

MINFILE Detail Report BC Geological Survey Ministry of Energy, Mines and Petroleum Resources

		Location/Identifi	cation							
MINFILE Number: Name(s):	093N 001 <u>MISTY</u> FORE, KAY	National 1	ber: 093N13 Cu1							
Status:	Developed Prospect		Mining Division:	Omineca Nechako Lakes						
Regions: BCGS Map: NTS Man:	British Columbia 093N093 093N13E		Electoral District: Resource District: UTM Zone:	Nechako Lakes Mackenzie Natural Resource District						
Latitude: Longitude: Elevation: Location Accuracy: Comments:	55 54 57 N 125 30 49 W 1536 metres Within 500M The location is for the	centre of drill activity where El Paso Mir	Northing: Easting:	6199567 342910 y copper reserves (as shown on						
Figure 7, Assessment Report 21307). Located approximately 56 kilometres north-northwest of Takla Landing.										
		Mineral Occurr	ence							
Commodities:	Copper									
Minerals	Significant: Associated: Alteration: Alteration Type: Mineralization Age:	Chalcopyrite, Bornite Pyrite, Magnetite, Quartz Chlorite, K-Feldspar, Malachite Chloritic, Potassic, Oxidation Unknown								
Deposit	Character: Classification: Type: Shape: Dimension: Comments:	Disseminated, Vein, Stockwork Porphyry, Hydrothermal, Epigenetic L03: Alkalic porphyry Cu-Au Tabular Modifier: 500x170x11 metres Dimensions and trend are for the mine	Fractured, Faulted	d by El Paso Mining and Milling Company.						
		Host Rock								
Dominant Host Ro	ck: Plutonic									
Stratigraphic Age Mesozoic Middle Jurassic	Group 	Formation 	Igne c Hoge Duck	bus/Metamorphic/Other m Intrusive Complex ling Creek Syenite Complex						
Isotopic Age		Dating Method	Material Dated							
Lithology: He	ornblende Biotite Gneiss, Hor ne Duckling Creek Svenite Co	 rnblende Monzonite, Syenite Dike, Ortho omplex is one phase of the Late Triassic t	- - clase Vein, Syenite, Peg o Early Cretaceous Hog	matite Dike, Pegmatite em Intrusive Complex.						
	Jeren Syeme of	Geological Set	ting							
Tectonic Belt: Terrane:	Intermontane Quesnel, Plutonic	Physiographic Area	a: Omineca Mo	ountains						
Metamorphic Type Grade:	e: Regional Greenschist									

		Inventory			
Ore Zone: Category: Quantity:	MISTY Inferred 3,000,000 tonnes		Year: Report On: NI 43-101:	1973 Y N	
	Commodity Copper	Grade 0.6000 per cent			
Comments: Reference:	Possible reserves. CIM Special Volume 15 (1976), 7	°able 1, No. 95.			

Capsule Geology

The Misty occurrence is situated within the Swannell Ranges (Omineca Mountains) near the headwaters of Duckling Creek, approximately 56 kilometres north-northeast of Takla Landing.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have been emplaced into volcanic rocks of the Middle Triassic to Lower Jurassic Takla Group, east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. Peto (1971) recognized 17 distinct plutonic varieties on the basis of mineralogical, textural and field relation criteria. Garnett (1978) subdivided the southern Hogem batholith into three distinct phases. Phase I rocks, chemically divided into the Hogem granodiorite and the Hogem basic suite, yield potassium/argon dates ranging from 176-212 Ma (Late Triassic to Middle Jurassic). Rocks forming Phase II Duckling Creek and Chuchi syenite complexes yield potassium-argon dates within the limits 162-182 Ma (Middle Jurassic). Dates from Phase III granite range from 108-126 Ma (Early Cretaceous).

Mineral occurrences comprising the Misty developed prospect occur within strongly foliated rocks of the Duckling Creek Syenite Complex. The complex is elongated in a northwesterly direction and contains both intrusive and migmatized rock units showing considerable compositional diversity. Three main rock types are recognized on the property: hornblende monzonite, syenite and pegmatite. These rock types show much variation in texture and are gradational from one to the other. The hornblende monzonite unit is the most common lithology, texturally grading from medium grained to pegmatitic and displaying moderate to intense foliation. The development of gneissic banding is very common. In some areas the monzonite shows evidence of magma cumulate differentiation with the development of mafic and ultramafic fractions. The syenite varies from fine grained to pegmatitic in texture and generally occurs as dikes crosscutting the hornblende monzonite. The pegmatite unit consists of feldspar (85 per cent) and hornblende (15 per cent) and predominantly occurs as dikes cutting the two other lithologies.

Mineralization comprises disseminated chalcopyrite, pyrite and bornite, with veinlets of chalcopyrite and pyrite common along the contact margins of crosscutting syenite dikes and orthoclase veins. Mineralization is hosted within a northwest trending, chloritized, K-feldspar altered, hornblende biotite gneiss. The best mineralization appears to occur in the more intensely foliated rocks showing chlorite and potassium feldspar alteration together with fracturing and faulting. Grain size is very fine. The fine grained, sugary grey K-feldspar alteration is the most receptive common host to mineralization as northwest-elongate pods parallel to the early foliation.

The preliminary copper inventory outlined by El Paso Mining and Milling Company between 1970 and 1973 occurs within a northwesterly trending fault zone cutting a strongly chloritized, potassium feldspar altered, hornblende biotite gneiss phase within the hornblende monzonite. The mineralized zone is 500 metres long, averages 11 metres wide and extends to a depth of at least 170 metres. Mineralization comprises disseminated sulphide phases, principally chalcopyrite and pyrite, with veinlets of chalcopyrite and pyrite common along the contact margins of crosscutting syenite dikes and orthoclase veins. The best mineralized sections within the hornblende biotite gneiss are associated with these dikes and veins, as well as potassium feldspar and chlorite alteration and strong foliation, faulting and fracturing. These more intensely altered and mineralized sections show an enriched magnetite content relative to the less altered, less foliated surrounding rock. Possible reserves are 3 million tonnes grading 0.6 per cent copper (CIM Special Volume 15 (1976), Table 1, No.95).

Teck Cominco explored the Misty in 2006 and reported that the alteration and mineralization is focused along the southwest margin of the Duckling Creek complex within a deformation zone that was active during alteration and mineralization. Induced polarization (IP) geophysical surveys have outlined weak chargeability anomalies along 3.5 kilometres of the Misty trend that have been drill tested by six widely-spaced diamond-drill holes. Mineralization has been intersected in two areas (holes JTM06-02 and 04) with copper values averaging between 0.1 per cent and 0.2 per cent over core widths of up to 105 metres (Assessment Report 28944). The Misty trend is still open to the southeast onto the adjacent Lorraine property (093N 002) and to the northwest.

The area that is now the Jan-Tam-Misty property was originally staked in the late 1940s following the discovery of the Lorraine copper-gold mineralization (093N 002) but the property was comprised of several smaller properties under different ownership. It was not until 2005 that the

property came into its present outline under one owner.

The Misty area was first staked in 1948 for Kenneo Exploration Ltd. but no significant work occurred till the 1970s. It was not until 1960 that extensive surface exploration occurred. Fort Reliance Minerals Limited completed a ground magnetometer survey, a geochemical soil survey and limited surface trenching in 1962 and 1963. From 1970-73, El Paso Mining and Milling carried out an extensive program of mapping, soil sampling, IP and magnetic geophysical surveys, trenching, diamond drilling (9 holes, 1517 metres) and rotary percussion drilling (8 holes, 488 metres). El Paso outlined a mineralized zone 500 metres long, averaging 11 metres wide that extends to a depth of at least 170 metres. El Paso calculated possible reserves (pre-National Instrument 43-101) of 3 million tonnes grading 0.6 per cent copper (CIM Special Volume 15). The property was allowed to lapse and was re-staked in 1989. In 1989 and 1990, Aranlee Resources carried out programs of geological mapping, rock, soil and stream sediment sampling.

L.B. Warren staked claims over the Jan-Tam-Misty area several times since 1995; prospecting was intermittent to 2006 when Warren optioned the property to Teck Cominco Limited. In 2006, the work program included: 40.45 kilometres of line cutting, IP and magnetic geophysical surveys on the Misty, Boundary (093N 093), and Slide (093N 242) grids, detailed mapping in the Misty (093N 001), Boundary and Slide areas, property-wide geological mapping, an airborne radiometric and magnetic survey totalling 323 line kilometres and the drilling of 10 NQ diamond-drill holes totalling 3069.8 metres on the Misty and Slide targets.

Teck Cominco completed an extensive drilling program (about 5000 metres) concentrated on the Jan-Tam-Misty property in 2007. In 2008, the company completed about 1200 metres of drilling on its 2007 targets Boundary and Slide, and on one new target.

			Bibliography						
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EMPR PF Cyprus Anv	EMPR PF Cyprus Anvil (unknown (1977): Report on Misty - Bell Copper)								
EMPR PRELIM MAP	9								
EMR MIN BULL MR	223 B.C. 255								
EMR MP CORPFILE	(Fort Reliance Minerals	Limited)							
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673210, 673224, 67408	82, 681524								
Date Coded:	1985/07/24	Coded By:	BC Geological Survey (BCGS)	Field Check:	Ν				
Date Revised:	2019/06/17	Revised By:	George Owsiacki (GO)	Field Check:	Ν				