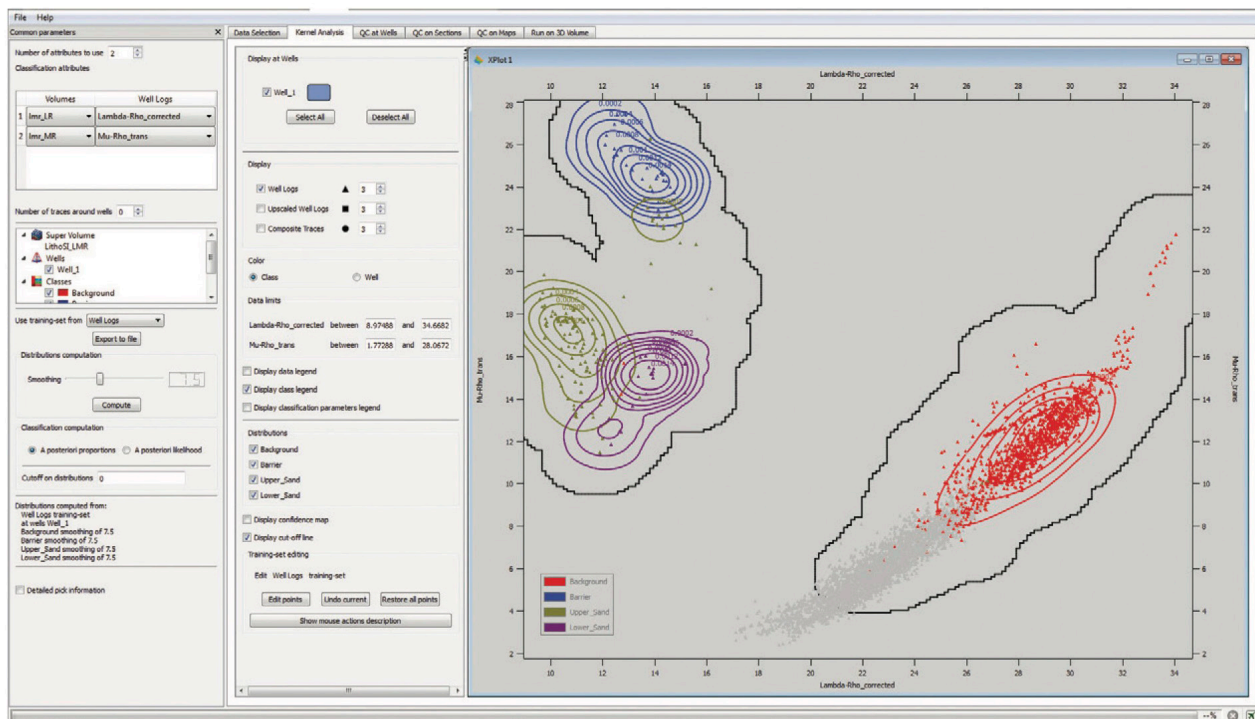


## Lithologic Classification Module

**LithoSI** quantifies uncertainty in seismic lithology and fluid prediction. Using multiple elastic parameters from the inversion of seismic data, **LithoSI** performs a supervised Bayesian classification to deliver probability cubes of predicted lithology or rock properties. The integrated inversion and classification workflow gives users superior definition of lithology classes, and allows more accurate assessment of lithology probabilities.



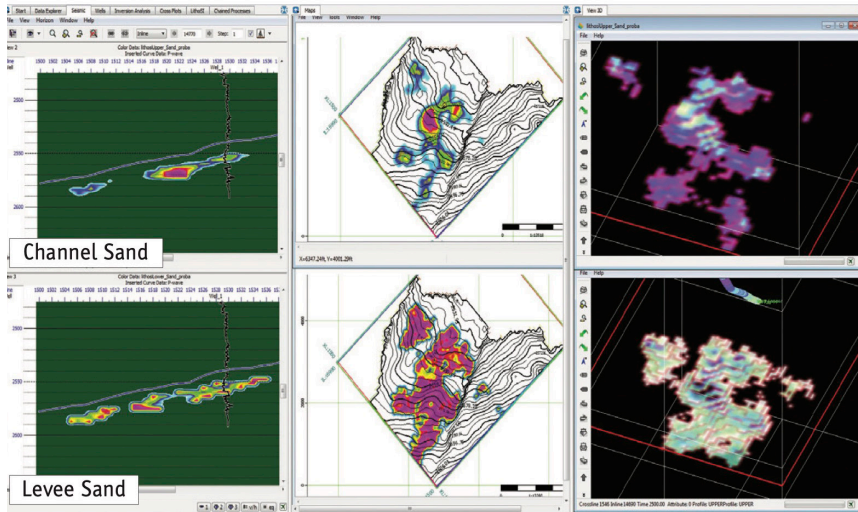
### LithoSI Analysis

**LithoSI** is able to design complex multi-variate probability distribution functions to ensure that lithologies are properly classified, and their probabilities accurately defined. The resulting litho-probability cubes enable the reservoir engineer to make a full assessment of the uncertainty in the range of net-pay scenarios and reduce the production risks. A composite cube of the most probable facies is an additional way to view the results, and a powerful tool for seismic reservoir interpretation:

- Lithology prediction using 2, 3 or 4 seismic attributes
- Classified log generation from cross-plot zones
- Kernel analysis using:
  - Well logs
  - Upscaled well logs
  - Composite trace

**Benefits:**

- Superior definition of lithology classes
- More accurate assessment of lithology probabilities
- Stratigraphic framework facilitates interpretation
- Net-to-gross ratio maps from litho-classification
- 4D fluid classification using time-lapse seismic data



**HampsonRussell Lithology Prediction Options**

- Flexible technique using multiple elastic attributes
- Modeling of multi-variate probability density functions of arbitrary shape
- Solution for sparse well data using rock physics simulation
- Integrated inversion and classification workflow

**LithoSI Results**

The output volumes from **LithoSI** are Litho-Probability cubes for each classified facies, as well as a most probable facies cube.