Telephone: Office 685-2914
Res. 224-7309

R. H. SERAPHIM ENGINEERING LIMITED
Geological Engineering

316
— 470 GRANVILLE STREET
VANCOUVER 2, B.C.

ROLLING HILLS COPPER MINES LTD.

KAMLOOPS CLAIMS

May 21, 1971.

R.H. Seraphim, Ph.D. P.Eng.

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SUMMARY AND CONCLUSIONS

Rolling Hills owns 85 claims and controls a further 72 claims covering ground in and near the Iron Mask batholith, a few miles south of Kamloops B.C. The batholith has several phases of diorite and some peridotite or picrite lenses. It intrudes the Triassic 'Nicola' volcanics.

The area contains a multitude of copper showings, including one former producer, the Iron Mask, which produced 180,000 tons of 1.5% copper. The other larger showings known in the area are the Galaxy, reported at seven to nine millions tons of 0.6% Cu, the Makaoo zones with 311,000 tons of 1.12% Cu, the Cominco or Ajax zone with unknown tonnage (probably some millions of tons of low grade) and the Kimberley zone, also with unknown tonnage. The Makaoo zone is presently controlled by Rolling Hills.

The mineralized zones occur in disrupted zones such as on the contacts of the peridotite or picrite, in a fractured syncline inlier of Nicola volcanics, and in zones of more intense brecciation or fracturing. The known zones provide good I.P. anomalies. The spurious I.P. anomalies caused by magnetite can be sorted out by magnetic survey. The known zones also produce strong geochemical anomalies, which are spread by glaciation to the southeast of their source. The area contains relatively little outcrop. The glaciation gives a strong topographic lineation which effectively obscures the location of the geologic breaks and areas of fracturing which control much of the mineralization.

The geological, geochemical, and geophysical surveys show a number of anomalies, the larger of which have been tested by diamond and percussion drilling. Some of these show scattered copper mineralization, and need more detailed mapping prior to deciding if further work is necessary. Some small anomalies do not appear to have been drilled yet. Further work might disclose some deposits similar in size to those now known. Eventually, a number of deposits in the general area brought under one management might support a mill.

RECOMMENDATION

The agreement concerning the Makaoo claims should be modified or renegotiated to give continued control of that property. Detailed mapping of the areas of interest listed under the section on 'mineralized zones and exploration possibilities' should be completed; tying in claim outlines, topographic features, and geology to the survey grids. Those areas considered of sufficient interest on the basis of the above mapping can be tested with diamond or percussion drilling. The Noonday zone is shown by one recent diamond drill hole to have some considerably better grade than disclosed by the percussion drilling. Two or more further diamond drill holes, at say 100 foot spacing, to the southeast of hole 70-1, are recommended if a suitable agreement with Makaoo is obtained.

INTRODUCTION

The property was re-examined briefly on April 23 and 24, 1971. Previous examinations had been made in May, 1956, September, 1956, and December, 1964.

This report is an attempt to assemble and summarize the currently available information on the property. The numerous geological, geochemical, and geophysical maps are compiled, in so far as practicable, into sets with approximately the same scale to permit easy correlation. The maps have been studied, and those areas considered most attractive for further exploration have been outlined.

Mr. Ken Spraggs of Rolling Hills assisted in this work, and guided the recent trip to the property. Dr. A.P. Fawley provided a number of maps and some background information. The help of these individuals is appreciated.

CLAIMS

The following claims are listed as subject to the agreement with Makaoo Development:

Crown Granted Claims

Name	Lot No.	Name	Lot No.
Lost Cord	2561	Python	2562
Noonday	2563	Copperhead	2564
Python 2	2565		

Mineral Claims

Name	Record No.	Name	Record No.
Dot 2	15701	Dot 3	15702
Dot 5	15704	Python 3	13887
Python 4	13888	Python 5	13889
Python 6	13890	Python 7	13891
Python 8 Fr.	13892	Python 15	13899
Python 16 Fr.	13900	Cub 3	13907
Cub 4	13908	Cub 5	13909
Cub 6	13910	Cub 9	13903
Cub 10	13904	Cub Fr.	24000
Nan	23342	Net	23343
Nat	23344	Static Fr.	24059
Coon Fr.	23999	Jet 1	34172
Jet 2	34173	Jet 3	34174
Jet 4	34175	Jet 5	34176
Jet 6	34202	Jet 7 Fr.	34203
Jet 8	34204	Jet 9	34205
Jet 10	34228	Jet 11	34294
Jet 12	34295	Jet 13	34296
Jet 14 Fr.	34297	Jet 15	34298
Jet 16 Fr.	34299	Jet 17	34300
Jet 18 Fr.	35691	Jet 19	35692
Line 1	34177	Line 2	34178
Line 3	34179	Line 4 Fr.	34180
Queen 1 Fr.	34201	Top 1	34301
Top 2 Fr.	34302	Top 3 Fr.	34303
Colt 1	34304	Colt 2	34305
Colt 3	34306	Colt 4	34307
Colt 5	34308	Guerin 1	35693
Guerin 2	35694	Trough 1 Fr.	33495
Trough 2 Fr.	33496	Trough 3 Fr.	33497
Pye 1 Fr.	34165	Pye 3	34166
Pye 4	34167	Pye 5 Fr.	34168
Pye 6 Fr.	34169	Pye 7	34170
Pye 8	34171		

The following claims are listed as owned outright by Rolling Hills:

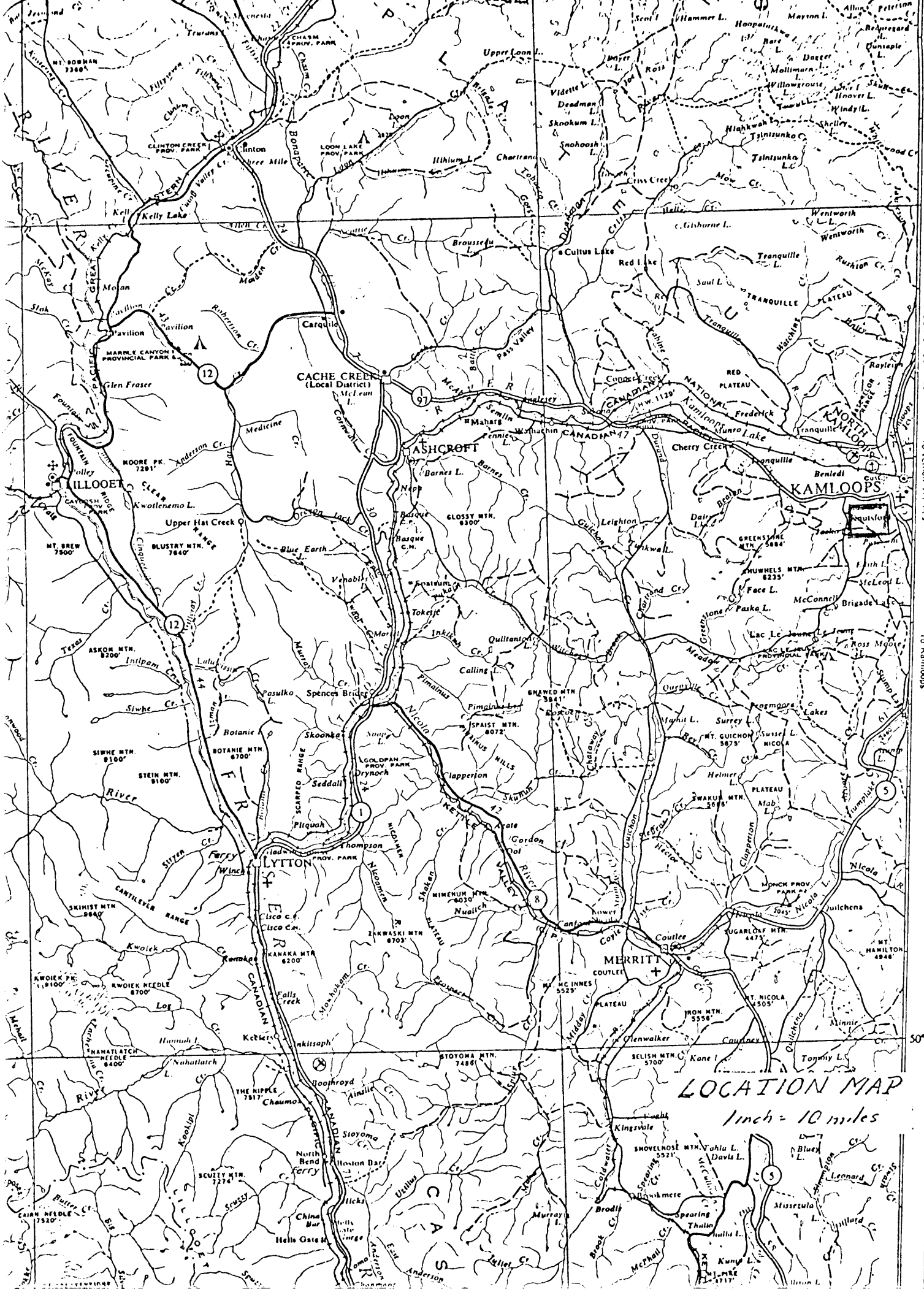
Mineral Claims

Name	Record No.	Name	Record No.
X2	41212	X3	41213
X4	41214	X5	41215
X7	41217	X9	41219
X10	41220	X12	41222
X16	41225	X18	41227
X20	41229	X22	41231
X24	41233	X28	41237
X30	41239	X31	41240
X32	41241	X33	75887
X34	75888	Ken 1	41313
Ken 3	41315	Ken 5	41317
Pam 1	41319	Pam 2	41320
Pam 3	41321	Pam 4	41322
Pam 5	41323	Pam 6	41324
Pam 7	41325	Pam 8	41326
Pam 9	41327	Pam 10	41328
Pam 11	41329	Pam 12	41330
Pam 13	41331	Pam 14	41332
Pam 15	41333	Pam 16	41334
Pam 17	41335	Pam 18	41336
Pam 19	41337	Pam 20	41338
Pam 21	41339	Pam 22	41340
Pam 23	41341	Pam 24	41342
Pam 28	41346	Pam 29	41347
Pam 30	41348	Pam 31	41349
Pam 32	75885	Pam 33	41351
Pam 35	41353	Wade 3	41625
Fox 7	41937	Fox 8	41938
Fox 9	41939	Fox 10	41940
Fox 11 Fr.	41941	Fox 12	41942
Fox 13	41943	B1	41244
B2	41245	B3	41246
B4	41247	B5	41248
B6	41249	B30	52968
B31	52969	B32	52970
B33	52971	Caddie 1	41258
Caddie 2	41259	Caddie 3	41260
Caddie 4	41261	Caddie 5	41262
Caddie 6	41263	Caddie 7	41264
Gal 1 Fr.	48499	Gal 2 Fr.	48500
Joseph	51330	Terry	51331
Marianna	51332	Fox 4	56184
Map 2 Fr.	92948		

The approximate location of these claims are shown on the accompanying 1 inch = 1500 foot map. The claims are also shown on the geological map at 600 ft = 1 inch, but locations are known to be inaccurate in places. Some correspondence with Makaoo indicates that doubt exists regarding the boundaries of the groups. A survey, at least with brunton and tape, of the claim lines is necessary with ties to the topographic features such as the lakes, and correlation to the drill holes and old shafts etc.

OWNERSHIP

Rolling Hills acquired the Kamloops area properties in 1963 through agreements with Quamco Ltd., Makaoo Development Ltd., and others. The Geroge Cross News Letter of Sept. 4, 1970 states "Makaoo Development Company Limited's copper prospect near Kamloops was optioned to Rolling Hills Copper Mines Ltd some 7½ years ago by an agreement which commits Rolling Hills to place the property in production by 29 Feb., 1972 subject to Rolling Hills having the right to terminate the agreement and relinquish its interest any time after $150,000 has been spent on the property ($142,280 had been spent up to 31 May, 1969). Makaoo would receive 20% interest in net proceeds after payment of pre-production costs. At Makaoo's annual meeting of 1 Sept. 70, shareholders rejected motions put from the floor aimed at amending the agreement by deleting reference to the production date, or alternatively by postponing it ----------."


LOCATION MAP
1 inch = 10 miles
CACHE CREEK
(Local District)
ASHCROFT
KAMLOOPS
MERRITT
LILLOOET
LYTTON
CANADIAN NATIONAL
CANADIAN PACIFIC
FRASER RIVER
THOMPSON RIVER
NICOLA VALLEY
To Barriere 30 miles
To Clearwater 71 miles
To Kamloops
51°
50°

Directors and officers of Rolling Hills are:

C.C. Keyes - president
G.D. MacDonald - managing director
F.W. Charlton
A.C. Armour
A.R. Belanger
H.L. Jestley - secretary

The former president and one of the largest shareholders, R.G. Campbell, died recently.

LOCATION, ACCESS, TOPOGRAPHY

The accompanying map shows the properties location with respect to Kamloops. The property is unusually well located with respect to water supply, timber, power, and housing facilities. The Transmountain pipeline crosses the property. The topography in the area is hilly, with open grazing land in the valleys.

HISTORY

The following is copied from the B.C. Minister of Mines Report 1956, pages 47-48:

"In 1896, the first year in which activity is recorded, over 200 claims were located. By 1900 underground work had been done at the Python, Noonday, Lucky Strike, Iron Mask, Wheal Tamar, Iron Cap, and Kimberley properties. Most of these properties have produced a few tons of selected ore. Exclusive of that from the Iron Mask and associated orebodies, the total production recorded from the area up to 1940 is 419 tons of copper-bearing material, mostly with low gold and silver content. West of the area the Copper King mine at Cherry Bluff produced 7,460 tons of material containing about 3 percent copper and 0.14 ounce of gold per ton. The Glen mine, in the same area, from 1891 to 1904 shipped 16,000 tons of magnetite as flux to the Nelson and Tacoma smelters.

The Iron Mask and Erin are the largest known orebodies. The approximate average grade of 182,494 tons milled and shipped from both bodies was 1.47 percent copper, 0.02 ounce per ton of gold, and 0.08 ounce per ton of silver. Production lasted with some breaks from 1904 until 1928, and was from the Iron Mask and partly from the Erin and smaller orebodies in the vicinity.

In 1916 the Granby Mining and Smelting Company optioned the Python, Evening Star, and Wheal Tamar groups and carried out diamond drilling, but the results of this work are not recorded.

Recent exploration has included geophysical surveys followed by diamond drilling. In 1951 and 1952 Berens River Mines Limited held 113 mineral claims and drilled twenty-two holes totalling 5,497 feet. Also in 1951 and 1952 Kennco Explorations (Canada) Limited made an electromagnetic survey of fifty-eight claims in the Pothook area, 3 miles west of the Iron Mask mine, and put down fourteen diamond-drill holes of a total length of 4,555 feet. This work indicated a large tonnage of submarginal material. In 1956 a geophysical survey was carried out on behalf of Graham Bousquet Gold Mines Limited over 118 claims which include the area surveyed by Kennco and which extend west of Sugarloaf Hill.

Mineral claims covered most of the area in 1956. The Consolidated Mining and Smelting Company of Canada, Limited has been active in the area since 1954. Including work done in 1929, this company has diamond drilled a total length of over 16,000 feet on the Ajax-Monte Carlo group. Other companies have extended old workings on the Night Hawk, Python, Copper Head, and Evening Star claims. Closely spaced diamond drilling has been done in 1955 and 1956 at two adjacent prospects in the extreme southeast part of the exposed batholithic area."

Rio Tinto conducted an I.P. survey over parts of the claims in 1963. Sulmac completed a large survey in 1965. The I.P. and magnetic maps accompanying this report are reproduced from their results. Vanco, an exploration company formed jointly by Steep Rock Iron Mines and Labrador Mining and Exploration, explored the Rolling Hills claims, together with adjoining ground, in 1965 and 1966.

Vanco's geochemical map is reproduced and supplied with this report. Vanco completed a small amount of diamond drilling. Rolling Hills has drilled a number of percussion holes and a few diamond drill holes on its own account since 1968.

Kimberley Copper, which holds adjoining ground, has been and continues to be active in the area. A diamond drill program, financed by Phillips Petroleum, was conducted on Kimberley's claims east of Rolling Hills in 1968 and 1969. More recently, Kimberley has optioned the Galaxy property, which is almost surrounded by Rolling Hills claims. They completed an underground program in 1969 and 1970. Nor West Kim Resources, (formerly Kimberley Copper Mines) is reported to be continuing with the underground work in 1971. (Northern Miner, April 29, 1971)

REGIONAL GEOLOGY

The regional geology is best described in J.M. Carr's report in the 1956 Minister of Mines. His text and map follow:

"The Iron Mask batholith is 3 miles southwest of Kamloops and extends for a distance of 18 miles in a northwesterly direction. It is partly overlain by Tertiary rocks. Associated with the batholith are numerous copper deposits, some of which carry appreciable values in gold and silver. Deposits of magnetite also occur. Despite a long history of exploration, only one important copper producer has been found, the Iron Mask mine.

The grain of the country trends northwest and has been emphasized by glacial scour. Outcrops are abundant on Coal Hill, Sugarloaf Hill, and the higher ground east of Jacko Lake. Outcrops are rate at the outer contacts of the batholith.

Rock Types

Four principal types of rock have been recognized within the batholith (*Geol. Surv., Canada,* Mem. 249, pp. 17–18, and unpublished thesis by W. H. Mathews); namely, an intermediate type (diorite, gabbro), a more acid type (syenite and monzonite), a basic type (pyroxenite), and a hydrothermally altered type. Only pyroxenite was mapped separately. Peridotite noted southeast of Jacko Lake was thought to be part of the batholith.

In this report, only two divisions are made of the batholithic rocks. They are made on the basis of field appearance and fabric rather than of composition. The rocks of one division are sufficiently different from those of the other that they may be considered to have distinct modes of origin. Altered rocks fall within either division and are described separately. The coarser-grained batholithic rocks are typically plutonic and possess a mean grain size greater than 1½ mm. Among them diorite and gabbro show rapid variation to much coarser grain sizes. The finer-grained batholithic rocks possess a mean grain size less than 1½ mm. and are more uniform in appearance. Some were previously mapped as Kamloops volcanics.

Cache Creek Rocks.—Grey glassy andesite and black, laminated, tuffaceous argillites that outcrop on the Merritt highway are assumed to belong to the Cache Creek group, of pre-Triassic age.

Nicola Rocks.—Rocks of the Triassic Nicola group are all volcanic. Limestone is recorded 1 mile southwest of Sugarloaf Hill (Kamloops map-sheet, 1896), but no sedimentary material of Nicola age is known in the present area.

The Nicola rocks differ in character from place to place around the batholith. The northern outcrops are of strongly altered andesite, red, green, or grey in colour. Some are porphyritic. Epidote disseminations and veinlets are usual, and in places the rocks are sparsely mineralized.

Near Knutsford the principal representative is a grey feldspathic andesite showing vesicularity and a mild alteration involving epidote. Pyroclastic types, predominantly of basaltic composition, are usual in the southern part of the area. Bedded and massive tuffs occur between Jacko and Edith Lakes. Mottled dull-green agglomeratic tuff is widespread parallel to the contact with Cache Creek rocks, where it is much sheared and broken. The same rock also outcrops west of the Monte Carlo workings. It is exposed underground in the Star workings, in association with grey volcanic rocks.

In places a distinction between Nicola and Kamloops volcanic rocks has to be based upon the degree of hydrothermal alteration shown and is hard to achieve in the field.

Picrite-Basalt.—Although occurring as intrusions within the batholith, this rock is not batholithic. The unaltered rock is known only at two places; namely, in an adit at 2,519 feet elevation on the Copper Head mineral claim, and southeast of Jacko Lake. Although it has been called peridotite, the unaltered rock possesses a glassy matrix and is similar to picrite-basalt north of Kamloops Lake. It is a greenish-black dense rock of conspicuously porphyritic appearance. Closely spaced crystals of serpentinized olivine range in size to as much as one-fifth of an inch. Both when fresh and when altered, the rock is for the most part appreciably magnetic.

Coarser-grained Batholithic Rocks.—Pyroxenite is known only in the Jacko and Edith Lakes area. It is a heavy grey-green rock of crystalline appearance and is strongly magnetic. It consists almost wholly of pyroxene, hornblende, and magnetite. Dioritic or gabbroic rocks rich in pyroxene occur in the same region, and will be termed pyroxenic diorite.

Gabbro and diorite are not separately recognizable except under the microscope, and diorite will be used as a general term. The rock has a variable appearance because of common changes in grain size and in the proportion of light- to dark-coloured components. In slightly weathered outcrop it is dark brown to light grey. On the broken surface the rock is uniformly dark grey-green or is white and dark speckled, according to whether the feldspar is somewhat altered or is fresh. Biotite is a usual component and shows as glistening flakes that may be light coloured by alteration. The rock is commonly magnetic. An inconstant banding is developed in places, and inclusions of dark fine-grained rock are quite usual.

Monzonite principally underlies an area along the northeast margin of the batholith, eastward from the Lost Chord working. It occurs locally in several other places, notably at the Iron Cap mine. The rock is more uniform than diorite, from which it is distinguished by the pink colour of much of the feldspar, which includes orthoclase. In part at least, monzonite is an alteration product of diorite. It may be relatively non-magnetic, as at the Iron Cap mine.

Finer-grained Batholithic Rocks.—These rocks may be termed microdiorite and micromonzonite, to distinguish each from its coarser-grained counterpart of similar composition. Microgranodiorite also occurs. These varieties probably do not form separate bodies, but instead grade into each other. Processes of alteration and recrystallization appear to be responsible for some of the existing differences.

All the rocks are grey, white, or pinkish in colour. The mean grain size is 1 mm., but a porphyritic tendency is usual. There is commonly a perceptible foliation, marked by bladed crystals of pyroxene and hornblende and by flaky ones of biotite where this

mineral is sufficiently abundant. Sparse chloritic inclusions of some other rock type do not exceed 1 inch in length. At one locality, 3,000 feet southeast of Coal Hill, somewhat larger inclusions of altered diorite were observed.

Microgranodiorite is a whiter rock than microdiorite and in places contains visible quartz. It mainly occurs south and east of the Lucky Strike workings, but is also present in the vicinity of the Ajax workings.

Microdiorite is light grey and speckled on the weathered surface, and a uniform darker grey on the fresh surface. Like the associated rocks, it is commonly cut by epidote veinlets. In general it is a rather even-grained rock, but it may grade into a conspicuously porphyritic type.

Micromonzonite is distinguished from microdiorite by its prevalent pinkish coloration, which is due to orthoclase or microcline. The rock may contain a small amount of quartz. Micromonzonite and monzonite may locally converge in character so that the one is difficult to tell from the other, probably because both are altered varieties of dioritic rocks.

Porphyritic microdiorite is a distinctive rock, yet is not easy to separate from microdiorite in the field because of complex intergradation. It contains abundant elongate hornblende crystals, set more or less parallel to one another in a dark-grey crystalline matrix. The rock is thus commonly foliated. Porphyritic microdiorite occupies most of Sugarloaf Hill, occurs in the Ajax-Monte Carlo vicinity, and outcrops in the southeasternmost part of the batholith. In all of these places it is slightly mineralized. Rather similar rock is seen a short distance south of the Python shaft in unknown relationship to the surrounding diorite. Certain dykes cutting diorite, Nicola volcanics, and picrite-basalt resemble porphyritic microdiorite.

Kamloops Volcanic and Sedimentary Rocks.—The Tranquille beds are very poorly exposed. At the filled-in shaft of an abandoned coal mine on Guerin Creek, debris of altered lava with copper stain confirms that here the beds rest directly on Nicola rocks, as mapped in 1895 (Kamloops map-sheet). The beds are reported to be 50 feet thick at this locality, with several coal seams totalling 30 inches. They are much broken up (Ann. Rept., 1924).

The volcanic rocks have been dated as Miocene or earlier (Mem. 249, p. 39). Agglomerate occurs in the extreme north of the area. Elsewhere comparatively fresh andesite and basalt lavas give indications of low dips. Direct evidence of basalt lava resting on the batholithic rocks exists north of Edith Lake.

Agate of poor quality weathers out of the volcanic rock, west of the Merritt highway and three-quarters of a mile from its junction with the Trans-Canada Highway.

Dykes.—Excepting those cutting Tertiary volcanics near the Trans-Canada Highway, no post-mineral dykes are identified. Dykes are scarce or absent in the heart of the batholith. Andesite dykes, some of which resemble porphyritic microdiorite, occur within diorite in the Iron Mask and Python vicinities. They were intruded prior to alteration of the diorite.

Rock Alteration

The batholithic rocks are strongly altered near zones of structural weakness. White rocks and pink rocks are produced, each representing a distinct kind of alteration. Distribution of the two kinds is overlapping, and since there is no evidence as to which was first, they may be related in origin. The alteration occurred subsequently to dyke intrusion and prior to mineralization. It was presumably effected at fairly high temperatures.

White alteration, which has been named albitization (*Geol. Surv., Canada,* Mem. 249, pp. 104–105), causes progressive elimination of dark minerals and results in speckled rocks which are whiter the more intense the alteration they represent. Any previous coarseness of grain is preserved as seen under the microscope, but in the field a rather fine-grained appearance is universal. Calcite and epidote are commonly dis-

seminated and in veinlets, and may be accompanied by minor amounts of pyrite. Magnetite content is low, the iron having been absorbed into new chlorite, epidote, and pyrite.

White rocks produced by alteration of diorite and gabbro are partly albitites, and partly rocks that are otherwise identical but contain feldspar more calcic than albite. The difference seems, from the present study, to bear no relation to proximity of mineralization and cannot be recognized in the field. The bodies of altered rock are unsymmetrical but dyke-like, with relatively sharp outlines against less-altered diorite. The trend is irregular and the size ranges from a few feet to many tens of feet in least dimension. Most of the altered diorite shows no copper mineralization. The principal areas in which these altered diorite bodies occur are between the Iron Mask mine area and the summit of Coal Hill, and north of the Monte Carlo workings. Near the boundary of the strongly altered areas, diorite is altered to white rock in a net pattern along intersecting sealed fractures.

The white alteration of the finer-grained batholithic rocks is less noticeable because of the light colour and fine grain of the unaltered rock. In the Ajax-Monte Carlo area at least, the white altered rocks are albitites. The alteration commonly affects numerous narrow sections of the rock rather than the whole mass. However, in the vicinity of the Ajax tunnel, where mineralization is strong, large masses of microdiorite are fairly uniformly albitized. Veinlets of analcite and albite traverse the altered sections, but in some instances similar veinlets are of a more calcic feldspar. The strongly albitized rock is generally non-magnetic; it rarely contains lenses of solid magnetite up to 6 inches wide.

Pink alteration is most obvious between the Iron Mask mine and the Noonday shaft, where replacement veins of pink orthoclase feldspar are very abundant. The pink veins occur sparsely in diorite and monzonite elsewhere along the margin. They have not been observed in the interior of the area, nor are they well developed in the finer-grained rocks. The veins vary from massive and persistent to narrow and diffuse. In the immediate vicinity of the Python mineralized zone the pink veins form a replacement breccia (that is, a breccia bonded by replacement veins). Adjacent to the veins, diorite is changed to monzonite. Individual veins frequently contain one or more of the following minerals: Calcite, epidote, albite, biotite, magnetite, and chalcopyrite. Calcite and epidote are the most common, and at least a trace of chalcopyrite usually accompanies them. Biotite may be somewhat earlier than the other minerals, whose crystallization partly occurred after the veins were fractured. All the above minerals may occur within the adjacent altered diorite rather than in a vein.

Monzonite at the Iron Cap mine and east of the Lost Chord claim almost certainly represents altered diorite; it contains slender pink veins and the mineral assemblage just noted. Magnetite is abundant as lenses and veins, but the rock itself is impoverished in magnetite.

Although well-defined pink veins do not occur in the finer-grained rocks, orthoclase and microcline have undoubtedly been introduced within some of the rocks classed as micromonzonites.

Overlapping of the pink and white alterations is evident at several localities. On the Ajax claim, both unaltered and albitized microdiorites contain vague stringers and patches of pink feldspar. In the Python and Iron Mask areas, similarly vague pink veins occur in whitened diorite. Near the Lucky Strike shaft, albitized diorite contains much introduced quartz and orthoclase.

Picrite-basalt in structurally weak zones is mostly altered to a hard uniformly dark-green rock in which the altered porphyritic crystals appear as vague rounded black shapes. Where the rock is fractured, the fracture planes are smooth and pass with equal facility through altered crystals and matrix. Microscopic examination shows that the original, partly serpentinized olivine crystals are reduced to talc, serpentine, and magnetite, and that the glassy matrix and small pyroxene crystals are replaced by a fine dense

aggregate of tremolite, chlorite, and magnetite. The altered rock corresponds very closely to the third Carabine Creek specimen described in Memoir 249 (p. 24).

Picrite-basalt is altered in this manner at its contact with diorite on the Copper Head claim, but has suffered only talcose alteration of the porphyritic crystals at its contact with altered Nicola volcanics. The more fully altered rock may break down to a slippery green sand, from which reddish hematized pellets can be picked by hand. This later alteration was probably effected during faulting, for the disintegrated rock appears along the strike of the Copper Head shear zone.

At the Larsen workings and near the Iron Mask shaft, picrite-basalt is converted to a black rock glistening with abundant finely disseminated biotite and traversed by talcose slips. The outlines of the altered olivine crystals cannot be distinguished, and the rock consists largely of pyroxene, hornblende, and biotite. Under the microscope, narrow veinlets of these minerals with brown garnet are seen. This alteration is a high-temperature kind and probably involved addition of material.

Basaltic tuff at the Star shaft and olivine-basalt at the Monte Carlo workings are altered to talc-chlorite rocks.

Structure

Evidence concerning the structure of this part of the batholith is insufficient to allow firm conclusions to be drawn. The following is, therefore, a discussion of the structural setting in which mineralization has occurred.

Two or three intrusive episodes preceded consolidation of the batholith; two if the coarser- and finer-grained rocks be considered contemporaneous, three if they be considered distinct. The picrite-basalt bodies are structurally a part of the batholith, and imply a phase of intrusion after emplacement of the coarser-grained rocks, because lenses of diorite are enclosed by picrite-basalt in the Larsen crosscut. There is no direct evidence of the age of picrite-basalt relative to the finer-grained batholithic rocks, but the following relationships appear significant.

Sections of micromonzonite occur well inside picrite-basalt in drill-hole No. 23 south of the Mars tunnel, and resemble dykes rather than inclusions. Porphyritic microdiorite occurs as dykes cutting picrite-basalt and diorite. Picrite-basalt at the Larsen workings has apparently been altered at high temperatures and with addition of magnetic components, presumably from near-by later micromonzonite. These indirect lines of evidence suggest that the finer-grained rocks are later than picrite-basalt.

The finer-grained rocks should therefore be later than the coarser-grained rocks, but no firm evidence has been found. Alteration has obscured the original relationships, and on surface no precise contact between large masses of the two rocks has been seen. In the Ajax drill cores the contact is interfingering, with diorite retaining its coarseness of grain at all of the many individual contacts with the finer rock. The relationship is certainly not gradational, and the finer-grained rocks seem to have intimately penetrated the previously consolidated diorite.

The sequence of intrusion may be: (*a*) Coarser-grained rocks, (*b*) picrite-basalt, and (*c*) finer-grained rocks.

A probable pre-Cretaceous age has been assigned to the batholith, and rocks at Carabine and Watching Creeks that correspond closely with picrite-basalt of the present area have been dated as post-Cretaceous (Mem. 249, pp. 18, 29). A cursory examination made by the writer in the Carabine Creek area failed to indicate that the picrite-basalt was part of the bedded tuff succession, to which a post-Cretaceous age applies. Consequently the picrite-basalt may not be post-Cretaceous, and the earlier age of the Iron Mask batholith can be accepted.

Zones of recurring fracture were active early in the history of the batholith. Portions of the zones are recognized where picrite-basalt or Nicola tuffs are in contact with batholithic rocks. Three early zones are partly identified—one at each batholithic margin and

the third within the batholith between the Evening Star and Iron Mask localities. Unlike the marginally situated zones, the third zone is apparently strongly arcuate. The zones may have partly determined the early batholithic contacts, which date from the first intrusive episode. In a second episode the zones were invaded by individual bodies of picrite-basalt. In a third episode, intrusion of the finer-grained batholithic rocks tended to follow the fracture zones and to obliterate them. These successive events have determined the dominant northwesterly trend of the intrusive contacts.

No through-going faults have been identified within the batholith. Faulting is chiefly observed at and near the contacts of batholithic rocks with picrite-basalt or altered tuffs. In the Python, Iron Mask, and Ajax areas, alteration of the batholithic rocks was preceded by intensive brecciation within 600 feet of picrite-basalt contacts. Coincidence of the later zones of dislocation with parts of the early fracture zones does not necessarily imply reactivation of the early zones throughout their whole original length; on the contrary, movement was probably restricted to the immediate vicinity of the altered incompetent picrite-basalt and basaltic tuffs.

Post-mineral faulting is probably widespread but may involve no large displacements. It is evident in the Python mineralized zone and is reported at the Iron Cap mine. Southeast of the Monte Carlo workings, Tertiary lava is probably faulted against Nicola rocks.

Discussion of the Mineralization

The copper deposits are veins, stockworks, and disseminations of replacement origin and mesothermal type. Chalcopyrite is the principal copper-bearing mineral and is accompanied by pyrite in widely varying proportion. Partial oxidation of sulphide minerals may extend to 150 feet depth but is unpredictable in occurrence. Gold and silver values are generally low and, if anything, decrease with increasing proportion of pyrite. Native copper and chalcocite occur at two localities and are probably of primary origin. Other native copper disseminations lie west of the area. Bornite is important at the Copper King mine at Cherry Bluff.

Altered wallrock is the chief gangue. In the northern deposits it contains much pink orthoclase feldspar. Magnetite is associated with this pink material as veins, lenses, and strong disseminations. One small magnetite vein, intersected by a diamond-drill hole east of the Lost Chord claim, contains apatite, and in that respect resembles iron deposits to the west of the present area. In this and other cases the magnetite is earlier than the chalcopyrite. Calcite and epidote are invariably closely associated with the sulphides. Gangue minerals of more restricted distribution include gypsum, ankerite, specular hematite, and quartz. Fluorite, prehnite, and zeolites occur in the northern part of the area.

Rock alteration and mineralization in batholithic rocks are as a rule adjacent to structurally weak masses of picrite-basalt and altered tuffs. Mineralization occurs at some of these contacts and as much as 1,000 feet from them. Stockworks such as that of the Python locality are mineralized zones of brecciation. Veins, on the other hand, are mineralized faults and locally exhibit a uniformity of attitude, such as that shown by the Iron Mask mine plans and as may exist in the Ajax area.

Intense rock alteration is a general guide to the likelihood of strong or widespread mineralization. In the coarse-grained rocks, pink replacement breccia represents structural conditions conducive to mineralization. Monzonite with few pink veins may be host to disseminated sulphides. White rock alteration of diorite is probably too widely distributed to indicate orebodies. Among the finer-grained rocks, better mineralization may be indicated by a greater intensity of white alteration.

Geophysical exploration assumes special importance in view of the poorly exposed nature of many critical areas. Electromagnetic methods have been widely used, and, despite the drilling of many non-mineralized conductors, probably remain the most satis-

factory. Resistivity methods have been employed to a limited extent in the Python area, but are suspect because of the rapidly varying thickness of cover. Magnetic methods have received little attention, yet may have some use in view of the possible lowering of magnetic susceptibility by white alteration of the rocks. Pink alteration, in the form of replacement breccia, or monzonite, is accompanied by a rise in magnetic susceptibility.

[References: *Minister of Mines, B.C.*, Ann. Repts., 1896–1930, 1940, 1951, 1952, 1955; *Geol. Surv., Canada,* Report, Kamloops Map Sheet, 1895; *Geol. Surv., Canada,* Mem. 38, 1915, pp. 140–141; *Geol. Surv., Canada,* Econ. Geol. Series No. 3, 1926; *Geol. Surv., Canada,* Mem. 249 (Nicola Map-area), 1948.]

Makaoo Development Company Limited

(50° 120° N.E.) Head office, 1208 Vancouver Block, Vancouver; mine office, Kamloops. W. I. Nelson, president and general manager, Kamloops. This company holds seventy-five mineral claims in a block whose boundaries are shown in Figure 3. Five of the claims are Crown granted. Exploration work has been done by the present company on the Python and Copper Head zones in the Python group (1),* on the Lost Chord claim (4), Orphan Boy shaft (2), and the old O.K. workings (5). Earlier activity was principally on the Python group of four Crown-granted claims, some of which were located as early as 1896. Prior to the First World War, the Python workings consisted of the Python adit, 525 feet in length, the Python shaft, 123 feet deep, and the Noonday (3) shaft, about 100 feet deep. The position of these workings is shown on Figure 3. In 1899, 30 tons of material containing about 8 per cent copper was shipped from the Python group.

The group was held by Canadian Mining and Smelting Company for a short time in 1954, when selected areas were covered by electromagnetic survey.

In 1955 the Makaoo Company reclaimed the Python adit and renamed it the 2825 level. In the course of this work the adit was shortened from 525 to 460 feet. During 1956 the Copper Head and Python zones, upon which much of the early exploration work had been done, were further developed. Underground work at this level consisted of 295 feet of drifting and 179 feet of crosscutting in the Copper Head zone, and 806 feet of drifting and 610 feet of crosscutting in the Python zone. In addition, a new adit at 2,519 feet elevation was driven 350 feet in a southwesterly direction from a portal situated 1,130 feet northerly from the portal of the 2825 level. Surface exploration included 901 feet of trenching, directed along the picrite-basalt and diorite contact from the Orphan Boy workings eastward to a point 2,600 feet beyond the Python shaft. Surface diamond drilling amounted to 3,822 feet, much of which was done on other groups of claims. The sites of these holes are shown on Figure 3. A total of 16,200 feet of road was constructed.

The *Copper Head* mineralized zone occurs within picrite-basalt at a highly sheared contact with altered diorite. The shearing is 6 feet wide and has an over-all trend of north 40 degrees west, but in the Copper Head workings it strikes north 25 degrees west. The dip is 70 degrees or more to the south. The picrite-basalt is pulverized within the shear zone, and in the footwall is less broken up but contains some strongly sheared sections. The hangingwall diorite contains pink veins of orthoclase feldspar and is traversed by numerous chloritic fractures.

Chalcopyrite is strongly disseminated in the shear zone and in the footwall. Gangue minerals are not abundant. Lenses of calcite and occasionally of tremolite asbestos occur, and contain small stringers of chalcopyrite. Small crystals of white fluorite line cavities within the mineralized rock. Little pyrite is present, and little oxidation of the chalcopyrite has occurred. On the hangingwall, diorite contains disseminated chalcopyrite for a foot or so from the shear zone and at greater distances where brecciated pink veins occur.

* Numbers in parentheses refer to location on Figure 3.

The detailed geology on Rolling Hills claims is best shown on the accompanying 600 ft = 1 inch map which is adapted from work done by Dr. P. Badgley in 1956. A copy of Badgley's report is available. Generally, his mapping provided information similar to Carr's except for some differences in rock names.

The principle item of economic interest to be gained from the geological work is a common association of copper mineralization with the contact of the picrite or peridotite bodies. Mineralization is also associated with the pink feldspathized zones, but pink feldspathization is considerably more widespread than the picrite.

Five mineralized zones of major interest have been determined to date in the Kamloops Area. The Iron Mask produced 180,000 tons of 1.5% copper, 0.02 ounces gold, and 0.08 ounces silver per ton. The ore zones were 10 to 30 ft wide, and 150 to 200 feet long. They were located near the contacts of picrite bodies.

The Galaxy zone has been reported to contain seven to nine million tons of 0.6% copper (Northern Miner, Sept 1965). It lies in what appears to be a pendant of highly altered Nicola rock (described alternatively as picrite by some geologists). The mineralized zone is approximately one thousand feet long and up to five hundred feet wide. The mineralization is erratic, apparently controlled by numerous fractures and shear zones.

The Makaoo zones are reported to contain 311,000 tons of 1.12% copper. (Geddes Webster private report dated Sept. 22, 1956) This mineralization is in two zones, the Python or largest zone is in a replacement breccia of diorite with abundant and irregular feldspathization. The Copperhead zone is in irregular fracturing near the contact of a picrite body. The Makaoo property is controlled by Rolling Hills, and is described in more detail later.

Cominco has not published any tonnage or grade for the mineralized zone near Jacko Lake. Diamond drilling in 1929 disclosed an area with many discontinuous mineralized bands. The 1929 Minister of Mines page 227 reports 109 ft of 0.77% Cu in one hole. "Similar non-continuous bands, ranging from 10 to 50 ft in width and with an average content of around one percent copper, were indicated in nine out of twelve diamond drill holes put down on the Ajax group, two of these being within the wide zone of mineralization indicated by the surface workings." The mineralized area is shown on a map in the 1956 Minister of Mines report page 65, together with a detailed description. The mineralization apparently lies in dioritic rocks, and is associated with albitization near a lens of picrite.

Kimberley Copper has not published any tonnage or grade for the drilling completed by Phillips Petroleum in 1968 and 1969. A 166 ft intercept was reported at 0.406% Cu., and a 120 ft intercept was reported at 0.367% Cu. (Northern Miner, July 18, 1968)

GEOCHEMISTRY

The area was the subject of a widespread geochemical survey by Vanco. The parts of the Vanco survey which are on Rolling Hills claims have been copied at a scale of 600 ft = 1 inch and are correlated as closely as possible with the claims and hence with the geology and geophysics. The survey did show strong anomalies over the known showings, particularly the Cominco and Galaxy showings. Aerial photographs show a strong glacial scour, with apparent movement from the northwest to the southeast. This scour has probably spread the anomalies out. Consequently, in theory one should test the northwest head of an anomalous zone to determine the source of the mineralization. The areas which are considered to be source areas are indicated on the geochemical map. The determination of these source areas is not usually precise unless information which gives more direct information on location, such as mineralized exposures or geophysical readings, are also available. If geochemical source areas correlate with I.P. highs, these areas are considered to be attractive areas for exploration.

GEOPHYSICS

Sulmac completed widespread geophysical surveys, both magnetics and induced polarity, over the area. Their map sets, originally on 400 ft to the inch, have been transferred to a scale of approximately 600 ft to the inch, and pieced together to permit correlation with the 600 scale geological and geochemical maps. Also, some detailed I.P. lines over part of the Makaoo ground has been redrafted to permit correlation with the 100 scale geological map of that area.

Hunting's I.P. survey over the Makaoo area, and Canadian Aero's survey over the Buda Shaft area (east of Cominco) are also available. The latter was added to the 600 scale Sulmac map.

The magnetic surveys are of considerable help in determining the lithological trends. The picrite or peridotite is strongly magnetic, and thus its extent and contacts may be deduced from the magnetic maps. The tertiary volcanics (see Carr's map) which lie to the north and west of the Rolling Hills claims are also strongly magnetic, but produce 'patchy' magnetic contour outlines which makes these rocks relatively easy to distinguish from the intrusives. Magnetite does provide I.P. anomalies, thus I.P. anomalies which co-incide only with magnetic anomalies rather than with geochemical anomalies are not attractive exploration targets.

DRILLING

A large number of percussion and diamond drill holes have been completed on the claims. Many of them tested geophysical or geochemical anomalies. Some were drilled only to comply with assessment work regulations. Those which are close to the Makaoo workings are shown on the 100 ft to the inch map of that area. A second concentration of percussion drill holes exists in the neighborhood of the Cominco claims and the Buda Shaft (east of the Cominco claims). The assay results of the percussion holes which are available are compiled in an appendix accompanying this report.

The percussion drilling disclosed two mineralized areas of interest, one on the Noonday claim, and one near the Buda Shaft. Maps at one hundred feet to the inch of these drilled areas accompany this report, and are discussed later on in this report.

The record of the diamond drill holes is also incomplete. The holes are plotted in so far as the data permits on the accompanying maps, and summary logs are appended.

Makaoo completed a number of holes in the 1950's before their property was optioned to Rolling Hills. Most of their holes are labelled 'S' and are shown on the reproduction of the 600 scale geological map, the 100 scale Makaoo property map, and 100 scale reproduction of the Sulmac I.P. survey. Some further record of these holes

might be available through A.P. Fawley, or in Makaoo files through W.I. Nelson (7611 French St., Vancouver). Many of the holes away from the principal Makaoo workings were drilled only for assessment work requirements, as claim grouping was more restricted at the time they were drilled. (See W.I. Nelson report of Nov. 1, 1962)

Rolling Hills completed several diamond drill holes, A1-63 to A4-63, in 1963 (see Appendix and Fawley Report of Oct. 1, 1963), before switching to percussion drilling. Poor core recovery was a factor in leading to the switch.

Vanco drilled a series of holes on Rolling Hills, Galaxy, and Inland Copper claims in 1965 and 1966. A half dozen of these are reported to have been on the Rolling Hills claims, testing the strongest I.P. anomalies determined by the Sulmac survey. (Details concerning the holes might be obtained from A.P. Fawley's or Vanco's files, but were not available at the time of writing this report).

Rolling Hills drilled several holes in 1966, 1967, and 1970. These were mostly for assessment work, and are summarized in the appendix.

TUNNELING

The only tunneling completed in recent years on the claims is the work by Makaoo in the 1950's, on the Python claim. Makaoo drove the 2824 level to explore the Copperhead and Python zones. The previously quoted tonnage estimated by Geddes Webster, 310,000 tons of 1.12% copper, came as a result of this work. Makaoo started a second tunnel, at 2519 elevation, but did not complete it primarily because of the very incompentent ground in the picrite. The above mentioned tunnels are shown on the accompanying 100 scale map.

Numerous small shafts are found throughout the claim group. The location of many is shown on the geological map. They were almost all completed by the prospectors in the early 1900's.

MINERALIZED ZONES AND EXPLORATION POSSIBILITIES

Zone 1 - Makaoo, Noonday etc.

The most extensive, but not necessarily continuous, zone of mineralization known is that extending southeasterly from the Orphan Bay shaft through the Copperhead, Python, Noonday and Python 8 claims to the Guerin claim, all on the Makaoo option. The mineralization is found near the contacts, chiefly the south-west contact, of a picrite or peridotite intrusive. Albitized diorite is the host rock.

The zone provides an I.P. anomaly (Zone 1) 8000 feet long, and still open to the east on adjoining claims. The detailed geophysics "indicated the zone to be caused by a narrow body of 200-300 feet in width".

The zone shows a strong variation in magnetic intensity; the picrite is invariably highly magnetic, and the areas of pink feldspathization tend to show as magnetic lows. Thus, as a generality, exploration should be intensified south of the magnetic highs caused by the picrite and in the magnetic lows i.e. the feldspathized zones.

The geochemical readings over the zone are erratic, perhaps in part because of the variable topography and overburden depth, and partly because of the strewing from the glaciation. The mineralized material scoured from the most northwest showings has probably been spread to the southeast, and obscures anomalies from the mineralization further southeast, down the glacial trend.

The mineralization known in the zone includes 220,000 tons of 1.11% copper in the Python zone, 90,000 tons of 1.13% copper in the Copperhead zone (Geddes Webster estimates), a zone 450 feet long and 100 to 200 feet wide with 'less than 0.5% Cu' on the Noonday claim (the assays are not all contiguous, thus an accurate calculation is not possible) and many smaller showings.

The detailed maps at 100 feet to the inch show the main workings, including trenches and drill holes, on the west part of this zone. This part appears to be tested sufficiently to preclude the possibility of developing a large tonnage ore deposit, but further detailed work might well add to the tonnages reported above. One recent drill hole, DDH 70-1, did intersect 75 feet of 2% copper in the Noonday zone, which is considerably better than shown by the percussion drilling. (The core was apparently sampled by taking alternate pieces of core rather than splitting it in the conventional method). The rock in this general area is relatively incompetent, however, and if underground mining is planned it might be abnormally expensive. Holes S 51, S 52, and S 53 test the better I.P. responses (see 100 scale I.P. map) to 2500 feet southeast of the Noonday Zone, and failed to show mineralization considered economic at present.

Further southeast, across the Pye 3 and Pye 6 claims, exploration has been less intensive. The few drill holes show some copper mineralization, thus detailed mapping and correlation of the drill holes to the geology and to the several types of surveys is warranted. The I.P. survey does show a wider anomaly towards the southeast, and the geochemical anomaly, though perhaps caused by glacial strewing, also remains open. The albitized diorite which appears to control the mineralization is shown to continue in this direction.

Zone 2 - East of Iron Mask

This zone is indicated on Sulmac's maps as an area of patchy I.P. highs which correlates closely with an area of magnetic highs. Thus, as suggested by Sulmac, the I.P. anomalies are probably caused by magnetite. The area is underlain by dioritic rocks. It fails to produce a geochemical anomaly. It might be ground checked to determine if overburden is sufficiently thick to make geochemical results unreliable, but otherwise is considered of little interest. No drill holes are known in the zone, and no indications of mineralization.

Zone 3 - Southeast of Iron Mask

Zone 3 lies approximately 1500 feet northeast of the Galaxy mineralized zone now being explored by Nor West Kim. Part of the zone is likely on Galaxy claims. The east part of the zone is an I.P. high accompanied by magnetic lows. The I.P. high co-incides with the head of a geochemical anomaly, and is thus particularly attractive. Drill holes S 5 and S 8 lie too far to the west to have investigated the best part of the co-incident I.P. geochem anomaly. A ground check of this zone is warranted, and the precise position of the Rolling Hills-Galaxy boundary should be determined.

Zone 4 - East of Python Lake

This zone is shown as a high on the I.P. maps. It has little or no magnetic expression, and does not provide a geochemical anomaly. It is mapped to be the Kamloops (Tertiary) rocks by Badgley but in the Nicola rocks by Carr. It was investigated by one drill hole, an old Makaoo hole numbered S 15. The I.P. anomaly does not appear attractive unless supporting data can be acquired through a ground check, or through determining some encouragement in the old drill hole results.

Zone 5 - Southeast Makaoo

This I.P. anomaly is relatively large and broad, but not high. A moderate magnetic anomaly is associated with it, thus magnetite probably accounts for at least part of the high I.P. readings. High copper determinations are more abundant further to the west; the area appears to be down-stream from rather than in a copper source area. No drill holes are known in the vicinity. The zone should be ground checked.

Zone 6 - Southeast Makaoo

The I.P., magnetics, and geochemistry of Zone 6 are very similar to those of Zone 5. A moderate I.P. anomaly accompanied by a moderate magnetic high shows only scattered geochemical readings in rock mapped as diorite. The area is thus only interesting enough to recommend a ground check at present, to determine if outcrop or old drill holes exist and are worth mapping.

Zone 7 - Northeast of Cominco

This zone has a strong I.P. anomaly in a wedge shaped fraction adjoining Cominco's claims. The anomaly is obviously a continuation of a larger one on Cominco's property. The magnetic survey in the area is incomplete, but the available readings are low. Geochemical readings are high, and the zone appears to be near a 'source area'. It was attractive enough to be tested previously with drilling; holes P 32, P 38, and P 36 showed picrite, feldspar, and 10 feet of 0.66% Cu respectively. Several copper showings are mapped in the vicinity. A detailed ground check and perhaps some more detailed mapping should be completed here.

Zone 8 - West of Cominco

Zone 8 is a strong I.P. anomaly lying just west of the Cominco boundary and probably is also a continuation of a more extensive anomaly on Cominco ground. Cominco's most important showing, the Ajax, lies 2000 feet to the southeast. Magnetic readings are relatively high, probably because a picrite body is found in the vicinity. Geochemical readings are high, and these high readings continue easterly onto Cominco property. A group of percussion holes, P 17 to 21 show scattered copper mineralization in dioritic rocks. This area thus also needs some detailed mapping to provide a better correlation and appreciation of the available data.

Zone 9 or Paquin Anomaly - Southeast Wallender Lake

This zone, east of Wallender Lake, has co-incident I.P. and magnetic highs, the latter undoubtedly contributing to the former. Geochemical readings are low. Holes P 15 and P 16 tested the I.P. high and showed only magnetite and pyrite in diorite, thus the zone is not of major interest.

Zone 10 - West of Jacko Lake

Zone 10 shows strong I.P. with a moderate co-incident magnetic anomaly. Geochemical readings are high. The rocks are mapped as Nicola volcanics. No mineralization or drill holes are shown in the vicinity. This area should thus be ground checked.

Zone 11 - Southeast Makaoo

This weakly anomalous I.P. zone is added to the geophysical map because it correlates with the head of a geochemical anomaly. A mineralized? fracture and a couple of drill holes are shown in the vicinity. The drill results are not known, thus ground check is advised.

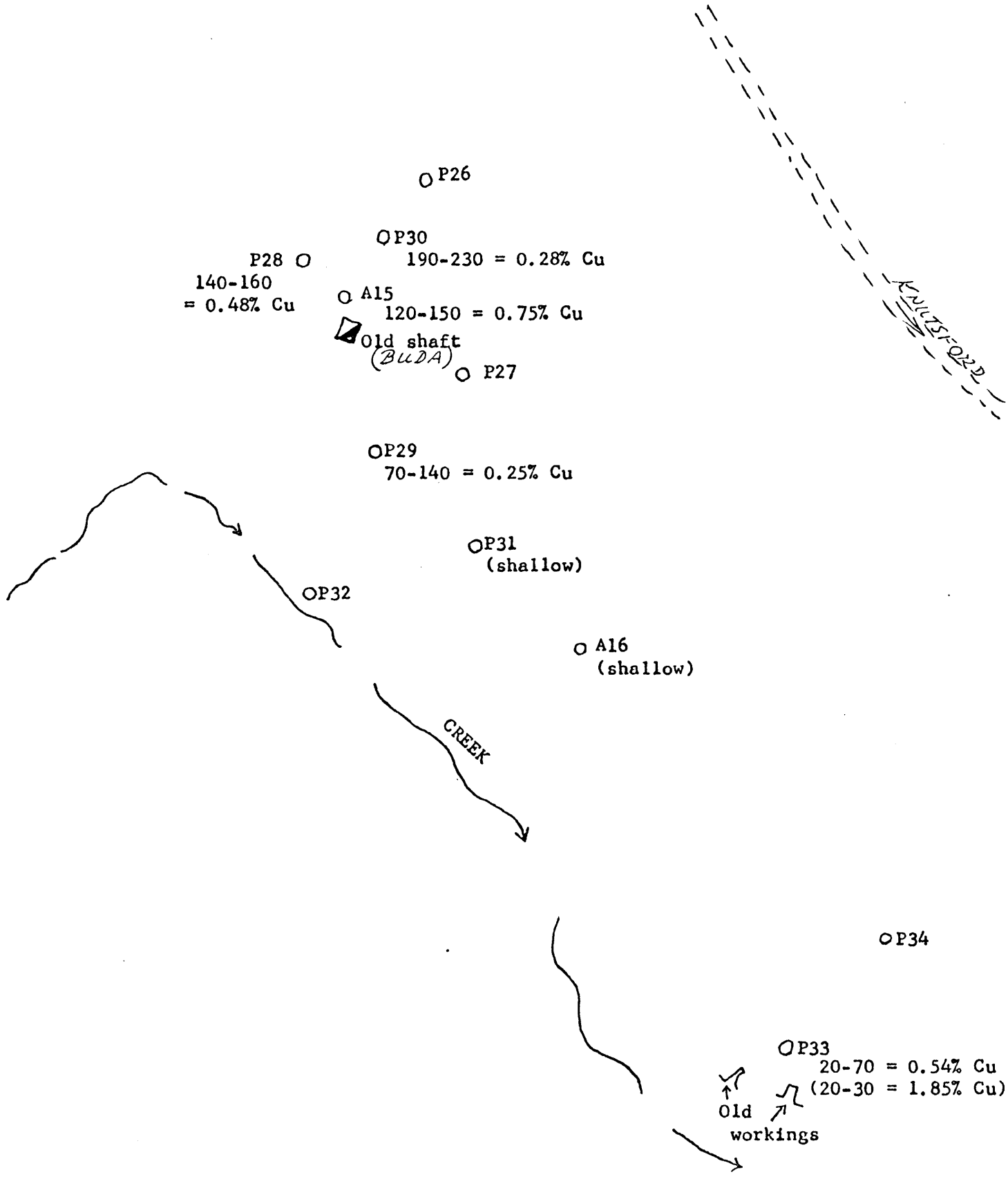
Zone 12 - Southeast Makaoo

This zone, like Zone 11, shows a moderate I.P. anomaly co-incident with a geochemical source area, thus is recommended for a further check, particularly because no drill holes are known in the vicinity.

Buda Shaft

A string of I.P. highs stretch southeasterly from the Cominco ground past the Buda shaft. The magnetic survey in the area is incomplete, but magnetic readings are not high. A geochemical anomaly is co-incident, but the copper values are scattered and low. The Buda shaft and a number of drill holes tested the mineralization in the area and showed it to be in a number of shear zones, which are not close enough, or high grade enough, to make ore. The following page summarized the results.

Close spaced percussion drilling on the west part of the Jet 19 fraction gave mostly very low copper values reported as p.p.m. which are shown in the appendix. One early hole, #2A, gave "40 ft of 0.5% Cu and still in values at bottom" (80') and this probably led to drilling the series of eighteen further holes.



Scale: 1 inch = 100 feet

ROLLING HILLS COPPER MINES LTD.

Prospecting Area (6)

Percussion Drill Holes
and
Assays Obtained

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May 21, 1971.

R.H. Seraphim, Ph.D. P.Eng.

Mallaoo

WARNOCK HERSEY INTERNATIONAL LIMITED • COAST ELDRIDGE PROFESSIONAL SERVICES DIVISION
125 East 4th Ave., Vancouver 10, B.C. Phone 878-4111 — Telex 04-50353

REPORT OF: Geochemical Analysis — FILE NO. A.3-E.1-68-39866

AT: Vancouver Laboratory — DATE: April 10, 1968

PROJECT: Precussion Drill Samples Mallaoo Area — REPORT NO.

REPORTED TO: Rolling Hills Copper Mines Ltd., Box 4183, Station "D", Vancouver 9, B. C. cc: Allan P. Fawley, 1947 West King Edward Avenue, Vancouver 9, B. C. — ORDER NO.

We have tested 115 samples of Precussion Drill Samples submitted by you on April 1, 1968 and report as hereunder:

TEST PROCEDURE:

The samples were tested by the "Total Extraction" method.

RESULTS:

Sample No.	Copper (ppm)	Sample No.	Copper (ppm)
1, 10-20	2600	2A, 40-50	6800
1, 20-3-	1600	2A, 50-60	4100
1, 30-40	3200	2A, 60-70	3300
1, 40-50	2800	2A, 70-80	4100
1, 50-60	1800	3, 5-10	1300
1, 60-70	800	3, 10-20	2400
1, 70-80	550	3, 20-30	1000
1A, 20-30	350	3, 30-40	2400
1A, 16-20	170	3, 40-50	4500
1A, 30-40	200	3, 50-60	6500
1A, 40-50	60	3, 60-70	20,000
1A, 50-60	80	3, 70-80	20,000
1A, 60-70	60	3, 80-90	12,000
1A, 70-80	60	3A, 5-20	700
1A, 80-90	60	3A, 20-30	250
1A, 90-100	80	3A, 30-40	250
1A, 100-110	120	3A, 40-50	450
2, 10-20	420	3A, 50-60	100
2, 20-30	1000	3A, 60-70	200
2, 30-40	1400	3A, 70-80	350
2, 40-50	450	3A, 80-90	1400
2, 50-60	190	4, 10-20	360
2, 60-70	600	4, 20-30	480
2A, 20-30	1100	4, 30-40	750
2A, 30-40	1600	4, 40-50	270

RESULTS (Cont'd)

Sample No.	Copper (ppm)	Sample No.	Copper (ppm)
4, 50-60	420	8, 10-20	1100
4, 60-70	800	8, 20-30	1700
4, 70-80	1400	8, 30-40	1600
4, 80-90	1200	8, 40-50	2500
4, 90-100	750	8, 50-60	3400
4, 100-110	500	9, 10-20	1800
4, 110-120	720	9, 20-30	4100
4, 120-130	2100	9, 30-40	2700
4, 130-132	1700	10, 10-20	3200
4A, 20-30	190	10, 30-40	2400
4A, 30-40	300	11, 10-20	850
4A, 40-50	250	11, 20-30	1500
5, 10-20	820	11, 30-40	2200
5, 20-30	2400	11, 40-50	2500
5, 30-40	950	11, 50-60	750
5, 40-50	3500	11, 60-70	700
5, 50-60	880	12, 8-20	850
5, 60-70	4000	12, 20-30	1600
5, 70-80	4000	12, 30-40	1450
5, 80-90	5300	12, 40-50	1450
5, 90-100	4500	12, 50-60	2100
6, 8-20	2500	12, 60-70	2100
6, 20-30	2000	13, 7-10	5000
6, 30-40	1800	13, 10-20	7300
6, 40-50	1400	13, 20-30	9400
7, 7-20	210	13, 30-40	4800
7, 20-30	90	13, 40-50	2300
7, 30-40	140	13, 50-60	2400
7, 40-50	290	13, 60-70	2200
7, 50-60	730	13, 70-80	2900
7, 60-70	270		
7, 70-80	170		
7, 80-90	210		
7, 90-100	290		
8, 5-10	1800		

COAST ELDRIDGE

D. T'mura,
PROVINCIAL ASSAYER

/cr

TO:

Rolling Hills Copper Mines Ltd.,
P.O. Box 4183
Station D
Vancouver 9, B.C.
cc:
Dr. Allan P. Fawley
1947 West King Edward Street
Vancouver 9, B.C.

Certificate of Assay

COAST ELDRIDGE

PROFESSIONAL SERVICES DIVISION
WARNOCK HERSEY INTERNATIONAL LIMITED
125 EAST 4TH AVE. VANCOUVER 10. B.C., CANADA

PHONE 604) 876-4111
TELEX: 04-50353
CABLE ADDRESS:
ELDRICO

FILE NO. A.3-R.2-68-41470

DATE May 16, 1968

We Hereby Certify that the following are the results of assays made by us upon submitted ..... DRILL CORE ..... samples

MARKED	GOLD		SILVER	Copper (Cu)					
	OUNCES PER TON	VALUE PER TON	OUNCES PER TON	PER CENT	PER CENT	PER CENT	PER CENT	PER CENT	PER CENT
		$							
Hole 3 60 - 70				2.04					
Hole 3 70 - 80				0.80					
Hole 3 80 - 90				0.23					
Hole 5 70 - 80				0.52					
Hole 5 80 - 90				0.61					
Hole 5 90 - 100				0.50					

Gold calculated at $ .... per ounce

1/2

Note. Rejects retained one week.
Pulps retained one month.
Pulps and rejects may be stored for a maximum of one year by special arrangement.

Unless it is specifically stated otherwise, gold and silver values reported on these sheets have not been adjusted to compensate for losses and gains inherent in the fire assay process.

H. Hawkes

..... Provincial Assayer

WARNOCK HERSEY INTERNATIONAL LIMITED
125 East 4th Ave., Vancouver 10 B.C. Phone 876-4111 Telex

COAST ELDRIDGE
PROFESSIONAL SERVICES DIVISION

REPORT OF: Geochemical Analysis

AT: Vancouver Laboratory

PROJECT: Ore Sample

REPORTED TO: Rolling Hills Copper Mines, Box 4183, Station "D", Vancouver 9, B. C.
cc: A.P. Fawley, 1947 W. King Edward Ave., Vancouver 9, B. C.

FILE NO: G.3-R.8-68-41467

DATE: May 22, 1968

REPORT NO:

ORDER NO:

We have tested 62 samples of Ore submitted by you on May 13, 1968 and report as hereunder:

TEST PROCEDURE:

The samples were tested by the "Total Extraction" method.

RESULTS:

Sample No.	Copper (ppm)	Sample No.	Copper (ppm)
Hole 14- 10-20	4200	Hole 15- 10-20	160
Hole 14- 20-30	1100	Hole 15- 20-30	250
Hole 14- 30-40	1600	Hole 15- 30-40	200
Hole 14- 40-50	630	Hole 15- 40-50	120
Hole 14- 50-60	2300	Hole 15- 50-60	85
Hole 14- 60-70	540	Hole 15- 60-70	250
Hole 14- 70-80	540	Hole 15- 70-80	600
Hole 14- 80-90	620	Hole 15- 80-90	250
Hole 14- 90-100	580	Hole 15- 90-100	1250
Hole 14- 100-110	2700	Hole 15- 100-110	300
Hole 14- 110-120	590	Hole 15- 110-120	650
Hole 14- 120-130	300	Hole 15- 120-130	1000
Hole 14- 130-140	550	Hole 15- 130-140	500
Hole 14- 140-150	1200	Hole 15- 140-150	650
Hole 14- 150-160	750	Hole 15- 150-160	550
Hole 14- 160-170	850	Hole 15- 160-170	550
Hole 14- 170-180	450	Hole 15- 170-180	550
Hole 14- 180-190	350	Hole 15- 180-190	500
Hole 14- 190-200	450	Hole 15- 190-200	450
Hole 15- 0-10	400	Hole 16- 0-10	750

RESULTS (Cont'd)

Sample No.	Copper (ppm)	Sample No.	Copper (ppm)
Hole 16- 10-20	4300	Hole 16- 120-130	1800
Hole 16- 20-30	6500	Hole 16- 130-140	700
Hole 16- 30-40	3800	Hole 16- 140-150	200
Hole 16- 40-50	3100	Hole 16- 150-160	250
Hole 16- 50-60	4000	Hole 16- 160-170	500
Hole 16- 70-80	5000	Hole 16- 170-180	600
Hole 16- 80-90	1200	Hole 16- 180-190	350
Hole 16- 90-100	3000	Hole 16- 190-200	200
Hole 16- 100-110	4500	Hole 16- 200-210	150
Hole 16- 110-120	3000	Hole 16- 210-220	120
		Hole 16- 60-70	2700

COAST ELDRIDGE

D. Timms,
PROVINCIAL ASSAYER

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WARNOCK HERSEY INTERNATIONAL LIMITED
COAST ELDRIDGE PROFESSIONAL SERVICES DIVISION
125 East 4th Ave., Vancouver 10, B.C. Phone 878-4111 — Telex 04-50353

REPORT OF: Geochemical Analysis
FILE NO C.3-R.2-68-41701
AT Vancouver Laboratory
DATE June 4, 1968
PROJECT: Ore Samples
REPORT NO
REPORTED TO: Rolling Hills Copper Mines Ltd.,
P.O. Box 4183
Station "D"
Vancouver 9, BC.
ORDER NO
cc: Dr. A.P. Fawley
1947 W. King Edward
Vancouver, B.C.

We have tested 51 samples of Ore submitted by you on May 24, 1968 and report as hereunder:

TEST PROCEDURE

The samples were tested by the "Total Extraction" method.

RESULTS

Sample No.	Copper (ppm)
Hole # 18 0 - 10	170
Hole # 18 10 - 20	160
Hole # 18 20 - 30	160
Hole # 18 30 - 40	150
Hole # 18 40 - 50	160
Hole # 18 50 - 60	175
Hole # 18 60 - 70	160
Hole # 18 70 - 80	410
Hole # 18 80 - 90	500
Hole # 18 90 - 100	170
Hole # 18 110 - 120	165
Hole # 18 120 - 130	160
Hole # 18 130 - 140	500
Hole # 18 140 - 150	750
Hole # 18 150 - 160	170
Hole # 18 160 - 170	250
Hole # 18 170 - 180	175
Hole # 18 180 - 190	160
Hole # 20 30 - 40	150
Hole # 20 40 - 50	160
Hole # 20 50 - 60	170
Hole # 20 60 - 70	170
Hole # 20 70 - 80	180
Hole # 20 80 - 90	180
Hole # 20 90 - 100	250
Hole # 20 100 - 110	170
Hole # 21 10 - 20	165
Hole # 21 20 - 30	250
Hole # 21 30 - 40	160
Hole # 21 40 - 50	670
Hole # 21 50 - 60	750
Hole # 21 60 - 70	170
Hole # 21 70 - 80	250
Hole # 21 80 - 90	250

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RESULTS - Cont'd

Sample No.		Copper (ppm)	Sample No.		Copper (ppm)
Hole # 21	90 - 100	415	Hole # 21	170 - 180	250
Hole # 21	100 - 110	750	Hole # 21	180 - 190	170
Hole # 21	110 - 120	420	Hole # 21	190 - 200	500
Hole # 21	120 - 130	335	Hole # 21	200 - 210	1,500
Hole # 21	130 - 140	250	Hole # 21	200 - 210	1,400
Hole # 21	140 - 150	250	Hole # 21	210 - 220	1,300
Hole # 21	150 - 160	660	Hole # 21	220 - 230	750
Hole # 21	160 - 170	340	Hole # 21	230 - 240	500
			Hole # 21	240 - 250	340

COAST ELDRIDGE

D. Timuss,
PROVINCIAL ASSAYER

WARNOCK HERSEY INTERNATIONAL LIMITED • COAST ELDRIDGE PROFESSIONAL SERVICES DIVISION
125 East 4th Ave., Vancouver 10, B.C. Phone 876-4111 - Telex 04-50353

REPORT OF: Geochemical Analysis
FILE NO C.3-R.2-68-41805
AT Vancouver Laboratory
DATE June 5, 1968
PROJECT: Ore Samples
REPORT NO
REPORTED TO: Rolling Hills Copper Mines Ltd.,
P.O. Box 4183
Station "D"
Vancouver 9, B.C.
cc: Dr. A.P. Fawley
1947 West King Edward
Vancouver, BC.
ORDER NO

We have tested 53 samples of Ore submitted by you on May 30, 1968 and report as hereunder:

TEST PROCEDURE

The samples were tested by the "Total Extraction" method.

RESULTS

H. Noonday Shaft

Sample No.	Copper (ppm)	Sample No.	Copper (ppm)
Hole # 22 20 - 30	180	Hole # 23 100 - 110	585
Hole # 22 30 - 40	250	Hole # 23 110 - 120	250
Hole # 22 40 - 50	165	Hole # 23 120 - 130	1,100
Hole # 22 50 - 60	160	Hole # 23 130 - 140	835
Hole # 22 60 - 70	160	Hole # 23 140 - 150	665
Hole # 22 70 - 80	140	Hole # 23 150 - 160	500
Hole # 22 80 - 90	115	Hole # 23 160 - 170	330
Hole # 22 90 - 100	250	Hole # 23 170 - 180	500
Hole # 22 100 - 110	150	Hole # 24 10 - 20	500
Hole # 22 110 - 120	250	Hole # 24 20 - 30	250
Hole # 22 120 - 130	165	Hole # 24 30 - 40	500
Hole # 23 10 - 20	1,000	Hole # 24 40 - 50	500
Hole # 23 20 - 30	1,350	Hole # 24 50 - 60	415
Hole # 23 30 - 40	1,900	Hole # 24 60 - 70	250
Hole # 23 40 - 50	1,000	Hole # 24 70 - 80	250
Hole # 23 50 - 60	415	Hole # 24 80 - 90	250
Hole # 23 60 - 70	585	Hole # 24 90 - 100	330
Hole # 23 70 - 80	250	Hole # 24 100 - 110	330
Hole # 23 80 - 90	750	Hole # 24 110 - 120	1,250
Hole # 23 90 - 100	415	Hole # 25 10 - 20	2,300

File No. C.3-R.2-68-4180
June 5, 1968

RESULTS - Cont'd

Sample No.	Copper (ppm)	Sample No.	Copper (ppm)
H Hole # 25 20 - 30	4,400	H Hole # 25 90 - 100	6,400
Hole # 25 30 - 40	3,000	Hole # 25 100 - 110	5,500
Hole # 25 40 - 50	3,300	Hole # 25 110 - 120	3,400
Hole # 25 50 - 60	8,350	Hole # 25 120 - 130	3,900
Hole # 25 60 - 70	6,000	Hole # 25 130 - 140	3,500
Hole # 25 70 - 80	3,300	Hole # 25 140 - 150	2,650
Hole # 25 80 - 90	2,300		

REMARKS

It is noted that some of the attached results are well above the range for geochemical analysis and should be considered as approximations only.

COAST ELDRIDGE

D. Timuss,
PROVINCIAL ASSAYER

/jp

WARNOCK HERSEY INTERNATIONAL LIMITED • COAST ELDRIDGE PROFESSIONAL SERVICES DIVISION
125 East 4th Ave., Vancouver 10, B.C. Phone 876-4111 – Telex 04-50353

REPORT OF: Geochemical Analysis — FILE NO A.3-R.8-68-42097

AT Vancouver Laboratory — DATE June 13, 1968

PROJECT: Ore Samples — REPORT NO

REPORTED TO: Rolling Hills Copper Mines Ltd., P.O. Box 4183, Station "D", Vancouver 9, B. C. — cc: Dr. A.P. Fawley, 1947 West King Edward, Vancouver, B. C. — ORDER NO

We have tested 49 samples of Soil submitted by you on June 10, 1968 and report as hereunder:

TEST PROCEDURE:

The samples were tested by the "Total Extraction" method.

RESULTS:

Sample No.	Copper (ppm)	Sample No.	Copper (ppm)
H-25-150-160	2950	H-26-170-180	325
H-25-160-170	3800	H-26-180-190	580
H-25-170-180	4300	H-26-190-200	420
H-25-180-190	3350	H-26-200-210	320
H-26-10-20	420	H-27-0-10	170
H-26-20-30	250	H-27-10-20	165
H-26-30-40	165	H-27-20-30	160
H-26-40-50	165	H-27-30-40	165
H-26-50-60	500	H-27-40-50	180
H-26-60-70	250	H-27-50-60	160
H-26-70-80	420	H-27-60-70	165
H-26-80-90	580	H-27-70-80	190
H-26-90-100	750	H-27-80-90	165
H-26-100-110	250	H-27-90-100	200
H-26-110-120	250	H-27-100-110	180
H-26-120-130	160	H-27-110-120	180
H-26-130-140	420	H-27-120-130	160
H-26-140-150	250	H27-130-140	200
H-26-150-160	160	H-27-140-150	210
H-26-160-170	250	H-27-150-160	150

.....2

RESULTS (Cont'd)

Sample No.	Copper (ppm)	Sample No.	Copper (ppm)
H-27-160-170	180	H-27-210-220	170
H-27-170-180	180	H-27-220-230	150
H-27-180-190	200	H-27-230-240	160
H-27-190-200	200	H-27-240-250 ✓	160
H-27-200-210	165		

COAST ELDRIDGE

D. Timuss,
PROVINCIAL ASSAYER

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ROLLING HILLS COPPER MINES LTD. (N.P.L.)

SUMMARY OF PERCUSSION DRILL HOLES

Hole No.	Location	Depth Feet	Geology	Sample No.	Interval	Assay Cu %	Remarks
P 1	Python CG	200	Diorite	W6	60- 70	Trace	
				W7	70 -80	0.11	
				W8	110-120	0.13	Not
				W9	120-130	Trace	deep
				W10	130-140	Trace	enough to
				W11	140-150	Trace	reach I.P.
				W12	150-160	Trace	anomaly
P 2	Copperhead CG	180	Diorite	W14	20- 30	Trace	" "
				W13	70- 80	Trace	" "
P 3	Copperhead CG	150	Picrite				
P 4	Python CG Copperhead ?	235	Diorite	W16	2-10	Trace	
				W17	10-20	0.62	
				W20	20-30	0.97	
				W19	30-40	0.35	
				W22	40-50	0.14	
				W23	50-60	Trace	
				W24	60-70	Trace	
				W25	110-120	0.17	
				W26	120-130	Trace	
				W27	130-140	Trace	
				W28	140-150	Trace	
				W29	150-160	0.08	
				W30	160-170	0.24	
				W31	170-180	Trace	
				W32	180-190	Trace	
				W33	200-210	0.16	
				W34	210-220	Trace	
P 5	Python 7 CG	100	Volcanics				Paquin anomaly-magnetite
P 6	Pye 5 Fract	190	Diorite	W37	10-20	0.23	
				W38	20-30	0.40	
				W39	30-40	0.92	
				W40	40-50	0.35	
				W41	50-60	0.40	
				W42	60-70	0.16	
				W43	70-80	0.07	
				W44	100-110	0.26	
				W45	110-120	0.25	
				W46	140-150	0.23	
				W47	150-160	0.24	
				W48	160-170	0.27	
				W49	170-180	0.18	
				W50	180-190	0.27	

180 / 423 = 0.24

Hole No.	Location	Depth Feet	Geology	Sample No.	Interval	Assay Cu %	Remarks
P 7	Pye 8 7.?	100	Diorite				Paquin anomaly-magnetite
P 8	Python 8 Fract	90	Diorite	W51	50-60	Trace	
				W52	60-70	0.02	
				W53	70-80	0.03	
				E85042	180-200	0.04	
P 9	Python 8 Fract	160	Diorite	W54	20-30	Trace	
				W56	50-60	Trace	
				W57	80-90	Trace	
				W58	90-100	Trace	
				W55	100-110	0.02	
				W59	130-140	0.08	
P 10	Noonday CG 100 scale map	90	Diorite	W61	30-40	0.10	On I.P.
				W62	60-70	2.50	Anomaly
				W63	70-80	0.12	
P 11	Noonday CG 100 scale map.	150	Diorite				Much magnetite
P 12	Pye 5 Fract	90	Diorite	W66	30-40	Trace	
				W67	40-50	Trace	Much pyrite
				W68	50-60	Trace	60-90
				W64	60-70	Trace	
P 13A	Caddie 3	60	Overburden				
P 13	Caddie 4	150	Diorite		--		Paquin anomaly - nothing
P 14	Caddie 1 2?	150	Diorite	W70	100-110	Trace	" " "
P 15	Caddie 1 X 16?	130	Diorite	W69	20-30	Trace	Mag-pyrite zone
P 16	X18	150	Diorite	W71	140-150	Trace	Paquin anomaly, nothing
P 17	Pam #3 2?	150	Diorite	W72	20-30	Trace	" " "
P 18	Pam #3	140	Diorite	W73	10-20	0.16	" " "
P 19	Pam #3	150	Diorite	W74	10-20	0.20	" " "
P 19	Pam #3	150	Diorite	W75	20-30	0.08	" " "
P 20	Pam #3	174	Diorite		--		" " "
P 21	Pam #3	107	Diorite		--		
P 22	Pam #5 3?	150					
P 23	Pam #29 ? Jot 19	80	Picrite				

Hole No.	Location	Depth Feet	Geology	Sample No.	Interval	Assay Cu %	Remarks
P 24	Pam #29	70	Picrite	W76	50-60	0.02	
P 25	Pam #22	60	Overburden				
P 26	Pam #18	235	Gabbro?	W77	30-40	Trace	
				W78	200-210	0.07	
P 27	Pam #18	200	Gabbro?	W80	170-190	Trace	
P 28A	Pam #18	40	Overburden				
P 28B	Pam #18	40	Overburden				
P 28	Pam #18	210	Gabbro	W79	140-150	0.62	
				W13158	150-160	0.35	
				W13159	160-170	0.12	
				W13160	170-180	0.03	
				W13161	180-190	Trace	
P 29	Pam #18	235	Gabbro	W13162	30-40	Trace	
				W13171	70-80	0.30	
				W13163	80-90	Trace	
				E7	80-90	0.13	
				W13172	90-100	0.24	
				E2	90-100	0.27	
				W13167	100-110	0.22	
				W13169	110-120	0.16	
				W13168	120-130	0.20	
				W13170	130-140	0.27	
				W13166	140-150	Trace	
				W13164	150-160	0.15	
				W13165	160-170	Trace	
P 30	Pam #18	235	Gabbro	W13173	190-200	0.32	
			Diorite	W13174	200-210	0.25	
				W13175	210-220	0.30	
				W13176	220-230	0.26	
P 31	Pam #18	70	Gabbro	W13178	30-40	0.17	
				W13179	50-60	0.08	
P 32	Pam #18	225	Picrite				
P 33A	Pam #18	60	Overburden				
P 33	Pam #19	150	Diorite	E8	20-30	1.85	
				E5	30-40	0.23	
				E6	40-50	0.09	
				E12	60-70	0.55	
P 34	Pam #19	110	Diorite	E11	30-40	0.14	
35A	Pye 8	55	Overburden				
P 35	Guerin 2	150	Diorite				

Hole No.	Location	Depth Feet	Geology	Sample No.	Interval	Assay Cu %	Remarks
P 36	Queen 1	100	Feldspar				
P 37	Queen 1	150	Diorite	E4	90-100	0.11	
P 38	Pam #10	130	Diorite	E9	40-50	0.66	
P 39	Pam #34 32	60	Volcanics				
P 40	Pam #34 32	150	Volcanics				
P 41	Satan-15. B 31-B 33	140	Diorite	E10	90-100	0.79	
				W104	110-120	0.60	
				W105	120-130	0.48	
				W116	130-140	0.60	
P 42A	Satan 16 B31-B33	10	Diorite				
P 42	Satan-16 B 31-B 33	107	Diorite	W101	20-30	0.20	
				W102	30-40	0.02	
				W103	50-60	0.70	
P 43	Satan 16 B 31-33	90	Diorite				
P 44	Satan 15 B 31-33	100	Diorite				
45	Satan 15 B 31-33	50	Diorite				
P 46A	Coon Fract	47	Gabbro				
P 46	Coon Fract	160	Gabbro				
P 47	Noonday CG (100 scale)	110	Diorite	W115	20-30	0.40	
				W114	30-40	0.30	
				W113	40-50	2.65	
				W112	50-60	0.50	
				W111	60-70	0.20	
				W110	80-90	0.30	
				W109	100-110	0.30	
				W108	110-120	1.15	
				W107	120-130	0.40	
P 48	Noonday CG (100 scale)	90	Diorite	W106	0-10	0.60	
				W126	10-20	1.00	
				W125	30-40	0.77	
				W124	40-50	1.10	
				W121	50-60	0.60	
				W120	60-70	0.80	
				W119	70-80	0.65	
				W118	80-90	1.05	
P 49	Noonday CG	140	Picrite	W123	30-40	0.32	Contact near collar
				W122	40-50	0.65	
	E85026 60-70	0.17		W117	90-100	0.32	
	E85043 70-80	0.32		W133	100-110	0.30	
	E85044 80-90	0.31		W132	110-120	0.45	
				W131	120-130	0.32	

Hole No.	Location	Depth Feet	Geology	Sample No.	Interval	Assay Cu %	Remarks
P 50	Noonday CG /00scale	200	Picrite	W130	30-40	0.80	
				W129	40-50	0.60	
				W128	50-60	0.45	
				W127	60-70	0.22	70-80 ?
				W134	80-90	0.28	
				W135	90-100	0.60	
				W136	100-110	0.35	110-120 ?
				W137	120-130	1.50	
				W138	130-140	0.50	
				W139	140-150	0.30	
				W140	170-180	0.27	
P 51	Noonday CG /00 scale	100	Picrite	W141	40-50	0.32	Contact near collar
				W142		0.50	
P 52	Noonday CG /00scale	150	Picrite / diorite	E85027	60-70	0.12	
				E85028	70-80	0.27	
				E85029	80-90	0.74	90-100 ?
				E85030	100-110	0.15	110-120 ?
				E85031	120-130	0.33	
				E85032	130-140	1.26	
P 53	Noonday CG (100 scale)	210	Picrite	E85033	30-40	0.23	
				E85034	40-50	0.20	
				E85035	50-60	0.23	
				E85036	60-70	0.64	
				E85037	70-80	0.40	
				E85038	80-90	0.12	
				E85039	110-120	0.10	
				E85040	140-150	0.33	
				E85041	150-160	0.23	
P 54	Noonday /00 scale	105	Picrite				
P 55	Noonday /00 scale	150	Picrite				
P 56	Noonday /00 scale	110	Picrite				

Hole	Location	Depth feet	Geology	Sample No.	Interval	Assay Cu %	Remarks
57	Python 100 scale	135	Picrite	E85045	0-10	0.52	
				E85046	10-20	0.36	
				E85047	20-30	0.79	
				E85048	30-40	0.55	
				E85049	40-50	0.22	
				E85050	50-60	0.17	
				E85051	60-70	0.24	
				E85052	70-80	0.09	
58A	Noonday 100 scale	50	Overburden				
P 58	Python no map	130	Picrite-feldspar				
P 59	Python no map	100	Picrite				
P 60	Python no map	110	Picrite sli. py				
P 61	Python no map	120	Picrite cons. py				
P 62	Python no map	100	Diorite	E85053	0-10	0.23	Starts at
				E85054	10-20	0.12	picrite
				E85055	20-30	0.12	contact
				E85056	30-40	0.13	S66W @ -45°
P 63	Python CG no map	180	Contact	E85057	30-40	0.41	S66W @ -45°
				E85058	40-50	0.63	Picrite-Diorite
				E85059	50-60	0.36	
				E85065	120-130	0.12	
				E85060	130-140	0.15	
P 64	Python CG no map	120	Contact	E85061	5-20	0.43	S66W @ -45°
				E85062	20-30	0.83	Picrite-Diorite
				E85063	30-40	0.59	
				E85064	40-50	0.18	
				E85066	60-70	0.31	
				E85067	80-90	0.26	
				E85068	90-100	0.24	
				E85069	100-110	0.32	
65	Python CG	185	Picrite				S66W @ -45°
P 66	Python 8 Fr. no map	100	Diorite				low cpy

Hole No.	Location	Depth Feet	Geology	Sample No.	Interval	Assay Cu %	Remarks
P 67	Python CG (100 scale map)	100	Diorite	--	--		
P 68	Python CG 100 scale map	105	Diorite	E85070	50-60	0.46	
				E85071	60-70	0.31	
				E85072	70-80	0.22	
				E85073	80-90	0.36	
				E85074	90-100	0.36	
P 69	Python CG 100 scale map	135	Diorite	E85075	20-30	0.52	Contact indistin
			Picrite	E85076	30-40	0.19	roughly @ 50'
				E85077	40-50	0.19	
				E85078	50-60	0.24	
				E85079	60-70	0.19	
P 70	Python CG ?	110	Diorite	--			
				E85080	50-60	0.03	On I.P. anomaly
P.71	Python 8 Fr. 100 scale map.	110	Diorite	--	--		
72	Python 8 Fr. no map.	120	Diorite	E85081	5-20	0.42	Sli cpy top 20'
P 73	Python CG 100 scale map.	140	Picrite	--	--		Sli pyrite
P 74	Copperhead CG no map.	140	Picrite	--	--		Sli pyrite
P 75	Python CG no map	170	Picrite-diorite contact @ 120'	--	--		S47°W @ -45° Sli py @ contact
P 76	Pam 16 no map.	160	Diorite	--			Sli py.
P 77	Pam 23 no map.	175	Peridotite Picrite	E85083	170-175	0.06	
P 78A	Pam 23 no map	50	--	--	--		Overburden
P 78B	Pam 23 no map	60	--	--	--		Overburden
P 78	Pam 18 no map	150	Diorite	--	--		
79	Pam 16 no map	150	Picrite	--	--		Pyroxenite 35-65

Hole No.	Location	Depth Feet	Geology	Sample No.	Interval	Assay Cu %	Remarks
P 80	X 5 no map	160	Diorite	E85082	110-120	0.01	Much feldspar
P 81A	X 6 no map	50	--	--	--		Overburden
P 81	X 8 no map	160	Diorite	E85084 E85085 E85086	60-70 80-90 90-100	Tr. Tr. 0.03	Sli sulphides

WARNOCK HERSEY
INTERNATIONAL LIMITED

PROFESSIONAL SERVICES DIVISION

125 East 4th Ave., Vancouver 10, B. C. Phone 876-4111 — Telex 04-50353

REPORT OF: Geochemical Analysis — Percussion drilling by Miller Jan 1969 Set 19 claim (See map for locations)

FILE NO: A.3-R.2-69-4756

AT: Vancouver Laboratory

DATE: March 13, 1969

PROJECT: Core Samples

REPORT NO:

REPORTED TO: Rolling Hills Copper Mines
P.O. Box 4183
Station "D"
Vancouver, B.C.

ORDER NO:

We have tested 102 samples of Drill Core submitted by you on March 4, 1969 and report as hereunder:

TEST PROCEDURE

The samples were tested by the "Total Extraction" Method.

RESULTS

Sample Number	Copper (ppm)	Sample Number	Copper (pp
50 - 60 Hole # 1	30	50 - 60 Hole # 4	245
60 - 70 Hole # 1	30	10 - 20 Hole # 5	80
10 - 20 Hole # 2	25	20 - 30 Hole # 5	200
20 - 30 Hole # 2	15	30 - 40 Hole # 5	15
30 - 40 Hole # 2	15	40 - 50 Hole # 5	5
40 - 50 Hole # 2	15	50 - 60 Hole # 5	5
50 - 60 Hole # 2	15	60 - 70 Hole # 5	5
60 - 70 Hole # 2	180	10 - 20 Hole # 6	25
70 - 80 Hole # 2	220	30 - 40 Hole # 6	35
10 - 20 Hole # 3	15	40 - 50 Hole # 6	35
20 - 30 Hole # 3	5	50 - 60 Hole # 6	40
30 - 40 Hole # 3	10	60 - 70 Hole # 6	50
40 - 50 Hole # 3	15	80 - 90 Hole # 6	80
50 - 60 Hole # 3	5	90 - 100 Hole # 6	220
60 - 70 Hole # 3	5	A Hole # 7	260
7 - 20 Hole # 4	250	B Hole # 7	10
20 - 30 Hole # 4	400	50 - 60 Hole # 7	200
30 - 40 Hole # 4	5	60 - 70 Hole # 7	125
40 - 50 Hole # 4	15	70 - 80 Hole # 7	235

....2

...2

Sample Number	Copper (ppm)
80 - 90 Hole # 7	125
90 - 100 Hole # 7	105
20 - 30 Hole # 8	250
30 - 40 Hole # 8	105
40 - 50 Hole # 8	5
50 - 60 Hole # 8	5
60 - 70 Hole # 8	10
70 - 80 Hole # 8	5
80 - 90 Hole # 8	95
90 - 100 Hole # 8	125
20 - 30 Hole # 9	250
30 - 40 Hole # 9	5
40 - 50 Hole # 9	95
50 - 60 Hole # 9	95
60 - 70 Hole # 9	110
70 - 80 Hole # 9	5
80 - 90 Hole # 9	20
90 - 100 Hole # 9	5
30 - 40 Hole # 10	320
40 - 50 Hole # 10	15
50 - 60 Hole # 10	35
60 - 70 Hole # 10	5
70 - 80 Hole # 10	110
80 - 90 Hole # 10	140
90 - 100 Hole # 10	115
100- 110 Hole # 10	110
10 - 20 Hole # 11	125
20 - 30 Hole # 11	80
30 - 40 Hole # 11	65
40 - 50 Hole # 11	75
50 - 60 Hole # 11	105
30 - 40 Hole # 12	105

Sample Number	Copper (ppm)
40 - 50 Hole # 12	80
50 - 60 Hole # 12	60
60 - 70 Hole # 12	85
70 - 80 Hole # 12	80
20 - 30 Hole # 13	55
30 - 40 Hole # 13	45
40 - 50 Hole # 13	55
50 - 60 Hole # 13	65
60 - 70 Hole # 13	45
70 - 80 Hole # 13	65
80 - 90 Hole # 13	50
90 - 100 Hole # 13	60
10 - 20 Hole # 14	20
20 - 30 Hole # 14	30
30 - 40 Hole # 14	45
40 - 50 Hole # 14	20
50 - 60 Hole # 14	15
60 - 70 Hole # 14	5
20 - 30 Hole # 15	5
30 - 40 Hole # 15	5
40 - 50 Hole # 15	5
50 - 60 Hole # 15	5
60 - 70 Hole # 15	5
70 - 80 Hole # 15	5
40 - 50 Hole # 16	45
50 - 60 Hole # 16	10
40 - 50 Hole # 17	5
50 - 60 Hole # 17	5
40 - 50 Hole # 18	5
50 - 60 Hole # 18	5
60 - 70 Hole # 18	10
70 - 80 Hole # 18	30

COAST ELDRIDGE

D. Timuss,
PROVINCIAL ASSAYER

WARNOCK HERSEY
INTERNATIONAL LIMITED

PROFESSIONAL SERVICES DIVISION

125 East 4th Ave., Vancouver 10, B. C. Phone 876-4111 — Telex 04-50353

REPORT OF: Geochemical Analysis

AT Vancouver Laboratory

PROJECT: Core Samples

REPORTED TO: Rolling Hills Copper Mines
P.O. Box 4183
Station "D"
Vancouver, B.C.

Percussion Drilling
by Millar Jan 1969
Jet 19 claim
See map for hole
locations

FILE NO: A.3-R.2-69-4756

DATE March 13, 1969

REPORT NO:

ORDER NO:

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TEST PROCEDURE

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RESULTS

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50 - 60 Hole # 1	30	50 - 60 Hole # 4	245
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20 - 30 Hole # 2	15	30 - 40 Hole # 5	15
30 - 40 Hole # 2	15	40 - 50 Hole # 5	5
40 - 50 Hole # 2	15	50 - 60 Hole # 5	5
50 - 60 Hole # 2	15	60 - 70 Hole # 5	5
60 - 70 Hole # 2	180	10 - 20 Hole # 6	25
70 - 80 Hole # 2	220	30 - 40 Hole # 6	35
10 - 20 Hole # 3	15	40 - 50 Hole # 6	35
20 - 30 Hole # 3	5	50 - 60 Hole # 6	40
30 - 40 Hole # 3	10	60 - 70 Hole # 6	50
40 - 50 Hole # 3	15	80 - 90 Hole # 6	80
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60 - 70 Hole # 3	5	A Hole # 7	260
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30 - 40 Hole # 4	5	60 - 70 Hole # 7	125
40 - 50 Hole # 4	15	70 - 80 Hole # 7	235

....2

File No. A.3-R.2-69-4756
March 13, 1969

COAST ELDRIDGE

PROFESSIONAL SERVICES DIVISION

WARNOCK HERSEY INTERNATIONAL LIMITED

....2

Sample Number	Copper (ppm)
80 - 90 Hole # 7	125
90 - 100 Hole # 7	105
20 - 30 Hole # 8	250
30 - 40 Hole # 8	105
40 - 50 Hole # 8	5
50 - 60 Hole # 8	5
60 - 70 Hole # 8	10
70 - 80 Hole # 8	5
80 - 90 Hole # 8	95
90 - 100 Hole # 8	125
20 - 30 Hole # 9	250
30 - 40 Hole # 9	5
40 - 50 Hole # 9	95
50 - 60 Hole # 9	95
60 - 70 Hole # 9	110
70 - 80 Hole # 9	5
80 - 90 Hole # 9	20
90 - 100 Hole # 9	5
30 - 40 Hole # 10	320
40 - 50 Hole # 10	15
50 - 60 Hole # 10	35
60 - 70 Hole # 10	5
70 - 80 Hole # 10	110
80 - 90 Hole # 10	140
90 - 100 Hole # 10	115
100- 110 Hole # 10	110
10 - 20 Hole # 11	125
20 - 30 Hole # 11	80
30 - 40 Hole # 11	65
40 - 50 Hole # 11	75
50 - 60 Hole # 11	105
30 - 40 Hole # 12	105

Sample Number	Copper (ppm)
40 - 50 Hole # 12	80
50 - 60 Hole # 12	60
60 - 70 Hole # 12	85
70 - 80 Hole # 12	80
20 - 30 Hole # 13	55
30 - 40 Hole # 13	45
40 - 50 Hole # 13	55
50 - 60 Hole # 13	65
60 - 70 Hole # 13	45
70 - 80 Hole # 13	65
80 - 90 Hole # 13	50
90 - 100 Hole # 13	60
10 - 20 Hole # 14	20
20 - 30 Hole # 14	30
30 - 40 Hole # 14	45
40 - 50 Hole # 14	20
50 - 60 Hole # 14	15
60 - 70 Hole # 14	5
20 - 30 Hole # 15	5
30 - 40 Hole # 15	5
40 - 50 Hole # 15	5
50 - 60 Hole # 15	5
60 - 70 Hole # 15	5
70 - 80 Hole # 15	5
40 - 50 Hole # 16	45
50 - 60 Hole # 16	10
40 - 50 Hole # 17	5
50 - 60 Hole # 17	5
40 - 50 Hole # 18	5
50 - 60 Hole # 18	5
60 - 70 Hole # 18	10
70 - 80 Hole # 18	30

COAST ELDRIDGE

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125 East 4th Ave., Vancouver 10, B. C. Phone 876-4111 — Telex 04-50353

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30 - 40 Hole # 2	15	40 - 50 Hole # 5	5
40 - 50 Hole # 2	15	50 - 60 Hole # 5	5
50 - 60 Hole # 2	15	60 - 70 Hole # 5	5
60 - 70 Hole # 2	180	10 - 20 Hole # 6	25
70 - 80 Hole # 2	220	30 - 40 Hole # 6	35
10 - 20 Hole # 3	15	40 - 50 Hole # 6	35
20 - 30 Hole # 3	5	50 - 60 Hole # 6	40
30 - 40 Hole # 3	10	60 - 70 Hole # 6	50
40 - 50 Hole # 3	15	80 - 90 Hole # 6	80
50 - 60 Hole # 3	5	90 - 100 Hole # 6	220
60 - 70 Hole # 3	5	A Hole # 7	260
7 - 20 Hole # 4	250	B Hole # 7	10
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30 - 40 Hole # 4	5	60 - 70 Hole # 7	125
40 - 50 Hole # 4	15	70 - 80 Hole # 7	235

....2

File No. A.3-R.2-69-4756
March 13, 1969

COAST ELDRIDGE

PROFESSIONAL SERVICES DIVISION

WARNOCK HERSEY INTERNATIONAL LIMITED

....2

Sample Number	Copper (ppm)
80 - 90 Hole # 7	125
90 - 100 Hole # 7	105
20 - 30 Hole # 8	250
30 - 40 Hole # 8	105
40 - 50 Hole # 8	5
50 - 60 Hole # 8	5
60 - 70 Hole # 8	10
70 - 80 Hole # 8	5
80 - 90 Hole # 8	95
90 - 100 Hole # 8	125
20 - 30 Hole # 9	250
30 - 40 Hole # 9	5
40 - 50 Hole # 9	95
50 - 60 Hole # 9	95
60 - 70 Hole # 9	110
70 - 80 Hole # 9	5
80 - 90 Hole # 9	20
90 - 100 Hole # 9	5
30 - 40 Hole # 10	320
40 - 50 Hole # 10	15
50 - 60 Hole # 10	35
60 - 70 Hole # 10	5
70 - 80 Hole # 10	110
80 - 90 Hole # 10	140
90 - 100 Hole # 10	115
100- 110 Hole # 10	110
10 - 20 Hole # 11	125
20 - 30 Hole # 11	80
30 - 40 Hole # 11	65
40 - 50 Hole # 11	75
50 - 60 Hole # 11	105
30 - 40 Hole # 12	105

Sample Number	Copper (ppm)
40 - 50 Hole # 12	80
50 - 60 Hole # 12	60
60 - 70 Hole # 12	85
70 - 80 Hole # 12	80
20 - 30 Hole # 13	55
30 - 40 Hole # 13	45
40 - 50 Hole # 13	55
50 - 60 Hole # 13	65
60 - 70 Hole # 13	45
70 - 80 Hole # 13	65
80 - 90 Hole # 13	50
90 - 100 Hole # 13	60
10 - 20 Hole # 14	20
20 - 30 Hole # 14	30
30 - 40 Hole # 14	45
40 - 50 Hole # 14	20
50 - 60 Hole # 14	15
60 - 70 Hole # 14	5
20 - 30 Hole # 15	5
30 - 40 Hole # 15	5
40 - 50 Hole # 15	5
50 - 60 Hole # 15	5
60 - 70 Hole # 15	5
70 - 80 Hole # 15	5
40 - 50 Hole # 16	45
50 - 60 Hole # 16	10
40 - 50 Hole # 17	5
50 - 60 Hole # 17	5
40 - 50 Hole # 18	5
50 - 60 Hole # 18	5
60 - 70 Hole # 18	10
70 - 80 Hole # 18	30

COAST ELDRIDGE

D. Timuss,
PROVINCIAL ASSAYER

APPENDIX 2

SUMMARY OF SURFACE DIAMOND DRILL HOLES

Makaoo

Hole	Location	Bearing	Dip	Length		Notes
S 50	Noonday	N83W	-45	344	diorite	faults to 168 ft, 168-182=0.86% Cu, weak mineralization to 344 (see 100 scale map)
S 51	Pye 4	S13W	-30	680	diorite	'considerable disseminated pyrite', some pink feldspar, rare chalcopyrite (see 100 scale I.P. map)
S 52	Python 8 Fr.	S40W	-41	505	diorite to 272, gabbro to 378	'copper too low to be of interest' - (see 100 scale I.P. map)
S 53	Pye 5 Fr.	S52W	-42	193	diorite	71 ft close to 0.3% Cu - but S 51 drilled below it showed less (see 100 scale I.P. map)
S 54	Python	S25W	-45	226	diorite	no appreciable chalcopyrite - fault near bottom. (See Makaoo 100 scale)
S 55	Noonday	S20E	-60	308	diorite	192 to 275 = 0.36% Cu (see Makaoo 100 scale)
S 56	Noonday	S55E	-60	604		below S 55 - grade similar (see Makaoo 100 scale)
S 57	Copperhead	S61W	-50	271		broken ground-poor recovery-assays not reliable

See W.I. Nelson report of Nov. 1, 1962 for details of the above

APPENDIX 2

SUMMARY OF SURFACE DIAMOND DRILL HOLES CONT'D.

Makaoo

Hole	Location	Bearing	Dip	Length	Notes
A1-63	Python (No1)	S70W	73	473	diorite to 321-andesite & diorite to 473 - 167 to 239 (72 ft) has 64' of 0.55% Cu and 8' of old tunnel
A2-63	Python (No1)	S70W	75	253	diorite to 186, picrite to 235, diorite to 253 - 35 to 205 scattered values up to .75% Cu (not all assayed)
A3-63	200 ft S.E. of A2	?	60	115 plus	
A4-63	??				
	See Fawley report of October 1, 1963 for details of the above				

Rolling Hills

66-1	600 ft at N60E of Buda Shaft		vertical	390	95 ft overburden, 105 to 225 picrite, 225 to 390 gabbro. 95 to 205 = 0.09% Cu
66-2	152E-95 Vanco grid		vertical	188	65 ft overburden-65 to 188=gabbro - no copper
66-3	192E-125 Vanco grid		vertical	131	diorite with epidote, minor magnetite and pyrite
70-1	Noonday (Makaoo 100 scale map)	S03E	-45	596	18 to 432 picrite, 432 to 552 diorite, 552 to 596 diorite 432 to 507=2.01% Cu (sample taken in pieces rather than split core)
70-1	Buda Shaft	?	?	156	66-156 - picrite and altered volcanics with sulfides
70-2	Buda Shaft	?	?	304	54-304 picrite and altered volcanics little or no sulfide - some magnetite

Telephone: Office 685-2914
Res. 224-7309

R. H. SERAPHIM ENGINEERING LIMITED
Geological Engineering

316
427 — 470 GRANVILLE STREET
VANCOUVER 2, B.C.

June 1, 1971.

Mr. C.C. Keyes,
Rolling Hills Copper Mines Ltd.,
1758 West 8th Ave.,
VANCOUVER, B.C.

Dear Mr. Keyes:

I finally gathered a little more information on the Rolling Hills work done by Vanco. I was not certain this would be available so did not hold up my report waiting for it.

The attached sheets provide the location of the eight diamond drill holes completed by Vanco. They can be correlated with the I.P. 'Chargeability' map accompanying my report. I was not able to obtain summary logs of the core from these holes, but was advised that no mineralization considered important was intersected.

I enclose 6 prints of the information so that a copy can be appended to each of the reports delivered to you.

Yours sincerely,

R.H. Seraphim.

RHS/db

Encls:

Telephone: Office 685-2914
Res. 224-7309

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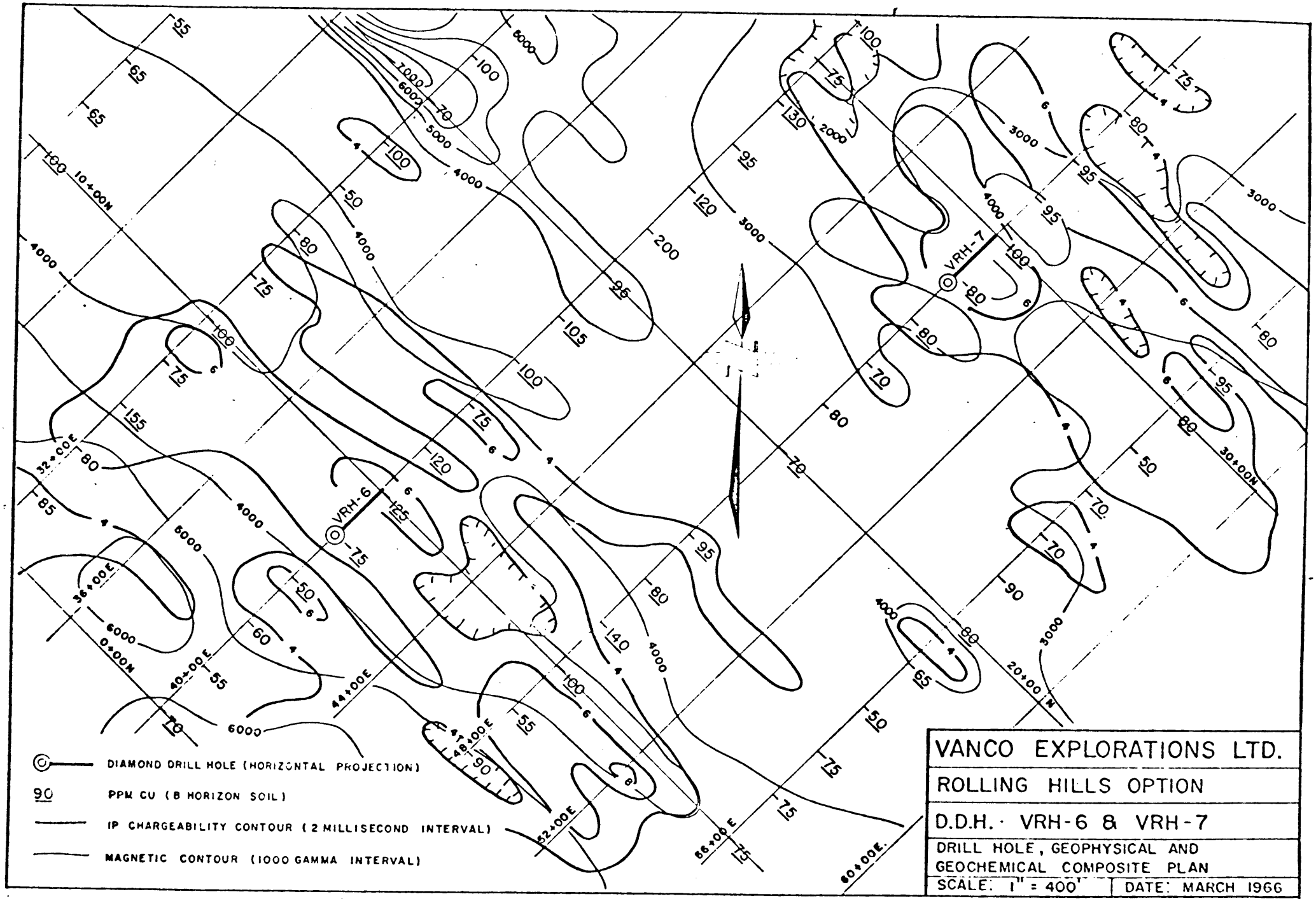
Encls:



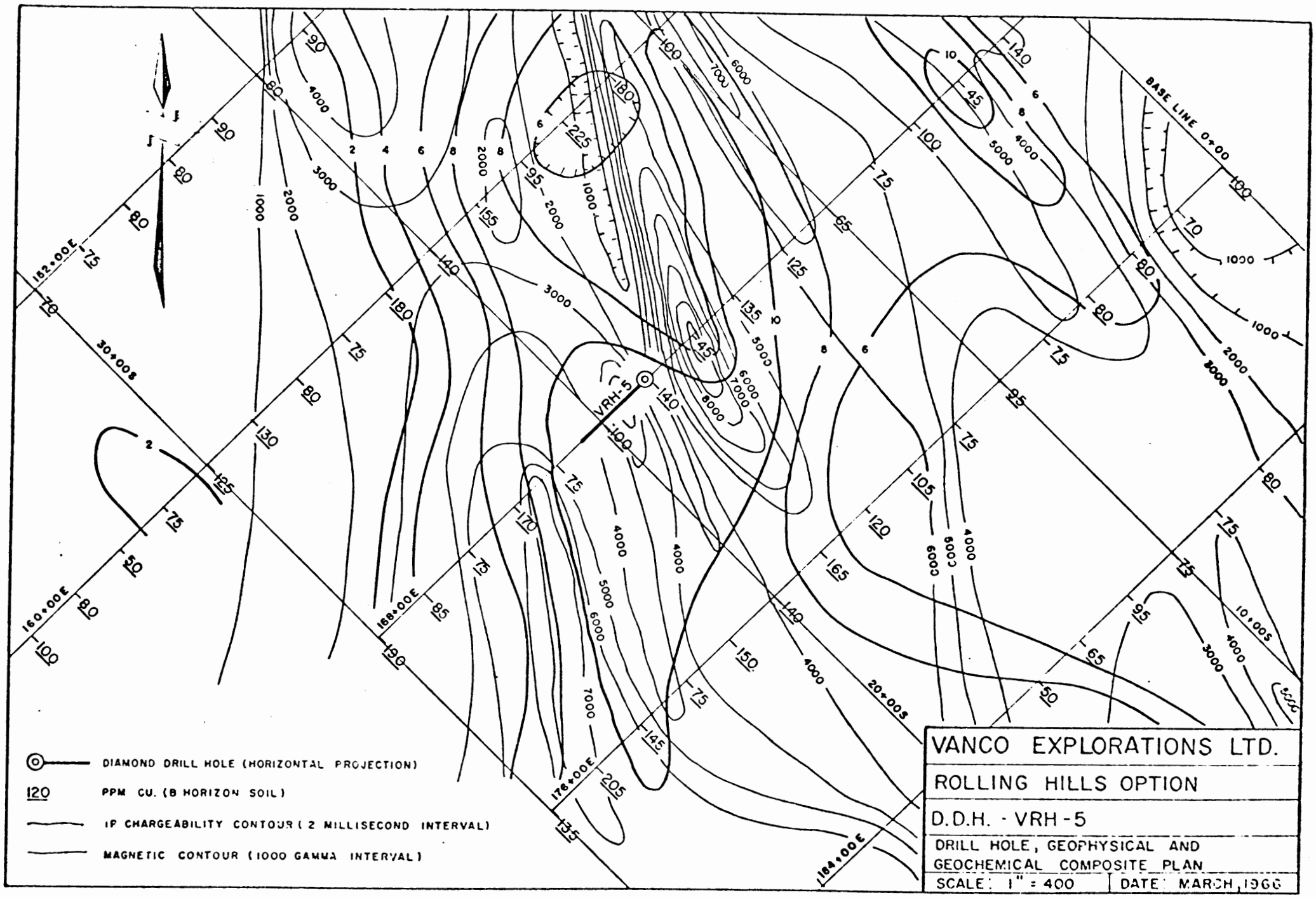
VANCO EXPLORATIONS LTD.

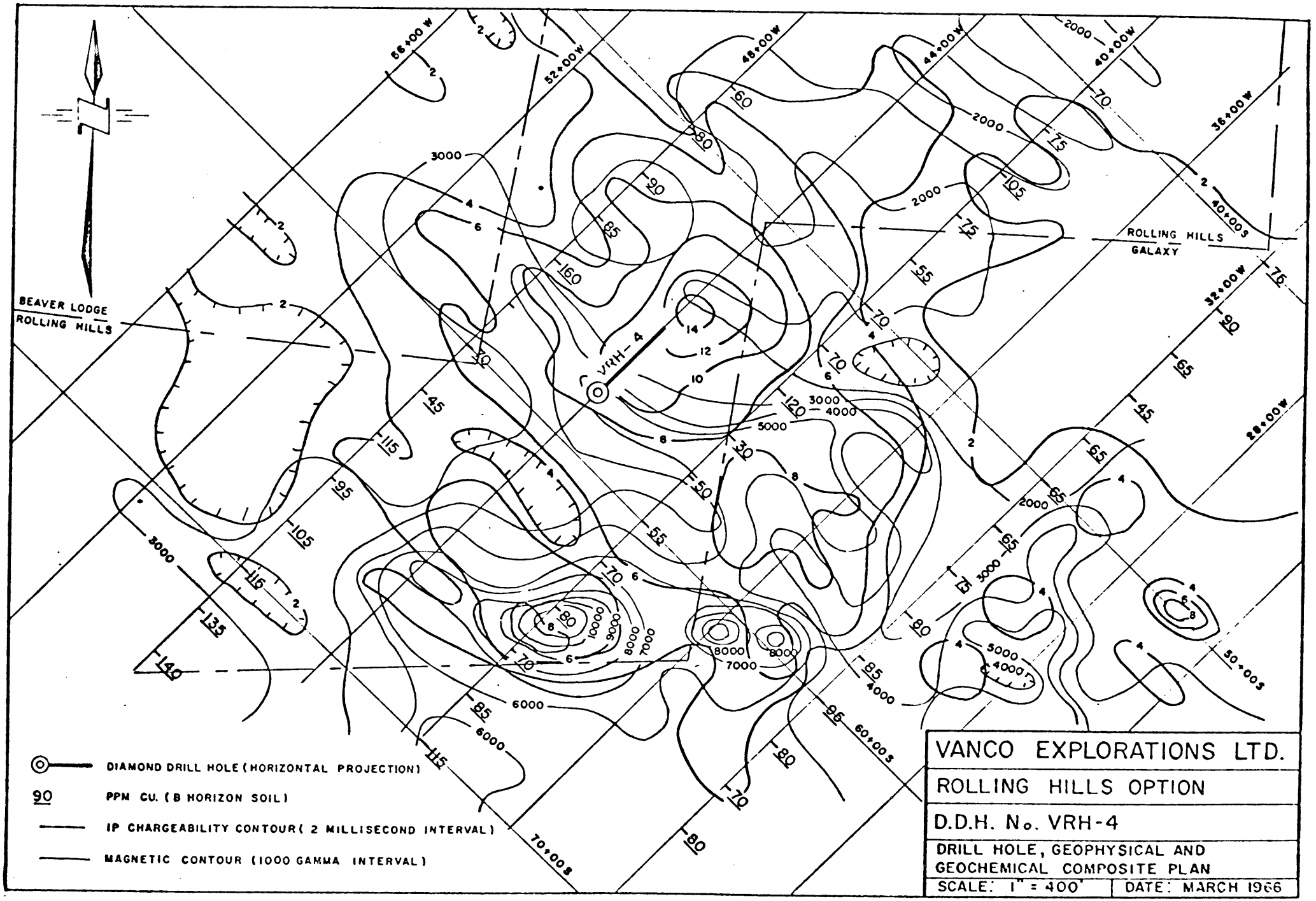
ROLLING HILLS OPTION

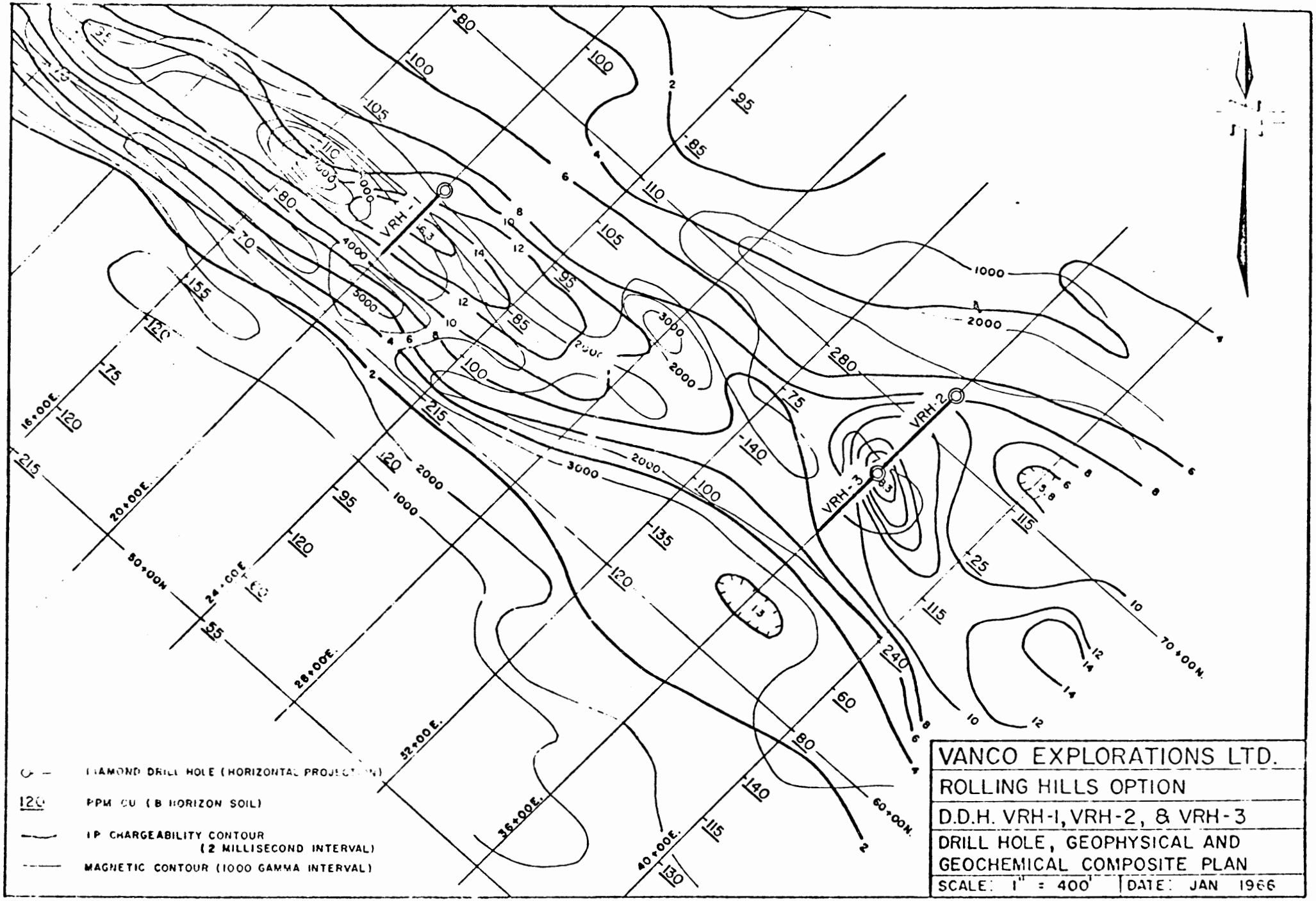
D.D.H. · VRH-6 & VRH-7

DRILL HOLE, GEOPHYSICAL AND GEOCHEMICAL COMPOSITE PLAN

SCALE: 1" = 400' | DATE: MARCH 1966


BASE LINE 0+00
VRH-5
152+00E
160+00E
168+00E
176+00E
184+00E
30+00S
20+00S
10+00S
DIAMOND DRILL HOLE (HORIZONTAL PROJECTION)
120 PPM CU. (B HORIZON SOIL)
IP CHARGEABILITY CONTOUR (2 MILLISECOND INTERVAL)
MAGNETIC CONTOUR (1000 GAMMA INTERVAL)
VANCO EXPLORATIONS LTD.
ROLLING HILLS OPTION
D.D.H. - VRH-5
DRILL HOLE, GEOPHYSICAL AND GEOCHEMICAL COMPOSITE PLAN
SCALE: 1" = 400
DATE: MARCH, 1966


BEAVER LODGE
ROLLING HILLS
ROLLING HILLS
GALAXY
VRH-4
56+00W
52+00W
48+00W
44+00W
40+00W
36+00W
32+00W
28+00W
70+00S
60+00S
50+00S
40+00S
DIAMOND DRILL HOLE (HORIZONTAL PROJECTION)
90 PPM CU. (B HORIZON SOIL)
IP CHARGEABILITY CONTOUR (2 MILLISECOND INTERVAL)
MAGNETIC CONTOUR (1000 GAMMA INTERVAL)
VANCO EXPLORATIONS LTD.
ROLLING HILLS OPTION
D.D.H. No. VRH-4
DRILL HOLE, GEOPHYSICAL AND GEOCHEMICAL COMPOSITE PLAN
SCALE: 1" = 400'
DATE: MARCH 1966


VRH-1
VRH-2
VRH-3
16+00E.
20+00E.
24+00E.
28+00E.
32+00E.
36+00E.
40+00E.
50+00N.
60+00N.
70+00N.
DIAMOND DRILL HOLE (HORIZONTAL PROJECTION)
120 PPM CU (B HORIZON SOIL)
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ROLLING HILLS OPTION
D.D.H. VRH-1, VRH-2, & VRH-3
DRILL HOLE, GEOPHYSICAL AND GEOCHEMICAL COMPOSITE PLAN
SCALE: 1" = 400' | DATE: JAN 1966