

Diamonds in Saskatchewan

Deposit Types

Did you know Saskatchewan has over 80 known kimberlite occurrences, the majority of which are diamond bearing? The Fort à la Corne (FALC) kimberlite cluster (see map on reverse) is one of the largest kimberlite fields in the world. Massive volumes of crater-facies kimberlite emplaced in this area were protected from erosion and glaciation by synchronously deposited Cretaceous shales. These voluminous kimberlite deposits have yielded some large, high-value diamonds. Diatreme-facies kimberlites have also been discovered on the exposed Canadian Shield (see map on reverse). Although smaller, these near-surface root-zone intrusions have the potential for much higher-grade deposits.

Mining History

Since the discovery of diamond-bearing kimberlite in Saskatchewan in the late 1980s, over half a billion dollars have been invested exploring for, and evaluating, diamond deposits in the province.

The Star-Orion Kimberlite project, the province's most advanced diamond play, has approximately 470 million tonnes of ore, at a weighted average grade of 14 carats per hundred tonnes and containing an estimated 66 million carats. These kimberlites have yielded coarse diamonds, with some stones recovered from test mining that approach 50 carats. In addition to large stones, the diamonds recovered to date have been high quality, with a significant proportion classed as high-purity Type IIa, a classification for diamonds that are almost or entirely devoid of impurities.



Star Diamond Corporation

A more recent discovery of hypabyssal diamond-bearing kimberlites on the exposed Canadian Shield has sparked exploration potential for new diamond discoveries in the Pikoo region and highlighted the province's untapped potential for diamonds.

Strong Potential

Much of Saskatchewan is underlain by stable Archean cratons that are conducive to the emplacement of diamond-bearing kimberlite. All diamond discoveries to date have been associated with the 2.5 billion year old Sask craton, but other parts of the province—including areas in which kimberlite indicators have been found—are also underlain by thick, old continental crust.

Numerous unsourced kimberlite indicator minerals have been found across the province (see map on reverse), many of which have chemical signatures indicating they originated within the diamond stability field, and hence from a source that has a high likelihood to host diamonds.

For more information

Saskatchewan Geological Survey

Ministry of Energy and Resources, Government of Saskatchewan
p: 306-787-2585 email: skgeosurvey@gov.sk.ca

Saskatchewan Mining and Petroleum GeoAtlas

www.saskatchewan.ca/GeoAtlas

saskatchewan.ca/invest

Diamonds in Saskatchewan

Total Kimberlite Indicator Minerals



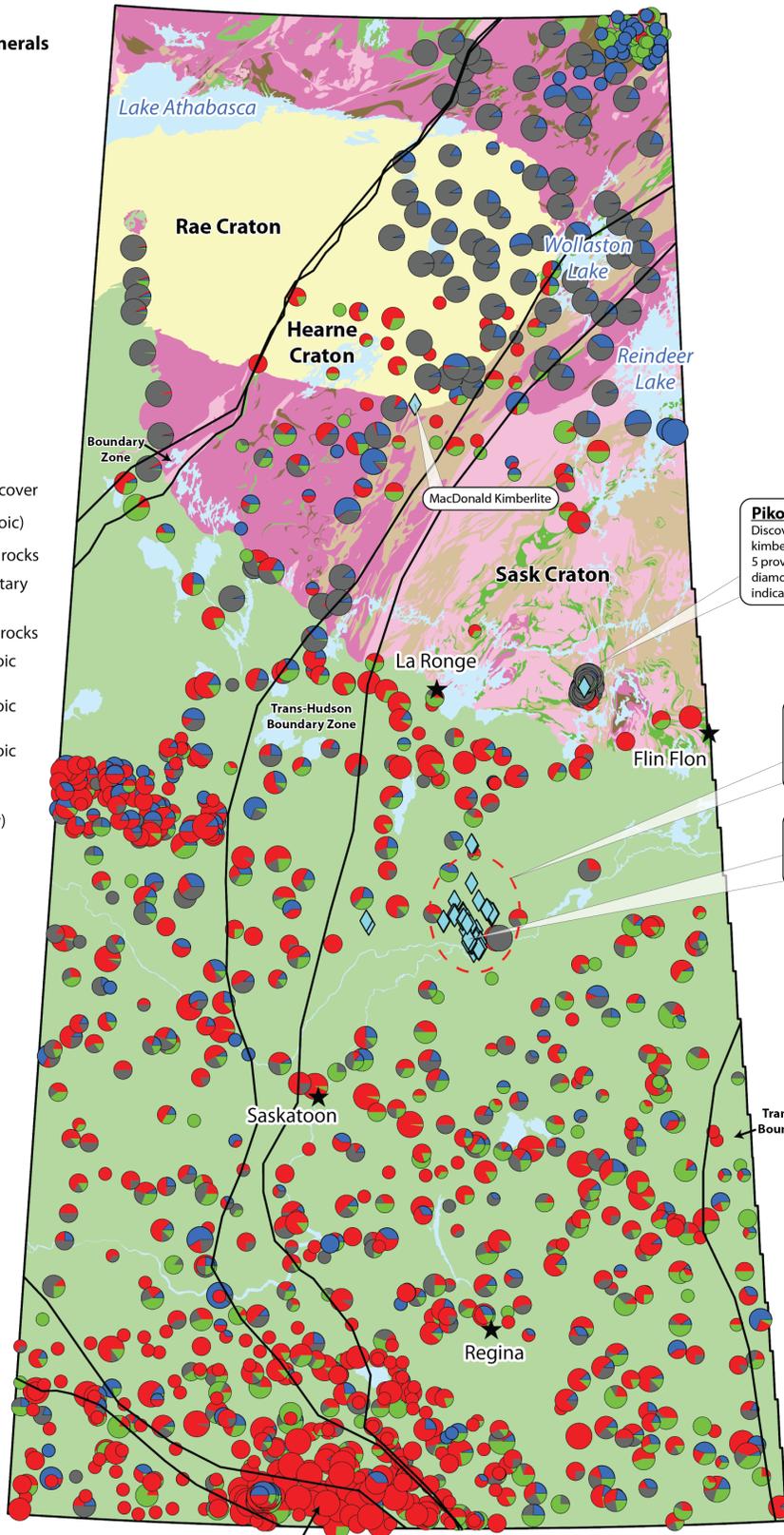
- Spinel
- Pyrope
- Ilmenite
- Chromium Diopside

- > 15 total count
- 8-15
- 4-7
- 1-3

◆ Kimberlite occurrences

Geology

- Phanerozoic sedimentary cover
- Athabasca Basin (Proterozoic)
- Paleoproterozoic plutonic rocks
- Paleoproterozoic sedimentary rocks
- Paleoproterozoic volcanic rocks
- Archean to Paleoproterozoic plutonic rocks
- Archean to Paleoproterozoic sedimentary rocks
- Archean to Paleoproterozoic volcanic rocks
- Cratonic boundaries (at Mohorovičić Discontinuity)



Pikoo Region
Discovered in 2013; 10 discrete kimberlite occurrences; 5 proven, well-defined diamondiferous kimberlite indicator mineral trains.

Fort à la Corne (FALC) Area
Discovered in 1989; over 70 known kimberlite occurrences; large, high-value diamonds recovered from massive volumes of low-grade kimberlite.

Star-Orion South
About half a billion tonnes of kimberlite ore containing an estimated 66 million carats

