
# Risk Reduction for Plays and Prospects Using Quantitative Show, Seal and Migration

**Date:** Monday 5th March 2012 | **Instructor:** John Dolson | **Location:** Business Design Centre

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**Content:**

**Who Should Attend**
Geologists, geophysicists and engineers wanting to learn more how to deal quantitatively with oil show data, prediction of height above free water, understanding tools for detecting migration pathways, breached oil fields (residuals), waste zone, by-passed pay and transition zone shows. The course emphasizes using all your tools (seismic, logs, cuttings, fluid inclusions, etc.) to evaluate dry holes, your drilling well or fields to look for the next successful location.

**Objectives & Content**
The participants will learn to look at SW and oil show information quantitatively to determine a position in a trap, paleostructural accumulation or migration pathway. They will learn to appreciate multiple tools for understanding how to quantitatively evaluate traps and migration pathways. A variety of GIS and Petroleum Systems modeling software will be reviewed to demonstrate predictive models of migration and entrapment using seals, potentiometric surfaces and faults to define potential new traps. Methods of quantitatively calibrating test and show data to the migration models will be emphasized.

Topics will include:

- Trap types
- Fault, Capillary and Pressure seals and the number required for different traps
- Capillary pressure
- relative permeability
- pseudo-capillary pressure curves from por/perm data
- flow units
- Winland pore throat analysis

We cover the basics of pressure plots emphasizing seal and pressure regressions recognition. We teach how to recognize and differentiate continuous phase, residual, dissolved hydrocarbon and source rock while drilling shows. We touch on seismic DHIs and focus on new techniques for capturing show data such as fluid inclusion stratigraphy, isotubes, head space gas and cuttings. The course ends with a demo of converting a paleogeographic map to a seals map with/without fault seals and then running vertical and lateral migration models to predict the location of fault and stratigraphic traps.