MAIN PRODUCT: / PRINC. PROD.: ZINC	PROV. OR TERR.: / PROV. OU TERR.: BRITISH COLUMBIA	DEPOSIT N.T.S. AREA: / S.N.R.C DU GÎTE : 104K/12	REF.: / RÉF.: ZN 002	MINSYS NO: / NO MINSYS: 509967- 0

NAME OF DEPOSIT: TULSEQUAH CHIEF
NOM DU GÎTE :

Object located: / Objet localisé: #9, Map 931 A
Uncertainty : / Facteur d'incertitude: 600 (meters/mètres)

Latitude/Latitude: 58°44'30 Longitude/Longitude: 133°35'20

UTM zone/Région UTM: 8 UTM North./UTM Nord: 6511937 UTM East./UTM Est: 581677

Mining division/Division minière: ATLIN
District/District: CASSIAR

OWNER OR OPERATOR / PROPRIÉTAIRE OU EXPLOITANT
Name: COMINCO L
Nom :

DESCRIPTION OF DEPOSIT / DESCRIPTION DU GISEMENT

The mineralization occurs in shear zones in altered Upper Triassic Stuhini Group volcanic rocks. The volcanics are of two main types, intermediate and acid. The intermediate rocks, which are greenstones, are of wide distribution both near the mine and regionally. The acid rock is a quartz-feldspar porphyry in which intrusive and extrusive phases are recognized. The quartz-feldspar porphyry is restricted to a comparatively small area, in and near the mine, and occurs as a wedge-shaped mass having greenstone on either side of it. All known orebodies lie within this wedge of quartz-feldspar porphyry.

Felsitic and andesitic dykes occur abundantly in the mine. The felsite dykes are found almost entirely along major shears and faults, and become intimately associated with orebodies localized in the same structures. The andesitic or "greenstone" dykes generally follow minor cross-fractures.

The orebodies are pyritic replacement bodies and stringer lodes localized within the main shear zones at their junctions with relatively insignificant east-striking and steeply north-dipping cross-fractures. The replacement bodies are elongated either along the shears or along the cross-fracture, or may shift from one structure to the other along the pitch of the ore. These bodies have a pitch length which is much longer than any horizontal dimension, and thus are essentially steeply pitching chimneys of ore which have been traced to a depth of at least 1,200 feet below the surface.

Within the very nose of the pinched-off porphyry body, the ore forms steeply dipping stringer lodes which attain a maximum width of 30 feet and length of

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Associated minerals or products / Minéraux ou produits associés
PB AU AG CU FLRT CD

HISTORY OF EXPLORATION AND DEVELOPMENT
HISTORIQUE DE L'EXPLORATION ET DE LA MISE EN VALEUR

The property is located at approximately 1,500' elevation on the east side of the Tulsequah River 8 miles north of its junction with the Taku River.

The showings were discovered in 1923 by prospector W. Kirkham, of Juneau, who was attracted to the showing by the prominent brownish-yellow bluffs. Seven claims were staked on the showings by the owners, Kirkham, G. Johnson, and A.K. Smith, of Juneau. Later that same year, the property was bounded to the Alaska Juneau Mining Company. Open cuts and about 60 feet of adit failed to locate significant mineralization and the option was given up.

A syndicate comprising W.A. Eaton, Dan Williams, and associates, of Juneau, optioned the property in 1928. The old adit was extended in a new direction and the ore zone intersected late in the year. In 1929, the property was re-optioned to United Eastern Mining Company, of Los Angeles. Development work totalled 1,919' of drifts and crosscuts in two adits, the A and B levels at 1,365 and 1,550' elevations, and 4,043' of diamond drilling in 7 holes. Under the option agreement a new company, Taku Mines Company, Limited was incorporated in December 1929. Due to the onset of the depression, work was not resumed in 1930 and the claims subsequently reverted to the owners.

The property remained idle until 1946 when The Consolidated Mining and Smelting Company of Canada Limited (Cominco Ltd. from 1966) optioned the claims from residents of Juneau. A new 5,400 level main haulage adit, begun in 1946, was driven 3,000' to the "A" orebody. A vertical two compartment shaft was raised 1,017' from the 5,400 level to the 6,400 level (old 1,550' elevation adit) and stations cut at 165' intervals to give 7 levels. Two additional levels, the 5,200 and 6,500 were established in subsequent years. Cominco incorporated a subsidiary company, Tulsequah Mines, Limited, in June 1951 as operator of the Tulsequah Chief and nearby Big Bull properties. The Polaris Taku 250-ton mill, located on the west side of the Tulsequah river about 3 miles southwest of the Tulsequah Chief, was leased and converted into a base metal mill. Production from the Tulsequah Chief began late in 1951. The mill capacity was increased to 500 tons per day in 1953. Production was continuous until September 1, 1957 when the mine closed due to low metal prices. Tulsequah Mines, Limited was dissolved voluntarily at the end of 1957. The lease agreement on the mill was cancelled in 1970 and the mill returned to New Taku Mines Ltd.

Proven and drill indicated reserves were reported as 788,000 tons at 0.09 oz/t Au, 2.9 ozs/t Ag, 1.3% Cu, 1.6% Pb, 8.0% Zn (New Taku Mines Ltd., 1971 (33rd) Annual Report). Around 1987, Comaplex Resources International Ltd. optioned 50% interest in the property. Redfern Resources Ltd. purchased Comaplex's interest. The property was geologically mapped and 5 test holes drilled from the surface. In 1988, the 2,800 foot long 5,400 level adit was rehabilitated and 8 holes were drilled. Further work in 1989 included 560 feet of drifting and diamond drilling of 10 underground holes for 16,000 feet. There are geological reserves of 5,822,000 tons of 1.60% Cu; 1.31% Pb; 7.02% Zn; 0.08 ounce per ton Au and 2.94 ounce per ton Ag. (Redfern Resources Ltd., Toronto Stoch Exchange, Listing Statement No. 3714, 1990).

Source/Source: / / -REGULAR
Printed/imprimée le: 5 Jun/Juin 1991

HISTORY OF PRODUCTION / HISTORIQUE DE LA PRODUCTION

Combined production from the Tulsequah Chief and Big Bull properties for the period 1951 to 1957 inclusive totalled 1,029,089 tons of ore. From this ore 94,254 ounces of gold, 3,400,773 ounces of silver, 27,207,864 pounds of copper, 26,926,859 pounds of lead, 124,692,862 pounds of zinc, and 453,992 pounds of cadmium were recovered. Production from the Tulsequah Chief is estimated at 577,000 tons.

MAP REFERENCES / RÉFÉRENCES CARTOGRAPHIQUES

Map 1262 A, Tulsequah & Juneau, (Geol.), Sc. 1: 250,000 - accomp. Memoir 362.

Map 931 A, Taku River, (Geol.), Sc. 1": 2 miles, accomp. Memoir 248.

#Preliminary Map 45-30, Taku River,(Geol.) Sc. 1": 1 mile, Paper 45-30, Geol. Surv. of Canada.

Area adjacent to Tulsequah Chief workings, Fig. 2, Memoir 248, p. 58.

Geological Map of the area adjacent to the Tulsequah Chief mine, Sc. 1": 1,500, Fig. 4 - accomp. Rept. by Smith, 1948.

*Map 104 K, Tulsequah, (Topo.), Sc. 1: 250,000.

REMARKS / REMARQUES

Last rev./Dernières m-à-j: By/Par:	/ /	/ /	04/30/1991 YJL	05/07/1991 YJL

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Reports of Minister of Mines, British Columbia: 1923, p. 89; 1926, p. 106; 1928, p. 123; 1929, pp. 118, 125, 136-138; 1930, p. 122; 1931 p. 62; 1946, p. 61; 1948, p. 63+; 1949, p. 73; 1950, p. 74; 1951, p. 74; 1952, p. 75; 1953, p. 81; 1954, p. A 80; 1955, pp. 11-13; 1956, p. 12; 1957, p. 5.

Report on Taku River Area, Bulletin No. 1, 1930, British Columbia Dept. of Mines.

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Kerr, F.A.; Some of the Mineral Properties of the Taku District, British Columbia; Summary Report, 1930, pp. 20-26 At. A, Geol. Surv. of Canada.

PROVINCIAL LINK: BCI 104K-2

MAIN PRODUCT: ZINC PRINC. PROD.:	PROV. OR TERR.: PROV. OU TERR.: BRITISH COLUMBIA	DEPOSIT N.T.S. AREA: S.N.R.C DU GÎTE : 104K/12	REF.: RÉF.: ZN 002	MINSYS NO: NO MINSYS: 509967- 0

NAME OF DEPOSIT: TULSEQUAH CHIEF
NOM DU GÎTE :

DESCRIPTION OF DEPOSIT (continued) / DESCRIPTION DU GISEMENT (suite)

500 feet. The stringer lodes narrow and finally play out 700 feet below the surface.

The mineralization in the shear zone is of two types. First, massive, fine-grained, pyrite-chalcopyrite lenses that tend to occupy the central part of the ore shoots. Second, sphalerite, pyrite, and galena in a dense, quartz-carbonate-barite gangue. This type is often banded and schistose showing relict structure of the sheared rock it replaces. It tends to occur on the margins and ends of the first type. The pyrite-chalcopyrite lenses are best developed on the lower level.

Locally in the massive sections and nearby there are veinlets and some scattered masses of fluorite, calcite, flaky chlorite, and barite.