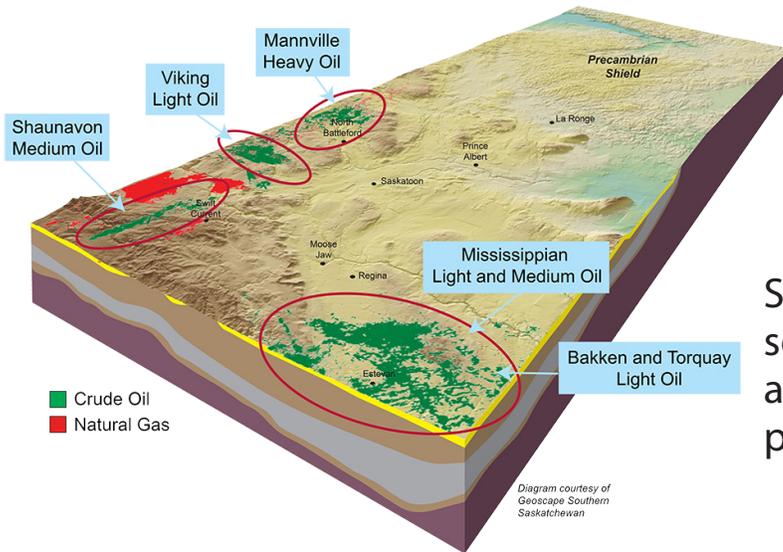


Saskatchewan's Top Oil Play Opportunities



Saskatchewan is Canada's second-largest oil producer, with about 10% of Canadian crude oil production.

Hydrocarbon Opportunities

Saskatchewan's oil patch activity levels in 2020 for drilling, exploration and development in the petroleum sector dropped slightly in comparison with 2019 levels in response to continued oil price pressures. There were an estimated 1,702 oil well completions in 2020, a decrease from 1,714 in 2019. The province also experienced a slight decrease in production in 2020: 435,826 barrels of oil per day (69,263 cubic metres/day) compared to the 486,385 barrels of oil per day (77,329 cubic metres/day) in 2019.

Saskatchewan's geology lends itself mainly to crude oil production, although it also has some production of natural gas. Over 40 formations and members produce crude oil, with oil densities that range from light to heavy. Saskatchewan's heavy oil production is from the Lloydminster area in west-central Saskatchewan, whereas the lighter crude oils are produced farther south. This geographic separation of oil pools is a result of Saskatchewan's geology: the province's western edge lies on the eastern edge of the Alberta Basin, and the southeastern part of the province lies within the northern portion of the Williston Basin. Saskatchewan oil reservoirs are relatively shallow, ranging in depth from 250 to 2,900 metres. The province's geology, combined with horizontal drilling and hydraulic fracturing, enhanced oil recovery (EOR) techniques and improved efficiencies in

field operations have enabled producers to continue to weather low oil prices and to sustain oil production.

Though there are many oil plays in the province, the seemingly most resilient five are indicated on the map above and described (from youngest to oldest) below.

Viking Light Oil

- The Cretaceous Viking Formation is a geologically complex unit consisting of interbedded, mainly marine-influenced, fine-grained sandstones, siltstones and mudstones sandwiched between two marine shales. Oil was discovered in the Viking in the 1950s.
- Approximately 9,078 oil well completions have occurred into the Viking since January 1, 2008. These wells have produced approximately 22.7 million barrels of 36° API oil (3.6 million cubic metres) in 2019, a decrease from 26.0 million barrels (4.1 million cubic metres) produced in 2018. Overall Viking production in 2020 was at a rate of 62,221 barrels/day (9,888 cubic metres/day).
- In light of the activity and success in the Viking, Kohlruess (2015) wrote an update on the Viking Formation in west-central Saskatchewan, describing the controls on hydrocarbon distribution in the area.