Thickness and extent of saline Cambrian reservoirs in the Ohio region are partially controlled by the underpinning Precambrian complex and paleotopography

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Updated image of the Precambrian complexes: Connecticut Mélange and Grenville Province and the East Central Illinois-Michigan and Appalachian Basins and Rome Trough. Thickness and extent of the proto Illinois-Michigan and Appalachian Basins have been redefined with applied regional configuration and severity of Cambrian thickness anomalies. The Rome Trough was redefined in an area located on or near Ohio. Note the relative position of the proto Illinois-Michigan and Appalachian Basins. The northernmost extent of the Rome Trough is defined by the proto Illinois-Michigan and Appalachian Basins and the southern portion of the Rome Trough is defined along tectonic boundaries and structural trends.

Previously known units will affect mapping of shoulder of the Rome Trough formed another portion of this trend, the Mt. Simon thickness along the southern portion of this arch. Along the southern portion of this arch, the Mt. Simon thickness may be disturbed due to syn-depositional folding. The Mt. Simon thickness may be disturbed due to syn-depositional folding.

The thickness and extent of saline Cambrian reservoirs in the Ohio region are partially controlled by the underpinning Precambrian complex and paleotopography. The Mt. Simon thickness in the Ohio region may be disturbed due to syn-depositional folding.
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CONCLUSIONS

- A deeply eroded, structurally complex Precambrian surface controlled dissolution of the Knox, Rome, and Batchawana unconformities on the Ohio Plateau, forming the stability and uniform sub-Knox correlation problems.
- The Mt. Simon is not a regional “blanket” sandstone covering across the Ohio region and is exposed only where it is more than 2,500 feet thick far below the local basement.
- Contours on the Conasauga Group/Sandusky Formation and density log cutoff values indicate potential reservoir areas for the Kerbel Formation, where present.
- Potential saline reservoirs of Mt. Simon and Sandusky Formation across the Ohio Region. Contours outside of closed 2,500 feet lines indicate high potential saline reservoir areas. Selected density logs and major facies boundaries representing the eastern extent of the Eau Nadnock drilled into with the Duff  well. The line demonstrates the irregular paleotopography of the Precambrian unconformity surface.

FUTURE WORK

- Upcoming detailed studies and test data will include our understanding of the extent and quality of potential Cambrian saline reservoirs.

REFERENCES CITED

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Step 5. The irregular sandstone inclusions in the upper part of the Lower Sandusky Formation at Leatherstocking Field, Richland County, Ohio. The irregular sandstone inclusions in the upper part of the Lower Sandusky Formation at Leatherstocking Field, Richland County, Ohio.

Step 6. Computer contoured map showing portion of the Conasauga Group/Sandusky Formation and net footage for density log cutoff values 2,500 feet below the local basement. Red contour shading is set at 2,500 feet to indicate thicker, higher potential saline reservoir areas. Selected density logs and major facies boundaries representing the eastern extent of the Eau Nadnock drilled into with the Duff  well. The line demonstrates the irregular paleotopography of the Precambrian unconformity surface.