



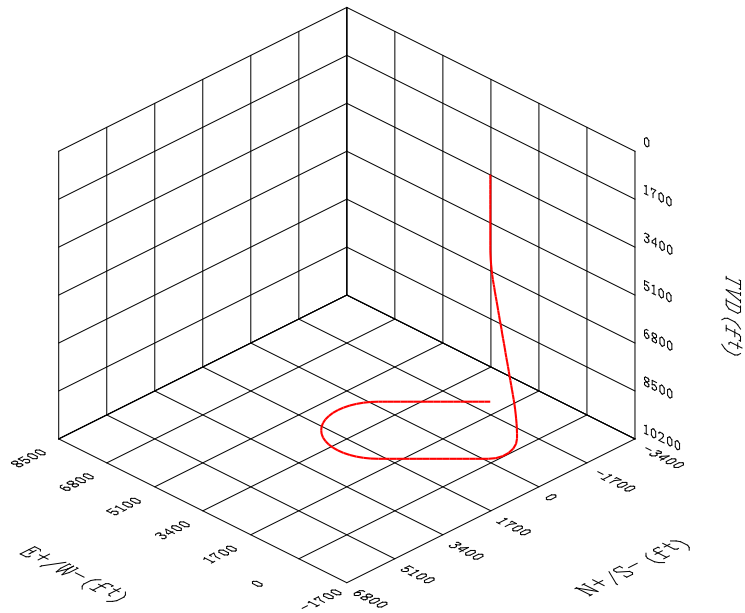
HXR DRILLING SERVICES

Complex Well Design

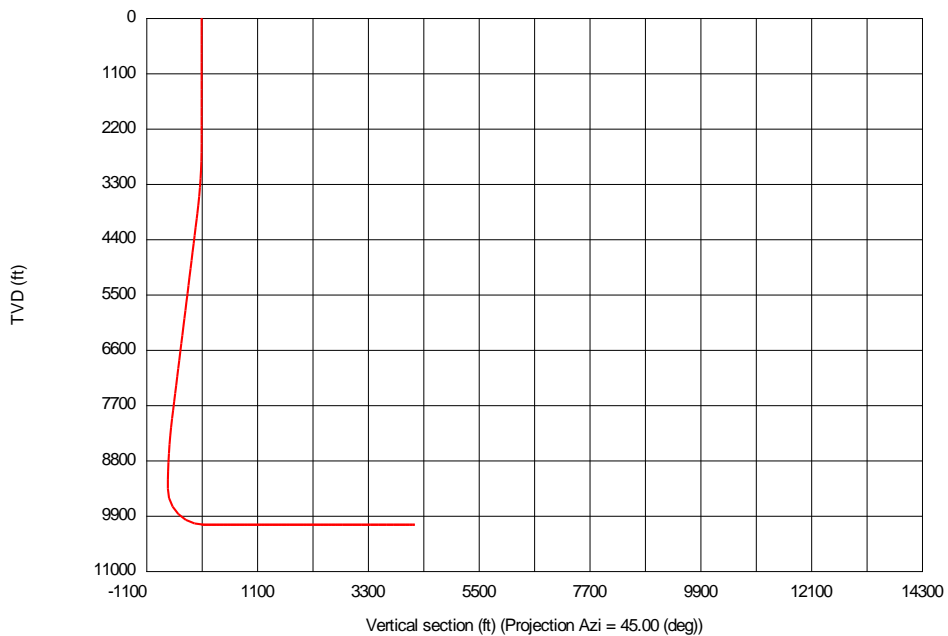
**U-Shaped Lateral w/Backbuild
RSS + Vibratory/Oscillating
Tool Models**



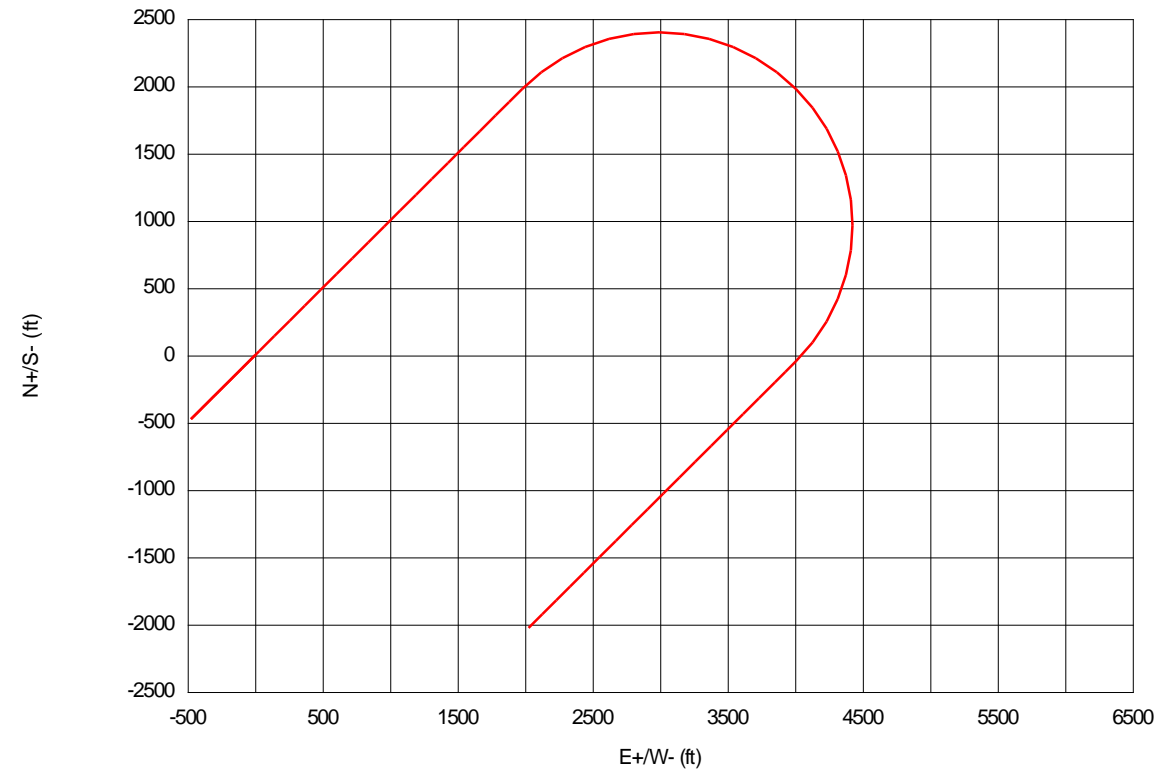
3D view



Section view



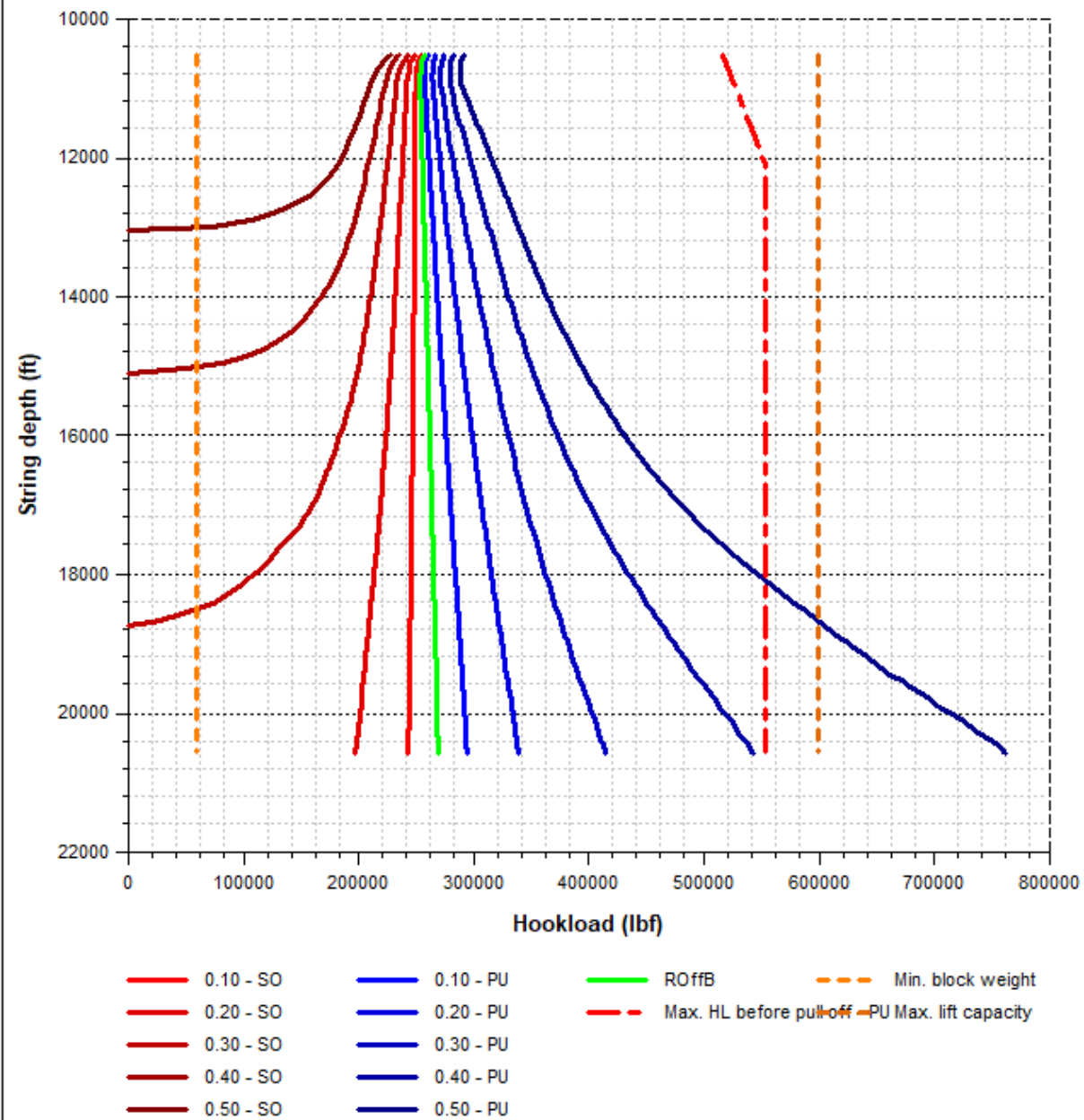
Plan view



MD: 20,580'
TVD: 10,078.70'

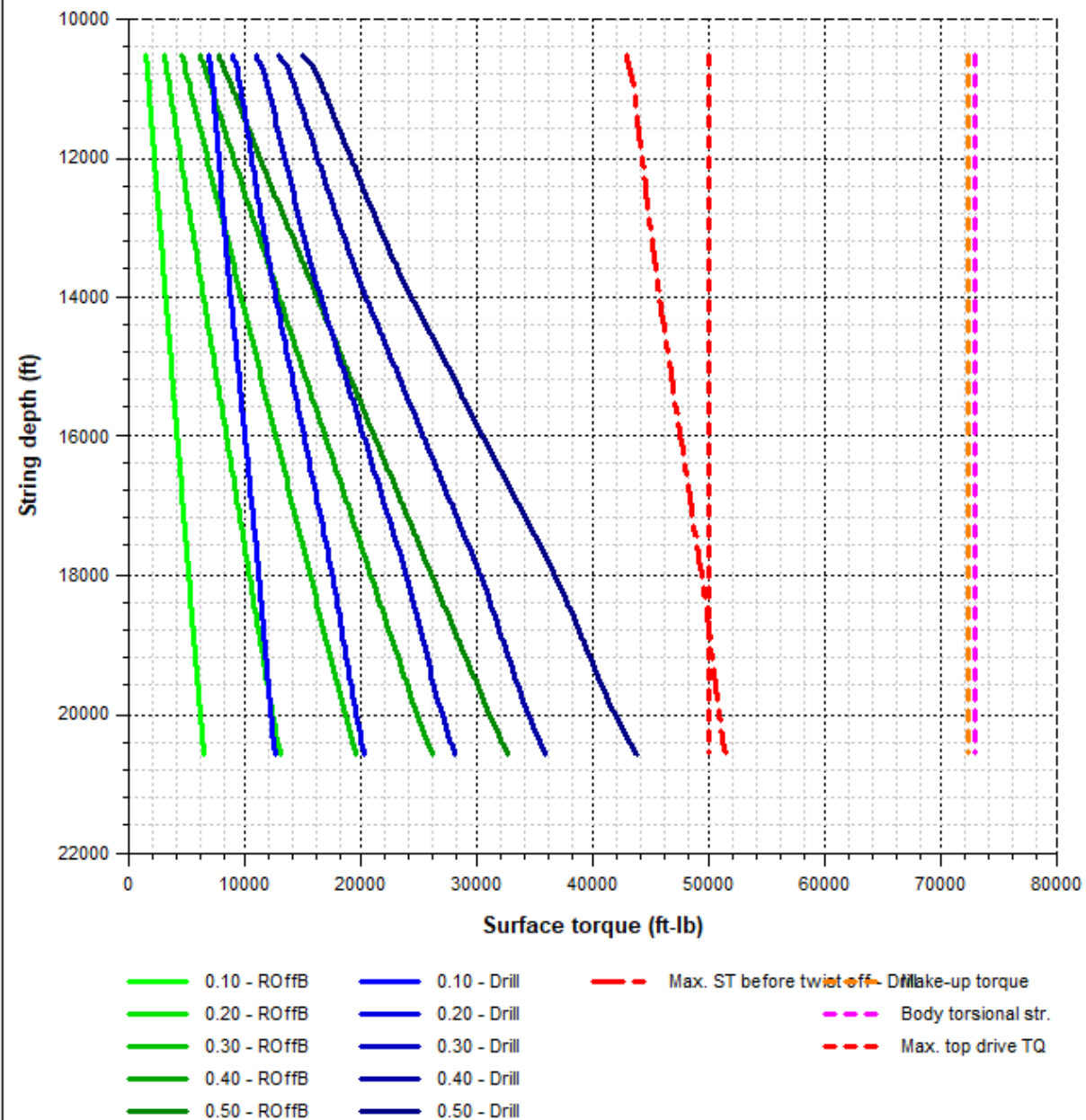
U-Shaped Lateral
90° Inclination
5.5" x 5" DP
8.5" Hole

Hookload - calculated and field data (FF in 0 - 20580 (ft))



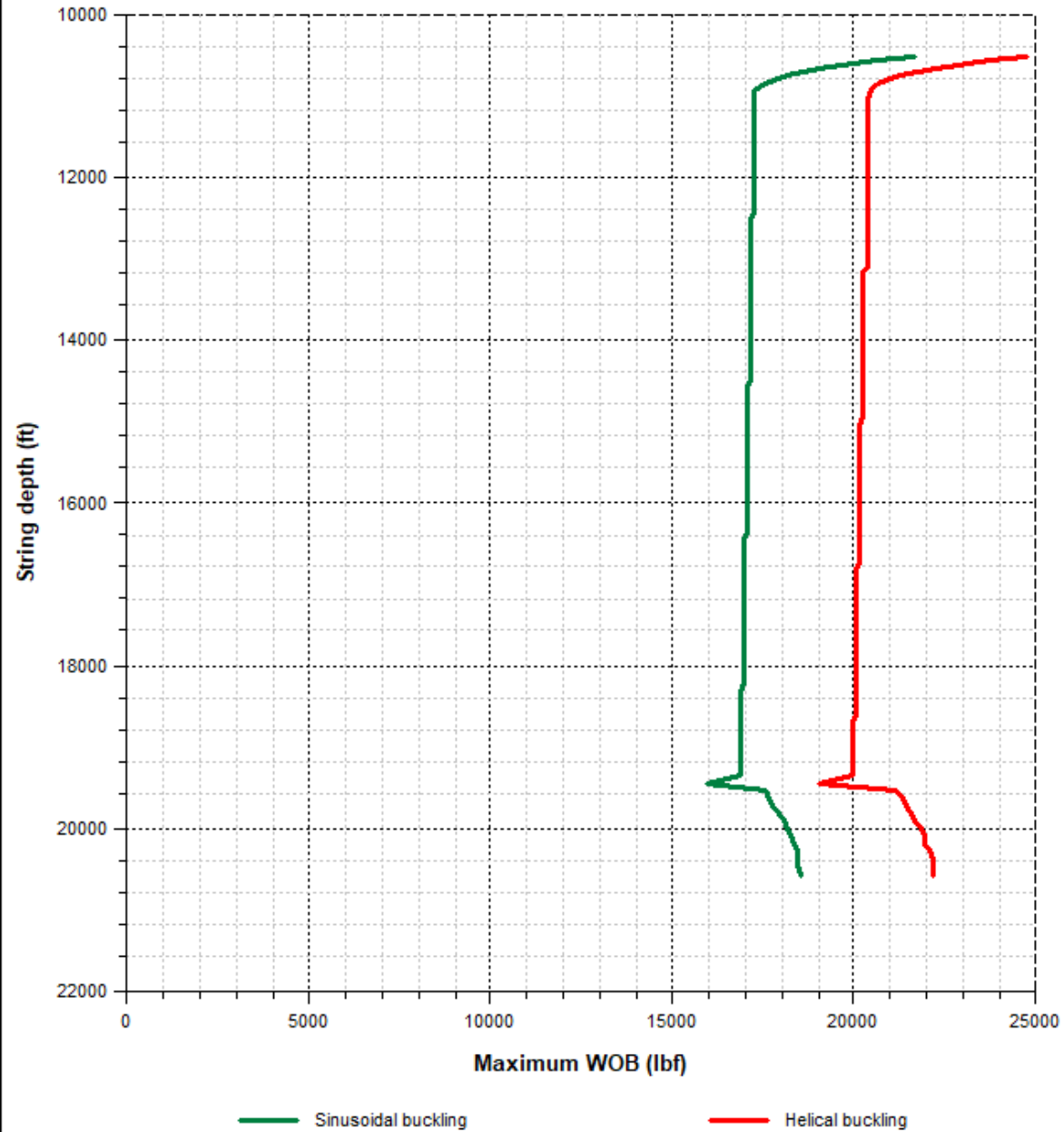
No expected Rig/Equipment Upgrades Required

Surface torque - calculated and field data (FF in 0 - 20580 (ft))



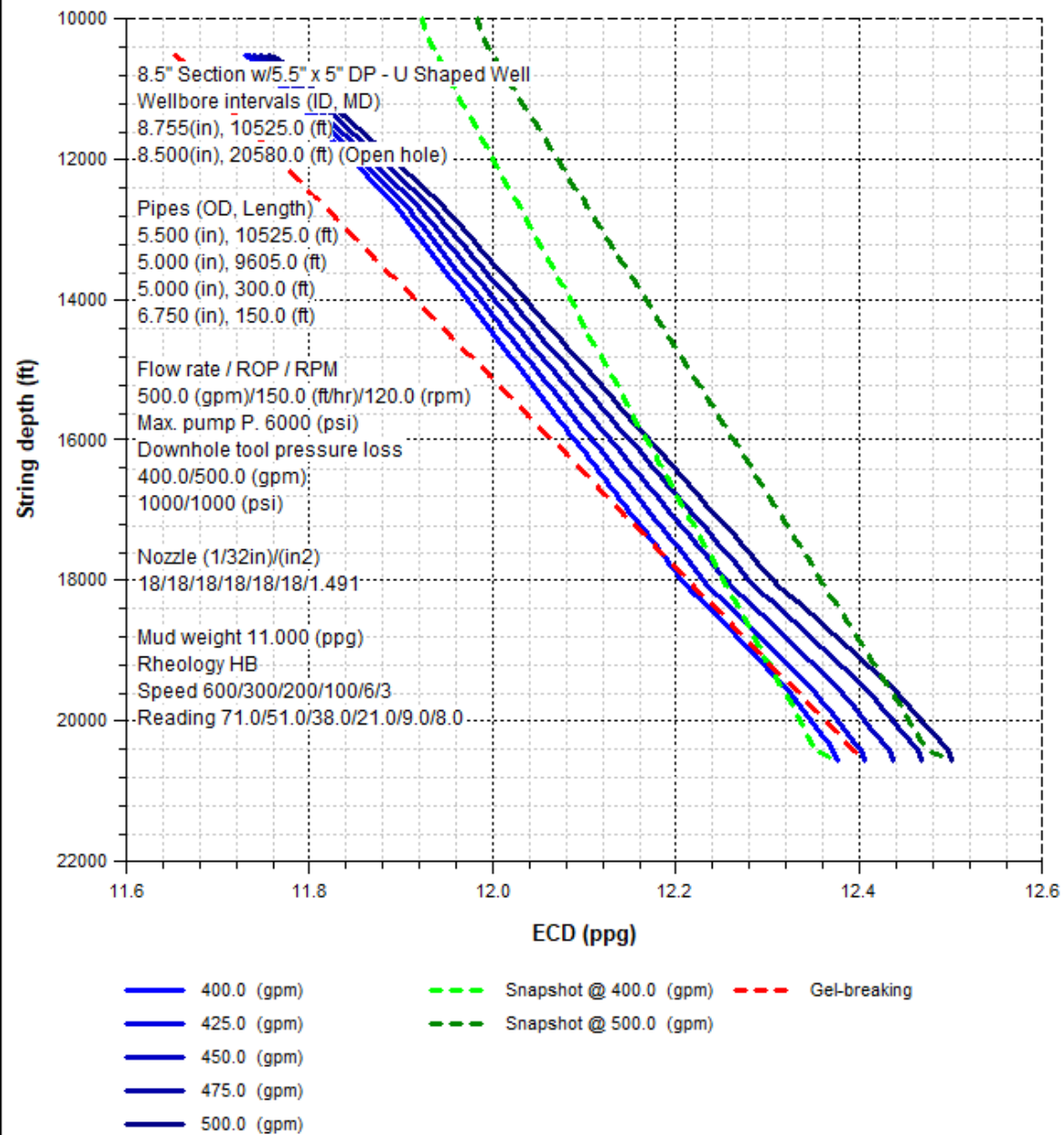
Common Land Rig TDS Can Be Used Without Issue

Drill: Maximum WOB before buckling vs. string depth



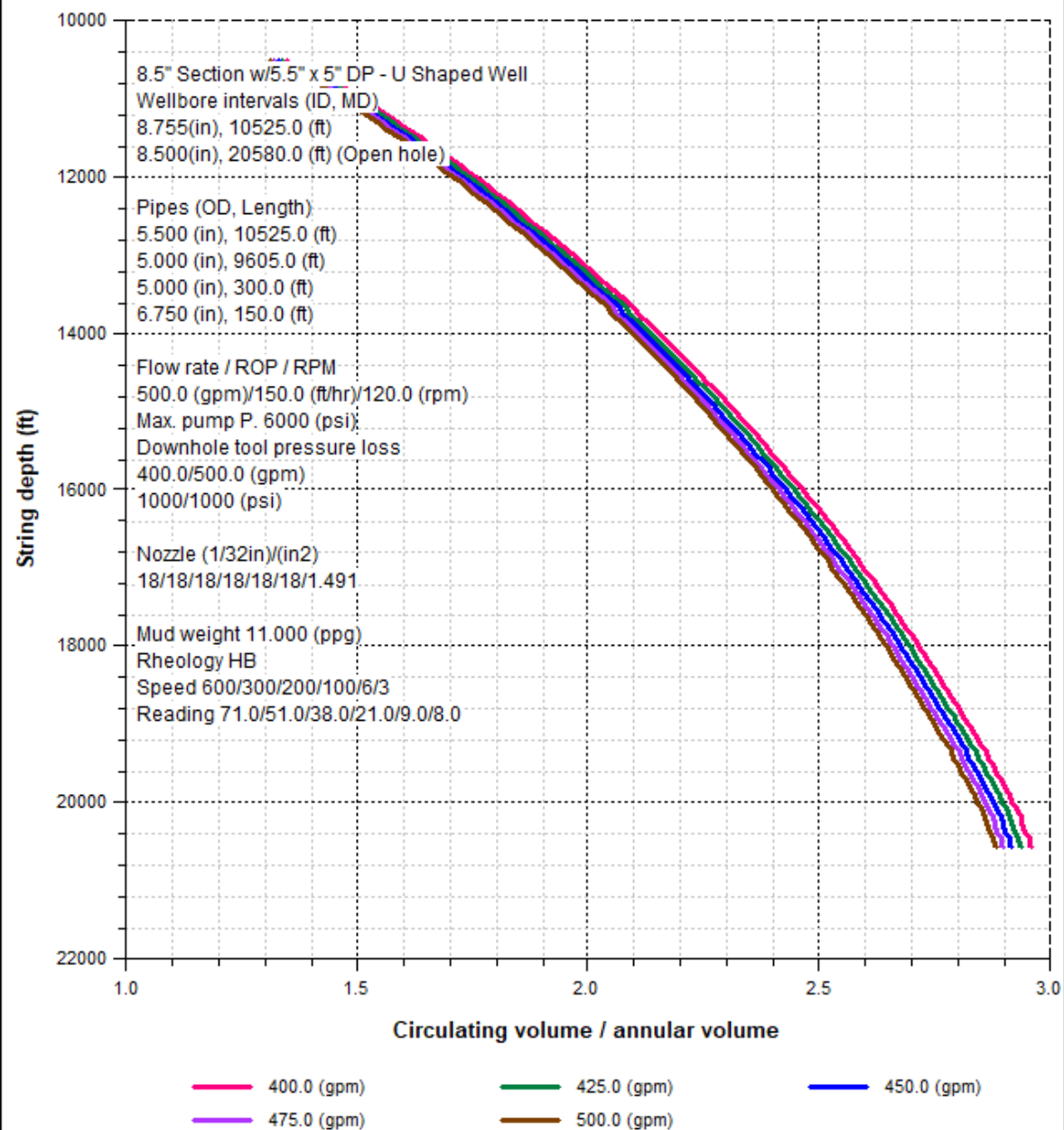
No major WOB issues – Rotary Drilling

ECD @ bit vs. string depth



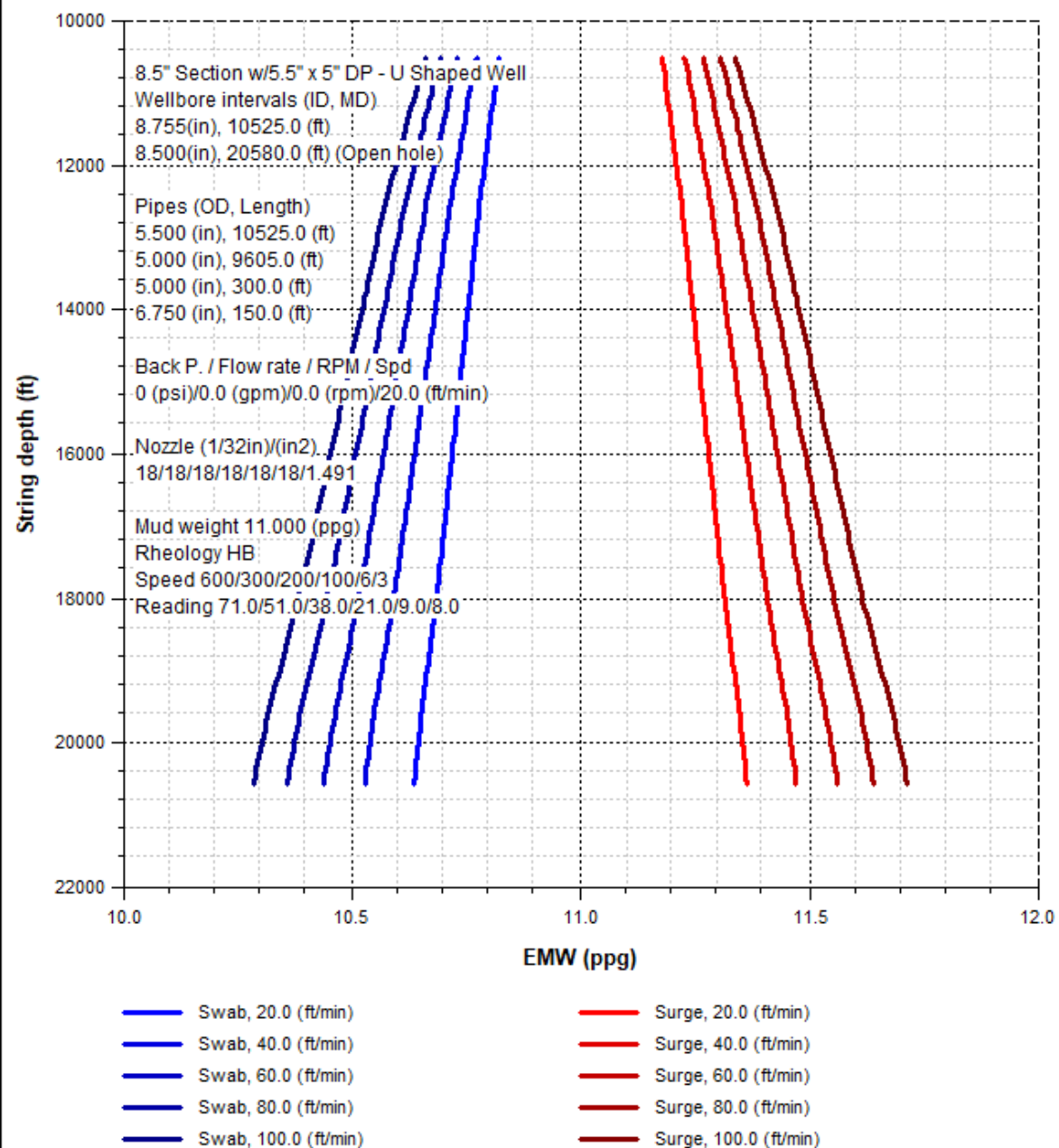
No ECD Issues

Circulating volume vs. string depth



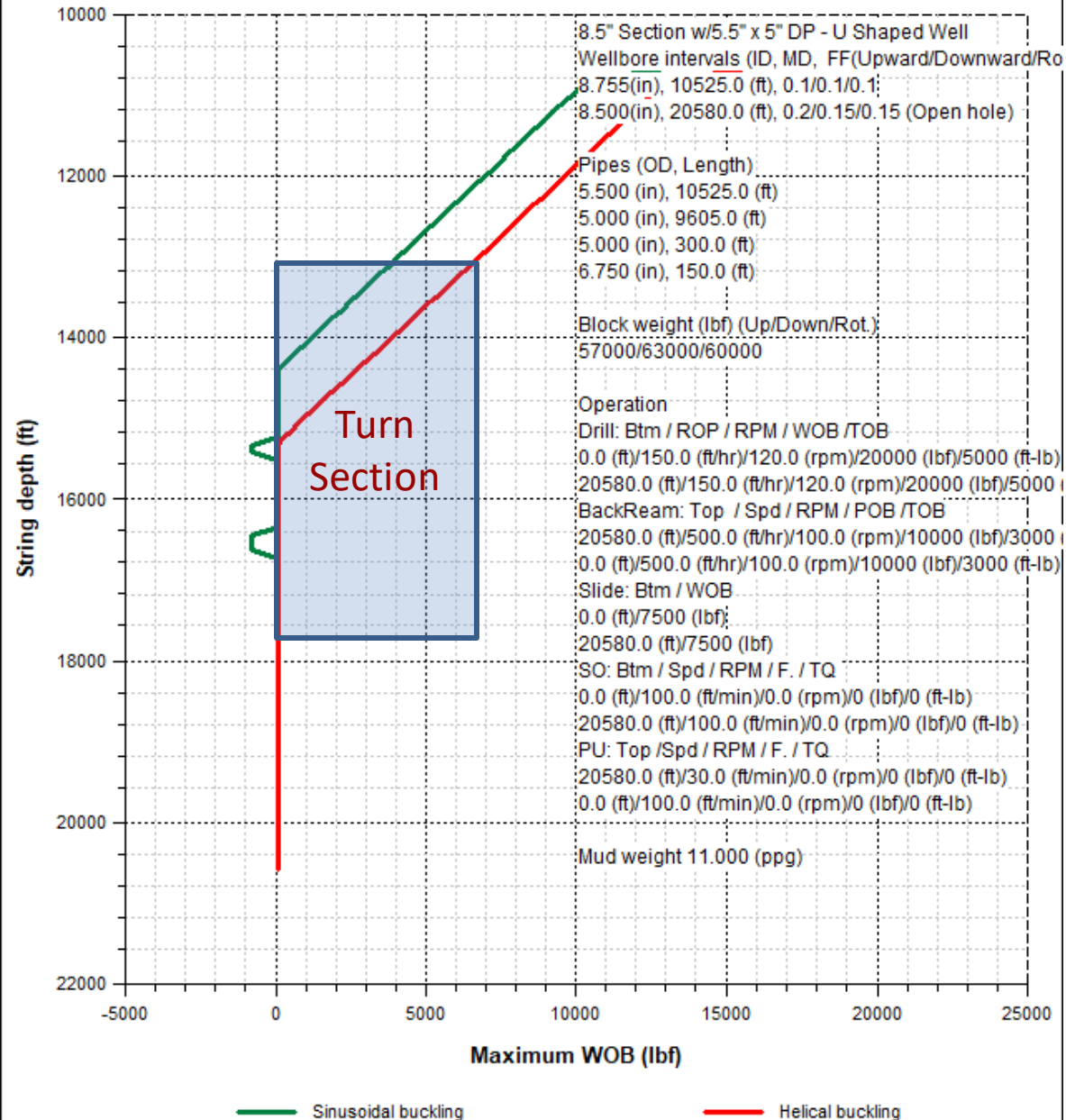
**No Unusual Hole Cleaning Issues
 Expected w/500 GPM and No/Minor
 Cavings**

Closed: EMW @ bit vs. string depth



No Expected S/S Issues

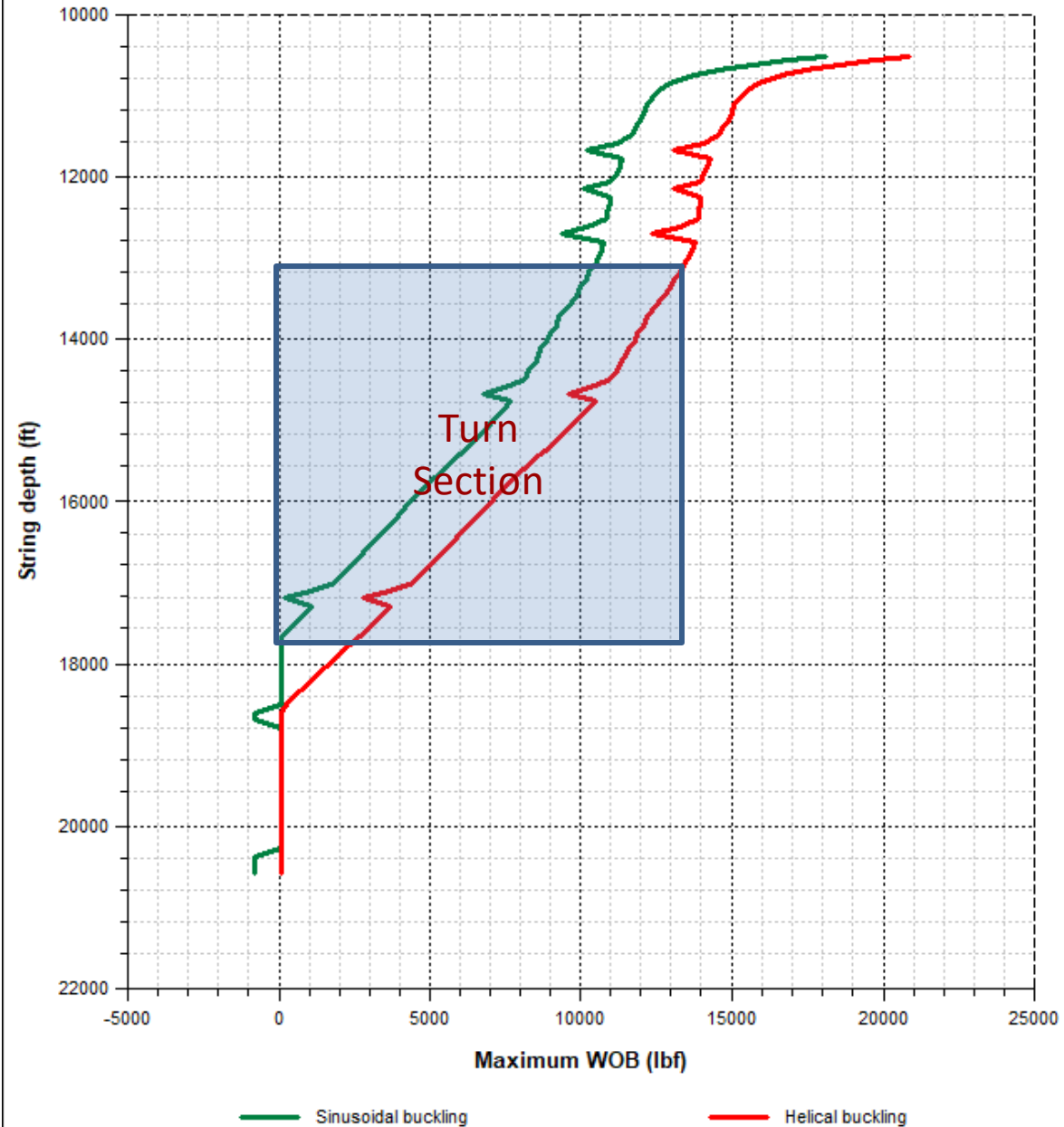
Slide: Maximum WOB before buckling vs. string depth



Do you need an RSS, or could you squeak it down with a motor? Well, let's take a look and judge for yourself if you want to take the time to slide.

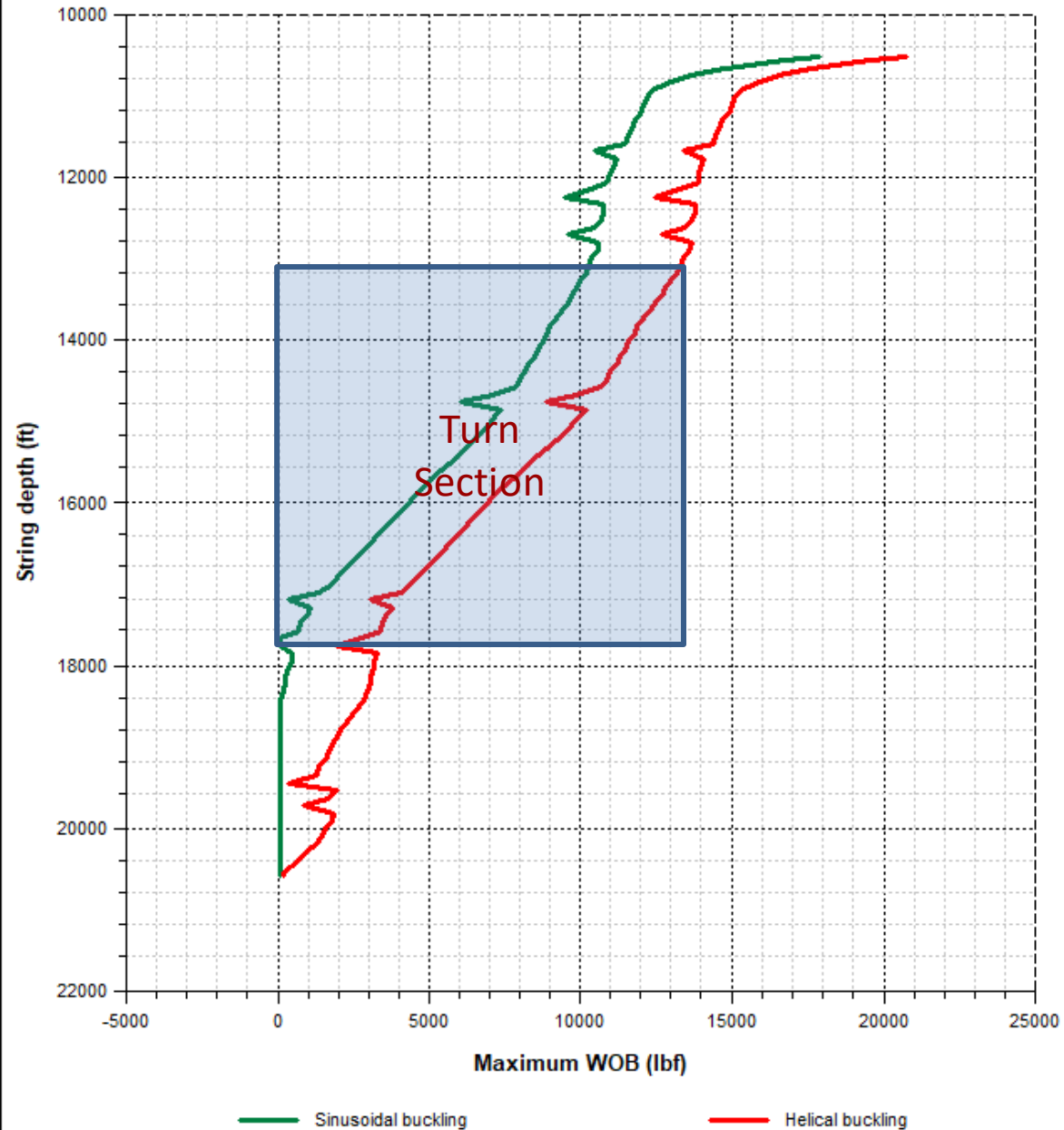
No Downhole Vibratory/Oscillation Tools in String

Slide: Maximum WOB before buckling vs. string depth



**Single Vibratory Tool 2800' Back
.15 SO FF Assumed**

Slide: Maximum WOB before buckling vs. string depth



**Dual Vibratory Tools 2800' + 7800' Back
.15 SO FF Assumed**