0.00</b>
6,400.00	32.16	97.09	5,046.69	-73.69	-471.83	3,793.69	1,010.65	6.00	-6.00	0.00
6,500.00	26.16	97.09	5,133.98	-160.98	-477.84	3,842.02	1,023.52	6.00	-6.00	0.00
6,600.00	20.16	97.09	5,225.87	-252.87	-482.69	3,881.04	1,033.92	6.00	-6.00	0.00
6,700.00	14.16	97.09	5,321.38	-348.38	-486.33	3,910.31	1,041.72	6.00	-6.00	0.00
6,800.00	8.16	97.09	5,419.44	-446.44	-488.72	3,929.52	1,046.83	6.00	-6.00	0.00
6,900.00	2.16	97.09	5,518.99	-545.99	-489.83	3,938.44	1,049.21	6.00	-6.00	0.00
<b>EOD TO VERTICAL</b>										
<b>6,936.06</b>	<b>0.00</b>	<b>0.00</b>	<b>5,555.04</b>	<b>-582.04</b>	<b>-489.92</b>	<b>3,939.12</b>	<b>1,049.39</b>	<b>6.00</b>	<b>-6.00</b>	<b>0.00</b>
7,000.00	0.00	0.00	5,618.98	-645.98	-489.92	3,939.12	1,049.39	0.00	0.00	0.00
<b>KOP (10°/100ft BUR)</b>										
<b>7,036.06</b>	<b>0.00</b>	<b>0.00</b>	<b>5,655.04</b>	<b>-682.04</b>	<b>-489.92</b>	<b>3,939.12</b>	<b>1,049.39</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
7,100.00	6.39	0.48	5,718.85	-745.85	-486.35	3,939.15	1,052.70	10.00	10.00	0.00
7,200.00	16.39	0.48	5,816.75	-843.75	-466.62	3,939.32	1,071.00	10.00	10.00	0.00
<b>SHARON SPRINGS SHALE</b>										
<b>7,232.87</b>	<b>19.68</b>	<b>0.48</b>	<b>5,848.00</b>	<b>-875.00</b>	<b>-456.45</b>	<b>3,939.40</b>	<b>1,080.44</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
7,300.00	26.39	0.48	5,909.74	-936.74	-430.19	3,939.62	1,104.79	10.00	10.00	0.00
<b>NIOBRARA FORMATION</b>										
<b>7,320.57</b>	<b>28.45</b>	<b>0.48</b>	<b>5,928.00</b>	<b>-955.00</b>	<b>-420.72</b>	<b>3,939.70</b>	<b>1,113.58</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
<b>NIOBRARA A CHALK</b>										
<b>7,326.27</b>	<b>29.02</b>	<b>0.48</b>	<b>5,933.00</b>	<b>-960.00</b>	<b>-417.98</b>	<b>3,939.73</b>	<b>1,116.12</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
7,400.00	36.39	0.48	5,995.00	-1,022.00	-378.17	3,940.06	1,153.05	10.00	10.00	0.00
<b>NIOBRARA B CHALK</b>										
<b>7,435.63</b>	<b>39.96</b>	<b>0.48</b>	<b>6,023.00</b>	<b>-1,050.00</b>	<b>-356.15</b>	<b>3,940.25</b>	<b>1,173.48</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
7,500.00	46.39	0.48	6,069.92	-1,096.92	-312.13	3,940.62	1,214.31	10.00	10.00	0.00
<b>NIOBRARA C CHALK</b>										
<b>7,550.35</b>	<b>51.43</b>	<b>0.48</b>	<b>6,103.00</b>	<b>-1,130.00</b>	<b>-274.20</b>	<b>3,940.94</b>	<b>1,249.50</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
7,600.00	56.39	0.48	6,132.24	-1,159.24	-234.09	3,941.28	1,286.71	10.00	10.00	0.00
<b>FT HAYS</b>										

# Planning Report

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CASTOR 7-59 11-2-12
<b>Company:</b>	MORNING GUN EXPLORATION	<b>TVD Reference:</b>	KB-EST @ 4973.00usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4973.00usft
<b>Site:</b>	SW SW SEC. 11 T7N R59W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	CASTOR 7-59 11-2-12	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

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>7,682.96</b>	<b>64.69</b>	<b>0.48</b>	<b>6,173.00</b>	<b>-1,200.00</b>	<b>-161.92</b>	<b>3,941.89</b>	<b>1,353.66</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
7,700.00	66.39	0.48	6,180.05	-1,207.05	-146.41	3,942.02	1,368.04	10.00	10.00	0.00
7,800.00	76.39	0.48	6,211.92	-1,238.92	-51.76	3,942.82	1,455.84	10.00	10.00	0.00
<b>CODELL</b>										
<b>7,860.31</b>	<b>82.43</b>	<b>0.48</b>	<b>6,223.00</b>	<b>-1,250.00</b>	<b>7.50</b>	<b>3,943.32</b>	<b>1,510.81</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
7,900.00	86.39	0.48	6,226.87	-1,253.87	46.98	3,943.66	1,547.44	10.00	10.00	0.00
<b>BPI: 600ft FSL &amp; 614ft FEL of Sec 11 - CODELL LP</b>										
<b>7,936.07</b>	<b>90.00</b>	<b>0.48</b>	<b>6,228.00</b>	<b>-1,255.00</b>	<b>83.03</b>	<b>3,943.96</b>	<b>1,580.88</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
8,000.00	90.00	0.48	6,228.00	-1,255.00	146.96	3,944.50	1,640.18	0.00	0.00	0.00
8,100.00	90.00	0.48	6,228.00	-1,255.00	246.95	3,945.35	1,732.94	0.00	0.00	0.00
8,200.00	90.00	0.48	6,228.00	-1,255.00	346.95	3,946.19	1,825.70	0.00	0.00	0.00
8,300.00	90.00	0.48	6,228.00	-1,255.00	446.95	3,947.04	1,918.47	0.00	0.00	0.00
8,400.00	90.00	0.48	6,228.00	-1,255.00	546.94	3,947.88	2,011.23	0.00	0.00	0.00
8,500.00	90.00	0.48	6,228.00	-1,255.00	646.94	3,948.73	2,103.99	0.00	0.00	0.00
8,600.00	90.00	0.48	6,228.00	-1,255.00	746.94	3,949.57	2,196.75	0.00	0.00	0.00
8,700.00	90.00	0.48	6,228.00	-1,255.00	846.93	3,950.42	2,289.51	0.00	0.00	0.00
8,800.00	90.00	0.48	6,228.00	-1,255.00	946.93	3,951.26	2,382.27	0.00	0.00	0.00
8,900.00	90.00	0.48	6,228.00	-1,255.00	1,046.92	3,952.10	2,475.03	0.00	0.00	0.00
9,000.00	90.00	0.48	6,227.99	-1,254.99	1,146.92	3,952.95	2,567.79	0.00	0.00	0.00
9,100.00	90.00	0.48	6,227.99	-1,254.99	1,246.92	3,953.79	2,660.55	0.00	0.00	0.00
9,200.00	90.00	0.48	6,227.99	-1,254.99	1,346.91	3,954.64	2,753.31	0.00	0.00	0.00
9,300.00	90.00	0.48	6,227.99	-1,254.99	1,446.91	3,955.48	2,846.08	0.00	0.00	0.00
9,400.00	90.00	0.48	6,227.99	-1,254.99	1,546.91	3,956.33	2,938.84	0.00	0.00	0.00
9,500.00	90.00	0.48	6,227.99	-1,254.99	1,646.90	3,957.17	3,031.60	0.00	0.00	0.00
9,600.00	90.00	0.48	6,227.99	-1,254.99	1,746.90	3,958.02	3,124.36	0.00	0.00	0.00
9,700.00	90.00	0.48	6,227.99	-1,254.99	1,846.90	3,958.86	3,217.12	0.00	0.00	0.00
9,800.00	90.00	0.48	6,227.99	-1,254.99	1,946.89	3,959.71	3,309.88	0.00	0.00	0.00
9,900.00	90.00	0.48	6,227.99	-1,254.99	2,046.89	3,960.55	3,402.64	0.00	0.00	0.00
10,000.00	90.00	0.48	6,227.99	-1,254.99	2,146.89	3,961.40	3,495.40	0.00	0.00	0.00
10,100.00	90.00	0.48	6,227.99	-1,254.99	2,246.88	3,962.24	3,588.16	0.00	0.00	0.00
10,200.00	90.00	0.48	6,227.99	-1,254.99	2,346.88	3,963.09	3,680.92	0.00	0.00	0.00
10,300.00	90.00	0.48	6,227.99	-1,254.99	2,446.87	3,963.93	3,773.69	0.00	0.00	0.00
10,400.00	90.00	0.48	6,227.99	-1,254.99	2,546.87	3,964.78	3,866.45	0.00	0.00	0.00
10,500.00	90.00	0.48	6,227.99	-1,254.99	2,646.87	3,965.62	3,959.21	0.00	0.00	0.00
10,600.00	90.00	0.48	6,227.99	-1,254.99	2,746.86	3,966.47	4,051.97	0.00	0.00	0.00
10,700.00	90.00	0.48	6,227.99	-1,254.99	2,846.86	3,967.31	4,144.73	0.00	0.00	0.00
10,800.00	90.00	0.48	6,227.99	-1,254.99	2,946.86	3,968.16	4,237.49	0.00	0.00	0.00
10,900.00	90.00	0.48	6,227.99	-1,254.99	3,046.85	3,969.00	4,330.25	0.00	0.00	0.00
11,000.00	90.00	0.48	6,227.98	-1,254.98	3,146.85	3,969.85	4,423.01	0.00	0.00	0.00
11,100.00	90.00	0.48	6,227.98	-1,254.98	3,246.85	3,970.69	4,515.77	0.00	0.00	0.00
11,200.00	90.00	0.48	6,227.98	-1,254.98	3,346.84	3,971.54	4,608.53	0.00	0.00	0.00
11,300.00	90.00	0.48	6,227.98	-1,254.98	3,446.84	3,972.38	4,701.30	0.00	0.00	0.00
11,400.00	90.00	0.48	6,227.98	-1,254.98	3,546.84	3,973.23	4,794.06	0.00	0.00	0.00
11,500.00	90.00	0.48	6,227.98	-1,254.98	3,646.83	3,974.07	4,886.82	0.00	0.00	0.00
11,600.00	90.00	0.48	6,227.98	-1,254.98	3,746.83	3,974.92	4,979.58	0.00	0.00	0.00
11,700.00	90.00	0.48	6,227.98	-1,254.98	3,846.82	3,975.76	5,072.34	0.00	0.00	0.00
11,800.00	90.00	0.48	6,227.98	-1,254.98	3,946.82	3,976.61	5,165.10	0.00	0.00	0.00
11,900.00	90.00	0.48	6,227.98	-1,254.98	4,046.82	3,977.45	5,257.86	0.00	0.00	0.00
12,000.00	90.00	0.48	6,227.98	-1,254.98	4,146.81	3,978.30	5,350.62	0.00	0.00	0.00
12,100.00	90.00	0.48	6,227.98	-1,254.98	4,246.81	3,979.14	5,443.38	0.00	0.00	0.00
12,200.00	90.00	0.48	6,227.98	-1,254.98	4,346.81	3,979.99	5,536.14	0.00	0.00	0.00
12,300.00	90.00	0.48	6,227.98	-1,254.98	4,446.80	3,980.83	5,628.91	0.00	0.00	0.00
12,400.00	90.00	0.48	6,227.98	-1,254.98	4,546.80	3,981.68	5,721.67	0.00	0.00	0.00
12,500.00	90.00	0.48	6,227.98	-1,254.98	4,646.80	3,982.52	5,814.43	0.00	0.00	0.00

# Planning Report

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CASTOR 7-59 11-2-12
<b>Company:</b>	MORNING GUN EXPLORATION	<b>TVD Reference:</b>	KB-EST @ 4973.00usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4973.00usft
<b>Site:</b>	SW SW SEC. 11 T7N R59W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	CASTOR 7-59 11-2-12	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

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)
12,600.00	90.00	0.48	6,227.98	-1,254.98	4,746.79	3,983.37	5,907.19	0.00	0.00	0.00
12,700.00	90.00	0.48	6,227.98	-1,254.98	4,846.79	3,984.21	5,999.95	0.00	0.00	0.00
12,800.00	90.00	0.48	6,227.98	-1,254.98	4,946.79	3,985.06	6,092.71	0.00	0.00	0.00
12,900.00	90.00	0.48	6,227.98	-1,254.98	5,046.78	3,985.90	6,185.47	0.00	0.00	0.00
13,000.00	90.00	0.48	6,227.97	-1,254.97	5,146.78	3,986.75	6,278.23	0.00	0.00	0.00
13,100.00	90.00	0.48	6,227.97	-1,254.97	5,246.77	3,987.59	6,370.99	0.00	0.00	0.00
13,200.00	90.00	0.48	6,227.97	-1,254.97	5,346.77	3,988.44	6,463.75	0.00	0.00	0.00
13,300.00	90.00	0.48	6,227.97	-1,254.97	5,446.77	3,989.28	6,556.52	0.00	0.00	0.00
13,400.00	90.00	0.48	6,227.97	-1,254.97	5,546.76	3,990.13	6,649.28	0.00	0.00	0.00
13,500.00	90.00	0.48	6,227.97	-1,254.97	5,646.76	3,990.97	6,742.04	0.00	0.00	0.00
13,600.00	90.00	0.48	6,227.97	-1,254.97	5,746.76	3,991.82	6,834.80	0.00	0.00	0.00
13,700.00	90.00	0.48	6,227.97	-1,254.97	5,846.75	3,992.66	6,927.56	0.00	0.00	0.00
13,800.00	90.00	0.48	6,227.97	-1,254.97	5,946.75	3,993.51	7,020.32	0.00	0.00	0.00
13,900.00	90.00	0.48	6,227.97	-1,254.97	6,046.75	3,994.35	7,113.08	0.00	0.00	0.00
14,000.00	90.00	0.48	6,227.97	-1,254.97	6,146.74	3,995.20	7,205.84	0.00	0.00	0.00
14,100.00	90.00	0.48	6,227.97	-1,254.97	6,246.74	3,996.04	7,298.60	0.00	0.00	0.00
14,200.00	90.00	0.48	6,227.97	-1,254.97	6,346.74	3,996.89	7,391.36	0.00	0.00	0.00
14,300.00	90.00	0.48	6,227.97	-1,254.97	6,446.73	3,997.73	7,484.13	0.00	0.00	0.00
14,400.00	90.00	0.48	6,227.97	-1,254.97	6,546.73	3,998.58	7,576.89	0.00	0.00	0.00
14,500.00	90.00	0.48	6,227.97	-1,254.97	6,646.72	3,999.42	7,669.65	0.00	0.00	0.00
14,600.00	90.00	0.48	6,227.97	-1,254.97	6,746.72	4,000.27	7,762.41	0.00	0.00	0.00
14,700.00	90.00	0.48	6,227.97	-1,254.97	6,846.72	4,001.11	7,855.17	0.00	0.00	0.00
14,800.00	90.00	0.48	6,227.97	-1,254.97	6,946.71	4,001.96	7,947.93	0.00	0.00	0.00
14,900.00	90.00	0.48	6,227.97	-1,254.97	7,046.71	4,002.80	8,040.69	0.00	0.00	0.00
15,000.00	90.00	0.48	6,227.96	-1,254.96	7,146.71	4,003.65	8,133.45	0.00	0.00	0.00
15,100.00	90.00	0.48	6,227.96	-1,254.96	7,246.70	4,004.49	8,226.21	0.00	0.00	0.00
15,200.00	90.00	0.48	6,227.96	-1,254.96	7,346.70	4,005.34	8,318.97	0.00	0.00	0.00
15,300.00	90.00	0.48	6,227.96	-1,254.96	7,446.70	4,006.18	8,411.74	0.00	0.00	0.00
15,400.00	90.00	0.48	6,227.96	-1,254.96	7,546.69	4,007.03	8,504.50	0.00	0.00	0.00
15,500.00	90.00	0.48	6,227.96	-1,254.96	7,646.69	4,007.87	8,597.26	0.00	0.00	0.00
15,600.00	90.00	0.48	6,227.96	-1,254.96	7,746.69	4,008.72	8,690.02	0.00	0.00	0.00
15,700.00	90.00	0.48	6,227.96	-1,254.96	7,846.68	4,009.56	8,782.78	0.00	0.00	0.00
15,800.00	90.00	0.48	6,227.96	-1,254.96	7,946.68	4,010.41	8,875.54	0.00	0.00	0.00
15,900.00	90.00	0.48	6,227.96	-1,254.96	8,046.67	4,011.25	8,968.30	0.00	0.00	0.00
16,000.00	90.00	0.48	6,227.96	-1,254.96	8,146.67	4,012.10	9,061.06	0.00	0.00	0.00
16,100.00	90.00	0.48	6,227.96	-1,254.96	8,246.67	4,012.94	9,153.82	0.00	0.00	0.00
16,200.00	90.00	0.48	6,227.96	-1,254.96	8,346.66	4,013.79	9,246.58	0.00	0.00	0.00
16,300.00	90.00	0.48	6,227.96	-1,254.96	8,446.66	4,014.63	9,339.34	0.00	0.00	0.00
16,400.00	90.00	0.48	6,227.96	-1,254.96	8,546.66	4,015.48	9,432.11	0.00	0.00	0.00
16,500.00	90.00	0.48	6,227.96	-1,254.96	8,646.65	4,016.32	9,524.87	0.00	0.00	0.00
16,600.00	90.00	0.48	6,227.96	-1,254.96	8,746.65	4,017.17	9,617.63	0.00	0.00	0.00
16,700.00	90.00	0.48	6,227.96	-1,254.96	8,846.65	4,018.01	9,710.39	0.00	0.00	0.00
16,800.00	90.00	0.48	6,227.96	-1,254.96	8,946.64	4,018.86	9,803.15	0.00	0.00	0.00
16,900.00	90.00	0.48	6,227.96	-1,254.96	9,046.64	4,019.70	9,895.91	0.00	0.00	0.00
17,000.00	90.00	0.48	6,227.95	-1,254.95	9,146.64	4,020.54	9,988.67	0.00	0.00	0.00
17,100.00	90.00	0.48	6,227.95	-1,254.95	9,246.63	4,021.39	10,081.43	0.00	0.00	0.00
17,200.00	90.00	0.48	6,227.95	-1,254.95	9,346.63	4,022.23	10,174.19	0.00	0.00	0.00
17,300.00	90.00	0.48	6,227.95	-1,254.95	9,446.62	4,023.08	10,266.95	0.00	0.00	0.00
EPI: 600ft FNL & 747ft FEL of Sec 2										
17,310.48	90.00	0.48	6,228.00	-1,255.00	9,457.10	4,023.26	10,276.71	0.00	0.00	0.00
EOT TO 0.42° AZ										
17,312.62	90.00	0.42	6,228.00	-1,255.00	9,459.24	4,023.27	10,278.69	3.00	0.00	-3.00
17,400.00	90.00	0.42	6,228.00	-1,255.00	9,546.62	4,023.91	10,359.71	0.00	0.00	0.00
17,500.00	90.00	0.41	6,228.00	-1,255.00	9,646.62	4,024.64	10,452.43	0.00	0.00	0.00

# Planning Report

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CASTOR 7-59 11-2-12
<b>Company:</b>	MORNING GUN EXPLORATION	<b>TVD Reference:</b>	KB-EST @ 4973.00usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4973.00usft
<b>Site:</b>	SW SW SEC. 11 T7N R59W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	CASTOR 7-59 11-2-12	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

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)
17,600.00	90.00	0.41	6,228.00	-1,255.00	9,746.62	4,025.35	10,545.14	0.00	0.00	0.00
<b>BHL: 300ft FNL &amp; 751ft FEL of Sec 2</b>										
<b>17,610.69</b>	<b>90.00</b>	<b>0.41</b>	<b>6,228.00</b>	<b>-1,255.00</b>	<b>9,757.31</b>	<b>4,025.43</b>	<b>10,555.05</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
495.18	484.00	PIERRE SHALE (BASE OF FOX HI				
4,117.43	3,288.00	PARKMAN				
5,132.74	4,068.00	SUSSEX				
6,322.71	4,983.00	SHANNON				
7,232.87	5,848.00	SHARON SPRINGS SHALE				
7,320.57	5,928.00	NIOBRARA FORMATION				
7,326.27	5,933.00	NIOBRARA A CHALK				
7,435.63	6,023.00	NIOBRARA B CHALK				
7,550.35	6,103.00	NIOBRARA C CHALK				
7,682.96	6,173.00	FT HAYS				
7,860.31	6,223.00	CODELL				
7,936.07	6,228.00	CODELL LP				

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 FSL & 704ft FWL of Sec 11	
100.00	100.00	0.00	0.00	START NUDGE (6°/100ft BUR)	
763.40	711.31	-27.32	219.62	EOB TO 39.8° INC	
6,272.66	4,943.73	-462.60	3,719.50	END OF TANGENT	
6,936.06	5,555.04	-489.92	3,939.12	EOD TO VERTICAL	
7,036.06	5,655.04	-489.92	3,939.12	KOP (10°/100ft BUR)	
7,936.07	6,228.00	83.03	3,943.96	BPI: 600ft FSL & 614ft FEL of Sec 11	
17,310.48	6,228.00	9,457.10	4,023.26	EPI: 600ft FNL & 747ft FEL of Sec 2	
17,312.62	6,228.00	9,459.24	4,023.27	EOT TO 0.42° AZ	
17,610.69	6,228.00	9,757.31	4,025.43	BHL: 300ft FNL & 751ft FEL of Sec 2	