**Predicting the Density and Viscosity of Supercritical CO2 Applet**

**by John R. Victorine**

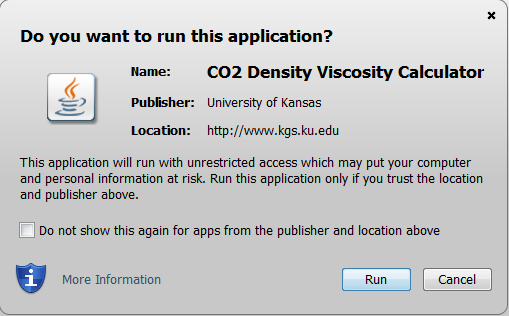
**Introduction**

This applet allows the user to import a comma delimited file containing columns of pressure (psia) and temperature (oC) for supercritical carbon dioxide which will then create a comma delimited file with the contents of the first file with two new columns containing the density (kg/m3) and viscosity (cp). The user only needs to identify the header section, the start of the data and the pressure and temperature columns. The program will then parse the pressure and temperature from the file and compute the density and viscosity using Liang-Biao Ouyang1 equations.

This program uses the equations created by Liang-Biao Ouyang1 paper to predict the density and viscosity of supercritical carbon dioxide under conditions in carbon capture and sequestration operations. Liang-Biao Ouyang cites examples between the pressures of 1100 to 9000 psia and at temperatures between 40 to 100 deg C.

This method uses the Java BigDecimal Math package to compute the density and viscosity.

**NOTE: Pressure and Temperature must be in units of psia and degree Celsius.**

To access this Predicting the Density and Viscosity of Supercritical CO2 Applet, go to the web address, <http://www.kgs.ku.edu/PRS/Ozark/CO2/>. A "Warning - Security" Dialog will appear *(“Do you want to run this application?”*). The program has to be able to read and write to the user’s PC. The program does not save your files to KGS, but allows you to access the KGS for well information. The program does not use Cookies or any hidden software. The blue shield on the warning dialog is a symbol that the Java web app is created by a trusted source, which is the University of Kansas. Select the "Run" Button, which will display the Seismic Image Icon Button in the “Enter” Panel illustrated below,

References:

**(1) New Correlations for Predicting the Density and Viscosity of Supercritical Carbon Dioxide Under Conditions Expected in Carbon Capture and Sequestration Operations by Liang-Biao Ouyang The Open Petroleum Engineering Journal, 2011, 4, 13-21**

