Reynolds Number is defined by

 $Re=\frac{ρ\left[\frac{kg\_{m}}{m^{3}}\right]q\left[\frac{m^{3}}{s}\right]}{μ\left[\frac{kg\_{m}}{m.s}\right]r\_{w}\left[m\right]}$ (1)

where

 $ρ\left[\frac{kg\_{m}}{m^{3}}\right]=ρ\left[\frac{lb\_{m}}{ft^{3}}\right]×\frac{0.4536}{1}\frac{kg}{lb\_{m}}×\frac{3.2808^{3}}{1}\frac{ft^{3}}{m^{3}}$ (2)

 $q\left[\frac{m^{3}}{s}\right]=q\left[\frac{bbl}{d}\right]×\frac{5.6146}{1}\frac{ft^{3}}{bbl}×\frac{1}{3.2808^{3}}\frac{m^{3}}{ft^{3}}×\frac{1}{86400}\frac{d}{s}$ (3)

 $μ\left[\frac{kg\_{m}}{m.s}\right]=μ\left[cp\right]×\frac{10^{-3}}{1}\frac{\left(\frac{kg\_{m}}{m.s}\right)}{cp}$ (4)

 $r\_{w}\left[m\right]=r\_{w}\left[ft\right]×\frac{1}{3.2808}\frac{m}{ft}$ (5)

Substitute (2-5) into (1), obtain

 $Re=0.097\frac{ρ\left[\frac{lb\_{m}}{ft^{3}}\right]q\left[\frac{bbl}{d}\right]}{μ\left[cp\right]×r\_{w}\left[ft\right]}$ (6)

