WESTCARB Annual Business Meeting

Update on the Geologic Model of the Kimberlina Area

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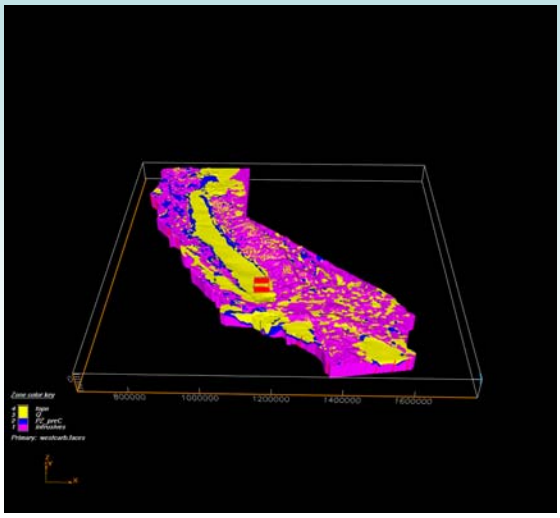
The 3D Geologic Model of the Kimberlina Area

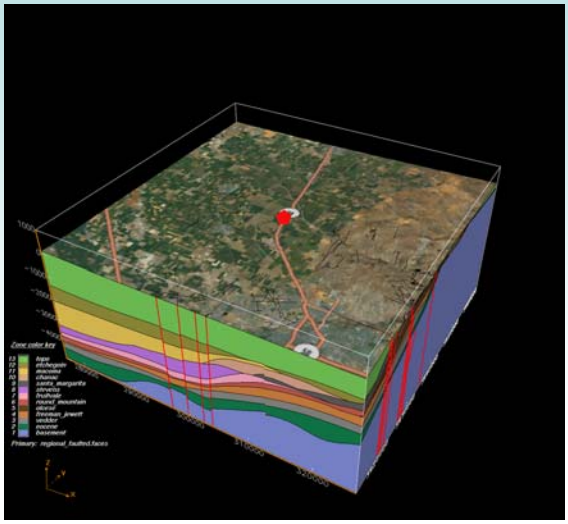
- The model is 5 0km x 50 km, centered on the Kimberlina power plant.
- This model contains 13 stratigraphic layers and >140 faults.
- The main source of data is DOGGR and most of the data were digitized from hardcopy.
- Wildcat exploratory wells were used for stratigraphic control between the oil and gas fields.
- EOG Resources provided well picks, as well as seismic interpretation, for some areas west of the Kimberlina site.
- Additional geologic information is needed to constrain geologic formation surfaces and fault locations.
- Oil and gas producers possess geologic data that would help refine the model.
- Westcarb could engage oil and gas producers to participate in the project.

The Kimberlina area geologic model is located in the southeastern corner of the San Joaquin basin.



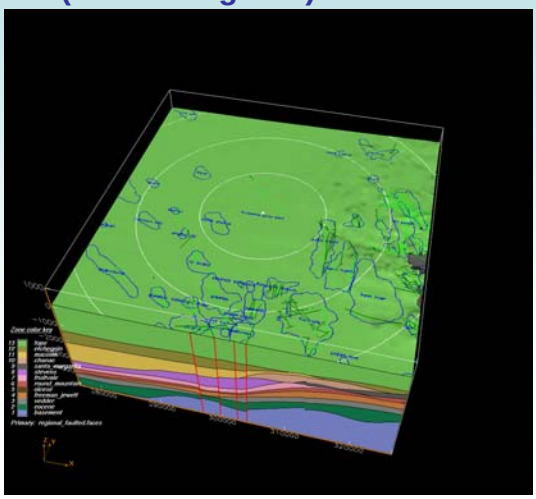
WEST COAST REGIONAL CARBON SEQUESTRATION PARTNERSHIP 3

The model is centered on the Kimberlina power plant, ~25 km northwest of Bakersfield, CA.

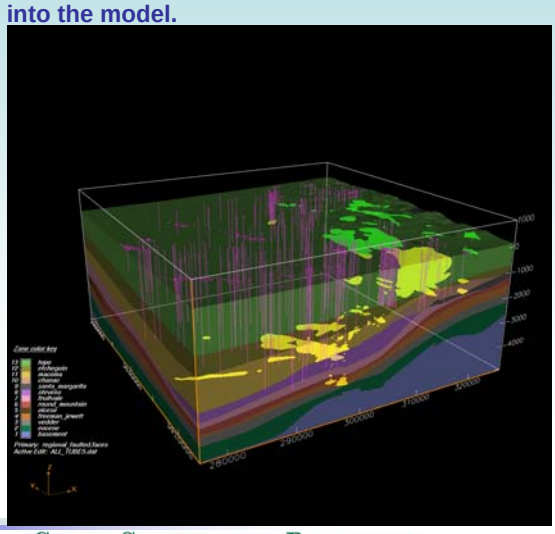


WEST COAST REGIONAL CARBON SEQUESTRATION PARTNERSHIP 4

This figure shows the distribution of oil and gas fields around the Kimberlina site. The inner circle has a 10 km radius. Faults have been projected to the surface of the model (shown in green).



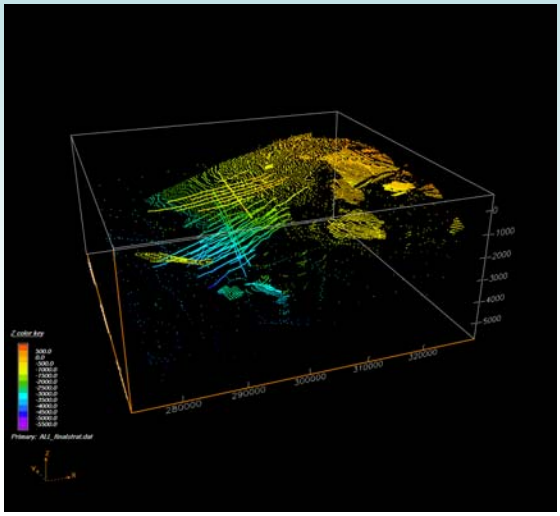
This figure shows the distribution of boreholes in the model, as well as the locations of oil and gas pools in the subsurface. The yellow pools are >800 m depth; the green pools are <800 m depth. There are >1100 boreholes and stratigraphic data from these wells have been incorporated into the model.



Click on the link below to view model animation

http://www.westcarb.org/videos/pools.mov

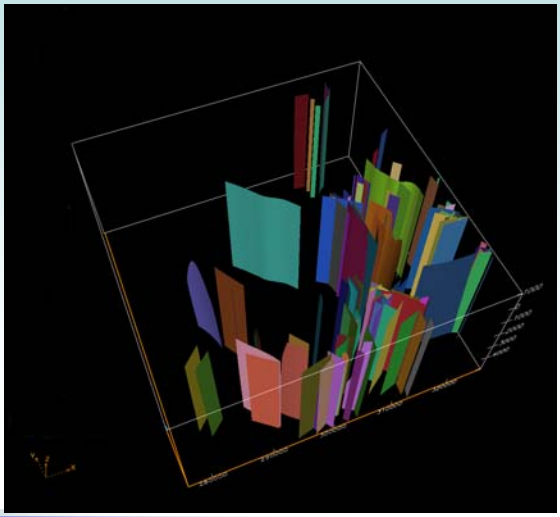
This figure shows the stratigraphic data that were used to generate the 3d model. Each point represents the top of a stratigraphic formation.



Click on the link below to view model animation

http://www.westcarb.org/videos/ALL_finalstrat.mov

This figure shows the distribution of faults, which are represented here as 2d grids cutting through the model. Most faults do not project to the land surface. Most of these faults are located in oil and gas fields, since that is where the data are available. There are >140 faults in this model.



Summary

- The geologic model of the Kimberlina area is a “living model”.
- Additional stratigraphic, structural, and geophysical data will be added in the future, when the data become available to the project.
- Physical property data can be added to the geologic framework to create a 3D property grid.
- Lithology, defined by well logs, will be added to “target models”, creating a lithofacies model.
- Lithofacies models show the spatial distribution of lithology at the target site.