

ENSIGN

Directional

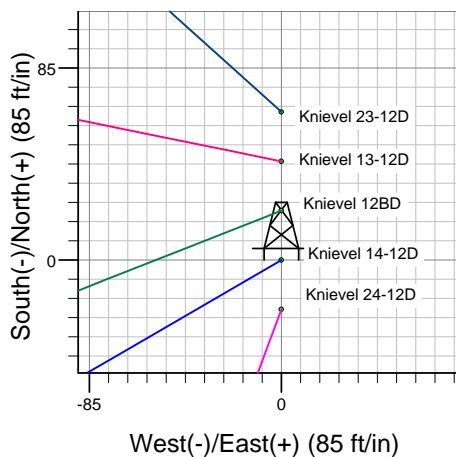
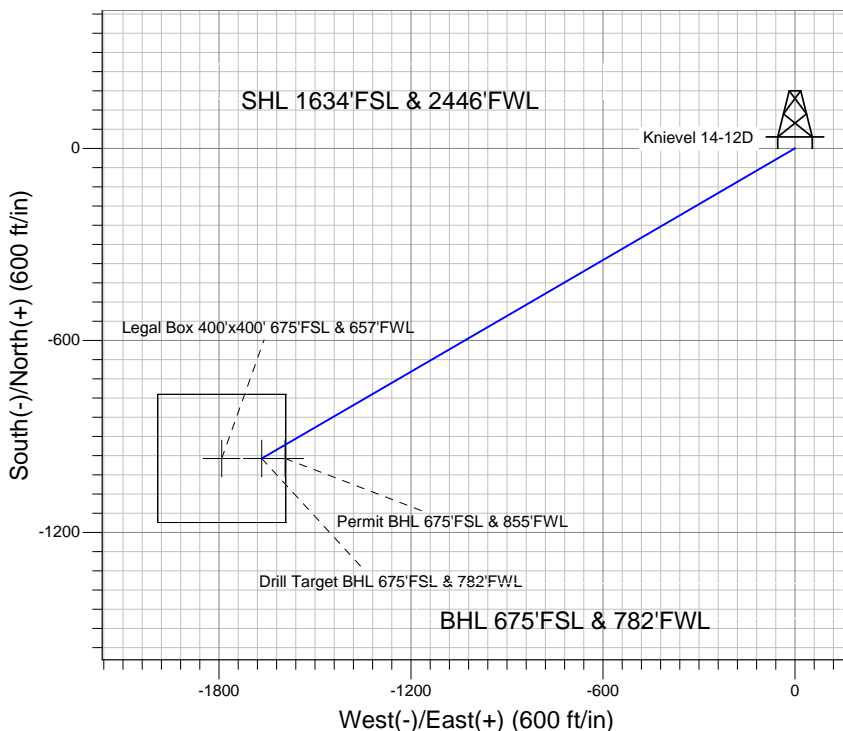
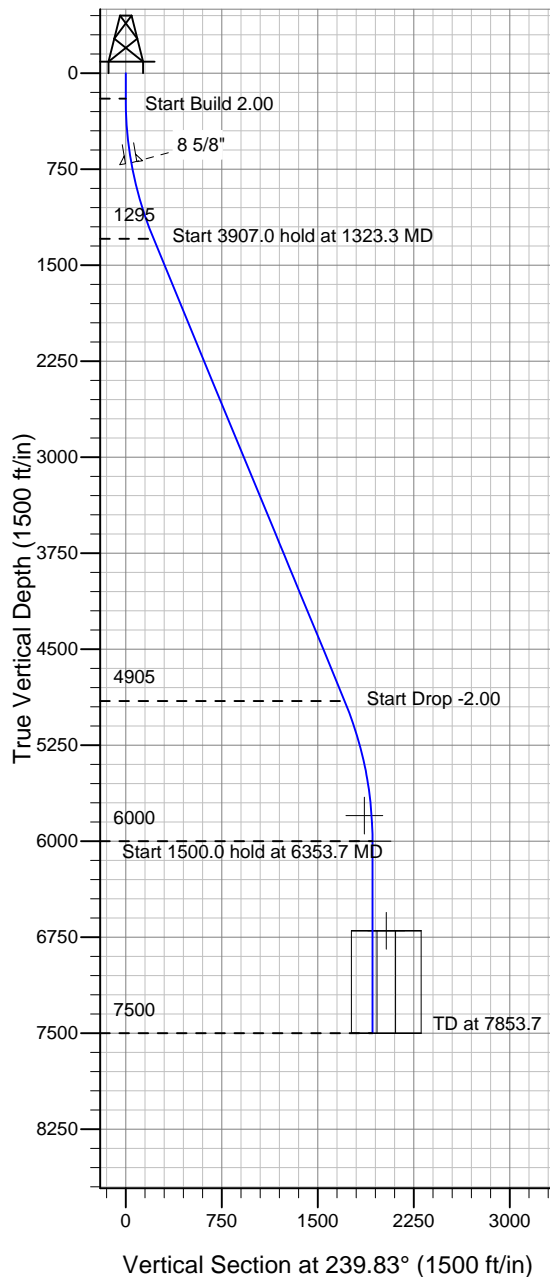
Well Name: Knievel 14-12D

Surface Location: Knievel 23-12D Pad Sec.12-T6N-R67W
North American Datum 1983, US State Plane 1983 Colorado Northern Zone
Ground Elevation: 4868.0

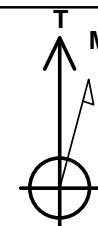
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1425234.98	3182868.67	40° 29' 55.716 N	104° 50' 32.784 W	

Original Well EleWELL @ 4881.0ft (Original Well Elev)

PETROLEUM DEVELOPMENT CORP Weld County CO



Knievel 23-12D Pad Sec.12-T6N-R67W
Knievel 14-12D
Plan #2 (10-01-10)
10:17, October 08 2010



Azimuths to True North
Magnetic North: 9.01°
Magnetic Field
Strength: 53248.7snT
Dip Angle: 67.14°
Date: 10/1/2010
Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Permit BHL 675'FSL & 855'FWL	5800.0	-969.0	-1593.7	40° 29' 46.140 N	104° 50' 53.412 W	Point
Target BHL 675'FSL & 782'FWL	6000.0	-969.0	-1666.7	40° 29' 46.140 N	104° 50' 54.357 W	Point
Legal Box 400'x400' 675'FSL & 657'FWL	6700.0	-969.0	-1791.7	40° 29' 46.140 N	104° 50' 55.975 W	Rectangle (Sides: L400.0 W400.0)

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	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1323.3	22.47	239.83	1294.8	-109.3	-188.0	2.00	239.83	217.4	
4	5230.3	22.47	239.83	4905.2	-859.7	-1478.7	0.00	0.00	1710.5	
5	6353.7	0.00	0.00	6000.0	-969.0	-1666.7	2.00	180.00	1927.9	Target BHL 675'FSL & 782'FWL
6	7853.7	0.00	0.00	7500.0	-969.0	-1666.7	0.00	0.00	1927.9	