

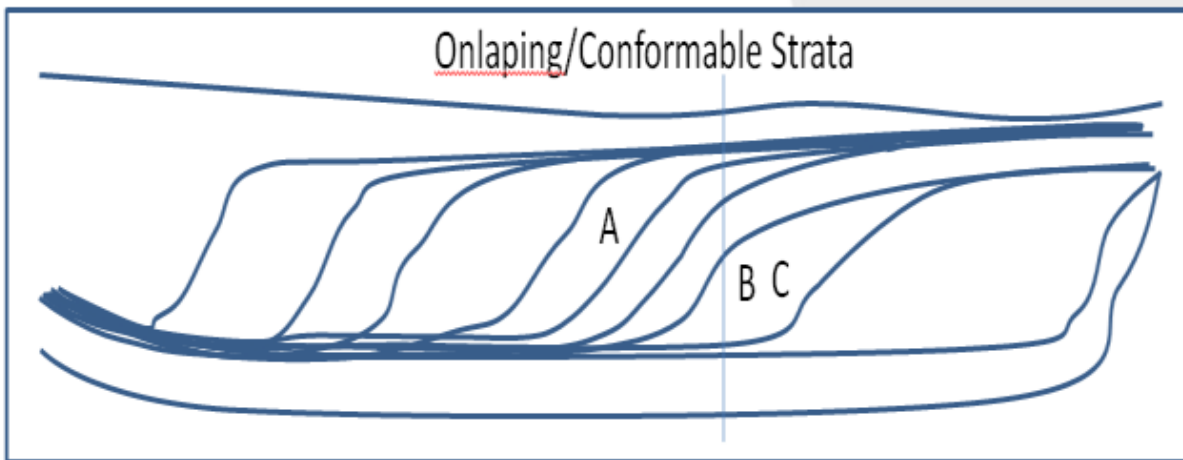


Modelling the Drainage of Wells and Frac Shadows in Montney Grimshaw

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Summary

The Montney Formation units B&C at Grimshaw (NW Alberta), were modelled using SMART4D to determine the remaining oil infill opportunities on the CanaMax lands. The Grimshaw Triassic Pool is on the subcrop edge of the Montney Formation in embayment graben complexes. It is characterized by siliclastic shoreface deposits (coarsening upward).

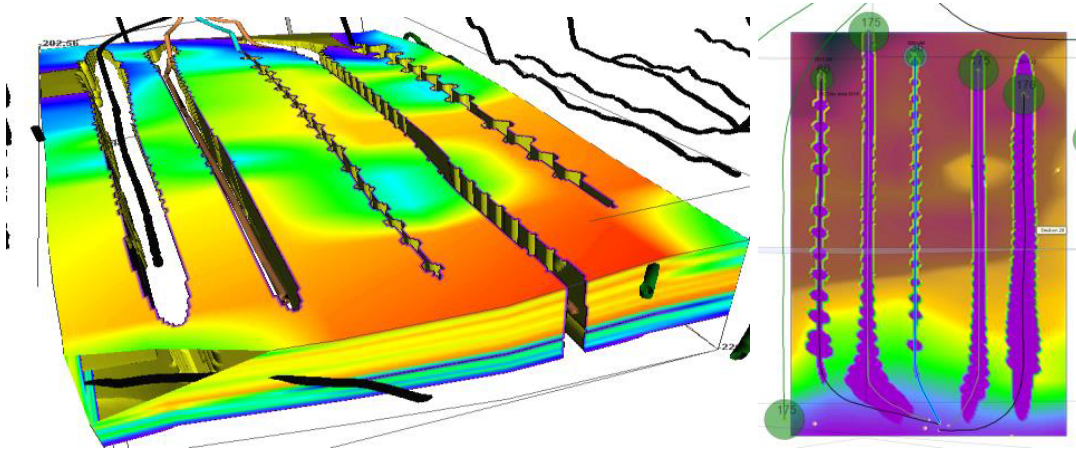


Following the initial modelling phase, production data, fracs and EURs were entered into the software to conduct a Volumetric Mapping Simulation (VSM). This iterative process comes up to a matching stimulated Reservoir volume to the EUR value or production to date within 5% precision. The results allow for the determination of infill well opportunities.

Workflow

CanaMax's utilized United's SMART4D to build a 3D model of units B&C of the Montney Formation over approximately 8 sections. Data imported included general well data, logs, trajectories and tops. The model was used by CanaMax to place horizontal wells within their target zone. Following this stage, United further characterized the reservoir and input reservoir data production, fracs and EURs provided by the engineering team. A hydrocarbon pore volume model was calculated and a high resolution, 9 million cell model was developed for the purposes of VSM. Sensitivity testing of the displacement efficiency and VSM parameters was

performed. The resulting drainage model displayed the drainage of the wells and frac shadows. Potential infill wells were planned and evaluated using the VSM.



Conclusions

This reservoir is in early stages of development with less than 2% produced with 6% recovery with the current well configurations from an OOIP of 66 MMSTB. Remaining oil infill opportunities between current wells and new areas can be a basis for the next development plans and fracs to improve production and recovery from this reservoir.

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