# CAESAR

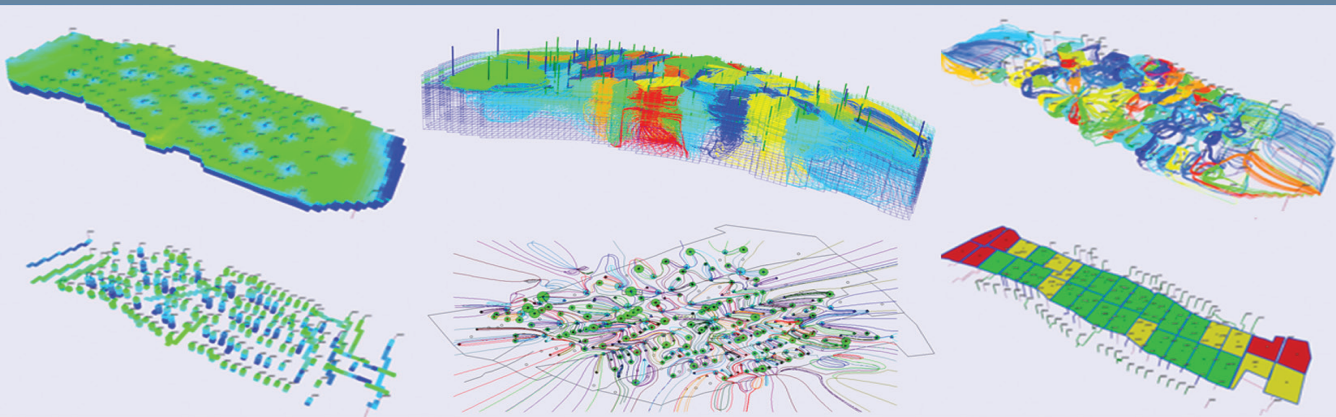## WELL AND RESERVOIR MANAGEMENT APPLICATION

### FEATURES:

- STREAMLINE ANALYSIS

- SOPHISTICATED 3D VISUALIZATION

- COMPUTATION AND DISPLAY OF OIL, GAS, WATER, AND TOTAL FLUXES

- INJECTION ALLOCATION, PIE CHART GENERATION, AND EFFICIENCY ANALYSIS

- WORKS WITH ANY RESERVOIR SIMULATOR AND PRODUCTION DATABASE

- INTEGRATED PLATFORM WITH POWERFUL ANALYTICS MODULE

- BUBBLE MAPS, TRAFFIC MAPS, DECLINE CURVES, AND HISTORY MATCH ANALYSIS

### BENEFITS:

- INTEGRATE PRODUCTION AND SIMULATION DATA

- HANDLE THOUSANDS OF WELLS, INCLUDING HORIZONTAL AND MULTI-LATERAL

- PERFORM FAST OPTIMIZATION AND DESIGN OF WATERFLOODS AS WELL AS WAG AND STEAM INJECTIONS

- IDENTIFY AND QUANTIFY THE IMPACT OF WORKOVERS

- DETERMINE INJECTORS CAUSING POOR SWEEP AND DETERMINE CANDIDATES FOR CONVERSION

- IDENTIFY KEY INJECTORS FOR EOR INJECTION



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**CAESAR** is a unique well and reservoir management application that can assist in optimizing field development and maximizing hydrocarbon resource value. CAESAR works with any reservoir simulator (Eclipse, FlowSim, VIP) as well as any production database. It has powerful capabilities for well and reservoir management, including locating potential infill drilling sites for additional reserves, history matching, and waterflood/WAG implementation, as well as identification of recompletions, perforations, and shut-in candidates. CAESAR is designed to visualize flow paths, compute allocation factors, assess pattern performance, and optimize injection based on injector-producer connections. It can be used to generate and analyze streamlines, quantify fluxes, and visualize the performance of a reservoir in 3D. CAESAR uses proprietary technology that allows the user to handle compressive fluid flow, gas cap, aquifer influx, and geologic heterogeneities like thief zones and faults with high accuracy. It can help in improving sweep efficiency and pressure balancing. CAESAR provides a complete integration framework to achieve reservoir optimization and production enhancement, using both production data and reservoir simulation.

| Analyze Flow Paths and Optimize Sweep | Development and Performance Analysis |
|---|---|

- □ Visualize streamlines between wells
- □ Assess pattern balance
- □ Locate unswept oil inside a reservoir
- □ Identify out-of-zone injection and sources of high WOR/GOR
- □ Locate potential infill well locations

- □ Compare field recoveries to analytic predictions
- □ Assess the performance of waterflood patterns
- □ Quantify and locate bypassed and remaining oil in waterflood patterns
- □ Rank patterns and identify opportunities with traffic pattern maps
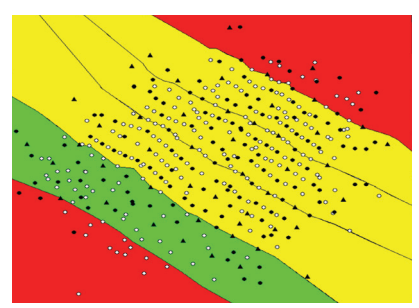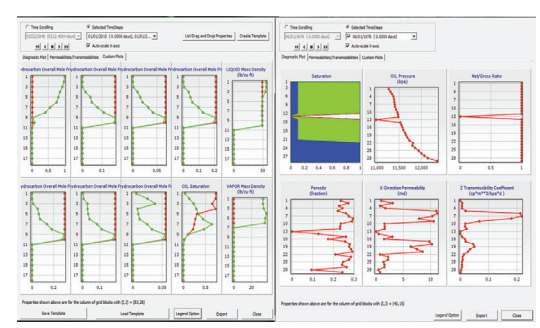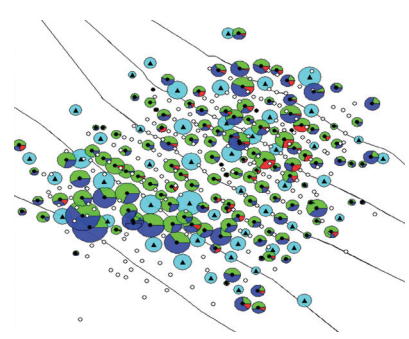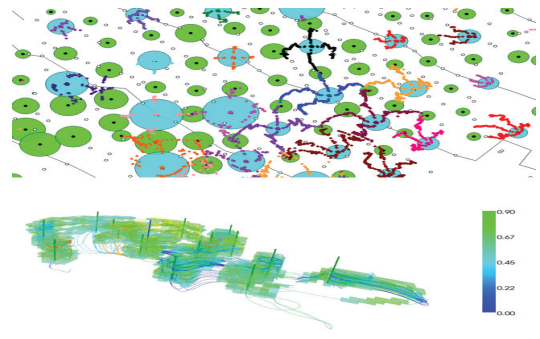
## Waterflood Analysis

□ Create standard waterflood performance plots to evaluate waterflood and identify problems and opportunities

□ Analyze ongoing field development using bubble maps and traffic pattern maps
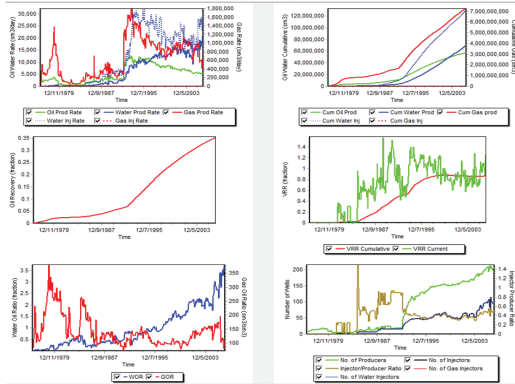


## WAG Analysis

□ Field and well level WAG Analysis using standardized plots

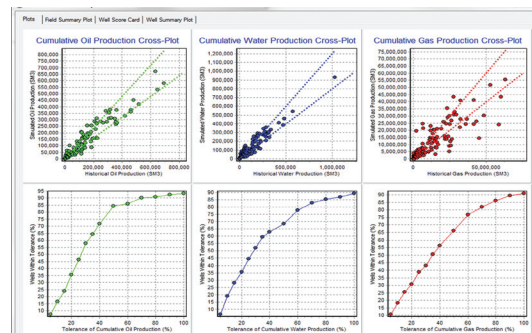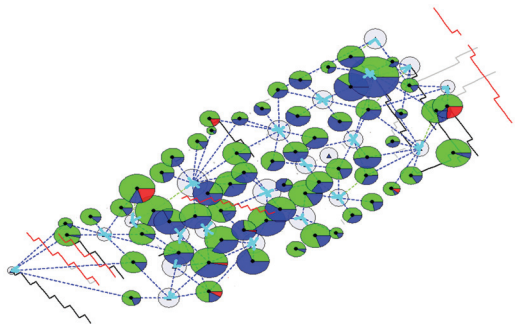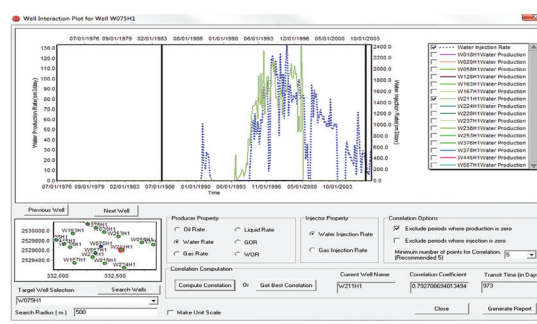□ Quick diagnosis of WAG performance and identification of optimization opportunities
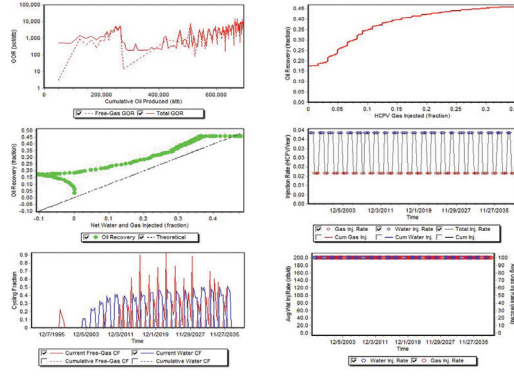


## Allocation Analysis and Fluid Management

□ Estimate injection well efficiencies

□ Calculate and visualize well connections

□ Manage fluid injection and withdrawal for optimized production
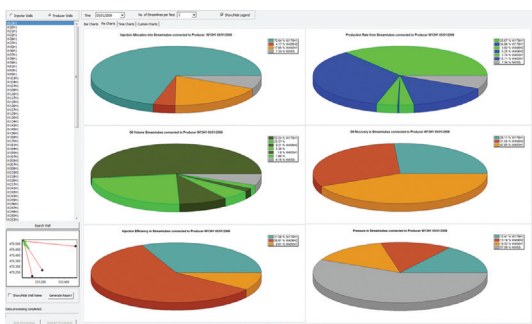


## Graphs and History Match Analysis

□ Create field, sector, well, and completion level performance plots

□ Perform analysis and quantification of history matches

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