

## The AER Play Workbook– Aligning Geoscience and Engineering Analyses for Regulatory Delivery and Public Reserves Reporting

*Courtney Whibbs, Erin Wadsworth, et. al.*  
*Alberta Energy Regulator*

### Summary

Alberta Energy Regulator (AER) and its precursors have historically assessed reserves on a field and pool basis. We have now begun to recognize resource groups based on geological attributes and reservoir engineering properties of the formations. These groups are known as geological plays. By assessing Alberta’s energy reserves and resources using geological plays, we can evaluate not only conventional, but also unconventional reserves and resources. This evolution from pools to plays considers changes in how the energy industry operates in Alberta, especially how reserves are being extracted using new technologies. This play-based assessment will support risk-informed and evidence-based decisions to more effectively plan for Alberta’s future energy development.

The play-based approach to reserves evaluation at the AER builds on a long history of play-based resource analysis at Alberta Geological Survey, the Geological Survey of Canada, the Canadian Gas Potential Committee, the United States Geological Survey, and the global petroleum exploration industry over the past number of decades. The deployment of play-based analysis by AER represents advancement in both its application as part of regulatory delivery and its potential to support socio-environmental analyses underpinning modern regulatory designs.

The AER’s Play Workbook is an interactive tool that provides information about the activity, production, reserves, and geology of each play—to help understand subsurface characteristics and activity in order to plan for and regulate surface development. As AER works to understand the cumulative effects of energy development, this information will help assess regional energy activity and its associated social, economic, and environmental effects. It will also help identify engagement opportunities, inform policy, and direct monitoring activities and inspections.

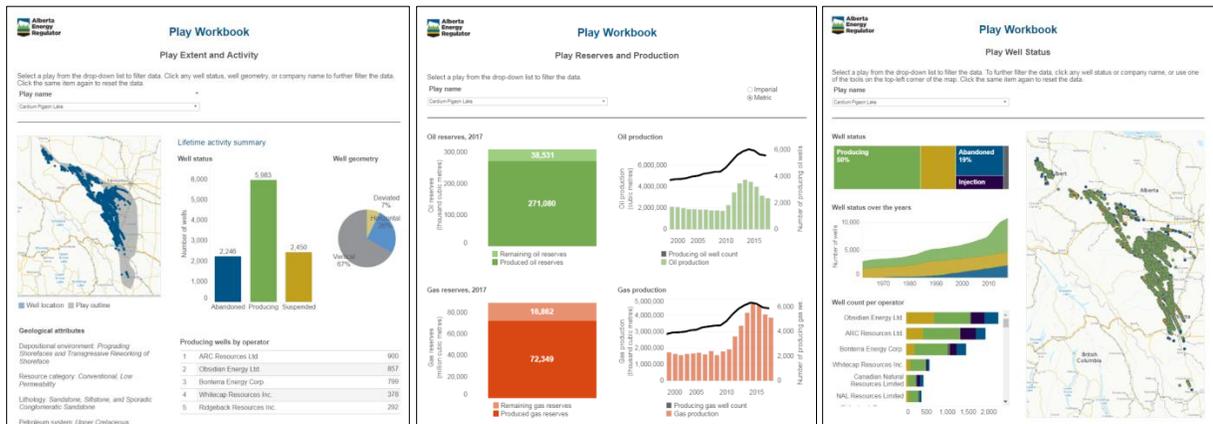
### Theory / Method / Workflow

A geological play is defined as “a set of known or postulated oil and (or) gas accumulations sharing similar geologic, geographic, and temporal properties, such as source rock, migration pathway, timing, trapping mechanism, and hydrocarbon type” (USGS Oil and Gas Resource Assessment Team, 1995). Establishing plays allows the AER to better evaluate the resource in the ground as each play has its own unique set of characteristics which may require a slightly different approach to regulation and reserves methodology. Resource and reserves reporting applies statistical techniques for probabilistic assessment based on the geological and engineering characteristics of a play.

The AER Play Workbook is an iterative report that provides a high level overview of each play in the province of Alberta. The AER hopes to continue to improve and add more information to the Play Workbook in the coming years. The first public release of the Play Workbook was in November 2018 on the AER’s external website.

## Results, Observations, Conclusions

The results of the tool can be viewed at <https://www.aer.ca/providing-information/data-and-reports/activity-and-data/play-workbook>.



## Novel/Additive Information

The AER Play Workbook modernizes the publically reported, play-based assessments of Alberta's energy development and resources. It will also be used to identify development trends that can intersect with social and environmental issues at the land surface.

## Acknowledgements

Emilie Beaucrea, Krista Beavis, Youyi Cheng, Tom Crowfoot, David Hiebert, Abdel Idris, Joe Li, Shauna Miller, Amanda Mitander, Ysabel Nava, Kevin Parks, Frank Pittis, Nick Roman, Michael Schaeffer, Yangchen Sheka, Laifeng Song, Michael Teare, Angie Toone, Frances Trudel, Erin Wadsworth, Courtney Whibbs, & Tanya Yeomans.

## References

U.S. Geological Survey National Oil and Gas Resource Team, 1995. National Assessment of U.S. Oil and Gas Resources 1995. U.S. Geological Survey Circular 1118. USGS Denver, CO., 30 pp.