



ADVANCED GOHFER TRAINING COURSE AGENDA (3 Day)

GOHFER v9.0 – Multi-Well Fully 3D Geo-Mechanical Model

Objective: This course is intended for **EXPERIENCED GOHFER USERS ONLY**. This course will discuss and demonstrate the new GOHFER v9.0 Multi-Well Fully 3D Geo-Mechanical Model. This course assumes the students have received previous GOHFER training and are proficient with the current customer version. Basic/beginner topics and other modules will not be covered.

Day 1: - Vertical & Horizontal Transverse Shale Model & Production Example

Introductions

Vertical Class Example

Vertical Well Project Workflow

Horizontal Transverse Shale Model & Production Example

3D Surveys

LAS (Shale / Carbonate Log Processing)

Longitudinal vs. Transverse Fractures

Geosteering

Breakdown Pressure

Fracture Orientation

Breakdown Gradient / Breakdown Angle

Perforations

Interference / Stress Shadowing

Single Transverse stage (multiple clusters)

Multiple Transverse stages (individual treatments)

Stress Anisotropy

Ball Drop Transverse stages (single treatment / multiple stages)

3D Grid Output

Longitudinal / Transverse production parameters

Day 2: AM - Multi-Well Fully 3D Geo-Model

3D Example 1 – Multi-Well Model w/ Reference Logs only (No Geo-Model)

Site & Well Location Entry

Log Processing & Integration

Grid Setup & Map View

3D Example 1 – Add 2D Surface Map to Previous Example

Grid Setup & Map View

3D Example 1 – Add 3D Geologic Model to Previous Example

Create Core to Replace Reference LAS

LAS Mapping from Core (Full 3D Distribution vs. Reference LAS (Layer Cake))

Import Geologic Model / Requirements

Offset Depletion / Well Bashing

Zipper frac simulations

Day 3: - Multi-Well Fully 3D Geo-Model

Fully 3D Geo-Model Example

Individual Multi-Well Fully 3D GeoModel Class Exercise

Wrap Up - Summary and Conclusions