

CarbOxSat™ Model

This interpretive model is specifically designed for saturation analysis of a single well based on Halliburton C/O logs. The CarbOxSat model is used for interpreting oil saturation in reservoirs where formation water salinity is fresh, mixed, or unknown.

CarbOxSat Model Features

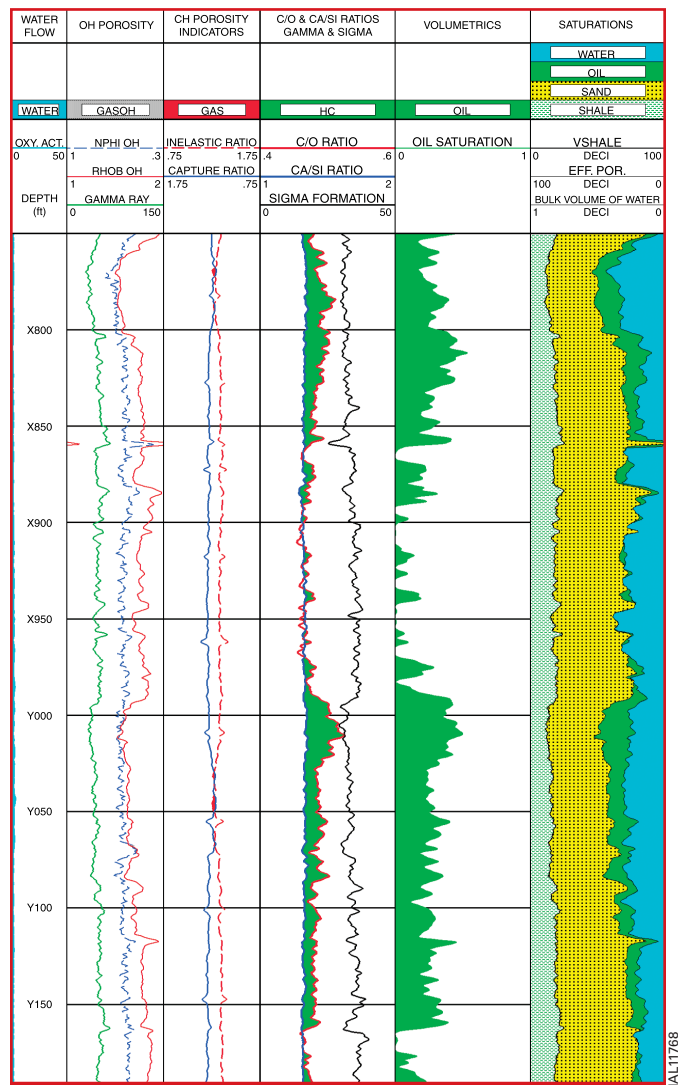
The CarbOxSat model contains the following features:

- Saturation interpretation of all Halliburton formation carbon/oxygen data
- Halliburton's lithology-compensated Delta-C/O or traditional overlay method
- Inclusion of open hole porosity and clay volume analyses
- Stand-alone analysis using porosity and clay indicators from cased hole monitoring tools or any available source

CarbOxSat Model Benefits

The CarbOxSat model includes the following benefits:

- Determines volume of hydrocarbons produced from the reservoir and allows estimates of remaining reserves
- Enhances reservoir production knowledge
- Allows better understanding of hydrocarbon drainage efficiency from the reservoir
- Identifies potential hydrocarbon production zones that have not been drained or were bypassed or previously undiscovered
- Pinpoints changing oil-water and gas-oil contacts through time-lapse monitoring
- Finds flooded or swept zones



Track 1 contains the open hole Neutron and Density porosity curves, as well as the Gamma Ray curve. Track 2 contains the cased hole porosity indicators of a pseudo- Density curve from the inelastic ratio, and a pseudo- Neutron porosity from the capture ratio. Track 3 contains the Delta-C/O envelope indicating the C/O interpretation. Track 5 shows the total hydrocarbon saturation, and Track 6 is a volumetrics track containing the volume of shale, effective porosity, and the bulk volume of water to provide water and hydrocarbon saturation.

Associated Answer Products and Pre-Processing Software

- Pulse-height spectral gain stabilization and processing (RMTERL)
- Multi-pass stacking (RMTEAVG)
- Environmental corrections (RMTECOR)
- SigmaSat™ – similar model for saturation analysis of neutron decay logs
- TripleSat™ – similar family of models utilizing both carbon/oxygen and neutron decay logs, for use where three fluids are present in the reservoir

CarbOxSat™ Model

Inputs	Clay Volume, Total Porosity, Effective Porosity, Environmentally Corrected Carbon/Oxygen and Calcium/silica Ratios
Outputs	Individual and Combined Clay Volume, Total Porosity, Effective Porosity, Capture-Ratio Porosity, Inelastic Ratio Porosity, Volume of Oil, Total and Effective Oil Saturations, Water Volumes