


Iron

The Yukon has had very little exploration attention directed towards iron deposits, even though it is host to the Crest deposit, one of the largest known iron deposits in North America. Iron is also found in several other interesting occurrences and deposits mostly in the northern Yukon.

The Crest iron deposit is an Algoma-type iron formation hosted in Upper Proterozoic glacial-marine sedimentary rocks. Historical mineable reserves are over 3 billion tonnes grading 43.8% Fe, 26.6% SiO₂ and 0.34% phosphorus, with a stripping ratio of less than 1:1. Geological mapping suggests the deposit is much larger, and a regional reserve is estimated to exceed 18.6 billion tonnes.

Similar stratigraphy occurs discontinuously from the eastern Wernecke Mountains (northeast of Dawson City) to the southeastern Mackenzie Mountains. This southeasterly trending belt, 630 km long and up to 40 km wide, lies obliquely across the Yukon/Northwest Territories boundary. Recent airborne geophysical surveys in this area may be helpful at further defining the favourable stratigraphy.



Another Algoma-type iron formation occurrence is Shell Creek where Precambrian- to Cambrian-aged sedimentary and volcanic rocks host magnetite iron formation up to 60 m thick. Airborne magnetic surveys have traced the iron formation for a strike length of 8 km. The deposit has never been drilled or fully evaluated for its iron potential.

Also in the northern Yukon, an oolitic magnetite deposit occurs at the contact between Permian clastic rocks and Jurassic to Lower Cretaceous recessive black shale. This deposit, known as the Alto, has been estimated to have a geologic resource of 27 million tonnes of 55% Fe.

The large, numerous and widespread Wernecke Breccias have been explored primarily for copper, gold and uranium, but they also have iron potential. The Wernecke Breccias occur in Middle Proterozoic sedimentary rocks in northern Yukon and have been compared to the giant Olympic Dam deposit in Australia. Deposits of this type may exceed 1000 Mt grading greater than 20% Fe, and frequently are in the 100 to 500 Mt range. The most notable iron deposit of this type in the Yukon is the Pagisteel occurrence, which contains 9 million tonnes of over 29% Fe. The indication that Wernecke Breccias do host iron deposits, makes them an exploration target for additional iron resources.

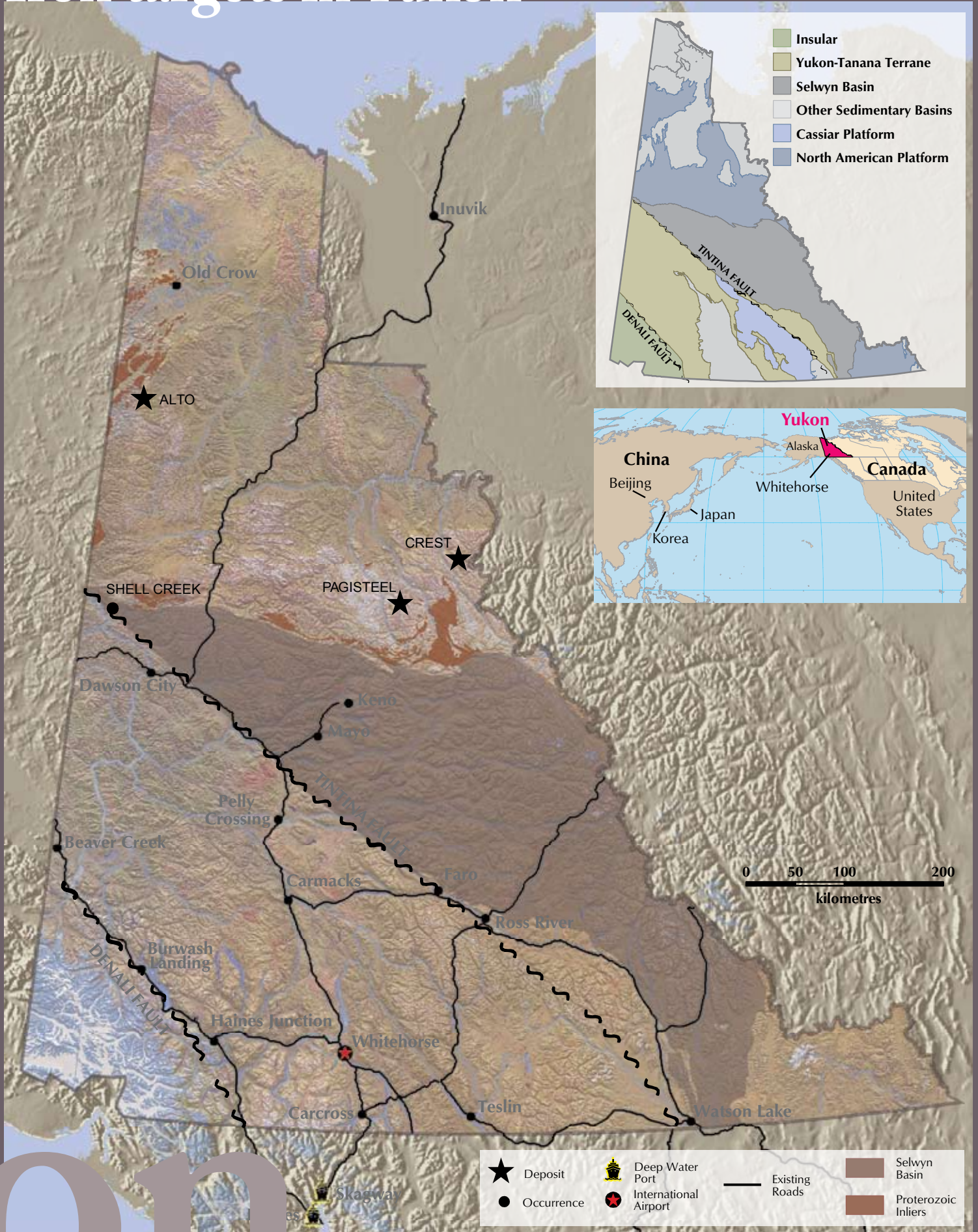
3 billion tonnes

Iron formation from the Crest deposit in the Snake River area of northeastern Yukon. This rock sample contains rhythmically banded jasper and hematite.



Ir

Iron targets in Yukon



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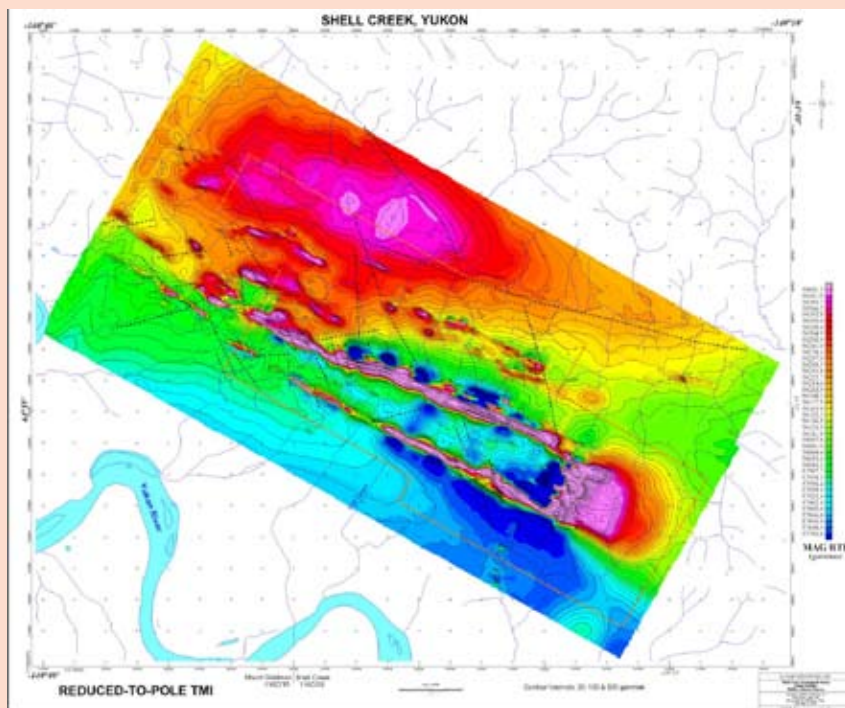
- ★ Deposit
- Occurrence
- ✈ Deep Water Port
- ✈ International Airport
- Existing Roads
- Selwyn Basin
- Proterozoic Inliers

Yukon iron deposits

Deposit Owner/optioned to/contact	Zone(s) Year resource-reserve was calculated/reference	Mineral resource-reserve category‡/ Tonnage@ grade/commodity	Status Yukon MINFILE no.**
Crest Chevron North America Exploration and Production Stephen Hutchison Manager Oil Sands 500-5th Avenue SW Calgary, Alberta Canada T2P 0L7 Telephone: 403-234-5437	Crest 1964 Assessment report #017964	Historical calculation mineable reserve 3 175 147 kt @ 43.8% Fe, 26.6% SiO ₂ , 0.34% P ₂ O ₃ Geological resource 18 billion tonnes	<i>Deposit</i> 1961: Discovery. 1963-1964: 2 bulk samples totalling 110 t shipped out for metallurgical testing; feasibility study completed. Stripping ratio less than 1:1. 106F 008
Alto Eagle Plains Resources 200-16 11th Avenue S Cranbrook, British Columbia Canada V1C 2P1 Telephone: 250-426-0749	Alto Assessment report #090158	Massive oolitic magnetite. Geologic estimate from surface exposure 27 million tonnes @ 55% Fe	<i>Deposit</i> 1973: Discovery. 1975-1977: Geologic mapping, sampling. 1996: Restaked. 116K 005
Shell Creek Logan Resources 570-789 Pender Street W Vancouver, British Columbia Canada V6C 1H2 Telephone: 604-689-0299	Shell Creek	No resource outlined. Algoma-type magnetite-chert iron formation. Two bands of magnetite estimated at 23 and 61 m thickness; geophysics indicates iron formation over 8 km long.	<i>Deposit</i> 1957: Discovered. 1961: Various geological work. 1968-1970: Bulk sampling. 2002: Restaked. 116C 029
Pagisteel Cash Minerals/Twenty Seven Capital Corporation 1016-510 West Hastings Street Vancouver, British Columbia Canada V6B 1L8 Telephone: 604-688-2568	Pagisteel 1967 company estimate	Proterozoic-aged "Wernecke Breccia" 9 100 000 tonnes grading 29.2% soluble iron	<i>Deposit</i> 1962: Discovered. 1964-1969: Transportation studies, diamond drilling. 1980, 1989: Restaked. 2004: Geophysics. 106D 049

‡Mineral resource-reserve category: resource and reserve figures have been compiled from a variety of historical data sources that in most cases predate the implementation of National Instrument 43-101. Therefore, only those figures indicated by an asterisk (*) comply with National Instrument 43-101.

** The Yukon MINFILE is a computerized mineral inventory system that documents the exploration history and geology of metallic, industrial mineral and coal occurrences in the Yukon. The database contains detailed descriptions of 2612 separate mineral occurrences located throughout the Yukon.



This image of total field magnetics at Shell Creek demonstrates the over 8-km extent of the iron formation which forms an east-southeast-plunging syncline.