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Getty Copper steps up pace at namesake project

BY ROB ROBERTSON

LOGAN LAKE, BRITISH COLUMBIA — The president of Getty Copper (GTY-T) doesn't need to do much arm-waving about the prospective nature of a land package that he has spent the past 25 years putting together. After all, Highland Valley Copper, one of the world's largest mining operations, is practically on its doorstep.

"We're in elephant country," John Lepinski told the *The Northern Miner* during a recent visit to the Getty property, which he hopes to develop into a minimum 100-million-tonne resource grading 0.45% copper.

Under the direction of geological engineering consultant Watts Griffis & McQuat, Getty Copper has two diamond drill rigs operating as part of a \$3-million exploration program.

Situated 70 km southwest of Kamloops and 18 km west of the town of Logan Lake in south-central British Columbia, the Getty property comprises more than 165 sq. km of contiguous claims in the northern part of the Highland Valley camp.

The property is within 9 km of nine major copper porphyry deposits, including the currently active Highland Valley open pit, the past-producing Bethlehem and Highland mines, and the undeveloped JA deposit. The area is well-served by highways and a railway, with ample water and power available.

The Getty property is host to two known copper deposits: the wholly owned Getty North, and Getty South, which is held under a 50% joint-venture option agreement between Getty Copper and privately owned Roak Industries.

The Getty North porphyry deposit is the focus of current drilling, which is aimed at expanding the reserve base and developing an open-pit model. Watts Griffis & McQuat has been overseeing the project for the past year and recently updated the resource estimate of Getty North to a drill-indicated 35 million tonnes grading 0.47% copper, including 7 million tonnes of oxide mineralization grading 0.6% copper.

The estimate is based on recent drilling up to, and including, hole 97-2, which intersected 264 metres averaging 0.35% copper (including 74 metres grading 0.67% copper). In 1996, Getty completed 39 drill holes totalling 9,835 metres at Getty North.

Drilling to date in 1997 has been confined to the southwestern extension of Getty North as the company works to

upgrade an inferred sulphide resource to the drill-indicated status. At the time of our site visit, Getty Copper was in the process of completing holes 97-17 and 18.

Results have been reported for up to hole 97-13. Highlights include: 200 metres grading 0.32% copper from a drilled depth of 190 to 390 metres (including 72 metres grading 0.41% copper at 190 to 262 metres) in hole 97-5; 286 metres grading 0.32% copper from a depth of 212 to 498 metres (including 52 metres grading 0.71% copper at 220 to 272 metres) in hole 97-6; 41 metres grading 0.4% copper from 252 to 293 metres in hole 97-9 (the hole was lost in mineralization); 242 metres grading 0.33% copper from 182 to 424 metres (including 44 metres grading 0.79% copper at 358 to 402 metres) in hole 97-11; 114 metres grading 0.2% copper from 292 to 406 metres in hole 97-12; and 248 metres grading 0.28% copper from 92 to 340 metres (including 38 metres grading 0.47% copper at 102 to 140 metres), plus 26 metres grading 0.47% copper at 222 to 248 metres in hole 97-13.

Based on past drilling and underground sampling, Watts Griffis & McQuat reports that the Getty South breccia deposit could contain a potential inferred resource of 36 million tonnes averaging 0.47% copper, including a higher-grade 400,000 tonnes of 1.5% copper.

During 1996, 13 drill holes totalling 3,236 metres tested Getty South, returning mixed results. Highlights included: 70 metres grading 0.52% copper from a drilled depth of 33 to 103 metres (including 18 metres grading 1.63% copper at 33 to 51 metres) in hole GS96-1; 32 metres grading 0.31% copper from 60 to 92 metres in hole GS96-3; 16 metres grading 0.31% copper from 187 to 203 metres in hole GS96-4; 16 metres grading 0.76% copper from 56.5 to 72.5 metres in hole GS96-6; 18 metres grading 0.33% copper from 136 to 154 metres in hole GS96-7; and 10 metres grading 0.44% copper from 231 to 241 metres in hole S-10.

Bruce Perry, a company geologist and site manager, reports that "sampling the deposit by core drilling has proved to be challenging due to the unusual mode of occurrence of the principal ore mineral, chalcopyrite, which is erratically distributed as very coarse grains contained only within the breccia's cryptocrystalline tourmaline-quartz cement."



Bruce Perry (left), Getty Copper's site manager, and Deborah McCombe of WGM examine core. To the right is geologist Victor Preto.

Highland Valley

The five major porphyry copper-molybdenum deposits — Valley, Lornex, Bethlehem, Highmont and JA — lie within a 15-sq.-km area in Highland Valley in the central part of the Guichon batholith.

These copper deposits are associated with multiple phases of the Upper Triassic Guichon Creek batholith, which intrude Triassic-age sedimentary and volcanic rocks and are locally overlain by Early Jurassic to Middle Tertiary-aged sedimentary and volcanic strata. Most of the deposits are related to porphyry stocks and dyke swarms closely associated with the north-trending Lornex fault and northwest-trending Highland Valley fault.

Mineralization occurs in fractures, veins, faults and breccias, with fracture density the most important factor influencing grade. The first mineralizing event in the batholith followed emplacement of the Bethlehem phase, which produced the Bethlehem deposits, Getty North and South, and several smaller deposits. The second mineralizing event followed the emplacement of the Bethesda phase, the youngest major phase of the batholith. The Valley, Lornex, Highmont, JA and several smaller deposits developed at this time.

Highland Valley Copper is mining the Valley and Lornex deposits by open-pit methods, with the bulk of the ore coming from the Valley pit.

About 90.4 million tonnes of combined ore and waste were mined in 1996. Of that, 42.6 million tonnes were milled at an average grade of 0.396% copper and 0.006% molybdenum, for a daily throughput averaging 116,448

tonnes.

Mill recoveries averaged 91.2% for copper and 55.3% for moly, while the concentrate grade averaged 43% for copper and 53% for moly.

Total production contained in concentrates was 328 million lb. copper and 3.1 million lb. moly, plus 11,600 oz. gold and 1.8 million oz. silver. This compares with 348 million lb. copper and 3.5 million lb. moly, plus 12,800 oz. gold and 1.9 million oz. silver, in 1995.

A host of factors resulted in a 6% drop in throughput in 1996. Chief among these were: the relocation of the in-pit crushing and conveying system; grinding problems caused by harder ore; and modifications to the mining plan, as necessitated by a fault system in the northern wall of Valley pit. Operating costs rose to \$5.72 per tonne milled in 1996, compared with \$5.12 in the previous year.

Lower copper prices and output reduced Highland Valley's operating profit to \$102 million in 1996 from \$258 million in 1995. Revenues were down in 1996 to \$414 million from \$560 million in the previous year.

At year-end, reserves within the Valley and Lornex pits stood at 495 million tonnes grading 0.422% copper. An additional inferred reserve is estimated at 43 million tonnes grading 0.44% copper. Current reserves will allow for mining until the year 2008.

Drilling in 1995 outlined a possible resource of 200 million tonnes grading 0.4% copper beneath the current pit design of the Valley deposit. In its year-end review of mineral exploration in British Columbia, the Energy and Minerals division of the province's Geological Survey branch reported that this

resource was further examined in 1996, resulting in an indicated resource of 350 million tonnes grading 0.384% copper. Its value and economic limits will continue to be the subject of ongoing studies in 1997.

Highland Valley Copper is a 4-way partnership among: **Cominco** (CLT-T) with a 50% interest; **Rio Algom** (ROM-T) with 33.6%; **Teck** (TEK-T) with 13.9%; and **Hightmont Mining** with 2.5%.

Highland Valley Copper also owns the JA deposit, which has been deemed uneconomic, as it is covered by extensive, saturated overburden in excess of 170 metres thick. In 1983, reserves were estimated at 286 million tonnes grading 0.43% copper and 0.017% moly in 1983.

Former producers Hightmont and Bethlehem are closed. Hightmont was an intermediate-size deposit, with reserves defined in two main zones totalling 123.1 million tonnes. During a brief production period from 1980 to 1984, a total of 34.7 million tonnes averaging 0.22% copper and 0.03% moly was mined at a stripping ratio of 1.53-to-1.

Bethlehem was in production from 1962 to 1982. Four smaller deposits — Huestis, East Jersey, Iona and Jersey — range in size from 1.4 to 76.1 million tonnes. Combined, they represent a total reserve of 136.6 million tonnes. Of that amount, 93.1 million tonnes grading 0.5% copper and 0.012 gram gold were mined at an average stripping ratio of 1.93-to-1.

Getty North and South

The Getty North and South deposits occur in the north-central part of the Guichon batholith, at a higher elevation than the neighboring deposits.

Getty North is hosted by predominantly quartz diorite of the Guichon phase and is cut by a ridge of younger quartz diorite along a series of fracture sets. Mineralization is associated with a dyke swarm and occurs in the shape of an inverted horseshoe, with a central

zone of lower-grade mineralization that is displaced and controlled by intrusive contacts and faulting.

In terms of geological setting, Getty North is said to resemble the Bethlehem deposits. To date, it is defined over a 350-by-250-metre area and to a depth of 330 metres. It trends in a northwesterly-southeasterly direction and dips 50° to the southwest.

Lower-grade mineralization is dominated by chalcopyrite and pyrite. Bornite is evident with increasing grade. Oxidized mineralization covers the central and northern portions of the deposit, with depths reaching 100 metres. The weathered rock contains chalcocite, malachite, azurite, chrysocolla and occasionally native copper.

Supergene mineralization has been identified adjacent to the deposit's northeastern boundary.

Getty Copper is investigating the possibility of recovering cathode copper from the oxide mineralization through the use of heap leaching and solvent extraction-electrowinning. Preliminary leaching tests by the company's consulting metallurgist, Morris Beattie, suggest a copper recovery of 82.4% over a 120-day period.

Three recent HQ-size holes were drilled, principally to collect samples of the oxide mineralization for further metallurgical studies.

Tests on the primary sulphide zone indicate that a concentrate grading in excess of 35% copper could be achieved, with a copper recovery rate of about 87%.

Getty South is a breccia-hosted deposit, just east of a major, north-striking regional fault. Elliptical in shape, it measures 550 by 275 metres, and Perry said the magnitude of brecciation is unique to the area.

The deposit is hosted in Guichon quartz diorite, intruded by dacite and quartz diorite porphyritic dykes, and is cut by widespread faulting.

While exploration on the Getty

property dates back to the turn of the century, the bulk of the exploration activity has taken place since the early 1950s. Getty North has, since 1956, been drilled by nine different companies. A total of 192 holes comprising 27,000 metres of drilling was completed up to April 8, 1996. Getty South has seen 16,000 metres of drilling and 1,800 metres of underground development by previous operators.

Past work on Highland Valley deposits has demonstrated that induced-polarization (IP) surveys are the most effective tool for locating copper-moly mineralization. Large, moderate-intensity chargeability anomalies were outlined over the Valley and Lornex deposits, and a weak, but distinct, anomaly was outlined over the Hightmont deposits. Bethlehem's Jersey and East Jersey deposits were defined by a moderate anomaly.

Perry says soil geochem sampling of the B horizon shows good correlation of anomalous copper, iron and molybdenum values, with underlying mineralization.

In 1995 and 1996, Getty Copper carried out geophysical and geochemical programs, which revealed eight large IP chargeability anomalies and five copper-in-soil anomalies, some of which coincided with the geophysical anomalies.

An area 500 metres south of the Getty North deposit was tested by exploratory drilling late last year. The target was a high-chargeability anomaly coinciding with a substantial soil anomaly. Hole 96-34 intersected a 12-metre interval grading 0.25% copper and a 26-metre interval grading 0.1% copper.

In late 1996, follow-up IP and magnetometer surveys within the North Valley and Glossie grid areas revealed four new partially defined IP anomalies.

At the Glossie area, two large chargeability anomalies with low resis-

tivity are associated with surface showings of sulphide copper. Within the North Valley area of the property, two IP anomalies, measuring 1,500 by 700 metres and 2,200 metres in diameter, were detected.

The grids in both areas are being extended for further geophysical surveying. Geochemical sampling and geological mapping will begin in both grid areas as soon as weather permits.

In the late part of the 1996 and early 1997, Getty Copper staked an additional 600 mineral claim units to the west and northwest.

Last fall, the company entered into a joint-venture option agreement with **Globe Resources** (GBS-v) on the 1.4-sq.-km Transvaal property, immediately west of the Getty North area.

Getty Copper can earn a half interest by spending \$525,000 on exploration over a 3-year period.

A large, 1-km-wide chargeability anomaly trends on to the northern portion of the property, which is marked by historic underground workings.

In 1996, nine holes were drilled into the western portion of the area. No significant results were reported, though Perry said the holes encountered both oxide and sulphide copper mineralization.

The proposed \$3-million exploration budget for 1997 will include 16,000 metres of drilling, 140 line km of IP and magnetic geophysical surveys, geochemical soil sampling, geological mapping, base-line environmental studies and metallurgical testing.

The bulk of the drilling will be directed on the Getty North and South deposits. Various geophysical and geochemical targets in the Transvaal, Getty West, Glossie and North Valley areas will also be drill-tested.

Getty Copper has more than \$4 million in working capital, with approximately 23 million shares outstanding, or 31 million fully diluted.