Location/Identification

MINFILE Number: 082ESE021
National Mineral Inventory Number: 082E2 Cu2
Name(s): **OLD IRONSIDES (L.589)**
PHOENIX MINE, IRONSIDES, KNOB HILL-IRONSIDES, GRANBY PHOENIX

Status: Past Producer
Mining Division: Greenwood
Mining Method Underground, Open Pit
Electoral District: Boundary-Similkameen
Regions:
Resource District: Selkirk Natural Resource District
BCGS Map: 082E008
NTS Map: 082E02E
UTM Zone: 11 (NAD 83)
Latitude: 49 05 50 N
Northing: 5439494
Longitude: 118 35 54 W
Easting: 383324
Elevation: 1208 metres
Location Accuracy: Within 500M
Comments: Part of the Phoenix mine. The Phoenix pit now covers the Knob Hill (082ESE020), Old Ironsides (082ESE021), Aetna (082ESE022) and Victoria (082ESE023) claims (EMPR Paper 1986-2, Figure 16). Old shafts and glory holes are located on GSC Map 16A. Production is included with Phoenix (Knob Hill).

Mineral Occurrence

Commodities: Copper, Gold, Silver

Minerals
Significant: Chalcopyrite, Pyrite, Magnetite, Gold
Associated: Hematite, Garnet, Epidote, Chlorite, Amphibole, Calcite, Quartz, Specularite
Mineralization Age: Jurassic-Cretaceous

Deposit
Character: Massive, Disseminated
Classification: Skarn, Replacement
Type: K01: Cu skarn, K04: Au skarn, K03: Fe skarn

Host Rock

Dominant Host Rock: Sedimentary

Stratigraphic Age	Group	Formation	Igneous/Metamorphic/Other
Triassic	Brooklyn	Unnamed/Unknown Formation	------

Isotopic Age	Dating Method	Material Dated
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Lithology: Limestone, Sharpstone Conglomerate, Tuff

Geological Setting

Tectonic Belt: Omineca
Physiographic Area: Okanagan Highland
Terrane: Quesnel, Plutonic Rocks

Inventory

No inventory data

Capsule Geology

The first claims in the Phoenix area were staked by Henry White (Knob Hill (Lot 590) (082ESE020)) and Matthew Hatter (Old Ironsides (Lot 589) on July 15th, 1891. The claims were Crown granted in 1896. The Old Ironsides mine became one of the first open pit mines in Canada. Production is

included with the Phoenix (082ESE020). See Phoenix for additional details on development, geology and mineralization.

The first period of production, from 1900 to 1919, by the Granby Consolidated Mining, Smelting and Power Company, Limited, was largely by underground mining on the Knob Hill, Ironsides, Gold Drop (082ESE028), Monarch (082ESE027), Victoria (082ESE023), Snowshoe (082ESE025) and Curlew (082ESE024) claims. Systematic development, consisting of an extensive system of tunnels and stopes, began in 1895 and comprised three adit levels on the Old Ironsides and Knob Hill claims. To the east, five levels, serviced in part by the Victoria shaft, were developed on the Victoria and Aetna (082ESE022) claims. At the close of the first period of operations in June 1919, a total of 12,434,620 tonnes of ore had been mined from stoped areas, exceeding 48,000 square metres in lateral extent, accessed by a 37-kilometre long network of interconnected tunnels.

Intermittent mining took place by W.E. McArthur from 1920 to 1942, mainly from the Old Ironsides claim. This period produced 47,107 tonnes of ore.

Renewed operations by the Granby company in 1959 began excavations which, by the final close of mining activity in 1976, resulted in removal of almost the entire old underground workings. This created a large elliptical 425 by 800-metre open pit. Mining took place largely on the Knob Hill, Old Ironsides, Aetna, Victoria, Brooklyn and Idaho (082ESE013), Stemwinder (082ESE014), Snowshoe and Rawhide (082ESE026) claims. From 1959 to 1978, 9,070,560 tonnes of residual low grade ore was extracted.

The mine is underlain by chert, cherty argillite, greenstone and a minor amount of limestone of the Upper Paleozoic Knob Hill Group. These rocks are unconformably overlain by limestone, sharpstone conglomerate, argillite and Eholt volcanics of the Triassic Brooklyn Group. Copper ore occurs in mineralized areas of the Brooklyn limestone, which have all the characteristics of metasomatic replacements. These replacements are composed essentially of chlorite-epidote skarn rocks with variable amounts of garnet, calcite and quartz, accompanied by blebs and disseminations of pyrite, chalcopyrite, magnetite and specularite.

The main ore body outcrops on the Old Ironsides and Knob Hill claims; in its downward and eastward extension it passes into the Victoria and Aetna claims. The body is composite in character and consists of two lenses which coalesce about their central portions. The western lens is at least 750 metres long, from 12 to 38 metres thick, and from 112 to over 275 metres wide. The eastern lens is apparently not so long, but approaches the magnitude of the former in width and thickness. The combined thickness of the two at their point of junction is about 57 metres. In its southern extension this composite ore body appears to break up into subordinate ribs and wedges of ore separated by complimentary ribs of almost barren gangue rock. A similar condition also appears to occur to the east of the main ore body and a 'great' pulaskite porphyry dike, where a rather flat lying zone, consisting in part of pay ore, has been found on about the same level as No. 3 tunnel. The general strike of the outcrop of the ore body is 010 degrees with dips to the east ranging from 45 to 60 degrees. The dip flattens with depth and on the lower levels averages from 15 to 30 degrees. A downfaulted block of Tertiary rock, viewed in the 1000-metre long Victoria to Gold Drop tunnel (elevation 1450 metres), separates the east side of the Phoenix pit from an eastern extension of the Old Ironsides - Knob Hill skarn zone.

Bibliography

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EMPR MR MAP 6 (1932)
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Date Coded:	1985/07/24	**Coded By:**	BC Geological Survey (BCGS)	**Field Check:**	Y
Date Revised:	2020/07/22	**Revised By:**	Karl A. Flower (KAF)	**Field Check:**	Y