## Location/Identification

**MINFILE Number:** 082FSW199

**Name(s):** **HOWARD (L.12538)**
DURANGO, UNION JACK, PECK

**Status:** Past Producer
**Mining Method** Underground
**Regions:** British Columbia
**BCGS Map:** 082F025
**NTS Map:** 082F03E
**Latitude:** 49 14 18 N
**Longitude:** 117 06 46 W
**Elevation:** 1708 metres
**Location Accuracy:** Within 500M

**Mining Division:** Nelson
**Electoral District:** Nelson-Creston
**Forest District:** Arrow Boundary Forest District

**UTM Zone:** 11 (NAD 83)
**Northing:** 5453957
**Easting:** 491791

**Comments:** The Howard Crown grant (Lot 12538) is on the east side of Active Creek (Geological Survey of Canada Memoir 172, pages 70-73).

## Mineral Occurrence

**Commodities:** Silver, Lead, Zinc, Gold, Cadmium, Copper

**Minerals**
**Significant:** Pyrite, Pyrrhotite, Galena, Gold, Sphalerite, Chalcopyrite
**Associated:** Quartz
**Alteration:** Silica
**Alteration Type:** Silicific'n
**Mineralization Age:** Unknown

**Deposit**
**Character:** Vein, Disseminated, Massive, Shear
**Classification:** Hydrothermal, Epigenetic
**Type:** I05: Polymetallic veins Ag-Pb-Zn+/-Au
**Shape:** Regular
**Modifier:** Folded, Faulted
**Dimension:** 2x0x0 metres
**Strike/Dip:** 016/45W
**Comments:** Queen A type veins are up to 1.8 metres wide.

## Host Rock

**Dominant Host Rock:** Plutonic

| Stratigraphic Age | Group | Formation | Igneous/Metamorphic/Other |
|---|---|---|---|
| Middle Ordovician | Undefined Group | Active | ------ |
| Jurassic | ------ | ------ | Nelson Intrusions |

| Isotopic Age | Dating Method | Material Dated |
|---|---|---|
| ------ | ------ | ------ |
| ------ | ------ | - |

**Lithology:** Quartzite, Granodiorite, Argillite, Granite, Lamprophyre Dike

## Geological Setting

**Tectonic Belt:** Omineca
**Physiographic Area:** Selkirk Mountains

**Terrane:** Ancestral North America, Plutonic R

## Inventory

**No inventory data**

## Summary Production

| | | Metric | | Imperial | |
|---|---|---|---|---|---|
| | **Mined:** | 20,091 | tonnes | 22,146 | tons |
| | **Milled:** | 19,806 | tonnes | 21,832 | tons |
| **Recovery** | Silver | 1,613,871 | grams | 51,887 | ounces |
| | Gold | 212,121 | grams | 6,820 | ounces |
| | Lead | 1,059,009 | kilograms | 2,334,715 | pounds |
| | Zinc | 343,307 | kilograms | 756,862 | pounds |
| | Cadmium | 68 | kilograms | 150 | pounds |

## Capsule Geology

Quartzites and argillites of the Middle Ordovician Active Formation are intruded by granodiorite of the Middle to Late Jurassic Nelson Intrusions. The intrusive-quartzite contact is highly irregular, strikes generally northwest and dips gently in a south direction under the sediments. Lamprophyre dykes typically occur near faults.

Heavy mineralization, consisting of pyrrhotite, pyrite, sphalerite, galena, chalcopyrite and quartz occurs in a fissure vein called the Peck zone which strikes south across the intrusive- quartzite contact and has a west dip. Some visible gold has been observed. There are also two Queen vein (082FSW048) types of sulphide-bearing quartz veins which crosscut the fissure ore. The Queen A type are steeply dipping quartz veins that are from 1.5 to 1.8 metres wide and have associated minor parallel quartz stringers that occur up to a metre away from the vein. There are at least 3 of these large Queen A type veins in the mine area. The Queen B types is more of a fault than a quartz vein but irregular masses of quartz that do occur contain minor sulphides and some precious metal values. These veins branch and dip rapidly while the Queen A types do not.

The Queen vein strikes east-west with a steep south dip. Within the granite it is narrow and hosts some quartz and tourmaline and the granite is silicified. To the west the Queen vein becomes mineralized locally and intersects the Peck zone. Where the Peck zone intersects the granite to the north, mineralization consisting of pyrite, pyrrhotite, sphalerite, and galena dies out and the granite-quartzite contact area is intensely silicified. To the south, the ore becomes massive and is up to 1.25 metres wide with some disseminated sulphides in the wallrocks. The ore zone is cut off to the south by the Queen fissure which exhibits sinistral movement in drag folds in the sulphide ores.

The total Howard mine production indicates grades of 17.15 grams per tonne gold, 85.7 grams per tonne silver and 12 per cent combined lead and zinc. The ore was confined to the zone between the granite- quartzite contact and the fault zone of the Queen fissure. In 10 years between 1937 and 1970 the Howard mine produced 20,091 tonnes of ore, of which 19,216 tonnes were mined in 1938. Recovery of elements from all ore mined, totalled 212,121 grams of gold, 1,613,871 grams of silver, 1,059,009 kilograms of lead, 343,307 kilograms of zinc and 68 kilograms of cadmium.

## Bibliography


EMPR AR 1897-531,574; 1898-1012; 1906-251; 1926-276,278,448; 1927-303,307; 1928-339,342; 1929-350; 1930-274; 1935-A31,E28,G50; 1936-E46; 1937-A39,E50; 1938-A36,E3,E42; 1939-39,91; 1941-26, 66; 1942-63; 1968-241

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GSC MEM 94, p. 121; *172, p. 70; 308, pp. 120,132
GSC OF 1195
GSC P 49-22; 50-19
GSC SUM RPT *1929A, p. 268A
Falconbridge File

| | | | | | |
|---|---|---|---|---|---|
| **Date Coded:** | 1985/07/24 | **Coded By:** | BC Geological Survey (BCGS) | **Field Check:** | N |
| **Date Revised:** | 2008/02/09 | **Revised By:** | Karl A. Flower(KAF) | **Field Check:** | N |