Gold-bearing Iron Formation in the Archean Ashuanipi Complex, Western Labrador

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Regional Overview

Iron formation occurrences in Labrador and adjacent Quebec

Lithogeochemistry

Implications for exploration







Algoma-type pyroxene-garnet-quartzmagnetite (silicate) iron formation layers range from decimetre to 10s metre thick and exhibit coarse-grained and massive to banded textures

These rocks are intercalated with migmatitic paragneiss and host 1 to 15 % disseminated pyrrhotite ± arsenopyrite ± chalcopyrite and the distribution suggests they are boudinaged former continuous layers

1967 m drilled in 22 DDH's



Au g/t

metres

Vertical gradient aeromagnetic signature for the Sheffor prospect, from Ivanov, 2012















Migmatitic garnet-opx paragneiss

Concordant iron formation lens offset along late pegmatite







Fold hinge in iron formation lens. Assayed 2.6 g/t Au across 1 m (MODS Au001)

Alternating quartz-garnetpyroxene and magnetite-rich banding in iron formation lens (MODS Au002)





Coarse-grained pyroxenequartz-garnet in iron formation lens (IOC 228 showing)



Two metre thick magnetite-rich iron formation lens. Assayed 80 ppb Au across 1.5 m (IOC 228 showing)











Iron formation occurrences and gossan zones in paragneiss (modified from van Nostrand and Bradford, 2014)





Regional aeromagnetic signature (Kilfoil, 2013)





Regional (Kilfoil, 2013) and detailed (Montague, 2011) aeromagnetic signatures





Pyroxene-garnet-magnetite iron formation lens in paragneiss intruded by pegmatite. Assayed 100 ppb Au across 75 cm

2.5 m wide by 5 m long ironformation lens. Assayed 192ppb Au and 630 ppm Ni across2 m





15 to 45 % Fe2O3 32-67% SiO2 1 to 18% Al2O3

Gold values from 16 samples range 20 ppb to 630 ppb Au (avg. 150 ppb Au). One sample assayed 2660 ppb Au

New[oundland Labrador

Up to 31465 ppm As, although most samples below 50 ppm

200 – 900 ppm Cu

Correlation diagrams of Fe2O3, MnO, Th, As, F and Cu versus Au



REE and multi-element plots of iron formation rocks from the study area and average profiles from BIF and Lac Lilois (Lapointe and Chown, 1993)



High Au samples have absent to negative Eu Low to moderate Au samples have both positive and weak negative Eu anomalies.

Presence or absence of a +ve Eu anomaly may be dependent on the detrital component and fluid composition from which the iron formation was precipitated (Peter, 2003)





 Large underexplored areas with anomalous lake sediment, soil, stream and rock assays and magnetic highs

 Significant developed prospects in very similar geological settings proximal to Labrador border (Sheffor and Lac Lilois prospects

- Exploration program is currently in progress targeting gold in paragneiss and iron formation (Labrador Gold Corp., April website)
- 7500 soil samples two 15 km long anomalous Au zones delineated