

Tug Hill Operating

R.D.H. Trust # 1-19H
Comanche County, Kansas

Patterson 172
As Drilled Update #8



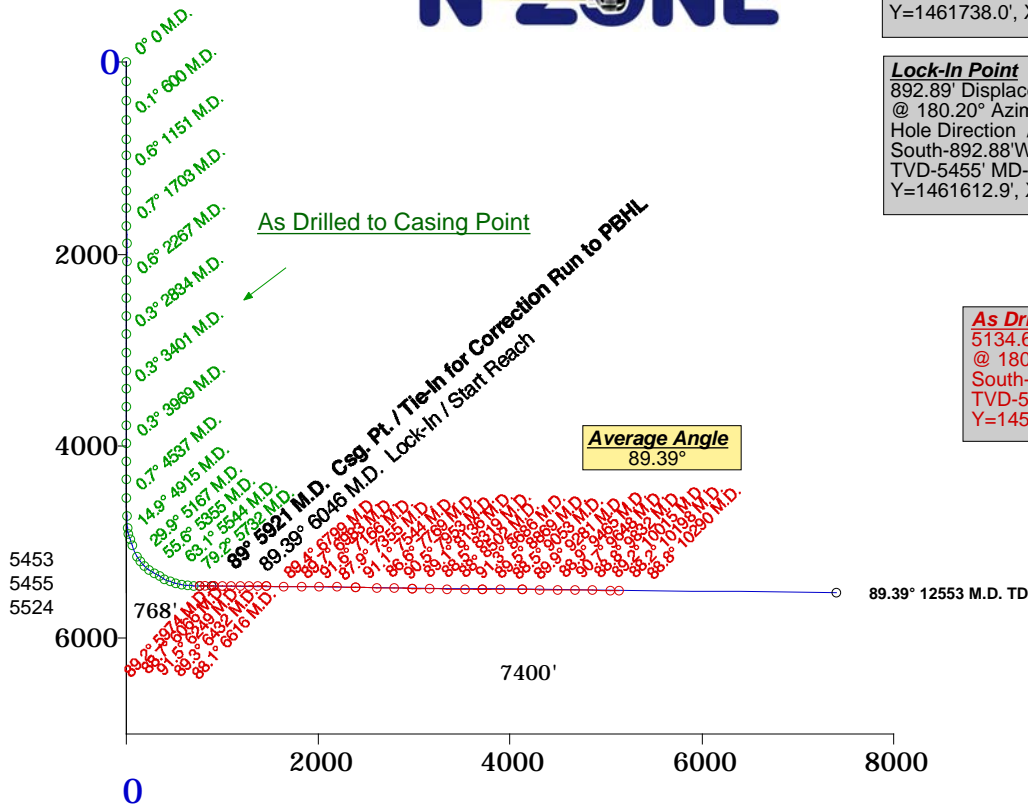
Horizontal Plan
1" = 5000'



Surface Location
Y=1462505.77'
X=1076500.88'
NAD 83

Vertical Section
1" = 2000'

Plane of Proposal
180.36° Azimuth



Average Angle
89.39°

Proposed Tie-In
767.77' Displacement from S/L
@ 180.26° Azimuth from S/L
Hole Direction / 179.20° Azimuth
South-767.76' West-3.52' of S/L
TVD-5453' MD-5921'
Y=1461738.0', X=1076497.4'

Lock-In Point
892.89' Displacement from S/L
@ 180.20° Azimuth from S/L
Hole Direction / 180.39° Azimuth
South-892.88' West-3.07' of S/L
TVD-5455' MD-6046'
Y=1461612.9', X=1076497.8'

As Drilled
5134.65' Displacement from S/L
@ 180.37° Azimuth from S/L
South-5134.55' West-33.23' of S/L
TVD-5506' MD-10290'
Y=1457371.22', X=1076467.65'

Proposed BHL
7399.69' Displacement from S/L
@ 180.36° Azimuth from S/L
South-7399.54' West-47.13' of S/L
TVD-5524' MD-12553'
Y=1455106.2', X=1076453.7'

