

# PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Thornton 19X-404**

Surface Location: Thornton 19X-404 Pad Sec.19-T7N-R66W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

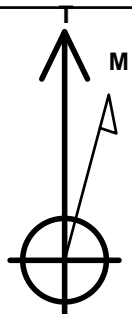
Ground Elevation: 4961.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1446342.69	3190917.78	40.556580	-104.812910	

RKB Ensign 32 - 15' WELL @ 4976.0ft (RKB Ensign 32 - 15')

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
HARDLINE BHL 460'FWL	1.0	-548.9	-4827.8	Polygon
HARDLINE SHL 460'FEL	1.0	-400.0	-230.0	Polygon
SECTION LINE 230'E OF SHL	1.0	-400.0	230.0	Polygon
TARGET BHL 1320'FSL & 500'FWL	7356.0	-148.9	-4787.8	Point



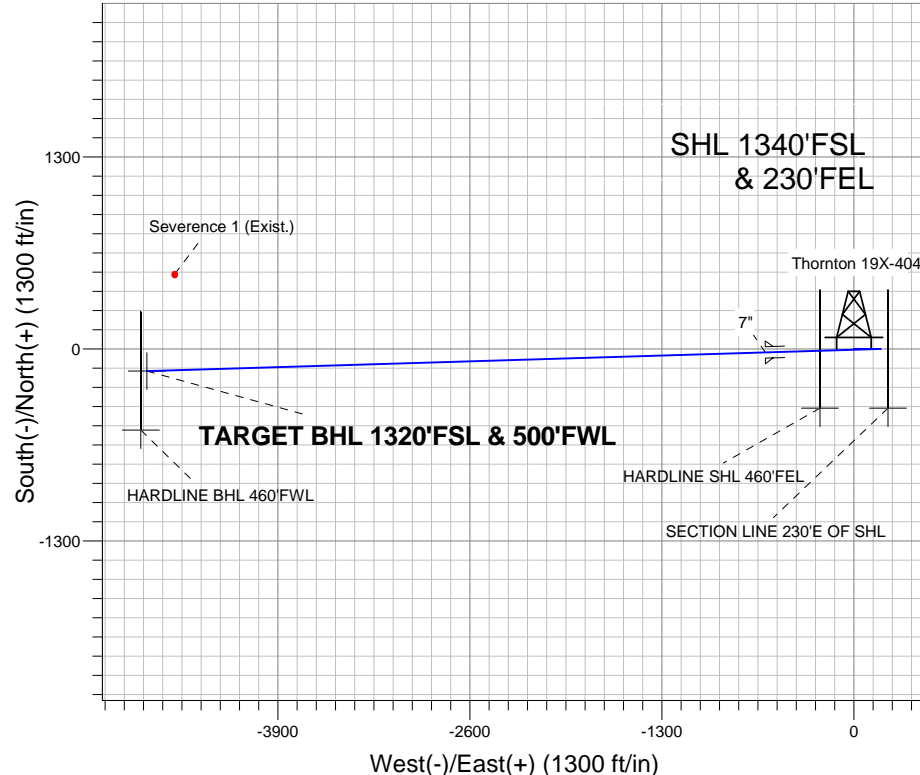
Azimuths to True North  
Magnetic North: 8.83°

Magnetic Field  
Strength: 53145.8nT  
Dip Angle: 67.15°  
Date: 1/13/2012  
Model: IGRF2010

Thornton 19X-404 Pad Sec.19-T7N-R66W  
Thornton 19X-404  
Plan #1 (1-13-12)  
13:25, January 23 2012

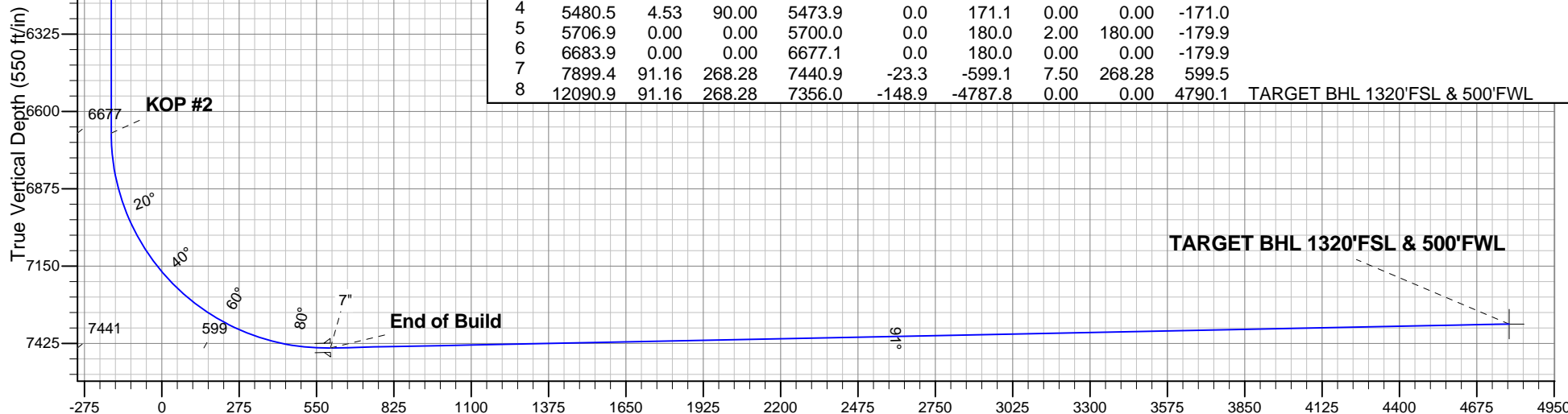
## ANNOTATIONS

TVD	MD	Annotation
3200.0	3200.0	KOP #1
6677.0	6683.9	KOP #2
7440.9	7899.4	End of Build



**ENSIGN**  
Directional

True Vertical Depth (550 ft/in)



## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	3200.0	0.00	0.00	3200.0	0.0	0.0	0.00	0.00	0.0	
3	3426.3	4.53	90.00	3426.1	0.0	8.9	2.00	90.00	-8.9	
4	5480.5	4.53	90.00	5473.9	0.0	171.1	0.00	0.00	-171.0	
5	5706.9	0.00	0.00	5700.0	0.0	180.0	2.00	180.00	-179.9	
6	6683.9	0.00	0.00	6677.1	0.0	180.0	0.00	0.00	-179.9	
7	7899.4	91.16	268.28	7440.9	-23.3	-599.1	7.50	268.28	599.5	
8	12090.9	91.16	268.28	7356.0	-148.9	-4787.8	0.00	0.00	4790.1	TARGET BHL 1320'FSL & 500'FWL

Vertical Section at 268.22° (550 ft/in)