

St. Louis Top Slope (Dip Angle) Map (Big Bow and Sand Arroyo Creek)

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**Cross Section Location Map** 





## Summary:

This poster is an illustration of the first phase to build an improved 3D stochastic model and simulation on St. Louis carbonate systems.

1. Seven lithofacies (six main lithofacies) were recognized and classified through the description of fifteen cored wells of three St. Louis oolite shoal reservoirs in Southwestern Kansas.

2. Sequence stratigraphic surfaces were recognized and picked from the cored wells.

3. The reservoir lithofacies, ooid skeletal grainstone, has distinctive petrophysical properties from other non-reservoir lithofaices.

4. Lithofacies were trained with digital logs (GR, Rt, PE and Porosity) to build neural network models from cored wells, and lithofacies were predicted in non-cored wells with these models;

5. Sequence Stratigraphic surfaces were picked in all non-cored well based on the log response.

# Further Work:

Additional work will include:

1. Stratigraphic surfaces will be input into RMS (Roxar) to build a 3D stratigraphic framework.

2. Object-based stochastic modeling (RMS) will be performed to build lithofacies models in three St. Louis oolite reservoirs to model the 3D external geometries of St. Louis oolite shoals.

3. Internal geometries of St. Louis oolite shoals will be illustrated by building 3D porosity and permeability distribution models using stochastic simulation (RMS).

4. Geostatistical models will be verified by inputting into a reservoir simulator and performing a production history match.

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Poster is Available @ Http://www.kgs.ku.edu/PRS/publication/2003/ofr2003-27