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KERR ADDISON MINES LIMITED

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To D. A. Lowrie From W. M. Sirola

Subject NEWTON CLAIM - C. M. DIVISION (92-O) Date November 30th, 1979

I had some petrographic work done on four specimens of drill core from this property and this work revealed the following:

I.D.B. A.H.C. P.S.C. W.J. DMH ..S. CKW FILE

1. The kaolinized feldspar porphyry intrusive (?) turns out to be dacite with fairly prominent sericite development on the plagioclase. Ferro-magnesian minerals are altered to chlorite-calcite-epidote.
2. The relatively high response found in the magnetometer survey results in part from magnetite development in andesite but one of the specimens we submitted was found to be an*Andesite-Diabase containing 5-7% magnetite.
3. The andesite specimen submitted showed strong chlorite-calcite development but no more than the expected amount of biotite (3-5%).

In summary, it would appear that there is a definite hydrothermal system involved and it does not greatly matter whether the dacites are intrusive or extrusive. The abundant development of kaolin, quartz veins, pyrite veins and microscopic sericite implies that we are probably in a transition zone between argillic and phyllic types of alteration.

We submitted a number of core specimens for assay approximately a week ago but are still awaiting results which should tell us whether or not pathfinder elements such as arsenic increase in any particular direction. If they do not, we may well abandon the project.

W. M. Sirola

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* Probably a dyke

cc.: Vancouver Petrographics Report

Vancouver Petrographics Ltd.

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Samples: 4-672, 4-707, 6-770, 7-480

The samples are grouped as follows:

1) Volcanic Rocks
   A. Porphyritic Dacite
      4-672, 6-770
   B. Porphyritic Andesite
      7-480
2) Dike (Diabasic Andesite)
      4-707

Alteration is as follows:

1) Plagioclase:
   4-672: to sericite and calcite
   4-707: to epidote
   6-770: to sericite
   7-480: along borders to sericite
2) Biotite and Amphibole
   4-672: biotite to chlorite-calcite-(sericite-plagioclase?)
   4-707: amphibole to calcite and pyrite=chlorite
   6-770: biotite to plagioclase-like mineral(?)
   7-480: biotite to chlorite-calcite-epidote
   amphibole to calcite-chlorite-epidote
3) Veins
   4-672: 1) quartz; 2) calcite-pyrite-chlorite-(chalcopyrite)-montmorillonite?: with siliceous halo
   4-707: 1) quartz-calcite-pyrite; 2) chlorite-pyrite
   6-770: 1) calcite; 2) calcite, arsenopyrite-pyrite: with partial siliceous halo
   7-480: 1) calcite; 2) quartz-pyrite-epidote

John Payne,
November, 1979

Sample 4-672 Porphyritic Dacite with Quartz vein and abundant calcite-pyrite-chlorite-(chalcopyrite) veins.

The rock is a moderately to strongly altered porphyritic dacite, with plagioclase and biotite phenocrysts in a very fine grained groundmass of plagioclase, quartz, and Ti-oxide. It is cut by a large quartz vein with variable grain size and a sericitic halo, and this vein and the rock are cut by irregular veins of calcite-pyrite-chlorite.

rock	
phenocrysts	
plagioclase	25-35%
biotite	5- 7
groundmass	
sericite	
quartz	
calcite	
Ti-oxide	

veins:
1) quartz
2) calcite-pyrite-chlorite-(chalcopyrite)-montmorillonite?

Plagioclase forms anhedral phenocrysts from 0.5-0.7 mm in size; they are moderately to strongly altered to sericite and patches of calcite. Some are completely altered and the texture of the original plagioclase is destroyed.

Biotite forms subhedral to anhedral phenocrysts up to 1 mm across; they are completely altered to aggregates of chlorite, calcite, sericite, and minor plagioclase?

The groundmass consists of a patchy, very fine grained aggregate of sericite and quartz, with irregular patches of calcite and scattered very fine grained patches of Ti-oxide.

The rock is cut by a major vein composed mainly of quartz with an irregular texture and grain size ranging from 0.05-0.5 mm. In the vein are patches of host rock? consisting mainly of very fine grained sericite and calcite. Other parts of the vein appear to be strongly altered rock, with a coarse intergrowth of patches of quartz and very fine grained sericite. Some of the textures are difficult to interpret because of later veins. Along the border of the quartz vein is a zone up to 2 mm wide containing very abundant sericite, with slightly coarser grain size than in the rock.

Late veins consist of rounded medium to coarse grained pyrite with minor blebs of rounded chalcopyrite up to 0.05 mm across, and abundant rounded inclusions of calcite, chlorite, or sericite. Calcite forms inclusions in pyrite and grains surrounding pyrite in the veins. Chlorite forms slightly radiating clusters of fibrous to flaky grains averaging 0.2-0.3 mm in length. Some veins consist mainly of chlorite, and show up green in the hand sample. Some veins contain patches up to 0.15 mm across of extremely fine grained montmorillonite: the mineral has the following properties: light brown color, R.I. less than calcite, low birefringence (difficult to estimate because of grain size (0.002-0.005 mm).

Along the borders of some calcite-pyrite-chlorite veins the groundmass is high in quartz and low in sericite, as if the vein had a weak siliceous alteration halo.

Sample 4-707   Andesite-Diabase Dike

The sample has a diabasic texture of intergrown plagioclase laths, with interstitial magnetite, amphibole, and patches of quartz. It is altered in an irregular zone along a quartz-calcite-pyrite vein, with an outer zone containing abundant calcite and minor chalcopyrite, and an inner zone containing chlorite-pyrite and lesser calcite. Magnetite and amphibole are destroyed in the alteration zone. The rock is cut by several thin veinlets of chlorite with scattered pyrite.

plagioclase	70-75%	
amphibole	12-17	(probably mainly hornblende)
magnetite	5- 7	
quartz	4- 5	
pyrite	0.5	

The rock consists mainly of plagioclase laths intergrown in a diabasic texture, with average grain size 0.3-0.5 mm long. Plagioclase is slightly to strongly altered to epidote, which generally forms extremely fine grained patches.

Amphibole forms grains averaging 0.05-0.1 mm in size, and a few elongate prismatic grains and clusters up to 0.2 mm long. Pleochroism is slight from pale yellowish green to light green. Amphibole commonly contains abundant extremely fine grained inclusions of Fe or Ti-oxides.

Magnetite forms disseminated subhedral to anhedral grains averaging 0.03-0.05 mm in size.

Quartz forms scattered patches from 0.05 to 0.2 mm in size, with a few patches up to 1 mm across. These are interstitial to plagioclase.

Pyrite forms scattered anhedral grains up to 0.8 mm across; these may be of secondary origin related to the alteration.

No indication exists that the magnetite is formed by contact metamorphism; it appears to be a primary phase of the andesite.

The large alteration patch in one corner of the section consists of an outer zone 1-2 mm wide in which calcite is very abundant as an alteration of amphibole, and chalcopyrite forms anhedral patches from 0.02-0.15 mm in size, in part replacing magnetite? Pyrite occurs in this zone as well, but is less abundant than in the inner alteration zone. The inner zone contains abundant chlorite and pyrite, both as alteration products of amphibole and magnetite, with lesser calcite in irregular patches. Pyrite grains average 0.05-0.15 mm in size, with a few grains up to 0.5 mm across. Coarser grains commonly have blebby inclusions of intergrowths of chalcopyrite and pyrrhotite.

The large vein at one end of the sample consists of quartz with patches of calcite and grains of pyrite. Chlorite forms a few patches in the rock up to 0.3 mm in size, and with pyrite forms late veins which appear to cut the earlier alteration, but because of similarities in mineralogy to the chlorite-pyrite-rich alteration, probably formed at the same time as this alteration.

Sample 6-770 Altered Porphyritic Dacite with abundant veins of calcite-arsenopyrite-pyrite

The rock is very strongly altered with quartz phenocrysts relatively fresh, and plagioclase phenocrysts very strongly altered to sericite. Some plagioclase phenocrysts are destroyed. A few phenocrysts appear to have the shapes of biotite laths; they are completely altered to aggregates which appear to be dominantly plagioclase?

phenocrysts	
plagioclase	30-35%
quartz	5- 7
biotite?	1½-2
groundmass	
sericite	30-35
quartz	15-20
calcite	5- 7
Ti-oxide	3- 5
pyrite	1½-2

fragment? quartz aggregate

veins
calcite-arsenopyrite-pyrite-(quartz), commonly with quartz-rich halo

Plagioclase phenocrysts are up to 1.5 mm across, averaging 0.5-0.8 mm. Almost all are completely altered to very fine grained sericite, and grain borders are irregular against the groundmass.

Quartz forms scattered phenocrysts from 0.2 to 1 mm in size.

Biotite? forms subhedral laths up to 1 mm across; they are completely altered to fine grained lathy aggregates of a mineral with the properties of plagioclase, and abundant dusty semiopaque and/or opaque (probably Ti-oxide).

The groundmass is a very fine grained aggregate of sericite and lesser quartz, with scattered Ti-oxide and irregular patches of calcite. Sericite and quartz grains average 0.02-0.03 mm in size. Locally sericite occurs in pseudomorphs after plagioclase laths from 0.05-0.15 mm in length in the groundmass.

Ti-oxide forms very fine grained patches averaging 0.02-0.1 mm in size, and a few fine grained patches up to 0.3 mm across.

Calcite forms irregular very fine grained patches and irregular vein-like zones, probably of replacement origin, related to the veins.

Pyrite forms scattered subhedral to euhedral grains averaging 0.3 mm across; many have moderately abundant inclusions of quartz and sericite.

The rock contains one angular patch 1.5 mm across composed of an irregular aggregate of quartz grains from 0.05 to 0.7 mm in size.

Veins consist of calcite-arsenopyrite and pyrite with minor quartz. Calcite forms patchy aggregates mainly 0.03-0.15 mm in size, with local zones averaging 0.3-0.5 mm and one patch averaging 0.01-0.02 mm in grain size. Arsenopyrite forms in two main textures: as radiating clusters of lathy grains averaging 0.2-0.3 mm long, with a few up to 0.5 mm surrounded by calcite, or as subparallel growths of stubby rectangular grains growing perpendicular to borders of pyrite lenses in cores of veins. Pyrite occurs as aggregates of grains in elongate lenses up to 0.5 mm wide and a few cm long in the centerlines of veins, and everywhere has overgrowths of arsenopyrite. Quartz occurs locally as grains up to 0.5 mm long. Calcite forms a few narrow veinlets in the rock.

Sample 7-480 Altered Porphyritic Andesite

The rock is a porphyritic andesite, with coarse phenocrysts up to 2.5 mm across of plagioclase, and finer phenocrysts up to 1 mm across of biotite, and up to 1.5 mm long of hornblende in a groundmass now composed of plagioclase, chlorite, quartz, calcite, and Ti-oxide. The rock is cut by two types of veins, and contains minor patches of chalcopyrite.

rock

phenocrysts		
plagioclase	15-20%	
biotite	3- 5	
chlorite-calcite	10	(after biotite, but texture destroyed)
hornblende	2- 3	(completely altered to calcite-chlorite-epidote-opaque)
groundmass		
plagioclase	25-30	
chlorite	20-25	
calcite	10-15	
quartz	5- 7	
Ti-oxide	1½-2	
pyrite	1½-2	
chalcopyrite	trace	

veins
1) calcite
2) quartz-pyrite-epidote-(secondary biotite)

Plagioclase forms subhedral to euhedral phenocrysts from 0.5 to 2.5 mm in size. Many are complexly twinned, and concentrically zoned; no composition was determined, but based on the texture, the composition is probably andesine. Some plagioclase occurs as clusters of several phenocrysts intergrown along anhedral borders. Plagioclase is fresh in the interiors of grains and completely altered to sericite along the rims. A few coarse grains are cut by numerous veinlets of calcite. A few coarse plagioclase? or hornblende? phenocrysts are completely altered to coarse patches of epidote with calcite and sericite.

Biotite occurs as a few phenocrysts up to 1 mm across; all but one are strongly altered from their rims towards the interiors to chlorite. Biotite is pleochroic from pale straw to medium reddish brown. Chlorite is pale green. Most chlorite patches contain scattered to locally abundant clusters of Ti-oxide up to 0.05 mm across. A few grains contain epidote.

Calcite-chlorite forms patches up to 1.5 mm across in which original biotite? texture has been completely destroyed. Chlorite forms radiating clusters of prismatic grains from 0.05-0.1 mm in length, and calcite forms irregular very fine grained patches. Some of these have intergrown irregular skeletal patches of epidote.

Hornblende forms a few elongate prismatic phenocrysts up to 1.5 mm long. They are completely altered to calcite with lesser chlorite, opaque (pyrite and Ti-oxide), and epidote. Some contain patches of very fine grained secondary biotite intergrown with the other minerals.

Quartz forms a few patches up to 1 mm across of interlocking grains from 0.05-0.25 mm grain size. The origin of these patches is uncertain.

(continued on next page)

Sample 7-480 (continued)

The groundmass contains irregular, slightly elongate plagioclase grains up to 0.4 mm long intergrown with patches of chlorite averaging 0.05-0.1 mm across, calcite as irregular very fine grained patches, quartz as interstitial grains from 0.02-0.1 mm, and scattered opaque and Ti-oxide from 0.02-0.05 mm in size. Pyrite forms grains from 0.2-1.5 mm in size, generally with rounded to irregular borders, and locally with skeletal outlines. Chalcopyrite occurs in patches as scattered grains from 0.02-0.15 mm in size associated with a variety of other minerals.

Calcite forms a few stringers which cut the rock.

The rock is cut by one vein and contains one coarse grained patch of the assemblage quartz-pyrite-epidote, with locally patches of very fine grained secondary biotite.

NOV 28 1979

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FILE

To D. A. Lowrie From W. M. Sirola

Subject NEWTON CLAIM - SCUM LAKE, CHILCOTIN PLATEAU (92-0) Date November 26, 1979

This 20-unit claim was staked on September 6, 1979 because a 12 meter chip sample from a rock trench assayed 3800 PPB in gold and 1060 PPM in lead.

This property was drilled by Cyprus Anvil in 1972 following I.P. and magnetic surveys. Cyprus concluded that the property contained a classic porphyry deposit with a low grade supergene copper zone beneath a leach and oxidized capping.

The Cretaceous sediments in the vicinity of Scum Lake have been intruded by large masses of diorite which in turn have been intruded by feldspar and quartz-feldspar porphyry. These in turn were covered by early tertiary andesite.

The topographic setting for the Newton Deposit is that of a symmetrical hill rising approximately 120 meters above the plateau. Presumably the silification evident in all of the rocks has made the area resistant to erosion. There is insufficient sedimentary and, or volcanic outcrop to indicate whether or not doming has taken place. Examination of drill core and other technical data suggests that if the deposit fits any kind of porphyry model, it would be the "volcanic" porphyry of Sutherland-Brown wherein volcanic rocks are cut by dikes and sills of monzonitic to dioritic composition.

There is a leached and oxidized capping of feldspar and quartz-feldspar porphyry approximately 30 meters thick. Below that is an argillic zone 60 meters thick containing abundant quartz veining, sometimes pervasive silification, and 1-5% pyrite. There is a supergene blanket with a maximum thickness of 60 meters immediately below the oxidized zone but the grade of this copper mineralization is low and varies from negligible to 0.2% copper.

Apart from the kaolin alteration and silification nothing is found that would suggest the possibility of a phyllic zone or a potassic zone at depth. This may result from the fact that most of the drill holes bottomed in silicified and pyritized andesite the thickness of which is

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Subject ________________ Date ________________

unknown. It is always possible that deeper drilling would encounter these forms of alteration, but any attendant mineralization would be too deep for open pit mining.

Conclusions And Recommendations

During the examination, Barry Price and I selected certain drill cores for assaying together with some additional soil samples from the surface. Should these samples show some promise in terms of gold mineralization, we can then decide on a further program of work.

The Newton Deposit is not in my view a classic porphyry as described by Simpson & Sawyer of Cyprus Exploration. Obviously, only certain elements of porphyry models have been found thus for. The association of gold with lead in Barry Price's sample is intriguing since no galena was seen either in surface exposure or in drill core. In any case it would be fortuitous indeed if a porphyry-gold deposit could be found with anything but by-product gold values.

The classic does not exist

Enclosures

1. Geologic Plan - Scale: 1" = 1000 Ft.

2. Diamond Drill Cross Section - A', B' Scale: 1" = 1000 Ft.

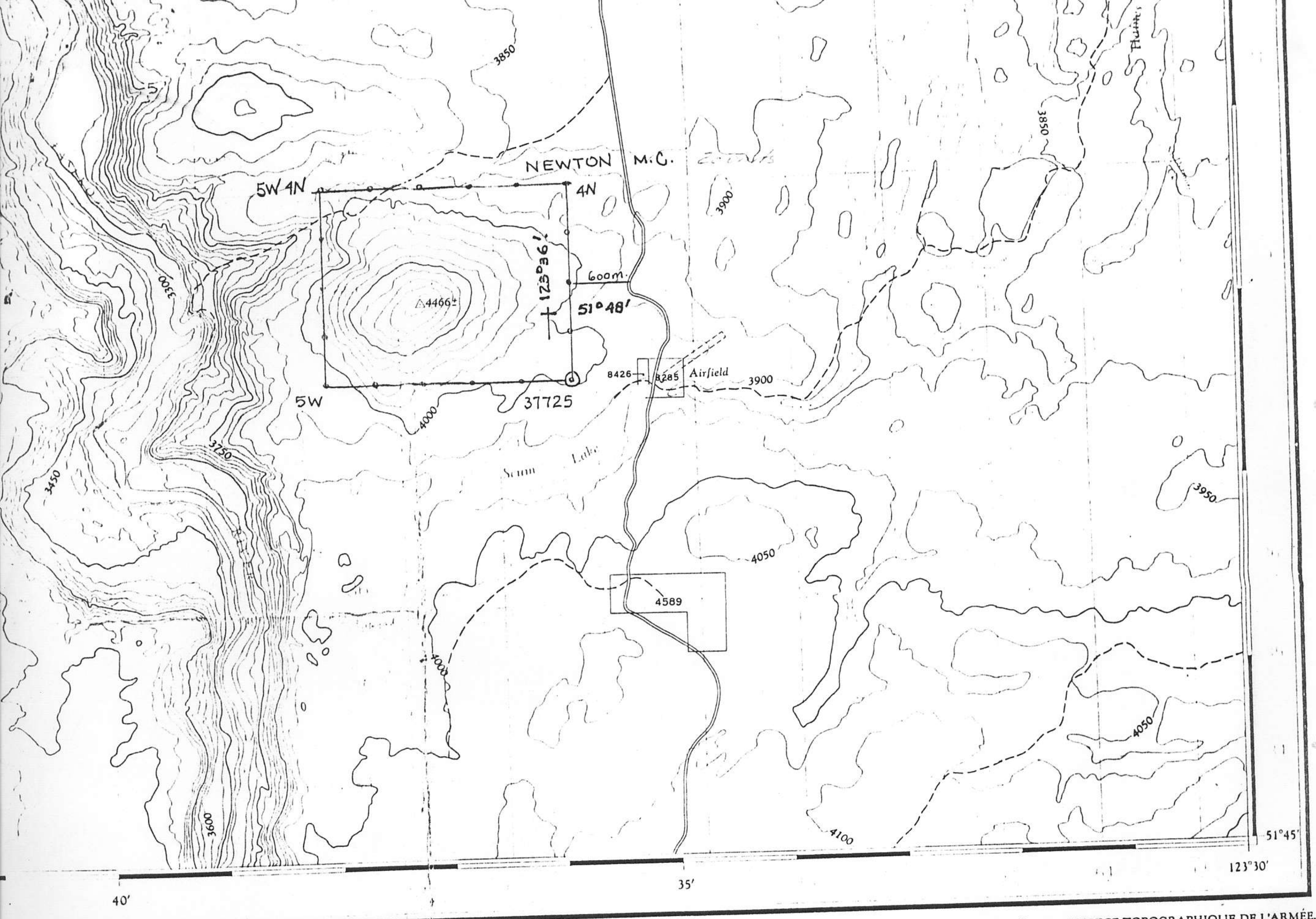
W. M. Sirola

W. M. Sirola

No "porphyry copper" deposits were thought to exist in B.C. in 1960

MoS_2 was a by-product at Brenda in ~~1965~~ the mid 1960'S

By product gold was not considered important at Bell copper in 1974



SCUM LAKE

BRITISH COLUMBIA

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Ces cartes sont en vente au Bureau de distribution des cartes, ministère des Mines et des Relevés techniques, Ottawa.