

# Reservoir Simulation



NETHERLAND, SEWELL & ASSOCIATES, INC.



**NSAII** 

One of the **most respected** names  
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**Expertise in**  
Reservoir Simulation

Numerical reservoir simulation is a sophisticated evaluation technique that includes material balance, fluid flow, reservoir heterogeneity, well interference, wellbore hydraulics, and facility characteristics in its predictions of reservoir performance. Simulation can be a valuable tool in many evaluations.

Understanding and accurately modeling the historical production behavior of a field has numerous benefits and applications, such as significantly improving future predictions, accounting for uncertainty risks, and helping decide between various development options.

Experience has taught us that in order for reservoir simulation to be a useful evaluation tool, it must be implemented by an experienced, multi-functional team of geoscientists and reservoir engineers. The Reservoir Simulation team at Netherland, Sewell & Associates, Inc. (NSAI) is comprised of experts who have been working with simulation tools for over 20 years and have been evaluating reservoirs around the world for over 25 years.

### **Reservoir Simulation Experts**

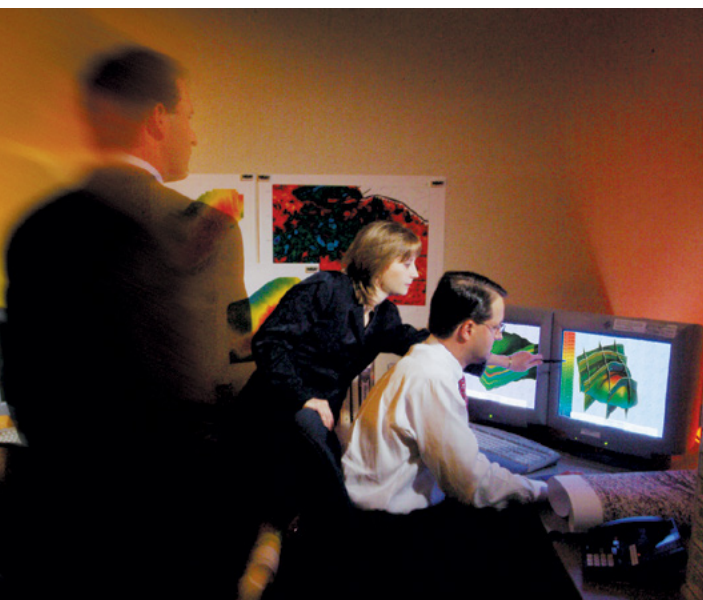
**Dave Adams** - Reservoir/Simulation Engineer - Dallas

**Mike Begland** - Reservoir/Simulation Engineer - Dallas

**John Cliver** - Reservoir/Simulation Engineer - Houston

**Derek Newton** - Reservoir/Simulation Engineer - Houston

**Chris Tucker** - Reservoir/Simulation Engineer - Dallas



## Methodology

We use black oil and compositional models in our studies, and our experts are proficient with a variety of simulation software applications including Schlumberger Eclipse®, Halliburton Landmark's Nexus, and Computer Modeling Group's IMEX and GEM. No job is too large—our history match models have included fields with over 1,200 wells and 80 years of history. Be it a single-well evaluation, a mechanistic model, or a full-field history match, our experts are skilled in all aspects of reservoir simulation. And whether we are auditing an existing model, revising a client's model to improve results, or creating a completely new model, we tailor each evaluation to meet the client's needs. By working together, our team designs models with realistic reservoir characteristics that answer the questions central to a client's objectives. Our simulation projects have been used by clients to justify wells and injection projects—proof that the economic value of simulation work greatly exceeds the required investment.

## Selected Reservoir Simulation Clients

Our simulation clients include small independent oil producers, large international oil companies, and national oil companies around the world.

- **AIG Financial Products Corp.**
- **BEB Erdgas und Erdöl GmbH**
- **Devon Energy Corporation**
- **ExxonMobil**
- **Freeport-McMoRan Inc.**
- **Hunt Petroleum Company**
- **International Finance Corporation**
- **Marathon Oil Corporation**
- **Noble Energy Inc.**
- **Northern Natural Gas Company**
- **Pemex Exploración y Producción**
- **Ras Laffan Liquefied Natural Gas Co. Ltd.**
- **Shell Exploration & Production Company, Inc.**
- **Sonangol E.P.**
- **U.S. Department of Energy**



## Selected Reservoir Simulation Projects

Our teams have been involved in projects all over the world. The list below represents only a few of those projects.

- Aguaytia Field, Peru
- Bermudez Field Complex, Mexico
- Cantarell Field, Mexico
- Condor Field, Chile and Argentina
- Cunningham Gas Storage Field, Kansas
- Elk Hills Field, California
- Goldenstedt-Visbek Field, Germany
- Jujo-Tecominoacán Field, Mexico
- Mobile Bay Field, Alabama
- North Field, Qatar
- Numerous Deepwater GOM Fields
- Redfield Gas Storage Field, Iowa

Our simulation projects have been used successfully in the following areas:

- Equity Redeterminations
- Expert Witness Testimony
- Field Development Optimization Studies
- Gas Storage Field Studies
- Production Rate Sensitivity Studies
- Project Finance Support
- Reserves Certifications
- Unconventional and Tight Reservoirs Studies

Contact NSAI today for more information or to arrange a meeting. We will gladly show you how our Reservoir Simulation services may be tailored to your particular needs at a competitive price.

Our clients get the NSAI name and our team of experts. We think they get the very best.



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